CARLO GAVAZZI
Automation Components

CARLO GAVAZZI



Our Products

CARLO GAVAZZI
Automation Components

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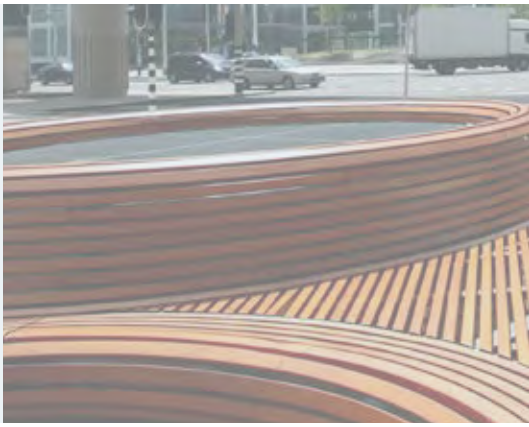
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CARLO GAVAZZI
Automation Components



A complete product range

ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is a multinational electronics group active in the design, manufacture and marketing of electronic equipment targeted at the global markets of industrial and building automation.

Our history is full of firsts and our products are installed in a huge number of applications all over the world. With more than 90 years of successful operation, our experience is unparalleled.

We have our headquarters in Europe and numerous offices around the world.
Our R&D competence centres and production sites are located in Denmark, Italy, Lithuania, Malta and the People's Republic of China.

We operate worldwide through 23 of our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

Our core competence in automation spans three product lines: Sensors, Switches and Controls.

Our wide array of products includes sensors, monitoring relays, timers, energy management systems, solid state relays, safety devices and fieldbus systems.

We focus our expertise on offering state-of-the-art product solutions in selected market segments.

Our customers include original equipment manufacturers of packaging machines, plastic-injection moulding machines, food and beverage production machines, conveying and materials handling equipment, door and entrance control systems, lifts and escalators, as well as heating, ventilation and air-conditioning devices.






A guarantee of reliability

Carlo Gavazzi products earned the independent approval of the relevant bodies which govern our industry and the many markets we serve.
They are developed and manufactured in full compliance with the most important international standard regulations.

Carlo Gavazzi manufacturing facilities operate in line with the requirements of ISO 9001:2015 Quality Management Systems and ISO 14001:2015 Environmental Management System standard.

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Automation Components



Sensors



Photoelectric sensors	8
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Ultrasonic sensors	98
Conductive level sensors	107
Magnetic sensors	111
Safety	118
Connectivity	136
Wind sensors	140

Photoelectric Time of Flight (ToF) sensors with IO-Link

Integrated amplifier

Types	LD30 Stainless steel AISI 316L		LD30 ABS housing Back potentiometer	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
				
Dimensions (mm)	11 x 31.5 x 21	11 x 31.5 x 21	10 x 30 x 20	10 x 30 x 20
Diffuse reflective background suppression, Infrared Laser - Class 1				
Operating frequency / Sensing distance (Sn)	5 Hz / 1 m	5 Hz / 1 m	5 Hz / 1 m	5 Hz / 1 m
	LD30ETBI10BPA2IO	**LD30ETBI10BPM5IO**	**LD30CTBI10BPA2IO**	**LD30CTBI10BPM5IO**

Specifications

Detection function	2 separate functions, Single mode, Windows Mode, Two-point Mode	
Sensing Principle	Time Of Flight detection (TOF)	
Light source	Infrared Laser - Class 1	
Analogue output	Via IO-Link	
Selectable function output 1	NPN, PNP or Push-Pull	
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	
Logic functions	AND, OR, X-OR, Gated SR-FF	
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	
Rated operating voltage (UB)	10 - 30 VDC	
Voltage drop	≤ 1.0 VDC	
No load supply current (Io)	≤ 25 mA@UB min, ≤ 12 mA@UB max	
Degree of protection	IP68, IP69K	IP67
Protection	Short-circuit (S), Reverse polarity (P) , Transients (T)	
Output current	< 100 mA	
Housing material	Stainless steel AISI 316L	ABS
Operating temperature	-25°C to +50°C	
LED colour	Yellow + Green	
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	01:01:00	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor: Process Data Variable; Device Identification	
SIO mode	Yes	
Required master port type	A	
Min. process cycle time [ms]	5	
Approvals/Marks	CE - cULus - ECOLAB Class 1 laser according to IEC 60825-1:2014 LASER 1 / LASER 1	CE - cULus Class 1 laser according to IEC 60825-1:2014 LASER 1 / LASER 1

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors with IO-Link

Integrated amplifier

Types	PD30 Stainless steel AISI 316L		PD30 ABS housing top potentiometer	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
				
Dimensions (mm)	11 x 31.5 x 21	11 x 31.5 x 21	10 x 30 x 20	10 x 30 x 20
Diffuse reflective				
Operating frequency / Sensing distance (Sn)	1000 Hz / 1000 mm	1000 Hz / 1000 mm	1000 Hz / 1000 mm	1000 Hz / 1000 mm
Infrared light (850 nm)	**PD30ETDI10BPA2IO**	**PD30ETDI10BPM5IO**	**PD30CTDI10BPA2IO**	**PD30CTDI10BPM5IO**
Red light (620 nm)	**PD30ETDR10BPA2IO**	**PD30ETDR10BPM5IO**	**PD30CTDR10BPA2IO**	**PD30CTDR10BPM5IO**
Diffuse reflective background/foreground suppression				
Operating frequency / Sensing distance (Sn)	500 Hz / 200 mm	500 Hz / 200 mm	500 Hz / 200 mm	500 Hz / 200 mm
Infrared light (850 nm)	**PD30ETBI20BPA2IO**	**PD30ETBI20BPM5IO**	**PD30CTBI20BPA2IO**	**PD30CTBI20BPM5IO**
Red light (620 nm)	**PD30ETBR20BPA2IO**	**PD30ETBR20BPM5IO**	**PD30CTBR20BPA2IO**	**PD30CTBR20BPM5IO**
Diffuse reflective background/foreground suppression, PointSpot				
Operating frequency / Sensing distance (Sn)	500 Hz / 250 mm	500 Hz / 250 mm	500 Hz / 250 mm	500 Hz / 250 mm
Red light (620 nm)	**PD30ETBS25BPA2IO**	**PD30ETBS25BPM5IO**	**PD30CTBS25BPA2IO**	**PD30CTBS25BPM5IO**
Diffuse reflective background/foreground suppression, Long Range				
Operating frequency / Sensing distance (Sn)	500 Hz / 350 mm	500 Hz / 350 mm	500 Hz / 350 mm	500 Hz / 350 mm
Red light (620 nm)	**PD30ETBR35BPA2IO**	**PD30ETBR35BPM5IO**	**PD30CTBR35BPA2IO**	**PD30CTBR35BPM5IO**
Retro reflective polarized				
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m
Red light (620 nm)	**PD30ETPR60BPA2IO**	**PD30ETPR60BPM5IO**	**PD30CTPR60BPA2IO**	**PD30CTPR60BPM5IO**
Retro reflective				
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m
Red light (620 nm)	**PD30ETRR60BPA2IO**	**PD30ETRR60BPM5IO**	**PD30CTRR60BPA2IO**	**PD30CTRR60BPM5IO**
Retro reflective polarized, PointSpot				
Operating frequency / Sensing distance (Sn)	1000 Hz / 5 m	1000 Hz / 5 m	1000 Hz / 5 m	1000 Hz / 5 m
Red light (620 nm)	**PD30ETPS50BPA2IO**	**PD30ETPS50BPM5IO**	**PD30CTPS50BPA2IO**	**PD30CTPS50BPM5IO**

Specifications

Detection function	Single mode, Windows Mode, Two-point Mode	
Analogue output	Via IO-Link	
Selectable function output 1	NPN, PNP or Push-Pull	
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	
Diagnostics	Quality of Teach, Quality of Run, Dust alarm, Temperature alarm, Operation hours, Power cycles, Detection cycles, Max. and Min. Temperatures, Short-circuit alarm, Maintenance, No of Parameter change	
Application functions	Pattern Recognition, Speed & Length detection, Divider function and Object & Gap Monitoring.	
Logic functions	AND, OR, X-OR, Gated SR-FF	
Timer functions	ON delay, OFF delay, ON+OFF delay and One shot leading or traling edge	
Rated operating voltage	10 - 30 VDC	
Voltage drop	≤ 1.0 VDC	
No load supply current (Io)	≤ 30 mA @ UB min, ≤ 15 mA @ UB max	
Degree of protection	IP68, IP69K	IP67
Protection	Short-circuit (S), Reverse polarity (P) , Transients (T)	
Output current	< 100 mA	
Housing material	Stainless steel AISI 316L	ABS
Operating temperature	-25°C to +60°C	
LED colour	Yellow + Green	
Communication interface	IO-Link	
IO-Link information	Transmission type - COM2 (38,4 kBaud), IO-Link revision - Ver. 1.1, SDCI standard - IEC 61131-9, Profile - Smart Sensor: Process Data Variable; Device Identification, SIO mode - Yes, Required master port type - A, Min. process cycle time - 5 ms	
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus

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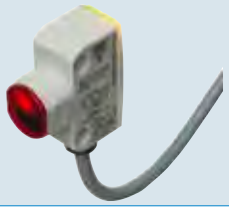
Photoelectric sensors

	M18, DC, axial type		M18, DC, radial type	
Types	**PA18CA.**	**PA18CA.**	**PA18CR.**	**PA18CR.**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 40	M18 x 44	M18 x 50	M18 x 54
Diffuse reflective				
Sensing distance (Sn)	50 - 1000 mm	50 - 1000 mm	50 - 800 mm	50 - 800 mm
NPN NO+NC	**PA18CAD10NASA**	**PA18CAD10NAM1SA**	**PA18CRD08NASA**	**PA18CRD08NAM1SA**
PNP NO+NC	**PA18CAD10PASA**	**PA18CAD10PAM1SA**	**PA18CRD08PASA**	**PA18CRD08PAM1SA**
Diffuse reflective WS				
Sensing distance (Sn)	0 - 400 mm	0 - 400 mm		
NPN NO+NC	**PA18CAD04NAWS**	**PA18CAD04NAM1WS**		
PNP NO+NC	**PA18CAD04PAWS**	**PA18CAD04PAM1WS**		
Retro reflective polarized				
Sensing distance (Sn)	5 - 500 cm	5 - 500 cm	5 - 400 cm	5 - 400 cm
NPN NO+NC	**PA18CAP50NASA**	**PA18CAP50NAM1SA**	**PA18CRP40NASA**	**PA18CRP40NAM1SA**
PNP NO+NC	**PA18CAP50PASA**	**PA18CAP50PAM1SA**	**PA18CRP40PASA**	**PA18CRP40PAM1SA**
Retro reflective				
Sensing distance (Sn)	5 - 650 cm	5 - 650 cm	5 - 500 cm	5 - 500 cm
NPN NO+NC	**PA18CAR65NASA**	**PA18CAR65NAM1SA**	**PA18CRR50NASA**	**PA18CRR50NAM1SA**
PNP NO+NC	**PA18CAR65PASA**	**PA18CAR65PAM1SA**	**PA18CRR50PASA**	**PA18CRR50PAM1SA**
Through-beam emitter (E)				
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 16 m	1 - 16 m
	PA18CAT20	**PA18CAT20M1**	**PA18CRT16**	**PA18CRT16M1**
Through-beam receiver (R)				
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 16 m	1 - 16 m
NPN NO+NC	**PA18CAT20NASA**	**PA18CAT20NAM1SA**	**PA18CRT16NASA**	**PA18CRT16NAM1SA**
PNP NO+NC	**PA18CAT20PASA**	**PA18CAT20PAM1SA**	**PA18CRT16PASA**	**PA18CRT16PAM1SA**
Background suppression (BGS)				
Sensing distance (Sn)	10 - 200 mm	10 - 200 mm		
NPN NO+NC	**PA18CAB20NASA**	**PA18CAB20NAM1SA**		
PNP NO+NC	**PA18CAB20PASA**	**PA18CAB20PAM1SA**		
Specifications				
Operating frequency	500 Hz	500 Hz	500 Hz	500 Hz
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP67 + IP69K	IP67 + IP69K	IP67 + IP69K	IP67 + IP69K
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Supply current BGS, E + R	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC
Housing material	ABS, PMMA, PBTB	ABS, PMMA, PBTB	ABS, PMMA, PBTB	ABS, PMMA, PBTB
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors

M18, DC, square type

Types	PH18.	PH18.	PH18.
Connections	2 m cable	M12 connector	Pigtail M12
			
Dimensions (mm)	15 x 21 (31.5) x 35	15 x 21 (31.5) x 35	15 x 21 (31.5) x 35
Diffuse reflective			
Sensing distance (Sn)	50 - 1000 mm	50 - 1000 mm	50 - 1000 mm
NPN NO+NC	**PH18CND10NASA**	**PH18CND10NAM1SA**	**PH18CND10NAT1SA**
PNP NC+NC	**PH18CND10PASA**	**PH18CND10PAM1SA**	**PH18CND10PAT1SA**
Retro reflective polarized			
Sensing distance (Sn)	5 - 500 cm	5 - 500 cm	5 - 500 cm
NPN NO+NC	**PH18CNP50NASA**	**PH18CNP50NAM1SA**	**PH18CNP50NAT1SA**
PNP NO+NC	**PH18CNP50PASA**	**PH18CNP50PAM1SA**	**PH18CNP50PAT1SA**
Retro reflective			
Sensing distance (Sn)	5 - 650 cm	5 - 650 cm	5 - 650 cm
NPN NO+NC	**PH18CNR65NASA**	**PH18CNR65NAM1SA**	**PH18CNR65NAT1SA**
PNP NO+NC	**PH18CNR65PASA**	**PH18CNR65PAM1SA**	**PH18CNR65PAT1SA**
Through-beam emitter (E)			
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 20 m
	PH18CNT20	**PH18CNT20M1**	**PH18CNT20T1**
Through-beam receiver (R)			
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 20 m
NPN NO+NC	**PH18CNT20NASA**	**PH18CNT20NAM1SA**	**PH18CNT20NAT1SA**
PNP NO+NC	**PH18CNT20PASA**	**PH18CNT20PAM1SA**	**PH18CNT20PAT1SA**
Background suppression (BGS)			
Sensing distance (Sn)	8 - 200 mm	8 - 200 mm	8 - 200 mm
NPN NO+NC	**PH18CNB20NASA**	**PH18CNB20NAM1SA**	**PH18CNB20NAT1SA**
PNP NO+NC	**PH18CNB20PASA**	**PH18CNB20PAM1SA**	**PH18CNB20PAT1SA**
Specifications			
Operating frequency	500 Hz	500 Hz	500 Hz
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP67 + IP69K	IP67 + IP69K	IP67 + IP69K
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Supply current BGS, E + R	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC	≤ 25 mA @ 24 VDC ≤ 40 mA @ 24 VDC
Housing material	ABS, PMMA	ABS, PMMA	ABS, PMMA
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Photoelectric sensors

	M18 metal, DC, integrated amplifier	
Types	**E.18..**	**E.18..-1**
Connections	**2 m cable**	**M12 connector**
		
Dimensions (mm)	M18 x 55	M18 x 67
Diffuse reflective		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable
NPN NO+NC	**EO1804NPAS**	**EO1804NPAS-1**
PNP NC+NC	**EO1804PPAS**	**EO1804PPAS-1**
Retro reflective polarized		
Operating frequency	100 Hz	100 Hz
Sensing distance (Sn)	2 m, adjustable	2 m, adjustable
NPN NO+NC	**EP1820NPAS**	**EP1820NPAS-1**
PNP NO+NC	**EP1820PPAS**	**EP1820PPAS-1**
Retro reflective		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	3 m, adjustable	3 m, adjustable
NPN NO+NC	**ER1830NPAS**	**ER1830NPAS-1**
PNP NO+NC	**ER1830PPAS**	**ER1830PPAS-1**
Through-beam emitter		
Sensing distance (Sn)	20 m	20 m
	ET1820	**ET1820-1**
Through-beam receiver		
Operating frequency	170 Hz	170 Hz
Sensing distance (Sn)	20 m, adjustable	20 m, adjustable
NPN NO+NC	**ET1820NPAS**	**ET1820NPAS-1**
PNP NO+NC	**ET1820PPAS**	**ET1820PPAS-1**
Specifications		
Rated operating voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	< 200 mA	< 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass
Operating temperature	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow	Yellow
Approvals/Marks	CE	CE

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Photoelectric sensors

	M18 plastic, AC, integrated amplifier		M18 metal, AC, integrated amplifier	
Types	**PA18CL**	**PA18CL.M6**	**PA18AL**	**PA18AL..M6**
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 71.5	M18 x 83.5	M18 x 71.5	M18 x 83.5
Diffuse reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	100 mm, fixed	100 mm, fixed		
Thyristor (SCR) NC	**PA18CLD01TC**	**PA18CLD01TCM6**		
Thyristor (SCR) NO	**PA18CLD01TO**	**PA18CLD01TOM6**		
Sensing distance (Sn)	200 mm, fixed	200 mm, fixed		
Thyristor (SCR) NC	**PA18CLD02TC**	**PA18CLD02TCM6**		
Thyristor (SCR) NO	**PA18CLD02TO**	**PA18CLD02TOM6**		
Sensing distance (Sn)	400 mm, fixed	400 mm, fixed		
Thyristor (SCR) NC	**PA18CLD04TC**	**PA18CLD04TCM6**		
Thyristor (SCR) NO	**PA18CLD04TO**	**PA18CLD04TOM6**		
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable
Thyristor (SCR) NC	**PA18CLD04TCSA**	**PA18CLD04TCM6SA**	**PA18ALD04TCSA**	**PA18ALD04TCM6SA**
Thyristor (SCR) NO	**PA18CLD04TOSA**	**PA18CLD04TOM6SA**	**PA18ALD04TOSA**	**PA18ALD04TOM6SA**
Retro reflective polarized				
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)	2 m, fixed	2 m, fixed	2 m, adjustable	2 m, adjustable
Thyristor (SCR) NC	**PA18CLP20TC**	**PA18CLP20TCM6**	**PA18ALP20TCSA**	**PA18ALP20TCM6SA**
Thyristor (SCR) NO	**PA18CLP20TO**	**PA18CLP20TOM6**	**PA18ALP20TOSA**	**PA18ALP20TOM6SA**
Retro reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	3 m, fixed	3 m, fixed	3 m, adjustable	3 m, adjustable
Thyristor (SCR) NC	**PA18CLR30TC**	**PA18CLR30TCM6**	**PA18ALR30TCSA**	**PA18ALR30TCM6SA**
Thyristor (SCR) NO	**PA18CLR30TO**	**PA18CLR30TOM6**	**PA18ALR30TOSA**	**PA18ALR30TOM6SA**
Specifications				
Rated operating voltage	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC
Off state current	≤ 5 mA AC	≤ 5 mA AC	≤ 5 mA AC	≤ 5 mA AC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT	PT
Load current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Polyester (PBTP)	Polyester (PBTP)	Nickel-plated brass	Nickel-plated brass
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric sensors

Integrated amplifier

Types	PD30 Stainless steel AISI 316L		PD30 ABS housing Back potentiometer	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
				
Dimensions (mm)	11 x 31.5 x 21	11 x 31.5 x 21	10 x 30 x 20	10 x 30 x 20
Diffuse reflective				
Operating frequency / Sensing distance (Sn)			1000 Hz / 1 m	1000 Hz / 1 m
NPN NO+NC			**PD30CND10NASA**	**PD30CND10NAM5SA**
PNP NO+NC			**PD30CND10PASA**	**PD30CND10PAM5SA**
Diffuse reflective, extremely wide angle, infrared light				
Operating frequency / Sensing distance (Sn)	1000 Hz / 200 mm	1000 Hz / 200 mm		
NPN NO+NC	**PD30ETD02NAWE**	**PD30ETD02NAM5WE**		
PNP NO+NC	**PD30ETD02PAWE**	**PD30ETD02PAM5WE**		
Diffuse reflective background suppression, red light				
Operating frequency / Sensing distance (Sn)			500 Hz / 200 mm	500 Hz / 200 mm
NPN NO+NC			**PD30CNB20NASA**	**PD30CNB20NAM5SA**
PNP NO+NC			**PD30CNB20PASA**	**PD30CNB20PAM5SA**
Diffuse reflective background suppression, infrared light				
Operating frequency / Sensing distance (Sn)			500 Hz / 200 mm	500 Hz / 200 mm
NPN NO+NC			**PD30CNB20NAIS**	**PD30CNB20NAM5IS**
PNP NO+NC			**PD30CNB20PAIS**	**PD30CNB20PAM5IS**
Retro reflective				
Operating frequency / Sensing distance (Sn)			1000 Hz / 6 m	1000 Hz / 6 m
NPN NO+NC			**PD30CNR60NASA**	**PD30CNR60NAM5SA**
PNP NO+NC			**PD30CNR60PASA**	**PD30CNR60PAM5SA**
Retro reflective polarized				
Operating frequency / Sensing distance (Sn)			1000 Hz / 6 m	1000 Hz / 6 m
NPN NO+NC			**PD30CNP60NASA**	**PD30CNP60NAM5SA**
PNP NO+NC			**PD30CNP60PASA**	**PD30CNP60PAM5SA**
Through-beam emitter				
Sensing distance (Sn)	15 m	15 m	15 m	15 m
	PD30ETT15	**PD30ETT15M5**	**PD30CNT15**	**PD30CNT15M5**
Through-beam receiver				
Operating frequency / Sensing distance (Sn)	500 Hz / 15 m	500 Hz / 15 m	500 Hz / 15 m	500 Hz / 15 m
NPN NO/NC	**PD30ETT15NASA**	**PD30ETT15M5NASA**	**PD30CNT15NASA**	**PD30CNT15NAM5SA**
PNP NO/NC	**PD30ETT15PASA**	**PD30ETT15M5PASA**	**PD30CNT15PASA**	**PD30CNT15PAM5SA**
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP68, IP69K	IP68, IP69K	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	Stainless steel AISI 316L	Stainless steel AISI 316L	ABS	ABS
Operating temperature	-40 (-25)°C to +60°C	-40 (-25)°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors

	Integrated amplifier		
Types	**PD30 PointSpot Back potentiometer**		**PD30 Top potentiometer**
Connections	**2 m cable**	**M8 connector**	**2 m cable**
			
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20
Diffuse reflective			
Operating frequency / Sensing distance (Sn)			1000 Hz / 1 m
NPN NO+NC			**PD30CTD10NASA**
PNP NO+NC			**PD30CTD10PASA**
Diffuse reflective, extremely wide angle, infrared light			
Operating frequency / Sensing distance (Sn)			1000 Hz / 200 mm
NPN NO+NC			**PD30CTD02NAWE**
PNP NO+NC			**PD30CTD02PAWE**
Diffuse reflective background suppression, red light			
Operating frequency / Sensing distance (Sn)	500 Hz / 250 mm	500 Hz / 250 mm	500 Hz / 200 mm
NPN NO+NC	**PD30CNB25NAPS**	**PD30CNB25NAM5PS**	**PD30CTB20NASA**
PNP NO+NC	**PD30CNB25PAPS**	**PD30CNB25PAM5PS**	**PD30CTB20PASA**
Diffuse reflective background suppression, infrared light			
Operating frequency / Sensing distance (Sn)			500 Hz / 200 mm
NPN NO+NC			**PD30CTB20NAIS**
PNP NO+NC			**PD30CTB20PAIS**
Retro reflective polarized			
Operating frequency / Sensing distance (Sn)	1000 Hz / 5 m	1000 Hz / 5 m	
NPN NO+NC	**PD30CNP50NAPS**	**PD30CNP50NAM5PS**	
PNP NO+NC	**PD30CNP50PAPS**	**PD30CNP50PAM5PS**	
Specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS	ABS
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE - cULus	CE - cULus	CE - cULus

Photoelectric sensors

	Integrated amplifier			
Types	**PD30 - Advanced with teach-in**			
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
				
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20
Retro reflective			**Retro reflective - transparent objects**	
Operating frequency / Sensing distance (Sn)			1000 Hz / 2 m, Teach-in	1000 Hz / 2 m, Teach-in
Mute NPN NO/NC			**PD30CNG02NPMU**	**PD30CNG02NPM5MU**
Mute PNP NO/NC			**PD30CNG02PPMU**	**PD30CNG02PPM5MU**
Remote NPN NO/NC			**PD30CNG02NPRT**	**PD30CNG02NPM5RT**
Remote PNP NO/NC			**PD30CNG02PPRT**	**PD30CNG02PPM5RT**
Through-beam emitter				
Sensing distance (Sn)	15 m, Teach-in	15 m, Teach-in		
NPN	**PD30CNT15NMU**	**PD30CNT15NM5MU**		
PNP	**PD30CNT15PMU**	**PD30CNT15PM5MU**		
Through-beam receiver mute function				
Operating frequency / Sensing distance (Sn)	1000 Hz / 15 m, Teach-in	1000 Hz / 15 m, Teach-in		
Remote NPN NO/NC	**PD30CNT15NPRT**	**PD30CNT15NPM5RT**		
Remote PNP NO/NC	**PD30CNT15PPRT**	**PD30CNT15PPM5RT**		
Dust NPN NO/NC	**PD30CNT15NPDU**	**PD30CNT15NPM5DU**		
Dust PNP NO/NC	**PD30CNT15PPDU**	**PD30CNT15PPM5DU**		
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.4 VDC @ 100 mA	≤ 2.4 VDC @ 100 mA	≤ 2.4 VDC @ 100 mA	≤ 2.4 VDC @ 100 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS	ABS	ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE - cULus	CE - cULus	CE - cULus	CE - cULus

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Photoelectric sensors

Through-beam, transistor output

Types	PB10..	PA12	PB18..	PE12..
Connections	5 m cable	M12 connector	5 m cable	5 m cable
				
Dimensions (mm)	Ø10	M12	Ø18	Ø12
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m	15 m	15 m
Single channel	**PB10CNT20**	**PA12BNT20**	**PB18CNT15**	**PE12CNT15**
Channel 1	**PB10C1T20**	**PA12B1T20**		**PE12C1T15**
Channel 2	**PB10C2T20**	**PA12B2T20**		**PE12C2T15**
Channel 3	**PB10C3T20**	**PA12B3T20**		**PE12C3T15**
Through-beam receiver				
Operating frequency	100 Hz (for 3 ch 30 Hz)	100 Hz (for 3 ch 30 Hz)	100 Hz	100 Hz
Sensing distance (Sn)	20 m	20 m	15 m	15 m
NPN NO Single channel	**PB10CNT20NO**	**PA12BNT20NO**	**PB18CNT15NO**	**PE12CNT15NO**
NPN NC Single channel	**PB10CNT20NC**	**PA12BNT20NC**	**PB18CNT15NC**	**PE12CNT15NC**
PNP NO Single channel	**PB10CNT20PO**	**PA12BNT20PO**	**PB18CNT15PO**	**PE12CNT15PO**
PNP NC Single channel	**PB10CNT20PC**	**PA12BNT20PC**	**PB18CNT15PC**	**PE12CNT15PC**
NPN NO Channel 1	**PB10C1T20NO**	**PA12B1T20NO**		**PE12C1T15NO**
NPN NC Channel 1	**PB10C1T20NC**	**PA12B1T20NC**		**PE12C1T15NC**
PNP NO Channel 1	**PB10C1T20PO**	**PA12B1T20PO**		**PE12C1T15PO**
PNP NC Channel 1	**PB10C1T20PC**	**PA12B1T20PC**		**PE12C1T15PC**
NPN NO Channel 2	**PB10C2T20NO**	**PA12B2T20NO**		**PE12C2T15NO**
NPN NC Channel 2	**PB10C2T20NC**	**PA12B2T20NC**		**PE12C2T15NC**
PNP NO Channel 2	**PB10C2T20PO**	**PA12B2T20PO**		**PE12C2T15PO**
PNP NC Channel 2	**PB10C2T20PC**	**PA12B2T20PC**		**PE12C2T15PC**
NPN NO Channel 3	**PB10C3T20NO**	**PA12B3T20NO**		**PE12C3T15NO**
NPN NC Channel 3	**PB10C3T20NC**	**PA12B3T20NC**		**PE12C3T15NC**
PNP NO Channel 3	**PB10C3T20PO**	**PA12B3T20PO**		**PE12C3T15PO**
PNP NC Channel 3	**PB10C3T20PC**	**PA12B3T20PC**		**PE12C3T15PC**
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	PC	PC	PTE	PC
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
LED colour	Green (E), Yellow (R)	Green (E), Yellow (R)		Green (E), Yellow (R)
Approvals/Marks UL 508 UL 325	CE cULus cURus	CE UL - cUL UR - cURus	CE cULus cURus	CE cULus cURus

NB! For pig-tail connector versions add C2 after the part number

CARLO GAVAZZI

Photoelectric sensors

DC, integrated amplifier

Types	PD70	PD112	PA.	PB.
Connections	2 m cable or connector		2 m cable or connector	
				
Dimensions (mm)	11.6 x 11.6 x 70	112 x 45 x 25	36 x 18 x 63	18 x 75 x 36
Diffuse reflective background suppression				
Operating frequency		Door mode 16.7 Hz Industry mode 250 Hz	1000 Hz	1000 Hz
Sensing distance (Sn)		2.5 m, adjustable	150 mm, adjustable	150 mm, adjustable
Cable		2 m	2 m	2 m
NPN/PNP, NO+NC		-	**PA15INPA/PA15IPPA**	**PB15INPA/PB15IPPA**
NPN+PNP, NO/NC		**PD112CNB25BP**	-	-
Connector		M12	M12	M12
NPN/PNP, NO+NC		-	**PA15INPA-1/PA15IPPA-1**	**PB15INPA-1/PB15IPPA-1**
NPN+PNP, NO/NC		**PD112CNB25BPM1**		
Retro reflective polarized				
Operating frequency			1000 Hz	1000 Hz
Sensing distance (Sn)			3 m, adjustable	3 m, adjustable
Cable			2 m	2 m
NPN/PNP, NO+NC			**PA3PNPA/PA3PPPA**	**PB3PNPA/PB3PPPA**
Connector			M12	M12
NPN/PNP, NO+NC			**PA3PNPA-1/PA3PPPA-1**	**PB3PNPA-1/PB3PPPA-1**
Through-beam				
Operating frequency	100 Hz			
Sensing distance (Sn)	12 m, adjustable			
Cable	2 m			
NPN NO (Receiver)	**PD70CNT12NO**			
NPN NC (Receiver)	**PD70CNT12NC**			
PNP NO (Receiver)	**PD70CNT12PO**			
PNP NC (Receiver)	**PD70CNT12PC**			
Mute High (Emitter)	**PD70CNT12MH**			
Mute Low (Emitter)	**PD70CNT12ML**			
Connector	M8			
NPN NO (Receiver)	**PD70CNT12NOM5**			
NPN NC (Receiver)	**PD70CNT12NCM5**			
PNP NO (Receiver)	**PD70CNT12POM5**			
PNP NC (Receiver)	**PD70CNT12PCM5**			
Mute High (Emitter)	**PD70CNT12M5MH**			
Mute Low (Emitter)	**PD70CNT12M5ML**			
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.8 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	≤ 100 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PC Black	PC Black	Aluminium	Reinforced ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Receiver output Green, Emitter power ON	Yellow, Output Green, Power ON	Yellow	Yellow
Approvals/Marks	CE - cURus	CE - cULus	CE	CE

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors

	Integrated amplifier		
Types	**PC50**	**PC50..M1**	**PC50**
Connections	**2 m cable**	**M12 connector**	**2 m cable**
			
Dimensions (mm)	17 x 50 x 50	17 x 50 x 50	17 x 50 x 50
Diffuse reflective			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	1 m, adjustable	1 m, adjustable	
NPN/PNP NO+NC	**PC50CND10BA**	**PC50CND10BAM1**	
Sensing distance (Sn)	2 m, adjustable	2 m, adjustable	
NPN/PNP NO+NC	**PC50CND20BA**	**PC50CND20BAM1**	
Sensing distance (Sn)			1 m, adjustable
Relay SPDT Multivoltage			**PC50CND10RP**
Sensing distance (Sn)			2 m, adjustable
Relay SPDT Multivoltage			**PC50CND20RP**
Diffuse reflective background suppression			
Operating frequency	250 Hz	250 Hz	
Sensing distance (Sn)	500 mm, adjustable	500 mm, adjustable	
NPN/PNP NO+NC	**PC50CNB50BA**	**PC50CNB50BAM1**	
Retro reflective polarized			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	6 m, adjustable	6 m, adjustable	6 m, adjustable
NPN/PNP NO+NC	**PC50CNP06BA**	**PC50CNP06BAM1**	
Mute High	**PC50CNP06BAMH**	**PC50CNP06BAM1MH**	
Mute Low	**PC50CNP06BAML**	**PC50CNP06BAM1ML**	
Relay SPDT Multivoltage			**PC50CNP06RP**
Retro reflective			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	10 m, adjustable	10 m, adjustable	10 m, adjustable
NPN/PNP NO+NC	**PC50CNR10BA**	**PC50CNR10BAM1**	
Relay SPDT Multivoltage			**PC50CNR10RP**
Through-beam emitter			
Sensing distance (Sn)	20 m	20 m	20 m
	PC50CNT20B	**PC50CNT20BM1**	**PC50CNT20R**
Through-beam receiver			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	20 m, adjustable	20 m, adjustable	20 m, adjustable
NPN/PNP NO+NC	**PC50CNT20BA**	**PC50CNT20BAM1**	-
Relay SPDT Multivoltage			**PC50CNT20RP**
Specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	12 - 240 VDC / 24 - 240 VAC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	Relay SPDT
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	PT
Load current	≤ 200 mA	≤ 200 mA	≤ 3 mA
Housing material	Reinforced ABS/PC	Reinforced ABS/PC	Reinforced ABS/PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric sensors

	Fork sensor
Types	**PF74..**
Connections	**5 m cable**
	
Dimensions (mm)	15 x 60 x 74
Fork sensor	
Operating frequency	≤ 1100 Hz
Sensing distance (Sn)	30 mm, slot width
PNP NO, NPN NC	**PF74CNT30BC**
PNP NC, NPN NO	**PF74CNT30BO**
General specifications	
Rated operating voltage	19.2 - 28.8 VDC
Voltage drop	≤ 1.5 VDC @ 100 mA
Degree of protection	IP65
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT
Load current	≤ 30 mA
Housing material	PC, black
Operating temperature	-25°C to +60°C
LED colour	Yellow + Green
Approvals/Marks	CE

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors

	Integrated amplifier relay output			Through-beam relay output
Types	**PM..**	**PM..**	**PD86**	**PD98**
Connections	**Terminals single relay**	**Terminal block mute input**	**Terminal block mute input**	**Terminal block mute input**
				
Dimensions (mm)	25 x 65 x 81	25 x 65 x 81	86 x 44 x 39	98 x 56 x 37
Diffuse reflective				
Oper. freq. / Sens. dist. (Sn)	20 Hz			
Sensing distance (Sn)	0.8 m, adjustable			
Relay SPDT Multivoltage	**PMD8RG / RGT PMD8RI / RIT**			
Retro reflective polarized				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed	
Relay SPDT Multivoltage	**PMP12RG / PMP12RI**			
Relay SPST (PC)		**PMP12RGM / PMP12RIM**	**PD86CNP12QPMU**	
Relay SPST (PC) - Detachable Terminals			**PD86CAP12QPTD**	
Relay SPST (PC) - Fixed Terminals			**PD86CAP12QPTF**	
Relay SPST (ZAMAK)			**PD86HNP12QPMU-01C**	
Relay SPST (ZAMAK) - Detachable Terminals			**PD86HAP12QPTD-01C**	
Relay SPST (ZAMAK) - Fixed Terminals			**PD86HAP12QPTF-01C**	
Retro reflective				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 10 m, fixed			
Relay SPDT Multivoltage	**PMR10RG / RGT**			
Relay SPST	**PMR10RI / RIT**			
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m		30 m (15 m default)
	PMT20G / PMT20I	**PMT20GM / PMT20IM**		**PD98CNT30QMU***
Through-beam receiver				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 20 m, fixed	20 Hz / 20 m, fixed		25 Hz / 30 m (15 m default)
Relay SPDT Multivoltage	**PMT20RG / RGT PMT20RI / RIT**			
Relay SPST				
General specifications				
Rated operating voltage	12 - 240 VDC / 24 - 240 VAC	24 VAC/DC ±20%	24 VAC/DC ±20%	12 V to 24 VAC/DC
Voltage drop	Relay SPDT	Relay SPST	Relay SPST	Relay DPDT
Degree of protection	IP67	IP67	IP66	IP54
Protection short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT	PT
Load current	≤ 3 A	≤ 3 A	1 A (AC), 0.5 A (DC)	1 A (AC), 0.5 A (DC)
Housing material	PC/ABS	PC/ABS	PD86C.. : PC + PMMA PD86H.. : ZAMAK + PMMA	PC/ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow	Yellow	Yellow + Green	Yellow (receiver)
Approvals/Marks	CE - UL - CSA	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325
Remarks	G = PG 13.5 Outlet I = ½"NPT Outlet T = Timer	G = PG 13.5 Outlet I = ½"NPT Outlet Mute input	Mute input CA and HA types: Angular detection and adjustable lenses ± 4,5 °	Mute input

* Item number set, emitter + receiver.

CARLO GAVAZZI

Photoelectric sensors

	Heavy duty infrared barrier	Through-beam relay output
Types	**PD140**	**PD180**
Connections	**Terminal block**	**Terminal block**
		
Dimensions (mm)	140 x 51 x 46	180 x 51 x 49
Through-beam range		
Indoor sensing distance (max)	60 m outdoor	15 / 30 m
General specifications		
Technology	Infrared	Infrared
Supply voltage receiver or emitter	12…24 VAC/VDC	12 + 24 VAC/DC
Battery supply emitter		2 x 3,6 VDC, 2100 mAH Lithium batteries size AA
Consumption	155 mA to 24 VAC (Emitter and receiver)	35 mA DC (55 mA DC with low battery alarm)
Output	SPDT	2 x SPST
Contact rating	1 A /@ 30 VDC, 0.5 A @ 50 VAC (resistive load)	1 A @ 30 VDC, 0.5 A @ 30 VAC (resistive load)
Approvals	CE - UL325 - UL508	CE - UL325 -CSA
Conformity	EN 12445, EN 12453, EN12978, EN/ISO 13849-1 ESPE2, RoHS	EN 12445, EN12453, EN12978, EN/ISO 13849-1 ESPE2, RoHS
Test input	Emitter test input	Emitter test input
Environmental specifications		
Wavelength	850 nm	850 nm
Operating temperature	-20°C to +60°C	-25°C to +55°C
Degree of protection	IP65	IP55
Mechanical specifications		
LED transmitter	Power signal	None (energy saving)
LED receiver	Signal for alignment with transmitter	Power ON - Green LED Output - Yellow LED
Optical adjustment	Horizontal 200° Vertical ±15°	Horizontal 200° Vertical ±30°
Mounting	Wall mounted type	Wall mounted type
Material	Aluminium, PC	PC
Weight	460 g (set)	Emitter 270 g Receiver 230 g
Comments	ESPE Category 2, EN 61496-2 Accessory: Laser alignment tool	ESPE Category 2, EN 61496-2 Emitter is supplied with 2 x 3.6 VDC 2100 mAH lithium batteries
Accessories	APD140-LA01 APD140-LA02 APD140-TC01	

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Photoelectric sensors

	Sensors	Amplifier 1-channel	Amplifier 2-channel	Amplifier 3-channel
Types	**MPF..**	**MPF1..**	**MPF2..**	**MPF3..**
Connections	**10 m cable**	**Terminals**	**Terminals**	**Terminals**
				
Dimensions (mm)	See sensor type	70 x 57 x 86	70 x 57 x 86	70 x 57 x 86
Amplifier				
		1-Channel	2-Channel	3-Channel
12-24 VAC/DC ±15% Low current		**MPF1-912RSL**	**MPF2-912RSL**	**MPF3-912RSL**
12-24 VAC/DC ±15%		**MPF1-912RS**	**MPF2-912RS**	**MPF3-912RS**
115 VAC ±15%		**MPF1-115RS**	**MPF2-115RS**	**MPF3-115RS**
230 VAC ±15%		**MPF1-230RS**	**MPF2-230RS**	**MPF3-230RS**
Through-beam emitter		**Output and function selection**		
Sensing distance (Sn)	15 m	No Dist Adjust		Dist Adjust	
Ø12 x 20	**MPFT15-4 (C)**	Normal Mute	Inverted Mute	Normal Mute	Inverted Mute
D11 x 24.5	**MPFT15-D11-4**				
D18 x 25	**MPFT15-D18-4 (C)**	RS	RSI	RSA	RSAI
M14 x 23	**MPFT15-M14-4 (C)**	RSL	RSLI	RSLA	RSLAI
Through-beam receiver					
Sensing distance (Sn)	15 m				
Ø12 x 20	**MPFR-4 (C)**				
D11 x 24.5	**MPFR-D11-4**				
D18 x 25	**MPFR-D18-4 (C)**				
M14 x 23	**MPFR-M14-4 (C)**				
General specifications					
Rated operating voltage	Powered by amplifier	See amplifier reference	See amplifier reference	See amplifier reference
Output		1 x 2 SPST in series	2 x 2 SPST in series	3 x 2 SPST in series
Low current resistive load		RS type: 2 A @ 240 VAC / 30 VDC RSL type: 0.5 A @ 50 VAC / 30 VAC	RS type: 2 A @ 240 VAC /30 VDC RSL type: 0.5 A @ 50 VAC / 30 VAC	RS type: 2 A @ 240 VAC / 30 VDC RSL type: 0.5 A @ 50 VAC / 30 VAC
Operating frequency	Amplifier dependent	10 Hz	10 Hz	10 Hz
Degree of protection	IP67	IP40	IP40	IP40
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	PT	PT	PT
Housing material -Amplifier -Sensor Ø12+D11+D18 -Sensor	 PC + ABS PC + Stainless steel	PC	PC	PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour		Yellow	Yellow	Yellow
Approvals/Marks	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325 - UL508
Remarks	C = Pigtail connector version			
Optical angle (degrees)	±5			

CARLO GAVAZZI

Photoelectric sensors

Sensors for amplifiers

Types	MOF..	MOF.. ATEX	MNF..	MDF..
Connections	10 m cable	Terminals	Terminals	Terminals
				
Dimensions (mm)	Ø 10 x 42	Ø 10 x 42	Ø 20 x 80	Ø 13.5 x 55
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m		
Max. ±2° optical angle	**MOFT20**	**MOFT20AX**		
	MOFT20-M12-2	**MOFT20-M12-2AX**		
Sensing distance (Sn)	50 m			
Max. ±2° optical angle	**MOFT50**			
	MOFT50-M12-2			
Sensing distance (Sn)	20 m	20 m		
Max. ±5° optical angle	**MOFT20-5**	**MOFT20-5AX**		
	MOFT20-M12-5	**MOFT20-M12-5AX**		
Sensing distance (Sn)	20 m	20 m	15 m	30 m
Max. ±8° optical angle	**MOFT20-8**	**MOFT20-8AX**	**MNFT15**	**MDFT30**
	MOFT20-M12-8	**MOFT20-M12-8AX**		
	MOFT20-M14-8	**MOFT20-M14-8AX**		
Through-beam receiver				
Operating frequency	Amplifier dependent	Amplifier dependent	Amplifier dependent	Amplifier dependent
Sensing distance (Sn)	See emitter	See emitter	See emitter	See emitter
Max. ±2° optical angle	**MOFR**	**MOFRAX**		
	MOFR-M12-2	**MOFR-M12-2AX**		
Max. ±5° optical angle	**MOFR-5**	**MOFR-5AX**		
	MOFR-M12-5	**MOFR-M12-5AX**		
Max. ±8° optical angle	**MOFR-8**	**MOFR-8AX**	**MNFR15**	**MDFR30**
	MOFR-M12-8	**MOFR-M12-8AX**		
	MOFR-M14-8	**MOFR-M14-8AX**		
General specifications				
Rated operating voltage	Powered by Amplifier	Powered by Amplifier	Powered by Amplifier	Powered by Amplifier
Output	On Amplifier	On Amplifier	On Amplifier	On Amplifier
Operating frequency	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..
Degree of protection	IP66 - IP67	IP66 - IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Housing material sensor	Ø10: PC M14 + M14: PC + SS	Ø10: PC M14 + M14: PC + SS	PC M14 + M14: PC + SS	Acetal, glass reinforced
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	None	None	None	None
Approvals/Marks	CE	CE - ATEX	CE	CE

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors

Types	Amplifiers for sensors		
Connections	**11-pole plug**	**11-pole plug**	**11-pole plug**
			
Dimensions (mm)	35 x 80 x 81.5	35 x 80 x 81.5	35 x 80 x 81.5
Description	Standard amplifier with Sensor diagnostics and adjustable sensing distance	As S142A but with adjustable time delay	As S142A but with Master / Slave function for high neighbour immunity
Amplifier references			
1 x SPDT relay	**S142ARNN924**	**S142BRNN924**	
1 x NPN output	**S142ARNN024**	**S142BRNN024**	
1 x NPN alarm output	**S142ARNN115** **S142ARNN230**	**S142BRNN115** **S142BRNN230**	
1 x SPDT relay	**S142ARNT924**	**S142BRNT924**	
1 x NPN output or alarm	**S142ARNT024**		
1 x Emitter mute input	**S142ARNT115** **S142ARNT230**	**S142BRNT115** **S142BRNT230**	
1 x PNP output	**S142APPT924**	**S142BPPT924**	
1 x PNP alarm output	**S142APPT115**	**S142BPPT115**	
1 x Emitter mute input	**S142APPT230**	**S142BPPT230**	
1 x SPDT relay			**S142CRXA924**
A - Auto distance adjustment			**S142CRXA115** **S142CRXA230**
M - Manual distance adjustment			**S142CRXM924** **S142CRXM115** **S142CRXM230**
General specifications			
Rated operating voltage 924 115 230	 24 VAC/DC 115 VAC 230 VAC	 24 VAC/DC 115 VAC 230 VAC	 24 VAC/DC 115 VAC 230 VAC
Relay load current esistive load	10 A @ 250 VAC / 25 VDC SPD	10 A @ 250 VAC / 25 VDC SPD	10 A @ 250 VAC / 25 VDC SPD
Transistor load current	100 mA 40 VDC	100 mA 40 VDC	
Operation frequency	20 Hz	20 Hz, no timer	15 Hz @ 2 systems 4 Hz @ 6 systems
Degree of protection	IP20	IP20	IP20
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	S
Housing material	Noryl SE1, Light grey	Noryl SE1, Light grey	Noryl SE1, Light grey
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI

Photoelectric sensors

Types	S1430 UAP..	S1430 RAL..	S1430 ROS..	PAM...
Connections	**11-pole plug**	**11-pole plug**	**11-pole plug**	**Terminals**
				
Dimensions (mm)	35 x 80 x 81.5	35 x 80 x 81.5	35 x 80 x 81.5	2, 3, 4, 5, 6 DIN housing
Description	3 inputs 3 transistors outputs	3 inputs 3 transistors outputs	3 inputs 3 double relay outputs	2-4-6-8 or 10 channels modular system
Amplifier references				
12-30 VAC/DC ±15%	**S1430UAP912**			
15-30 VAC/DC ±10%		**S1430RAL915**	**S1430ROS915**	
No. of channels				2 channels
- NPN output, NO				**PAM02AN3ANO/NC**
- PNP output, NO				**PAM02AN3APO/PC**
No. of channels				4 channels
- NPN output, NO				**PAM04AN3ANO/NC**
- PNP output, NO				**PAM04AN3APO/PC**
No. of channels				6 channels
- NPN output, NO				**PAM06AN3ANO/NC**
- PNP output, NO				**PAM06AN3APO/PC**
Extension modules references				
No. of channels				2 channels
- NPN output, NO				**PAM02CN3ANO**
- NPN output, NC				**PAM02CN3ANC**
- PNP output, NO				**PAM02CN3APO**
- PNP output, NC				**PAM02CN3APC**
No. of channels				4 channels
- NPN output, NO				**PAM04CN3ANO**
- NPN output, NC				**PAM04CN3ANC**
- PNP output, NO				**PAM04CN3APO**
- PNP output, NC				**PAM04CN3APC**
General specifications				
Rated operating voltage	See Amplifier type	See Amplifier type	See Amplifier type	18 - 33 VDC
Output	3 x Transistor NPN/PNP/NO/NC	3 x SPST	3 x SPST	One output per channel
Load current resistive load	100 mA, 40 VDC, NPN	1.5 A @ 100 VAC / 30 VDC	1.5 A @ 100 VAC / 30 VDC	20 mA, 33 VDC, NPN / PNP 8 A @ 250 VAC /24 VDC SPDT resistive load
Operation frequency	16 Hz	12.5 Hz	12.5 Hz	30 Hz @ 6 channels
Degree of protection	IP20	IP20	IP20	IP20
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	PT	PT	SPT
Housing material	Noryl SE1, Light grey	Noryl SE1, Light grey	Noryl SE1, Light grey	
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
LED colour	Yellow + Green + Red	Yellow + Green + Red	Yellow + Green + Red	Yellow + Green + Red
Approvals/Marks	Multiplexed system	Multiplexed system	Multiplexed system	Multiplexed system, test functions, bargraph, mute input etc.

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric sensors

Types	Wireless entrapment protection device for industrial doors ESPE		
Connections	**Main controller**	**Subcontroller**	**PB11**
			
Dimensions (mm)	35 x 35 x 125	26 x 242 x 45	Ø11 x 24.5
Description	The Carlo Gavazzi main controller can control up to 4 subcontrollers	This flexible Carlo Gavazzi subcontroller can handle 2 safety edges and 1 door-in-door limit switch	
References			
Main controller	**WSM 2 B A 2 D24**		
Subcontroller		**WSS 2 B A 2 BAT**	
Photoelectric sensor Emitter			**PB 11 CNT 15 WE**
Photoelectric sensor Receiver			**PB 11 CNT 15 WR**
General specifications			
Rated operating voltage	12 - 24 VAC/DC	1 - 4 Lithium 3.6 VDC size AA batteries	From subcontroller
Supply current	< 50 mA		
Relay load current resistive load	1 A / 30 VDC 0.5 A / 30 VAC		
Communication frequency	2.4 GHz Duplex	2.4 GHz Duplex	
Response time	120 mS	120 mS	
Number of channels	16	16	
Communication distance	10 m wireless	10 m wireless	
Sensing distance			15 m
Subcontroller up-time		10 - 80 sec	
Test input	On main module		
Degree of protection	IP66	IP66	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	PT	P	
Housing material	ABS, Light grey	PC, Light grey	PA6 Glass reinforced
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Green, Yellow, Red	Yellow	-
Approvals/Marks	CE - UL - FCC	CE - UL - FCC	CE - UL

Photoelectric sensors

Types	Wireless entrapment protection device for industrial gates ESPE		
Connections	**Main controller**	**Subcontroller**	**PB11**
			
Dimensions (mm)	35 x 35 x 125	26 x 242 x 45	Ø11 x 24.5
Description	The Carlo Gavazzi main controller can control up to 6 subcontrollers	This flexible Carlo Gavazzi subcontroller can handle one opening safety edge and one closing edge	
References			
Main controller (N.O. 8.2 kohm output)	**WSM6GAOOD24**		
Main controller (N.C. output)	**WSM6GACCD24**		
Subcontroller		**WSS2GA2BAT**	
Photoelectric sensor Emitter			**PB 11 CNT 15 WE**
Photoelectric sensor Receiver			**PB 11 CNT 15 WR**
General specifications			
Rated operating voltage	12 - 24 VAC/DC	1 - 4 Lithium 3.6 VDC size AA batteries	From subcontroller
Supply current	< 50 mA		
Relay load current resistive load	1 A / 30 VDC 0.5 A / 30 VAC		
Communication frequency	2.4 GHz Duplex	2.4 GHz Duplex	
Response time	From 15 to 100 ms	From 15 to 100 ms	
Number of channels	16	16	
Communication distance	15 m wireless	15 m wireless	
Sensing distance			2.5 m
Subcontroller up-time		15 – 105 s, fixed time or infinite	
Test input	On main module		
Degree of protection	IP66	IP66	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	PT	P	
Housing material	ABS, Light grey	PC, Light grey	PA6 Glass reinforced
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Green, Yellow, Red	Yellow	-
Approvals/Marks	CE - UL - FCC - TÜV	CE - UL - FCC - TÜV	CE - UL

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Photoelectric level sensors

	Integrated amplifier		
Types	**VP0.E.**	**VP ATEX**	**VP E.M**
Connections	**2 m cable**	**2 m cable**	**2 m cable**
			
Dimensions (mm)	3/8" x 74	3/8" x 74	3/8" x 74
Light type	Unmodulated	Unmodulated	Modulated
Optical level sensor references			
Operating frequency	30 Hz	30 Hz	30 Hz
Sensing dist. (Sn), Hor.	± 5 mm, fixed	± 5 mm, fixed	± 5 mm, fixed
Sensing dist. (Sn), Ver.	± 2.5 mm, fixed	± 2.5 mm, fixed	± 2.5 mm, fixed
Housing material	Polysulfone	Polysulfone	Polysulfone
NPN NO	**VP02E**		**VP02EM**
NPN NC	**VP01E**		**VP01EM**
PNP NO	**VP02EP**	**VP02EPAX**	**VP02EPM**
PNP NC	**VP01EP**	**VP01EPAX**	**VP01EPM**
Housing material	Polyamide 12	Polyamide 12	Polyamide 12
NPN NO	**VP04E**		**VP04EM**
NPN NC	**VP03E**		**VP03EM**
PNP NO	**VP04EP**	**VP04EPAX**	**VP04EPM**
PNP NC	**VP03EP**	**VP03EPAX**	**VP03EPM**
Housing material	Polysulfone		
SCR NO	**VP02-110TB**		
SCR NC	**VP01-110TB**		
SCR NO	**VP02-230TB**		
SCR NC	**VP01-230TB**		
DC-types			
Rated operating voltage	10 - 40 VDC	10 - 16.8 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
Off-state current	≤ 12 mA	≤ 12 mA	≤ 12 mA
Load current	< 200 mA	< 50 mA	< 200 mA
AC-types (SCR)			
Rated operating voltage	110 or 230 VAC		
Voltage drop	≤ 9 VAC		
Off-state current	≤ 7 mA		
Load current	< 10 - 100 mA		
General specifications			
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	PT	PT	PT
Operating temperature	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
LED colour	Yellow	Yellow	Yellow
Pressure	10 bar @ +60°C	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE	CE - Ⓔx - TÜV - ATEX zone 1	CE

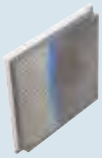
Photoelectric level sensors

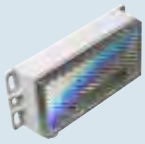
	Integrated amplifier	
Types	**VPA..../VPB....**	**VPA....-1/VPB....-1**
Connections	**2 m cable**	**M12 connector**
		
Dimensions (mm)	3/8" x 70.5	3/8" x 90.5
Light type	Modulated	Modulated
Optical level sensor references		
Operating frequency	30 Hz	30 Hz
Sensing dist. (Sn), Hor.	± 5 mm, fixed	± 5 mm, fixed
Sensing dist. (Sn), Ver.	± 2.5 mm, fixed	± 2.5 mm, fixed
Housing material	Stainless steel/polysulfone	Stainless steel/polysulfone
NPN NO+NC	**VPA1MNA**	**VPA1MNA-1**
PNP NO+NC	**VPA1MPA**	**VPA1MPA-1**
Housing material	Stainless steel and glass	Stainless steel and glass
NPN NO+NC	**VPA2MNA**	**VPA2MNA-1**
PNP NO+NC	**VPA2MPA**	**VPA2MPA-1**
Housing material	Nickel-pl. brass/polysulfone	Nickel-pl. brass/polysulfone
NPN NO+NC	**VPB1MNA**	**VPB1MNA-1**
PNP NO+NC	**VPB1MPA**	**VPB1MPA-1**
Housing material	Nickel-plated brass and glass	Nickel-plated brass and glass
NPN NO+NC	**VPB2MNA**	**VPB2MNA-1**
PNP NO+NC	**VPB2MPA**	**VPB2MPA-1**
DC-types		
Rated operational voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC
Off-state current	≤ 7 mA	≤ 7 mA
Load current	< 200 mA	< 200 mA
General specifications		
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Operating temperature	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	No LED
Pressure	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE	CE

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Photoelectric sensors accessories

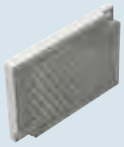
Reflectors, rectangular

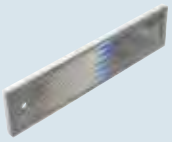
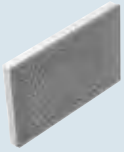





Item Number	ER100	ER840	ER681	ER686
Dimensions (mm)	100 x 100 x 9.2	84.5 x 84.5 x 9	52 x 119 x 27	55.3 x 126 x 9
Mounting (screws not incl.)	2 x M3 screws	2 x M3.5 screws	4 x M4 screws	2 x M6 screws
Reduction factor	1.2	0.96	0.92	0.92

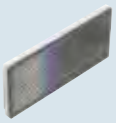
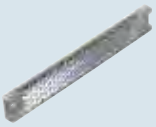
Reflectors, rectangular



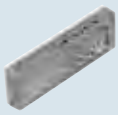
Item Number	ER4060	ER5060	ER42182	ER5080
Dimensions (mm)	60 x 41 x 8	55.5 x 61 x 8	186 x 46.5 x 8	80 x 54 x 8
Mounting (screws not incl.)	2 x M3.5 screws	2 x M4 screws	2 x M6 screws	Adhesive
Reduction factor	0.81	0.80	0.65	0.60

Reflectors, rectangular


Item Number	ER483	ER8	ER665	ER530
Dimensions (mm)	32.5 x 65 x 8	82 x 37 x 5.5	18.5 x 120 x 65	19 x 72.5 x 8.4
Mounting (screws not incl.)	2 x M3.5 screws	Adhesive	2 x M4 screws	2 x M3.5 screws
Reduction factor	0.55	0.51	0.45	0.45

Reflectors, rectangular



Item Number	ER390	ER1	ER640	ER692
Dimensions (mm)	23.5 x 47.5 x 8	51 x 17.5 x 5	13 x 17 x 5	Ø 35 x 5.5
Mounting (screws not incl.)	2 x M3.5 screws	Adhesive	Adhesive	Adhesive
Reduction factor	1.39	0.20	0.16	0.53

Photoelectric sensors accessories

Reflectors, cylindrical






Item Number	ER4	ER460	ER420	ER423
Dimensions (mm)	Ø 84 x 7.4	Ø 46 x 6.5	Ø 42 x 6.3	Ø 41.5 x 6
Mounting (screws not incl.)	1 x M4 screw	Adhesive	Adhesive	2 x M3 screws
Reduction factor	1	0.55	0.54	0.54

Reflectors, cylindrical — Micro cube reflectors for LD32






Item Number	ER689	EM 130-20	EM 120-20	EM 123-70
Dimensions (mm)	Ø 25 x 5.5	20 x 43	20 x 32	13.7 x 23
Mounting (screws not incl.)	Adhesive	2 x M3 screws	2 x M3.5 screws	2 x M2 screws
Reduction factor	0.39	1 (Micro Cube)	1 (Micro Cube)	1 (Micro Cube)

Reflectors, tape — Micro cube reflectors for LD32






Item Number	ERT25	EM 111-40	EM 121-41	EM 110-40
Dimensions (mm)	25 mm x 45.7 m	10.5 x 10.5	Ø20	Ø10
Mounting (screws not incl.)	Adhesive			
Reduction factor	0.23 (25 x 25 mm)	1 (Micro Cube)	1 (Micro Cube)	1 (Micro Cube)

Reflectors, tape — Accessories, photoelectric sensors



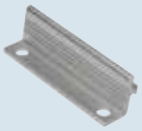



Item Number	ERT50	AMPF-MB1	AMPF-MB2	AMPF-MB3
Dimensions (mm)/Used for	50 mm x 45.7 m	MPFT15-4 & MPFR-4	MPFT15-4 & MPFR-4	MPFT15-4 & MPFR-4
Mounting (screws not incl.)	Adhesive			
Reduction factor/ Description	0.34 (50 x 50 mm)	Plastic mounting bracket for wall mounting	Adaptor for fitting to an Ø18 mm rubber profile	Metal mounting bracket for harsh environment

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Photoelectric sensors accessories

Accessories, photoelectric sensors

				
Item Number	**6IODC**	**APA3**	**MB-M01**	**MB18A**
Used for	S1430...	PA.. sensors	MOF.. sensors	M18 sensors
Description	Plug conversion	Mounting bracket in anodized aluminium	Ball mounting bracket for flexible mounting	Mounting bracket in plastic

Accessories, photoelectric sensors — Brackets

				
Item Number	**APA18-MB1**	**APH18-MB1**	**APA-2**	**APB-1**
Used for	PA18 sensors	PH18 sensors	PA.. sensors	PB
Description	Mounting bracket in plastic	Mounting bracket in plastic	Mounting bracket in steel, black	Mounting bracket in steel, black

Brackets

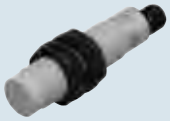
				
Item Number	**MB02**	**APD32-MB3**	**APD30 MB1**	**APD30 MB2**
Used for	PM	PD32 - LD32	PD.. sensors	PD.. sensors
Description	Long mounting bracket for wall mounting in steel, chromium-plated	Mounting bracket in steel, chromium-plated	Mounting bracket in steel, chromium-plated	Mounting bracket in steel, chromium-plated

Brackets — Alignment tools

				
Item Number	**ACP50-1**	APD140-LA01	APD140-LA02	APD140-TC01
Used for	PC50.. sensors	PD140.. Heavy duty infrared barrier	PD140.. Heavy duty infrared barrier	PD140.. Heavy duty infrared barrier
Description	Mounting bracket in steel, chromium-plated	Laser alignment tool	Laser alignment tool without batteries (Battery: DL1/3N, CR1/3N 3V - Lithium)	Alignment test cable

Capacitive proximity sensors, 4th Gen. TRIPLESHIELD™ with IO-Link

M18-DC 4th Generation TRIPLESHIELD™ with IO-Link - PBT Housing

Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector 4-pole**	**2 m cable**	**M12 connector 4-pole**
				
Dimensions (mm)	M18 x 70	M18 x 85	M18 x 70	M18 x 85
Thread (mm)	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	8 mm (adjustable 2 - 10 mm)	8 mm (adjustable 2 - 10 mm)	12 mm (adjustable 3 - 15 mm)	12 mm (adjustable 3 - 15 mm)
References				
	CA18CAF08BPA2IO	**CA18CAF08BPM1IO**	**CA18CAN12BPA2IO**	**CA18CAN12BPM1IO**
Characteristics flush and non-flush mountable				
Selectable function output 1	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change
Logic functions	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
"Protection short-circuit (S) Reverse polarity (P) Transients (T)"	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)
Degree of protection	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	01:01:00	01:01:00	01:01:00	01:01:00
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	5	5	5	5
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Capacitive proximity sensors, 4th Gen. TRIPLESHIELD™ with IO-Link

M18-DC 4th Generation TRIPLESHIELD™ with IO-Link - PFTE Housing

Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector 4-pole**	**2 m cable**	**M12 connector 4-pole**
				
Dimensions (mm)	M18 x 70	M18 x 70	M18 x 70	M18 x 70
Thread (mm)	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	8 mm (adjustable 2 - 10 mm)	8 mm (adjustable 2 - 10 mm)	12 mm (adjustable 3 - 15 mm)	12 mm (adjustable 3 - 15 mm)
References				
	CA18FAF08BPA2IO	**CA18FAF08BPM1IO**	**CA18FAN12BPA2IO**	**CA18FAN12BPM1IO**
Characteristics flush and non-flush mountable				
Selectable function output 1	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change
Logic functions	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PTFE	PTFE	PTFE	PTFE
Operating temperature	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)
Degree of protection	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	1.1	1.1	1.1	1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	5	5	5	5
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Capacitive proximity sensors, 4th Gen. TRIPLESHIELD™ with IO-Link

M18-DC 4th Generation TRIPLESHIELD™ with IO-Link - PBT and AISI316 Housing

Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector 4-pole**	**2 m cable**	**M12 connector 4-pole**
				
Dimensions (mm)	M18 x 70	M18 x 70	M18 x 70	M18 x 70
Thread (mm)	M18 x 1.0 x 55	M18 x 1.0 x 47	M18 x 1.0 x 55	M18 x 1.0 x 47
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	8 mm (adjustable 2 - 10 mm)	8 mm (adjustable 2 - 10 mm)	12 mm (adjustable 3 - 15 mm)	12 mm (adjustable 3 - 15 mm)
References				
	CA18EAF08BPA2IO	**CA18EAF08BPM1IO**	**CA18EAN12BPA2IO**	**CA18EAN12BPM1IO**
Characteristics flush and non-flush mountable				
Selectable function output 1	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change
Logic functions	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	Body in AISI316L, Front in PBT	Body in AISI316L, Front in PBT	Body in AISI316L, Front in PBT	Body in AISI316L, Front in PBT
Operating temperature	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)
Degree of protection	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12	IP67, IP68, IP69K, NEMA: 1, 2, 4, 4X, 5, 6, 6P, 12
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	1.1	1.1	1.1	1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	5	5	5	5
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Capacitive proximity sensors, 4th Gen. TRIPLESHIELD™ with IO-Link

M30-DC 4th Generation TRIPLESHIELD™ with IO-Link - PBT Housing

Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M30 x 81	M30 x 74	M30 x 81	M30 x 74
Thread (mm)	M30 x 1.5 x 59.5	M30 x 1.5 x 59.5	M30 x 1.5 x 45.5	M30 x 1.5 x 45.5
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	16 mm (adjustable 2 - 20 mm)	16 mm (adjustable 2 - 20 mm)	25 mm (adjustable 4 - 30 mm)	25 mm (adjustable 4 - 30 mm)
References				
	CA30CAF16BPA2IO	**CA30CAF16BPM1IO**	**CA30CAN25BPA2IO**	**CA30CAN25BPM1IO**
Characteristics flush and non-flush mountable				
Selectable function output 1	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change
Logic functions	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)
Degree of protection	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	1.1	1.1	1.1	1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	5	5	5	5
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Capacitive proximity sensors, 4th Gen. TRIPLESHIELD™ with IO-Link

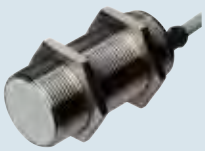
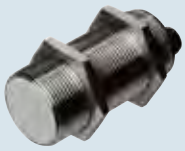
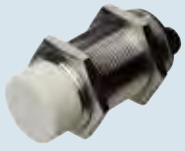
M30-DC 4th Generation TRIPLESHIELD™ with IO-Link - PFTE Housing

Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M30 x 61	M30 x 61	M30 x 61	M30 x 61
Thread (mm)	M30 x 1.5 x 59.5	M30 x 1.5 x 59.5	M30 x 1.5 x 45.5	M30 x 1.5 x 45.5
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	16 mm (adjustable 2 - 20 mm)	16 mm (adjustable 2 - 20 mm)	25 mm (adjustable 4 - 30 mm)	25 mm (adjustable 4 - 30 mm)
References				
	CA30FAF16BPA2IO	**CA30FAF16BPM1IO**	**CA30FAN25BPA2IO**	**CA30FAN25BPM1IO**
Characteristics flush and non-flush mountable				
Selectable function output 1	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change
Logic functions	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PTFE	PTFE	PTFE	PTFE
Operating temperature	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)
Degree of protection	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	1.1	1.1	1.1	1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	5	5	5	5
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Capacitive proximity sensors, 4th Gen. TRIPLESHIELD™ with IO-Link

M30-DC 4th Generation TRIPLESHIELD™ with IO-Link - PBT and AISI316 Housing

Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M30 x 61	M30 x 61	M30 x 61	M30 x 61
Thread (mm)	M30 x 1.5 x 59.5	M30 x 1.5 x 59.5	M30 x 1.5 x 45.5	M30 x 1.5 x 45.5
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	16 mm (adjustable 2 - 20 mm)	16 mm (adjustable 2 - 20 mm)	25 mm (adjustable 4 - 30 mm)	25 mm (adjustable 4 - 30 mm)
References				
	CA30EAF16BPA2IO	**CA30EAF16BPM1IO**	**CA30EAN25BPA2IO**	**CA30EAN25BPM1IO**
Characteristics flush and non-flush mountable				
Selectable function output 1	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull	NPN, PNP or Push-Pull
Selectable function output 2	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach	NPN, PNP, Push-Pull, External input or External teach
Diagnostics	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change	Operation hours, Power cycles, Detection cycles max. and min. Temperatures, Short-circuit, Maintenance, No of Parameter change
Logic functions	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF	AND, OR, X-OR, Gated SR-FF
Timer functions	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot	ON delay. OFF delay, ON+OFF delay and One shot
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	Body in AISI316L, Front in PBT	Body in AISI316L, Front in PBT	Body in AISI316L, Front in PBT	Body in AISI316L, Front in PBT
Operating temperature	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)	-30°C to +85°C (120°C sensor face)
Degree of protection	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12	IP67, IP68, IP69K, NEMA:1,2,4,4X,5,6,6P,12
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	1.1	1.1	1.1	1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	5	5	5	5
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Capacitive proximity sensors, TRIPLESHIELD™

Types	M18-AC TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**
Flush mountable		
Dimensions (mm)	M18 x 71.5	M18 x 83.5
Thread (mm)	M18 x 1 x 46.5	M18 x 1 x 46.5
Operating frequency	10 Hz	10 Hz
Sensing distance (Sn)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)
References		
Thyristor (SCR) NO	**CA18CLF08TO**	**CA18CLF08TOM6**
Thyristor (SCR) NC	**CA18CLF08TC**	**CA18CLF08TCM6**
Non-flush mountable		
Dimensions (mm)	M18 x 79.5	M18 x 91.5
Thread (mm)	M18 x 1 x 46.5	M18 x 1 x 46.5
Operating frequency	10 Hz	10 Hz
Sensing distance (Sn)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)
References		
Thyristor (SCR) NO	**CA18CLN12TO**	**CA18CLN12TOM6**
Thyristor (SCR) NC	**CA18CLN12TC**	**CA18CLN12TCM6**
Characteristics flush and non-flush mountable		
Rated operating voltage	20 - 250 VAC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	T	T
Output current	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

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Capacitive proximity sensors, 4th Generation TRIPLESHIELD™

Types	M18-DC 4th Generation TRIPLESHIELD™ Flush mountable		M18-DC 4th Generation TRIPLESHIELD™ Non-flush mountable	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 70	M18 x 85	M18 x 70	M18 x 85
Thread (mm)	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	8 mm (adjustable 2 - 10 mm)	8 mm (adjustable 2 - 10 mm)	12 mm (adjustable 3 - 15 mm)	12 mm (adjustable 3 - 15 mm)
References				
Standard				
NPN - NO and NC	**CA18CAF08NA**	**CA18CAF08NAM1**	**CA18CAN12NA**	**CA18CAN12NAM1**
PNP - NO and NC	**CA18CAF08PA**	**CA18CAF08PAM1**	**CA18CAN12PA**	**CA18CAN12PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC
Degree of protection	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Capacitive proximity sensors, 4th Generation TRIPLESHIELD™

M30-DC 4th Generation TRIPLESHIELD™

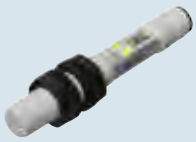
Types	Flush mountable		Non-flush mountable	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M30 x 81	M30 x 74	M30 x 81	M30 x 74
Thread (mm)	M30 x 1.5 x 59.5	M30 x 1.5 x 59.5	M30 x 1.5 x 45.5	M30 x 1.5 x 45.5
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	16 mm (adjustable 2 - 20 mm)	16 mm (adjustable 2 - 20 mm)	25 mm (adjustable 4 - 30 mm)	25 mm (adjustable 4 - 30 mm)
References				
Standard				
NPN - NO and NC	**CA30CAF16NA**	**CA30CAF16NAM1**	**CA30CAN25NA**	**CA30CAN25NAM1**
PNP - NO and NC	**CA30CAF16PA**	**CA30CAF16PAM1**	**CA30CAN25PA**	**CA30CAN25PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC
Degree of protection	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

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Capacitive proximity sensors, TRIPLESHIELD™

Types	M30-AC TRIPLESHIELD™			
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 63.6	M30 x 63.6	M30 x 63.6	M30 x 63.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)
References				
Thyristor (SCR) NO or NC	**EC3016TBAPL**	**EC3016TBAPL-6**	**EC3016TBASL**	**EC3016TBASL-6**
Non-flush mountable				
Dimensions (mm)	M30 x 75.6	M30 x 75.6	M30 x 75.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)
References				
Thyristor (SCR) NO or NC	**EC3025TBAPL**	**EC3025TBAPL-6**	**EC3025TBASL**	**EC3025TBASL-6**
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC
Voltage drop	< 10 VAC	< 10 VAC	< 10 VAC	< 10 VAC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESHIELD™

Types	M12 Teach-in TRIPLESHIELD™		M18 Teach-in TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 82.4	M12 x 84.7	M18 x 89.55	M18 x 89.2
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	15 Hz	15 Hz	15 Hz	15 Hz
Sensing distance (Sn)	0.5 - 8 mm (Teach-in)	0.5 - 8 mm (Teach-in)	0.2 - 12 mm (Teach-in)	0.2 - 12 mm (Teach-in)
References				
NPN/PNP, NO/NC	**CA12CLC08BPRT**	**CA12CLC08BPM1RT**	**CA18CLC12BP**	**CA18CLC12BPM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	< 2.5 VDC	< 2.5 VDC	< 2.5 VDC	< 2.5 VDC
Degree of protection	IP68	IP68	IP68	IP68
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 250 mA	< 250 mA	< 250 mA	< 250 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Special features	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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Capacitive proximity sensors, TRIPLESHIELD™

Types	M30 Teach-in TRIPLESHIELD™		M30 AC/DC TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 99.2	M30 x 90.45	M30 x 63.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	15 Hz	15 Hz	10 Hz	10 Hz
Sensing distance (Sn)	0.5 - 30 mm (adjustable)	0.5 - 30 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)
References				
NPN/PNP, NO/NC	**CA30CLC30BP**	**CA30CLC30BPM1**		
Power MOFSET			**CA30CLF16CP**	**CA30CLF16CPM6**
Non-flush mountable				
Dimensions (mm)			M30 x 71.6	M30 x 83.6
Thread (mm)			M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency			10 Hz	10 Hz
Sensing distance (Sn)			2 - 25 mm (adjustable)	2 - 25 mm (adjustable)
References				
Power MOFSET			**CA30CLN25CP**	**CA30CLN25CPM6**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	20 - 250 VAC/DC	20 - 250 VAC/DC
Voltage drop	< 2.5 VDC	< 2.5 VDC	< 5.5 VAC/DC	< 5.5 VAC/DC
Degree of protection	IP68	IP68	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	PT	PT
Output current	< 250 mA	< 250 mA	< 250 mA DC < 350 mA AC	< 250 mA DC < 350 mA AC
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-20°C to +85°C	-20°C to +85°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Special features	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation		
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors

Types	M18 TRIPLESHIELD™, chemical resistant		High Temperature
Connections	**2 m cable**	**2 m cable**	**2 m cable**
Flush mountable			
Dimensions (mm)	M18 x 71.5	M18 x 71.5	
Thread (mm)	M18 x 1 x 46.5	M18 x 1 x 46.5	
Operating frequency	30 Hz	30 Hz	
Sensing distance (Sn)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)	
References			
NPN-NO/NC	**CA18HLF08NA**	**CA18GLF08NA**	
PNP-NO/NC	**CA18HLF08PA**	**CA18GLF08PA**	
Non-flush mountable			
Dimensions (mm)	M18 x 71.5		M30 x 57 + 55 x 15 x 35
Thread (mm)	M18 x 1 x 46.5		M30 x 1.5 x 30
Operating frequency	30 Hz		5 Hz
Sensing distance (Sn)	3 - 12 mm (adjustable)		4 - 15 mm adjustable (Def. 10 mm)
References			
NPN-NO/NC	**CA18HLN12NA**		**ECH3010NPAT-1**
PNP-NO/NC	**CA18HLN12PA**		**ECH3010PPAT-1**
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.0 VDC
Degree of protection	IP67	IP67	IP67, Nema 1, 3, 4, 6, 13
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA
Housing material	Polypropylene	PVC	Sensor PTFE. Amplifier PBT
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE

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Capacitive proximity sensors, TRIPLESHIELD™

Types	VC5510	VC5510 Time delay	CD50	
Connections	**1.5 m cable**	**1.5 m cable**	**2 m cable**	**2 m cable**
Flush mountable				
Dimensions (mm)	55 x 35 x 15	55 x 35 x 15	50 x 30 x 7	50 x 30 x 7
Operating frequency	> 15 Hz	> 0.1 Hz	10 Hz	10 Hz
Sensing distance (Sn)	10 mm	10 mm	6 mm	5 mm
References				
NPN - NO	**VC5510NNOP**	**VC5510NNOPT**	**CD50CNF06NO**	**CD50CNF05NO**
NPN - NC	**VC5510NNCP**	**VC5510NNCPT**		
PNP - NO	**VC5510PNOP**	**VC5510PNOPT**		
PNP - NC	**VC5510PNCP**	**VC5510PNCPT**		
Sensing distance (Sn)			7 mm	
PNP - NO			**CD50CNF07PO**	
NPN - NC			**CD50CNF07NC**	
Sensing distance (Sn)			10 mm	
PNP - NO			**CD50CNF10PO**	
NPN - NC			**CD50CNF10NC**	
Characteristics flush and non-flush mountable				
Rated operating voltage	5 - 30 VDC	5 - 30 VDC	10 - 30 VDC	5 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 V	≤ 1.5 V
Degree of protection	IP65	IP65	IP67	IP67
Output current	≤ 100 mA	≤ 100 mA	≤ 50 mA	≤ 50 mA
Housing material	PC/ABS	PC/ABS	Noryl, grey	Noryl, grey
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +60°C	0°C to +60°C
LED colour	Red	Red		
Approvals/Marks	CE - UL	CE - UL	CE	CE

Capacitive proximity sensors, TRIPLESHIELD™

Types	CD46 Teach-in TRIPLESHIELD™	EC 5525 TRIPLESHIELD™	
Connections	**2 m cable**	**2 m cable**	**M12 connector**
Flush or Non-flush mountable			
Dimensions short body (mm)	46 x 28 x 5.5	55 x 35 x 15	55 x 35 x 15
Operating frequency	10 Hz	50 Hz	50 Hz
Sensing distance (Sn)	1.0 - 10 mm (Teach-in)	4 - 25 mm	4 - 25 mm
References			
NPN-NO/NC	**CD46CNC10NP**	**EC5525NPAP**	**EC5525NPAP-1**
PNP-NO/NC	**CD46CNC10PP**	**EC5525PPAP**	**EC5525PPAP-1**
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 30 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP68	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	PBT	Polycarbonate	Polycarbonate
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow, Green	Yellow	Yellow
Special features	Teach-in, remote setup, alarm output		
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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Capacitive proximity sensors, TRIPLESHIELD™

Types	M18 Teach-in TRIPLESHIELD™		M30 Teach-in TRIPLESHIELD™	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush or Non-flush mountable				
Dimensions (mm)	M18 x 89.55	M18 x 89.2	M30 x 99.2	M30 x 99.45
Thread (mm)	M18 x 1 x 50	M18 x 1 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	5 Hz	5 Hz	5 Hz	5 Hz
Sensing distance (Sn)	0.5 - 12 mm (Teach-in)	0.5 - 12 mm (Teach-in)	0.5 - 30 mm (Teach-in)	0.5 - 30 mm (Teach-in)
References				
NPN/PNP, NO/NC	**CA18CLL12BP**	**CA18CLL12BPM1**	**CA30CLL30BP**	**CA30CLL30BPM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP68	IP68	IP68	IP68
Output current	≤ 250 mA	≤ 250 mA	≤ 250 mA	≤ 250 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C
Max. temperature on sensing face	120°C (248°F)	120°C (248°F)	120°C (248°F)	120°C (248°F)
LED colour	Yellow	Yellow	Yellow	Yellow
Special features	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive level sensors

Types	Capacitive liquid level sensors	
Connections	**2 m cable**	**M8, 4-pin pig-tail**
		
Dimensions (mm)	34 x 16 x 8	34 x 16 x 8
Operating frequency	10 Hz	10 Hz
Tank wall thickness (out-of-the-box)	0.5 to 6 mm plastic, 0.5 to 4 mm glass	0.5 to 6 mm plastic, 0.5 to 4 mm glass
Teach-in	Empty or full tank	Empty or full tank
References		
NPN - NC	**CD34CNFLFNCP2**	**CD34CNFLFNCT5**
NPN - NO	**CD34CNFLFNOP2**	**CD34CNFLFNOT4**
PNP - NC	**CD34CNFLFPCP2**	**CD34CNFLFPCT5**
PNP - NO	**CD34CNFLFPOP2**	**CD34CNFLFPOT5**
Specifications		
Rated operating voltage	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC
Degree of protection	IP65, IP66, IP67, IP68 (1.3 m @ 24h), IP69K NEMA 1, 2, 4, 4X, 5, 12	IP65, IP66, IP67, IP68 (1.3 m @ 24h), IP69K NEMA 1, 2, 4, 4X, 5, 12
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	< 100 mA	< 100 mA
Housing material	PBT	PBT
Operating temperature	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow and Green	Yellow and Green
Special features	Designed to eliminate tank walls and build-up of foam or film on tank walls. Detection liquids: water-based liquids such as water, milk, syrup, milkshakes, lubricants, acids, alkaline, body fluids and highly conductive liquids up to 50 ms	Designed to eliminate tank walls and build-up of foam or film on tank walls. Detection liquids: water-based liquids such as water, milk, syrup, milkshakes, lubricants, acids, alkaline, body fluids and highly conductive liquids up to 50 ms
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB
Accessories	Mounting Bracket ACD34-MB01	Mounting Bracket ACD34-MB01

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Capacitive level sensors

Types	Capacitive level sensors for solid, fluid and granulated substances			
Connections	**2 m cable**	**2 m cable**	**2 m cable**	**2 m cable**
				
Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101	M30 x 101
Thread	Smooth	Smooth	Smooth	M30 (with 2 nuts)
Operating frequency	1 Hz	1 Hz	1 Hz	1 Hz
Sensing distance (Sn)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)
References with ON delay				
Time delay	1 s - 10 m			1 s - 10 m
120 VAC	**VC11RT12010M**			
230 VAC	**VC11RT23010M**			
24 VAC/DC	**VC11RT92410M**			
24-230 VAC/DC	**VC11RTM2410M**			**CA30CLN12MU10M**
References with OFF delay				
Time delay		1 s - 10 m		1 s - 10 m
120 VAC		**VC12RT12010M**		
230 VAC		**VC12RT23010M**		
24 VAC/DC		**VC12RT92410M**		
24-230 VAC/DC		**VC12RTM2410M**		**CA30CLN12MV10M**
References without delay				
120 VAC			**VC12RN120**	
230 VAC			**VC12RN230**	
24 VAC/DC			**VC12RN924**	
24-230 VAC/DC			**VC12RNM24**	**CA30CLN12MT**
Specifications				
Consumption	≤ 1.5 W	≤ 1.5 W	≤ 1.5 W	≤ 2.5 W
Consumption M24 versions	≤ 2.5 W	≤ 2.5 W	≤ 2.5 W	
Hysteresis	1.5 mm at 7 mm sensing distance	1.5 mm at 7 mm sensing distance	1.5 mm at 7 mm sensing distance	3 - 20%
Output	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC
Degree of protection	IP67	IP67	IP67	IP67
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	PBTP, grey
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
LED colour	Red	Red	Red	Yellow
Approvals/Marks UL508 NEMA	CE cULus (M24 versions)	CE - CSA cULus (M24 versions)	CE cULus (M24 versions)	CE, CSA cULus 1, 2, 4, 4X, 5, 6, 6P, 12

Capacitive level sensors

	Ø18 Sensors for solid, fluid and granulated substances		Ø32 Sensors
Types	**2-wire, AC**	**3-wire, DC**	**2-wire, AC**
Connections	**2 m cable**	**2 m cable**	**2 m cable**
			
Dimensions (mm)	Ø18 x 86	Ø18 x 86	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	10 Hz	30 Hz	10 Hz
Sensing distance (Sn)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)	2 - 20 mm (adjustable)
References			
Thyristor (SCR) NO	**CB18CLN12TOFT**		
Thyristor (SCR) NO ATEX	**CB18CLN12TOFTAX**		
Thyristor (SCR) NC	**CB18CLN12TCFT**		
Thyristor (SCR) NC ATEX	**CB18CLN12TCFTAX**		
NPN - NO/NC		**CB18CLN12NA**	
NPN - NO/NC ATEX		**CB18CLN12NAAX**	
PNP - NO/NC		**CB18CLN12PA**	
PNP - NO/NC ATEX		**CB18CLN12PAAX**	
ON-delay			No
Thyristor (SCR) NO			**CB32CLN20TO**
Thyristor (SCR) NO ATEX			**CB32CLN20TOAX**
Thyristor (SCR) NC			**CB32CLN20TC**
Thyristor (SCR) NC ATEX			**CB32CLN20TCAX**
ON-delay			Yes
Thyristor (SCR) NO			**CB32CLN20TOFT**
Thyristor (SCR) NO ATEX			**CB32CLN20TOFTAX**
Thyristor (SCR) NC			**CB32CLN20TCFT**
Thyristor (SCR) NC ATEX			**CB32CLN20TCFTAX**
Specifications			
Rated operating voltage	20 - 250 VAC	10 - 40 VDC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC
Time delay	30 s ON-delay		30 s ON-delay
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	T	SPT	T
Output current	≤ 500 mA	≤ 200 mA	≤ 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +80°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX

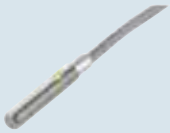
CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Capacitive level sensors

Types	Ø32 Level sensors TRIPLESHIELD™ - ATEX		
Connections	**With ON delay**	**With OFF delay**	**Without time delay**
			
Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	5 Hz	5 Hz	5 Hz
Sensing distance (Sn)	4 - 20 mm (adjustable)	4 - 20 mm (adjustable)	4 - 20 mm (adjustable)
References			
Cable length	2 m	2 m	2 m
120 VAC	**CB32CLN20SUAX**	**CB32CLN20SVAX**	**CB32CLN20STAX**
230 VAC	**CB32CLN20RUAX**	**CB32CLN20RVAX**	**CB32CLN20RTAX**
24 VAC/DC	**CB32CLN20QUAX**	**CB32CLN20QVAX**	**CB32CLN20QTAX**
Cable length	5 m	5 m	5 m
120 VAC	**CB32CLN20SUAX5M**	**CB32CLN20SVAX5M**	**CB32CLN20STAX5M**
230 VAC	**CB32CLN20RUAX5M**	**CB32CLN20RVAX5M**	**CB32CLN20RTAX5M**
24 VAC/DC	**CB32CLN20QUAX5M**	**CB32CLN20QVAX5M**	**CB32CLN20QTAX5M**
Cable length	10 m	10 m	10 m
120 VAC	**CB32CLN20SUAX10M**	**CB32CLN20SVAX10M**	**CB32CLN20STAX10M**
230 VAC	**CB32CLN20RUAX10M**	**CB32CLN20RVAX10M**	**CB32CLN20RTAX10M**
24 VAC/DC	**CB32CLN20QUAX10M**	**CB32CLN20QVAX10M**	**CB32CLN20QTAX10M**
Specifications			
Consumption	< 1.5 W	< 1.5 W	< 1.5 W
Hysteresis	3 to 20% of sensing distance	3 to 20% of sensing distance	3 to 20% of sensing distance
Output	Relay SPDT, 2 A / 240 VAC	Relay SPDT, 2 A / 240 VAC	Relay SPDT, 2 A / 240 VAC
Time delay	1 s - 10 m	1 s - 10 m	
Degree of protection	IP67	IP67	IP67
Housing material	PBT	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - ATEX	CE - ATEX	CE - ATEX

CARLO GAVAZZI

Inductive proximity sensors, 3-wire, DC, IO-Link

Types	Ø4 IO-Link - Short body		M5 IO-Link - Short body	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
Flush mountable				
Dimensions (mm)	Ø4 x 28.2	Ø4 x 38.2	M5 x 28.2	M5 x 38.2
Thread (mm)	-	-	M5 x 0.5 x 23	M5 x 0.5 x 23
Operating frequency	4.5 kHz (extended range) 6 kHz (standard range)	4.5 kHz (extended range) 6 kHz (standard range)	4.5 kHz (extended range) 6 kHz (standard range)	4.5 kHz (extended range) 6 kHz (standard range)
Sensing distance (Sn)	0.8 or 1.3 mm (adjustable)	0.8 or 1.3 mm (adjustable)	0.8 or 1.3 mm (adjustable)	0.8 or 1.3 mm (adjustable)
References				
	IBS04SF15A2IO	**IBS04SF15M5IO**	**ICS05S23F15A2IO**	**ICS05S23F15M5IO**
Characteristics				
Output configuration	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC
Adjustable hysteresis	Standard or increased value	Standard or increased value	Standard or increased value	Standard or increased value
Timer functions	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot
Switchpoint mode	Single point, two point or window	Single point, two point or window	Single point, two point or window	Single point, two point or window
Advanced functions	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring
Diagnostic functions	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	V 1.1	V 1.1	V 1.1	V 1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	10.4 ms	10.4 ms	10.4 ms	10.4 ms
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, IO-Link

Types	M8 IO-Link - Short body		M8 IO-Link - Long body	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
Flush mountable				
Dimensions (mm)	M8 x 31	M8 x 40	M8 x 46	M8 x 55
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	1 or 2 mm (adjustable)	1 or 2 mm (adjustable)	1 or 2 mm (adjustable)	1 or 2 mm (adjustable)
References				
	ICS08S30F20A2IO	**ICS08S30F20M5IO**	**ICS08L45F20A2IO**	**ICS08L45F20M5IO**
Non-flush mountable				
Dimensions (mm)	M8 x 34	M8 x 43	M8 x 49	M8 x 58
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 or 4 mm (adjustable)	2 or 4 mm (adjustable)	2 or 4 mm (adjustable)	2 or 4 mm (adjustable)
References				
	ICS08S30N40A2IO	**ICS08S30N40M5IO**	**ICS08L45N40A2IO**	**ICS08L45N40M5IO**
Characteristics flush and non-flush mountable				
Output configuration	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC
Adjustable hysteresis	Standard or increased value	Standard or increased value	Standard or increased value	Standard or increased value
Timer functions	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot
Switchpoint mode	Single point, two point or window	Single point, two point or window	Single point, two point or window	Single point, two point or window
Advanced functions	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring
Diagnostic functions	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	V 1.1	V 1.1	V 1.1	V 1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	10.4 ms	10.4 ms	10.4 ms	10.4 ms
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI

Inductive proximity sensors, 3-wire, DC, IO-Link

Types	M12 IO-Link - Short body		M12 IO-Link - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 32	M12 x 50.2	M12 x 52	M12 x 70.2
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	33%, 50%, 75% or 100% of 4 mm	33%, 50%, 75% or 100% of 4 mm	33%, 50%, 75% or 100% of 4 mm	33%, 50%, 75% or 100% of 4 mm
References				
	ICB12S30F04A2IO	**ICB12S30F04M1IO**	**ICB12L50F04A2IO**	**ICB12L50F04M1IO**
Non-flush mountable				
Dimensions (mm)	M12 x 36	M12 x 54.2	M12 x 56	M12 x 74.2
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	33%, 50%, 75% or 100% of 8 mm	33%, 50%, 75% or 100% of 8 mm	33%, 50%, 75% or 100% of 8 mm	33%, 50%, 75% or 100% of 8 mm
References				
	ICB12S30N08A2IO	**ICB12S30N08M1IO**	**ICB12L50N08A2IO**	**ICB12L50N08M1IO**
Characteristics flush and non-flush mountable				
Output configuration	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC
Adjustable hysteresis	Standard or increased value	Standard or increased value	Standard or increased value	Standard or increased value
Timer functions	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot
Switchpoint mode	Single point, two point or window	Single point, two point or window	Single point, two point or window	Single point, two point or window
Advanced functions	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring
Diagnostic functions	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	V 1.1	V 1.1	V 1.1	V 1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	10.4 ms	10.4 ms	10.4 ms	10.4 ms
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, IO-Link

Types	M18 IO-Link - Short body		M18 IO-Link - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 32	M18 x 54	M18 x 52	M18 x 74
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	33%, 50%, 75% or 100% of 8 mm	33%, 50%, 75% or 100% of 8 mm	33%, 50%, 75% or 100% of 8 mm	33%, 50%, 75% or 100% of 8 mm
References				
	ICB18S30F08A2IO	**ICB18S30F08M1IO**	**ICB18L50F08A2IO**	**ICB18L50F08M1IO**
Non-flush mountable				
Dimensions (mm)	M18 x 42	M18 x 64	M18 x 62	M18 x 84
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	33%, 50%, 75% or 100% of 14 mm	33%, 50%, 75% or 100% of 14 mm	33%, 50%, 75% or 100% of 14 mm	33%, 50%, 75% or 100% of 14 mm
References				
	ICB18S30N14A2IO	**ICB18S30N14M1IO**	**ICB18L50N14A2IO**	**ICB18L50N14M1IO**
Characteristics flush and non-flush mountable				
Output configuration	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC
Adjustable hysteresis	Standard or increased value	Standard or increased value	Standard or increased value	Standard or increased value
Timer functions	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot
Switchpoint mode	Single point, two point or window	Single point, two point or window	Single point, two point or window	Single point, two point or window
Advanced functions	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring
Diagnostic functions	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	V 1.1	V 1.1	V 1.1	V 1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	10.4 ms	10.4 ms	10.4 ms	10.4 ms
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI

Inductive proximity sensors, 3-wire, DC, IO-Link

Types	M30 IO-Link - Short body		M30 IO-Link - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 32	M30 x 55	M30 x 52	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	33%, 50%, 75% or 100% of 15 mm	33%, 50%, 75% or 100% of 15 mm	33%, 50%, 75% or 100% of 15 mm	33%, 50%, 75% or 100% of 15 mm
References				
	ICB30S30F15A2IO	**ICB30S30F15M1IO**	**ICB30L50F15A2IO**	**ICB30L50F15M1IO**
Non-flush mountable				
Dimensions (mm)	M30 x 44	M30 x 67	M30 x 64	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	33%, 50%, 75% or 100% of 22 mm	33%, 50%, 75% or 100% of 22 mm	33%, 50%, 75% or 100% of 22 mm	33%, 50%, 75% or 100% of 22 mm
References				
	ICB30S30N22A2IO	**ICB30S30N22M1IO**	**ICB30L50N22A2IO**	**ICB30L50N22M1IO**
Characteristics flush and non-flush mountable				
Output configuration	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC	NPN, PNP or push-pull NO or NC
Adjustable hysteresis	Standard or increased value	Standard or increased value	Standard or increased value	Standard or increased value
Timer functions	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot	ON delay, OFF delay, ON + OFF delay and one shot
Switchpoint mode	Single point, two point or window	Single point, two point or window	Single point, two point or window	Single point, two point or window
Advanced functions	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring	RPM counter, rotational speed monitoring
Diagnostic functions	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring	Underrun and overrun temperature events, frequency monitoring
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA	max. 2.5 VDC @ 200 mA
No load supply current (Io)	≤ 20 mA	≤ 20 mA	≤ 20 mA	≤ 20 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Communication interface	IO-Link	IO-Link	IO-Link	IO-Link
Transmission type	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)	COM2 (38,4 kBaud)
IO-Link revision	V 1.1	V 1.1	V 1.1	V 1.1
SDCI standard	IEC 61131-9	IEC 61131-9	IEC 61131-9	IEC 61131-9
Profiles	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification	Smart Sensor: Process Data Variable; Device Identification
SIO mode	Yes	Yes	Yes	Yes
Required master port type	A	A	A	A
Min. process cycle time [ms]	10.4 ms	10.4 ms	10.4 ms	10.4 ms
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, E1-type

Types	M12 Extended		M18 Extended	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 52	M12 x 70.2	M18 x 52	M18 x 74
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 50	M18 x 1 x 49.8
Operating frequency	1.3 kHz	1.3 kHz	900 Hz	900 Hz
Sensing distance (Sn)	4 mm	4 mm	8 mm	8 mm
References				
NPN-NO	**ICS12L50F04NOB2E1**	**ICS12L50F04NOM1E1**	**ICS18L50F08NOB2E1**	**ICS18L50F08NOM1E1**
PNP-NO	**ICS12L50F04POB2E1**	**ICS12L50F04POM1E1**	**ICS18L50F08POB2E1**	**ICS18L50F08POM1E1**
NPN-NC	**ICS12L50F04NCB2E1**	**ICS12L50F04NCM1E1**	**ICS18L50F08NCB2E1**	**ICS18L50F08NCM1E1**
PNP-NC	**ICS12L50F04PCB2E1**	**ICS12L50F04PCM1E1**	**ICS18L50F08PCB2E1**	**ICS18L50F08PCM1E1**
Non-flush mountable				
Dimensions (mm)	M12 x 56	M12 x 74.2	M18 x 60	M18 x 82
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 51	M18 x 1 x 49.8
Operating frequency	1 kHz	1 kHz	900 Hz	900 Hz
Sensing distance (Sn)	8 mm	8 mm	14 mm	14 mm
References				
NPN-NO	**ICS12L50N08NOB2E1**	**ICS12L50N08NOM1E1**	**ICS18L50N14NOB2E1**	**ICS18L50N14NOM1E1**
PNP-NO	**ICS12L50N08POB2E1**	**ICS12L50N08POM1E1**	**ICS18L50N14POB2E1**	**ICS18L50N14POM1E1**
NPN-NC	**ICS12L50N08NCB2E1**	**ICS12L50N08NCM1E1**	**ICS18L50N14NCB2E1**	**ICS18L50N14NCM1E1**
PNP-NC	**ICS12L50N08PCB2E1**	**ICS12L50N08PCM1E1**	**ICS18L50N14PCB2E1**	**ICS18L50N14PCM1E1**
Characteristics flush and non-flush mountable				
Rated operating voltage	8 - 60 VDC	8 - 60 VDC	8 - 60 VDC	8 - 60 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67, IP68 (2m / 20h), IP69K	IP67, IP68 (2m / 20h), IP69K	IP67, IP68 (2m / 20h), IP69K	IP67, IP68 (2m / 20h), IP69K
Load dump protection	DIN ISO 7637-2/SAE J1113-11	DIN ISO 7637-2/SAE J1113-11	DIN ISO 7637-2/SAE J1113-11	DIN ISO 7637-2/SAE J1113-11
Radiated noise immunity - ISO 11452-2	200 V/m	200 V/m	200 V/m	200 V/m
Continuous shock resistance - EN 60068-2-27 Ea	40 g 6ms, 4000 shocks each in every direction of 3 axes	40 g 6ms, 4000 shocks each in every direction of 3 axes	40 g 6ms, 4000 shocks each in every direction of 3 axes	40 g 6ms, 4000 shocks each in every direction of 3 axes
Salt spray test - EN 60068-2-52 Kb	Test method 5 - 4 cycles	Test method 5 - 4 cycles	Test method 5 - 4 cycles	Test method 5 - 4 cycles
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	Stainless steel (AISI 304)	Stainless steel (AISI 304)	Stainless steel (AISI 304)	Stainless steel (AISI 304)
Operating temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - E1 (ECE10R-06)	CE - cULus - E1 (ECE10R-06)	CE - cULus - E1 (ECE10R-06)	CE - cULus - E1 (ECE10R-06)

Inductive proximity sensors, 3-wire, DC, E1-type

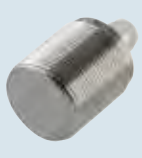
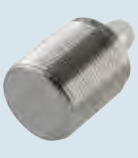
Types	M30 Extended	
Connections	**2 m cable**	**M12 connector**
Flush mountable		
Dimensions (mm)	M30 x 52	M30 x 74.2
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	300 Hz	300 Hz
Sensing distance (Sn)	15 mm	15 mm
References		
NPN-NO	**ICS30L50F15NOB2E1**	**ICS30L50F15NOM1E1**
PNP-NO	**ICS30L50F15POB2E1**	**ICS30L50F15POM1E1**
NPN-NC	**ICS30L50F15NCB2E1**	**ICS30L50F15NCM1E1**
PNP-NC	**ICS30L50F15PCB2E1**	**ICS30L50F15PCM1E1**
Non-flush mountable		
Dimensions (mm)	M30 x 65	M30 x 87.2
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	300 Hz	300 Hz
Sensing distance (Sn)	22 mm	22 mm
References		
NPN-NO	**ICS30L50N22NOB2E1**	**ICS30L50N22NOM1E1**
PNP-NO	**ICS30L50N22POB2E1**	**ICS30L50N22POM1E1**
NPN-NC	**ICS30L50N22NCB2E1**	**ICS30L50N22NCM1E1**
PNP-NC	**ICS30L50N22PCB2E1**	**ICS30L50N22PCM1E1**
Characteristics flush and non-flush mountable		
Rated operating voltage	8 - 60 VDC	8 - 60 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67, IP68 (2m / 20h), IP69K	IP67, IP68 (2m / 20h), IP69K
Load dump protection	DIN ISO 7637-2/SAE J1113-11	DIN ISO 7637-2/SAE J1113-11
Radiated noise immunity - ISO 11452-2	200 V/m	200 V/m
Continuous shock resistance - EN 60068-2-27 Ea	40 g 6ms, 4000 shocks each in every direction of 3 axes	40 g 6ms, 4000 shocks each in every direction of 3 axes
Salt spray test - EN 60068-2-52 Kb	Test method 5 - 4 cycles	Test method 5 - 4 cycles
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA
Housing material	Stainless steel (AISI 304)	Stainless steel (AISI 304)
Operating temperature	-40°C to +85°C	-40°C to +85°C
LED colour	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - E1 (ECE10R-06)	CE - cULus - E1 (ECE10R-06)

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, washdown IP69K

Types	M12 Standard - Long body	M12 Extended - Long body	M18 Standard - Long body	M18 Extended - Long body
Connections	**M12 connector**	**M12 connector**	**M12 connector**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 64.8	M12 x 64.8	M18 x 63	M18 x 63
Thread (mm)	M12 x 1 x 38.7	M12 x 1 x 38.7	M12 x 1 x 35	M12 x 1 x 35
Operating frequency	2 kHz	2 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	2 mm	4 mm	5 mm	8 mm
References				
NPN-NO	**ICS12LF02NOM1-FB**	**ICS12LF04NOM1-FB**	**ICS18LF05NOM1-FB**	**ICS18LF08NOM1-FB**
PNP-NO	**ICS12LF02POM1-FB**	**ICS12LF04POM1-FB**	**ICS18LF05POM1-FB**	**ICS18LF08POM1-FB**
NPN-NC	**ICS12LF02NCM1-FB**	**ICS12LF04NCM1-FB**	**ICS18LF05NCM1-FB**	**ICS18LF08NCM1-FB**
PNP-NC	**ICS12LF02PCM1-FB**	**ICS12LF04PCM1-FB**	**ICS18LF05PCM1-FB**	**ICS18LF08PCM1-FB**
Non-flush mountable				
Dimensions (mm)	M12 x 64.8	M12 x 64.8	M18 x 63	M18 x 63
Thread (mm)	M12 x 1 x 32.5	M12 x 1 x 32.5	M12 x 1 x 27	M12 x 1 x 27
Operating frequency	2 kHz	2 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	4 mm	8 mm	8 mm	12 mm
References				
NPN-NO	**ICS12LN04NOM1-FB**	**ICS12LN08NOM1-FB**	**ICS18LN08NOM1-FB**	**ICS18LN12NOM1-FB**
PNP-NO	**ICS12LN04POM1-FB**	**ICS12LN08POM1-FB**	**ICS18LN08POM1-FB**	**ICS18LN12POM1-FB**
NPN-NC	**ICS12LN04NCM1-FB**	**ICS12LN08NCM1-FB**	**ICS18LN08NCM1-FB**	**ICS18LN12NCM1-FB**
PNP-NC	**ICS12LN04PCM1-FB**	**ICS12LN08PCM1-FB**	**ICS18LN08PCM1-FB**	**ICS18LN12PCM1-FB**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C
Housing material	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)
Front cap material	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - ECOLAB - Cl. I Div. 2	CE - cULus - ECOLAB - Cl. I Div. 2	CE - cULus - ECOLAB - Cl. I Div. 2	CE - cULus - ECOLAB - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, washdown IP69K

Types	M30 Standard		M30 Extended	
	Short body	Long body	Short body	Long body
Connections	M12 connector	M12 connector	M12 connector	M12 connector
Flush mountable				
Dimensions (mm)	M30 x 47	M30 x 67.5	M30 x 47	M30 x 67.5
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 30	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	10 mm	10 mm	15 mm	15 mm
References				
NPN-NO	**ICS30SF10NOM1-FB**	**ICS30LF10NOM1-FB**	**ICS30SF15NOM1-FB**	**ICS30LF15NOM1-FB**
PNP-NO	**ICS30SF10POM1-FB**	**ICS30LF10POM1-FB**	**ICS30SF15POM1-FB**	**ICS30LF15POM1-FB**
NPN-NC	**ICS30SF10NCM1-FB**	**ICS30LF10NCM1-FB**	**ICS30SF15NCM1-FB**	**ICS30LF15NCM1-FB**
PNP-NC	**ICS30SF10PCM1-FB**	**ICS30LF10PCM1-FB**	**ICS30SF15PCM1-FB**	**ICS30LF15PCM1-FB**
Non-flush mountable				
Dimensions (mm)	M30 x 59.5	M30 x 79.5	M30 x 59.5	M30 x 79.5
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 30	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	22 mm	22 mm
References				
NPN-NO	**ICS30SN15NOM1-FB**	**ICS30LN15NOM1-FB**	**ICS30SN22NOM1-FB**	**ICS30LN22NOM1-FB**
PNP-NO	**ICS30SN15POM1-FB**	**ICS30LN15POM1-FB**	**ICS30SN22POM1-FB**	**ICS30LN22POM1-FB**
NPN-NC	**ICS30SN15NCM1-FB**	**ICS30LN15NCM1-FB**	**ICS30SN22NCM1-FB**	**ICS30LN22NCM1-FB**
PNP-NC	**ICS30SN15PCM1-FB**	**ICS30LN15PCM1-FB**	**ICS30SN22PCM1-FB**	**ICS30LN22PCM1-FB**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA
Degree of protection	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C
Housing material	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)
Front cap material	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified
Operating temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - ECOLAB - Cl. I Div. 2	CE - cULus - ECOLAB - Cl. I Div. 2	CE - cULus - ECOLAB - Cl. I Div. 2	CE - cULus - ECOLAB - Cl. I Div. 2

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC

Types	M12 Standard - Short body		M12 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67	M12 x 70
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO	**ICB12S30F02NO**	**ICB12S30F02NOM1**	**ICB12L50F02NO**	**ICB12L50F02NOM1**
PNP-NO	**ICB12S30F02PO**	**ICB12S30F02POM1**	**ICB12L50F02PO**	**ICB12L50F02POM1**
NPN-NC	**ICB12S30F02NC**	**ICB12S30F02NCM1**	**ICB12L50F02NC**	**ICB12L50F02NCM1**
PNP-NC	**ICB12S30F02PC**	**ICB12S30F02PCM1**	**ICB12L50F02PC**	**ICB12L50F02PCM1**
Non-flush mountable				
Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71	M12 x 74
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO	**ICB12S30N04NO**	**ICB12S30N04NOM1**	**ICB12L50N04NO**	**ICB12L50N04NOM1**
PNP-NO	**ICB12S30N04PO**	**ICB12S30N04POM1**	**ICB12L50N04PO**	**ICB12L50N04POM1**
NPN-NC	**ICB12S30N04NC**	**ICB12S30N04NCM1**	**ICB12L50N04NC**	**ICB12L50N04NCM1**
PNP-NC	**ICB12S30N04PC**	**ICB12S30N04PCM1**	**ICB12L50N04PC**	**ICB12L50N04PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, extended range

Types	M12 Extended - Extra-short body	M12 Extended - Extra-short body
Connections	**2 m cable**	**M12 connector**
Flush mountable		
Dimensions (mm)	M12 x 25	M12 x 40
Thread (mm)	M12 x 1 x 23	M12 x 1 x 23
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm
References		
NPN-NO	**ICB12S23F04A2NO**	**ICB12S23F04M1NO**
PNP-NO	**ICB12S23F04A2PO**	**ICB12S23F04M1PO**
NPN-NC	**ICB12S23F04A2NC**	**ICB12S23F04M1NC**
PNP-NC	**ICB12S23F04A2PC**	**ICB12S23F04M1PC**
Non-flush mountable		
Dimensions (mm)	M12 x 29	M12 x 44
Thread (mm)	M12 x 1 x 23	M12 x 1 x 23
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	8 mm	8 mm
References		
NPN-NO	**ICB12S23N08A2NO**	**ICB12S23N08M1NO**
PNP-NO	**ICB12S23N08A2PO**	**ICB12S23N08M1PO**
NPN-NC	**ICB12S23N08A2NC**	**ICB12S23N08M1NC**
PNP-NC	**ICB12S23N08A2PC**	**ICB12S23N08M1PC**
Characteristics quasi-flush and non-flush mountable		
Rated operating voltage	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, extended range

Types	M12 Extended - Short body		M12 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67	M12 x 70
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO	**ICB12S30F04NO**	**ICB12S30F04NOM1**	**ICB12L50F04NO**	**ICB12L50F04NOM1**
PNP-NO	**ICB12S30F04PO**	**ICB12S30F04POM1**	**ICB12L50F04PO**	**ICB12L50F04POM1**
NPN-NC	**ICB12S30F04NC**	**ICB12S30F04NCM1**	**ICB12L50F04NC**	**ICB12L50F04NCM1**
PNP-NC	**ICB12S30F04PC**	**ICB12S30F04PCM1**	**ICB12L50F04PC**	**ICB12L50F04PCM1**
Non-flush mountable				
Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71	M12 x 74
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**ICB12S30N08NO**	**ICB12S30N08NOM1**	**ICB12L50N08NO**	**ICB12L50N08NOM1**
PNP-NO	**ICB12S30N08PO**	**ICB12S30N08POM1**	**ICB12L50N08PO**	**ICB12L50N08POM1**
NPN-NC	**ICB12S30N08NC**	**ICB12S30N08NCM1**	**ICB12L50N08NC**	**ICB12L50N08NCM1**
PNP-NC	**ICB12S30N08PC**	**ICB12S30N08PCM1**	**ICB12L50N08PC**	**ICB12L50N08PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, increased range

Types	M12 Increased - Short body		M12 Increased - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Quasi-flush mountable				
Dimensions (mm)	M12 x 48	M12 x 51	M12 x 68	M12 x 71
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	6 mm	6 mm	6 mm	6 mm
References				
NPN-NO	**ICB12S30F06NO**	**ICB12S30F06NOM1**	**ICB12L50F06NO**	**ICB12L50F06NOM1**
PNP-NO	**ICB12S30F06PO**	**ICB12S30F06POM1**	**ICB12L50F06PO**	**ICB12L50F06POM1**
NPN-NC	**ICB12S30F06NC**	**ICB12S30F06NCM1**	**ICB12L50F06NC**	**ICB12L50F06NCM1**
PNP-NC	**ICB12S30F06PC**	**ICB12S30F06PCM1**	**ICB12L50F06PC**	**ICB12L50F06PCM1**
Non-flush mountable				
Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71	M12 x 74
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	10 mm	10 mm	10 mm	10 mm
References				
NPN-NO	**ICB12S30N10NO**	**ICB12S30N10NOM1**	**ICB12L50N10NO**	**ICB12L50N10NOM1**
PNP-NO	**ICB12S30N10PO**	**ICB12S30N10POM1**	**ICB12L50N10PO**	**ICB12L50N10POM1**
NPN-NC	**ICB12S30N10NC**	**ICB12S30N10NCM1**	**ICB12L50N10NC**	**ICB12L50N10NCM1**
PNP-NC	**ICB12S30N10PC**	**ICB12S30N10PCM1**	**ICB12L50N10PC**	**ICB12L50N10PCM1**
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73	M18 x 74
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
NPN-NO	**ICB18S30F05NO**	**ICB18S30F05NOM1**	**ICB18L50F05NO**	**ICB18L50F05NOM1**
PNP-NO	**ICB18S30F05PO**	**ICB18S30F05POM1**	**ICB18L50F05PO**	**ICB18L50F05POM1**
NPN-NC	**ICB18S30F05NC**	**ICB18S30F05NCM1**	**ICB18L50F05NC**	**ICB18L50F05NCM1**
PNP-NC	**ICB18S30F05PC**	**ICB18S30F05PCM1**	**ICB18L50F05PC**	**ICB18L50F05PCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83	M18 x 84
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**ICB18S30N08NO**	**ICB18S30N08NOM1**	**ICB18L50N08NO**	**ICB18L50N08NOM1**
PNP-NO	**ICB18S30N08PO**	**ICB18S30N08POM1**	**ICB18L50N08PO**	**ICB18L50N08POM1**
NPN-NC	**ICB18S30N08NC**	**ICB18S30N08NCM1**	**ICB18L50N08NC**	**ICB18L50N08NCM1**
PNP-NC	**ICB18S30N08PC**	**ICB18S30N08PCM1**	**ICB18L50N08PC**	**ICB18L50N08PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, extended range

Types	M18 Extended - Short body		M18 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73	M18 x 74
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**ICB18S30F08NO**	**ICB18S30F08NOM1**	**ICB18L50F08NO**	**ICB18L50F08NOM1**
PNP-NO	**ICB18S30F08PO**	**ICB18S30F08POM1**	**ICB18L50F08PO**	**ICB18L50F08POM1**
NPN-NC	**ICB18S30F08NC**	**ICB18S30F08NCM1**	**ICB18L50F08NC**	**ICB18L50F08NCM1**
PNP-NC	**ICB18S30F08PC**	**ICB18S30F08PCM1**	**ICB18L50F08PC**	**ICB18L50F08PCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83	M18 x 84
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	14 mm	14 mm	14 mm	14 mm
References				
NPN-NO	**ICB18S30N14NO**	**ICB18S30N14NOM1**	**ICB18L50N14NO**	**ICB18L50N14NOM1**
PNP-NO	**ICB18S30N14PO**	**ICB18S30N14POM1**	**ICB18L50N14PO**	**ICB18L50N14POM1**
NPN-NC	**ICB18S30N14NC**	**ICB18S30N14NCM1**	**ICB18L50N14NC**	**ICB18L50N14NCM1**
PNP-NC	**ICB18S30N14PC**	**ICB18S30N14PCM1**	**ICB18L50N14PC**	**ICB18L50N14PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, increased range

Types	M18 Increased - Short body		M18 Increased - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Quasi-flush mountable				
Dimensions (mm)	M18 x 54	M18 x 55	M18 x 74	M18 x 75
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	12 mm	12 mm	12 mm	12 mm
References				
NPN-NO	**ICB18S30F12NO**	**ICB18S30F12NOM1**	**ICB18L50F12NO**	**ICB18L50F12NOM1**
PNP-NO	**ICB18S30F12PO**	**ICB18S30F12POM1**	**ICB18L50F12PO**	**ICB18L50F12POM1**
NPN-NC	**ICB18S30F12NC**	**ICB18S30F12NCM1**	**ICB18L50F12NC**	**ICB18L50F12NCM1**
PNP-NC	**ICB18S30F12PC**	**ICB18S30F12PCM1**	**ICB18L50F12PC**	**ICB18L50F12PCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83	M18 x 84
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	20 mm	20 mm	20 mm	20 mm
References				
NPN-NO	**ICB18S30N20NO**	**ICB18S30N20NOM1**	**ICB18L50N20NO**	**ICB18L50N20NOM1**
PNP-NO	**ICB18S30N20PO**	**ICB18S30N20POM1**	**ICB18L50N20PO**	**ICB18L50N20POM1**
NPN-NC	**ICB18S30N20NC**	**ICB18S30N20NCM1**	**ICB18L50N20NC**	**ICB18L50N20NCM1**
PNP-NC	**ICB18S30N20PC**	**ICB18S30N20PCM1**	**ICB18L50N20PC**	**ICB18L50N20PCM1**
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	10 mm	10 mm	10 mm	10 mm
References				
NPN-NO	**ICB30S30F10NO**	**ICB30S30F10NOM1**	**ICB30L50F10NO**	**ICB30L50F10NOM1**
PNP-NO	**ICB30S30F10PO**	**ICB30S30F10POM1**	**ICB30L50F10PO**	**ICB30L50F10POM1**
NPN-NC	**ICB30S30F10NC**	**ICB30S30F10NCM1**	**ICB30L50F10NC**	**ICB30L50F10NCM1**
PNP-NC	**ICB30S30F10PC**	**ICB30S30F10PCM1**	**ICB30L50F10PC**	**ICB30L50F10PCM1**
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO	**ICB30S30N15NO**	**ICB30S30N15NOM1**	**ICB30L50N15NO**	**ICB30L50N15NOM1**
PNP-NO	**ICB30S30N15PO**	**ICB30S30N15POM1**	**ICB30L50N15PO**	**ICB30L50N15POM1**
NPN-NC	**ICB30S30N15NC**	**ICB30S30N15NCM1**	**ICB30L50N15NC**	**ICB30L50N15NCM1**
PNP-NC	**ICB30S30N15PC**	**ICB30S30N15PCM1**	**ICB30L50N15PC**	**ICB30L50N15PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC, extended range

Types	M30 Extended - Short body		M30 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO	**ICB30S30F15NO**	**ICB30S30F15NOM1**	**ICB30L50F15NO**	**ICB30L50F15NOM1**
PNP-NO	**ICB30S30F15PO**	**ICB30S30F15POM1**	**ICB30L50F15PO**	**ICB30L50F15POM1**
NPN-NC	**ICB30S30F15NC**	**ICB30S30F15NCM1**	**ICB30L50F15NC**	**ICB30L50F15NCM1**
PNP-NC	**ICB30S30F15PC**	**ICB30S30F15PCM1**	**ICB30L50F15PC**	**ICB30L50F15PCM1**
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	22 mm	22 mm	22 mm	22 mm
References				
NPN-NO	**ICB30S30N22NO**	**ICB30S30N22NOM1**	**ICB30L50N22NO**	**ICB30L50N22NOM1**
PNP-NO	**ICB30S30N22PO**	**ICB30S30N22POM1**	**ICB30L50N22PO**	**ICB30L50N22POM1**
NPN-NC	**ICB30S30N22NC**	**ICB30S30N22NCM1**	**ICB30L50N22NC**	**ICB30L50N22NCM1**
PNP-NC	**ICB30S30N22PC**	**ICB30S30N22PCM1**	**ICB30L50N22PC**	**ICB30L50N22PCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, increased range

Types	M30 Increased - Short body		M30 Increased - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Quasi-flush mountable				
Dimensions (mm)	M30 x 35	M30 x 60	M30 x 50	M30 x 75
Thread (mm)	M30 x 1.5 x 35	M30 x 1.5 x 35	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hz
Sensing distance (Sn)	22 mm	22 mm	22 mm	22 mm
References				
NPN-NO	**ICB30S35F22NO**	**ICB30S35F22NOM1**	**ICB30L50F22NO**	**ICB30L50F22NOM1**
PNP-NO	**ICB30S35F22PO**	**ICB30S35F22POM1**	**ICB30L50F22PO**	**ICB30L50F22POM1**
NPN-NC	**ICB30S35F22NC**	**ICB30S35F22NCM1**	**ICB30L50F22NC**	**ICB30L50F22NCM1**
PNP-NC	**ICB30S35F22PC**	**ICB30S35F22PCM1**	**ICB30L50F22PC**	**ICB30L50F22PCM1**
Non-flush mountable				
Dimensions (mm)	M30 x 47	M30 x 72	M30 x 62	M30 x 87
Thread (mm)	M30 x 1.5 x 35	M30 x 1.5 x 35	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hz
Sensing distance (Sn)	40 mm	40 mm	40 mm	40 mm
References				
NPN-NO	**ICB30S35N40NO**	**ICB30S35N40NOM1**	**ICB30L50N40NO**	**ICB30L50N40NOM1**
PNP-NO	**ICB30S35N40PO**	**ICB30S35N40POM1**	**ICB30L50N40PO**	**ICB30L50N40POM1**
NPN-NC	**ICB30S35N40NC**	**ICB30S35N40NCM1**	**ICB30L50N40NC**	**ICB30L50N40NCM1**
PNP-NC	**ICB30S35N40PC**	**ICB30S35N40PCM1**	**ICB30L50N40PC**	**ICB30L50N40PCM1**
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2	CE - cULus - Cl. I Div. 2

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 4-wire, DC

Types	M12 Standard - Short body		M12 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67	M12 x 70
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO+NC	**ICB12S30F02NA**	**ICB12S30F02NAM1**	**ICB12L50F02NA**	**ICB12L50F02NAM1**
PNP-NO+NC	**ICB12S30F02PA**	**ICB12S30F02PAM1**	**ICB12L50F02PA**	**ICB12L50F02PAM1**
Non-flush mountable				
Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71	M12 x 74
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO+NC	**ICB12S30N04NA**	**ICB12S30N04NAM1**	**ICB12L50N04NA**	**ICB12L50N04NAM1**
PNP-NO+NC	**ICB12S30N04PA**	**ICB12S30N04PAM1**	**ICB12L50N04PA**	**ICB12L50N04PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Inductive proximity sensors, 4-wire, DC, extended range

Types	M12 Extended - Short body		M12 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67	M12 x 70
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO+NC	**ICB12S30F04NA**	**ICB12S30F04NAM1**	**ICB12L50F04NA**	**ICB12L50F04NAM1**
PNP-NO+NC	**ICB12S30F04PA**	**ICB12S30F04PAM1**	**ICB12L50F04PA**	**ICB12L50F04PAM1**
Non-flush mountable				
Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71	M12 x 74
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO+NC	**ICB12S30N08NA**	**ICB12S30N08NAM1**	**ICB12L50N08NA**	**ICB12L50N08NAM1**
PNP-NO+NC	**ICB12S30N08PA**	**ICB12S30N08PAM1**	**ICB12L50N08PA**	**ICB12L50N08PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 4-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73	M18 x 74
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
NPN-NO+NC	**ICB18S30F05NA**	**ICB18S30F05NAM1**	**ICB18L50F05NA**	**ICB18L50F05NAM1**
PNP-NO+NC	**ICB18S30F05PA**	**ICB18S30F05PAM1**	**ICB18L50F05PA**	**ICB18L50F05PAM1**
Non-flush mountable				
Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83	M18 x 84
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO+NC	**ICB18S30N08NA**	**ICB18S30N08NAM1**	**ICB18L50N08NA**	**ICB18L50N08NAM1**
PNP-NO+NC	**ICB18S30N08PA**	**ICB18S30N08PAM1**	**ICB18L50N08PA**	**ICB18L50N08PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Inductive proximity sensors, 4-wire, DC, extended range

Types	M18 Extended - Short body		M18 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Quasi-flush mountable				
Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73	M18 x 74
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO+NC	**ICB18S30F08NA**	**ICB18S30F08NAM1**	**ICB18L50F08NA**	**ICB18L50F08NAM1**
PNP-NO+NC	**ICB18S30F08PA**	**ICB18S30F08PAM1**	**ICB18L50F08PA**	**ICB18L50F08PAM1**
Non-flush mountable				
Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83	M18 x 84
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz	1.5 kHz
Sensing distance (Sn)	14 mm	14 mm	14 mm	14 mm
References				
NPN-NO+NC	**ICB18S30N14NA**	**ICB18S30N14NAM1**	**ICB18L50N14NA**	**ICB18L50N14NAM1**
PNP-NO+NC	**ICB18S30N14PA**	**ICB18S30N14PAM1**	**ICB18L50N14PA**	**ICB18L50N14PAM1**
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

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Inductive proximity sensors, 4-wire, DC

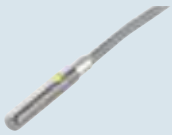
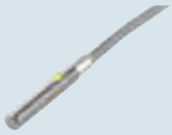
Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	10 mm	10 mm	10 mm	10 mm
References				
NPN-NO+NC	**ICB30S30F10NA**	**ICB30S30F10NAM1**	**ICB30L50F10NA**	**ICB30L50F10NAM1**
PNP-NO+NC	**ICB30S30F10PA**	**ICB30S30F10PAM1**	**ICB30L50F10PA**	**ICB30L50F10PAM1**
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO+NC	**ICB30S30N15NA**	**ICB30S30N15NAM1**	**ICB30L50N15NA**	**ICB30L50N15NAM1**
PNP-NO+NC	**ICB30S30N15PA**	**ICB30S30N15PAM1**	**ICB30L50N15PA**	**ICB30L50N15PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Inductive proximity sensors, 4-wire, DC, extended range

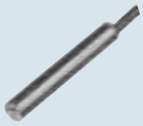
Types	M30 Extended - Short body		M30 Extended - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6	M30 x 75
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO+NC	**ICB30S30F15NA**	**ICB30S30F15NAM1**	**ICB30L50F15NA**	**ICB30L50F15NAM1**
PNP-NO+NC	**ICB30S30F15PA**	**ICB30S30F15PAM1**	**ICB30L50F15PA**	**ICB30L50F15PAM1**
Non-flush mountable				
Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6	M30 x 87
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
Sensing distance (Sn)	22 mm	22 mm	22 mm	22 mm
References				
NPN-NO+NC	**ICB30S30N22NA**	**ICB30S30N22NAM1**	**ICB30L50N22NA**	**ICB30L50N22NAM1**
PNP-NO+NC	**ICB30S30N22PA**	**ICB30S30N22PAM1**	**ICB30L50N22PA**	**ICB30L50N22PAM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

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Inductive proximity sensors, 3-wire, DC

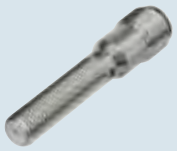
Types	Ø4 Standard & Extended Short body		M5 Standard & Extended Short body	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
Flush mountable - Standard				
Dimensions (mm)	Ø4 x 28.2	Ø4 x 38.2	M5 x 28.2	M5 x 38.2
Thread (mm)	-	-	M5 x 0.5 x 23	M5 x 0.5 x 23
Operating frequency	6 kHz	6 kHz	6 kHz	6 kHz
Sensing distance (Sn)	0.8 mm	0.8 mm	0.8 mm	0.8 mm
References				
NPN-NO	**IBS04SF08A2NO**	**IBS04SF08M5NO**	**ICS05S23F08A2NO**	**ICS05S23F08M5NO**
PNP-NO	**IBS04SF08A2PO**	**IBS04SF08M5PO**	**ICS05S23F08A2PO**	**ICS05S23F08M5PO**
NPN-NC	**IBS04SF08A2NC**	**IBS04SF08M5NC**	**ICS05S23F08A2NC**	**ICS05S23F08M5NC**
PNP-NC	**IBS04SF08A2PC**	**IBS04SF08M5PC**	**ICS05S23F08A2PC**	**ICS05S23F08M5PC**
Flush mountable - Extended				
Dimensions (mm)	Ø4 x 28.2	Ø4 x 38.2	M5 x 28.2	M5 x 38.2
Thread (mm)	-	-	M5 x 0.5 x 23	M5 x 0.5 x 23
Operating frequency	4.5 kHz	4.5 kHz	4.5 kHz	4.5 kHz
Sensing distance (Sn)	1.3 mm	1.3 mm	1.3 mm	1.3 mm
References				
NPN-NO	**IBS04SF15A2NO**	**IBS04SF15M5NO**	**ICS05S23F15A2NO**	**ICS05S23F15M5NO**
PNP-NO	**IBS04SF15A2PO**	**IBS04SF15M5PO**	**ICS05S23F15A2PO**	**ICS05S23F15M5PO**
NPN-NC	**IBS04SF15A2NC**	**IBS04SF15M5NC**	**ICS05S23F15A2NC**	**ICS05S23F15M5NC**
PNP-NC	**IBS04SF15A2PC**	**IBS04SF15M5PC**	**ICS05S23F15A2PC**	**ICS05S23F15M5PC**
Characteristics				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)	max. 1.2 VDC (@ 100 mA)
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	Ø6.5 Extended - Short body		Ø6.5 Extended - Long body	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
Flush mountable				
Dimensions (mm)	Ø6.5 x 31	Ø6.5 x 40	Ø6.5 x 46	Ø6.5 x 55
Thread (mm)	-	-	-	-
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO	**IBS06SF02NO**	**IBS06SF02NOM5**	**IBS06LF02NO**	**IBS06LF02NOM5**
PNP-NO	**IBS06SF02PO**	**IBS06SF02POM5**	**IBS06LF02PO**	**IBS06LF02POM5**
NPN-NC	**IBS06SF02NC**	**IBS06SF02NCM5**	**IBS06LF02NC**	**IBS06LF02NCM5**
PNP-NC	**IBS06SF02PC**	**IBS06SF02PCM5**	**IBS06LF02PC**	**IBS06LF02PCM5**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC

Types	M8 Standard - Short body		
Connections	**2 m cable**	**M8 connector**	**M12 connector**
Flush mountable			
Dimensions (mm)	M8 x 31	M8 x 40	M8 x 53.6
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 29
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	1 mm	1 mm	1.5 mm
References			
NPN-NO	**ICS08S30F01NO**	**ICS08S30F01NOM5**	
PNP-NO	**ICS08S30F01PO**	**ICS08S30F01POM5**	**ICS08S30F15POM1**
NPN-NC	**ICS08S30F01NC**	**ICS08S30F01NCM5**	
PNP-NC	**ICS08S30F01PC**	**ICS08S30F01PCM5**	
Flush mountable - Extended			
Dimensions (mm)	M8 x 34	M8 x 43	M8 x 56.6
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 29
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2.5 mm
References			
NPN-NO	**ICS08S30N02NO**	**ICS08S30N02NOM5**	
PNP-NO	**ICS08S30N02PO**	**ICS08S30N02POM5**	**ICS08S30N25POM1**
NPN-NC	**ICS08S30N02NC**	**ICS08S30N02NCM5**	
PNP-NC	**ICS08S30N02PC**	**ICS08S30N02PCM5**	
Characteristics			
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C
Housing material	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus

Inductive proximity sensors, 3-wire, DC

Types	M8 Standard - Long body	
Connections	**2 m cable**	**M8 connector**
Flush mountable		
Dimensions (mm)	M8 x 46	M8 x 55
Thread (mm)	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	1 mm	1 mm
References		
NPN-NO	**ICS08L45F01NO**	**ICS08L45F01NOM5**
PNP-NO	**ICS08L45F01PO**	**ICS08L45F01POM5**
NPN-NC	**ICS08L45F01NC**	**ICS08L45F01NCM5**
PNP-NC	**ICS08L45F01PC**	**ICS08L45F01PCM5**
Flush mountable - Extended		
Dimensions (mm)	M8 x 49	M8 x 58
Thread (mm)	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm
References		
NPN-NO	**ICS08L45N02NO**	**ICS08L45N02NOM5**
PNP-NO	**ICS08L45N02PO**	**ICS08L45N02POM5**
NPN-NC	**ICS08L45N02NC**	**ICS08L45N02NCM5**
PNP-NC	**ICS08L45N02PC**	**ICS08L45N02PCM5**
Characteristics		
Rated operating voltage	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC

Types	M8 Extended - Short body		
Connections	**2 m cable**	**M8 connector**	**M12 connector**
Flush mountable			
Dimensions (mm)	M8 x 31	M8 x 40	M8 x 53.6
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 29
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm
References			
NPN-NO	**ICS08S30F02NO**	**ICS08S30F02NOM5**	
PNP-NO	**ICS08S30F02PO**	**ICS08S30F02POM5**	**ICS08S30F02POM1**
NPN-NC	**ICS08S30F02NC**	**ICS08S30F02NCM5**	
PNP-NC	**ICS08S30F02PC**	**ICS08S30F02PCM5**	
Non-flush mountable			
Dimensions (mm)	M8 x 34	M8 x 43	M8 x 56.6
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 29
Operating frequency	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm
References			
NPN-NO	**ICS08S30N04NO**	**ICS08S30N04NOM5**	
PNP-NO	**ICS08S30N04PO**	**ICS08S30N04POM5**	**ICS08S30N04POM1**
NPN-NC	**ICS08S30N04NC**	**ICS08S30N04NCM5**	
PNP-NC	**ICS08S30N04PC**	**ICS08S30N04PCM5**	
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C
Housing material	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus

Inductive proximity sensors, 3-wire, DC

Types	M8 Extended - Long body	
Connections	**2 m cable**	**M8 connector**
Flush mountable		
Dimensions (mm)	M8 x 46	M8 x 55
Thread (mm)	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm
References		
NPN-NO	**ICS08L45F02NO**	**ICS08L45F02NOM5**
PNP-NO	**ICS08L45F02PO**	**ICS08L45F02POM5**
NPN-NC	**ICS08L45F02NC**	**ICS08L45F02NCM5**
PNP-NC	**ICS08L45F02PC**	**ICS08L45F02PCM5**
Non-flush mountable		
Dimensions (mm)	M8 x 49	M8 x 58
Thread (mm)	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm
References		
NPN-NO	**ICS08L45N04NO**	**ICS08L45N04NOM5**
PNP-NO	**ICS08L45N04PO**	**ICS08L45N04POM5**
NPN-NC	**ICS08L45N04NC**	**ICS08L45N04NCM5**
PNP-NC	**ICS08L45N04PC**	**ICS08L45N04PCM5**
Characteristics flush and non-flush mountable		
Rated operating voltage	10 - 36 VDC	10 - 36 VDC
Voltage drop	max. 1.6 VDC (@ 200 mA)	max. 1.6 VDC (@ 200 mA)
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C; ≤ 150 mA @ 50-80°C
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 4-wire, DC, extended range

Types	M8 Extended - Short body		M8 Extended - Long body	
Connections	**2 m cable**	**M8 connector**	**2 m cable**	**M8 connector**
Flush mountable				
Dimensions (mm)	M8 x 31	M8 x 40	M8 x 46	M8 x 55
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO+NC	**ICS08S30F02NA**	**ICS08S30F02NAM5**	**ICS08L45F02NA**	**ICS08L45F02NAM5**
PNP-NO+NC	**ICS08S30F02PA**	**ICS08S30F02PAM5**	**ICS08L45F02PA**	**ICS08L45F02PAM5**
Non-flush mountable				
Dimensions (mm)	M8 x 34	M8 x 43	M8 x 49	M8 x 58
Thread (mm)	M8 x 1 x 30	M8 x 1 x 29	M8 x 1 x 45	M8 x 1 x 44
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO+NC	**ICS08S30N04NA**	**ICS08S30N04NAM5**	**ICS08L45N04NA**	**ICS08L45N04NAM5**
PNP-NO+NC	**ICS08S30N04PA**	**ICS08S30N04PAM5**	**ICS08L45N04PA**	**ICS08L45N04PAM5**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 1.6 VDC @ 200 mA	≤ 1.6 VDC @ 200 mA	≤ 1.6 VDC @ 200 mA	≤ 1.6 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Stainless steel (AISI304)	Stainless steel (AISI304)	Stainless steel (AISI304)	Stainless steel (AISI304)
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Inductive proximity sensors, 2-wire, AC

Types	M12 Standard - Long body	
Connections	**2 m cable**	**M12 connector**
Flush mountable		
Dimensions (mm)	M12 x 66	M12 x 74.5
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	25 Hz	25 Hz
Sensing distance (Sn)	2 mm	2 mm
References		
SCR-NO	**EI1202TBOSL**	**EI1202TBOSL-6**
SCR-NC	**EI1202TBCSL**	
Non-flush mountable		
Dimensions (mm)	M12 x 70	M12 x 78.5
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	25 Hz	25 Hz
Sensing distance (Sn)	4 mm	4 mm
References		
SCR-NO	**EI1204TBOSL**	**EI1204TBOSL-6**
SCR-NC	**EI1204TBCSL**	
Characteristics flush and non-flush mountable		
Rated operating voltage	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	T	T
Output current	< 500 mA	< 500 mA
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 2-wire, AC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 57	M18 x 55	M18 x 77	M18 x 75
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
SCR-NO	**EI1805TBOSS**	**EI1805TBOSS-6**	**EI1805TBOSL**	**EI1805TBOSL-6**
SCR-NC	**EI1805TBCSS**		**EI1805TBCSL**	
Non-flush mountable				
Dimensions (mm)	M18 x 65	M18 x 63	M18 x 85	M18 x 83
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
SCR-NO	**EI1808TBOSS**	**EI1808TBOSS-6**	**EI1808TBOSL**	**EI1808TBOSL-6**
SCR-NC	**EI1808TBCSS**		**EI1808TBCSL**	**EI1808TBCSL-6**
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, AC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 59		M30 x 79	M30 x 75.5
Thread (mm)	M30 x 1.5 x 30		M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	25 Hz		25 Hz	25 Hz
Sensing distance (Sn)	10 mm		10 mm	10 mm
References				
SCR-NO	**EI3010TBOSS**		**EI3010TBOSL**	**EI3010TBOSL-6**
SCR-NC	**EI3010TBCSS**		**EI3010TBCSL**	
Non-flush mountable				
Dimensions (mm)	M30 x 87.5	M30 x 67.5	M30 x 91	M30 x 71
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
SCR-NO	**EI3015TBOSS**	**EI3015TBOSS-6**	**EI3015TBOSL**	**EI3015TBOSL-6**
SCR-NC	**EI3015TBCSS**		**EI3015TBCSL**	
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC

Types	M12 Standard - Short body		M12 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M12 x 46	M12 x 54.5	M12 x 66	M12 x 74.5
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	800 Hz	800 Hz	800 Hz	800 Hz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO	**EI1202NPOSS**	**EI1202NPOSS-1**	**EI1202NPOSL**	**EI1202NPOSL-1**
PNP-NO	**EI1202PPOSS**	**EI1202PPOSS-1**	**EI1202PPOSL**	**EI1202PPOSL-1**
NPN-NC	**EI1202NPCSS**	**EI1202NPCSS-1**		
PNP-NC	**EI1202PPCSS**	**EI1202PPCSS-1**	**EI1202PPCSL**	
Non-flush mountable				
Dimensions (mm)	M12 x 50	M12 x 58.5	M12 x 70	M12 x 78.5
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	500 Hz	500 Hz	500 Hz	500 Hz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO	**EI1204NPOSS**	**EI1204NPOSS-1**	**EI1204NPOSL**	**EI1204NPOSL-1**
PNP-NO	**EI1204PPOSS**	**EI1204PPOSS-1**	**EI1204PPOSL**	**EI1204PPOSL-1**
NPN-NC	**EI1204NPCSS**	**EI1204NPCSS-1**		
PNP-NC	**EI1204PPCSS**	**EI1204PPCSS-1**	**EI1204PPCSL**	
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 57	M18 x 55	M18 x 77	M18 x 75
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	500 Hz	500 Hz	500 Hz	500 Hz
Sensing distance (Sn)	5 mm	5 mm	5 mm	5 mm
References				
NPN-NO	**EI1805NPOSS**	**EI1805NPOSS-1**	**EI1805NPOSL**	**EI1805NPOSL-1**
PNP-NO	**EI1805PPOSS**	**EI1805PPOSS-1**	**EI1805PPOSL**	**EI1805PPOSL-1**
NPN-NC	**EI1805NPCSS**	**EI1805NPCSS-1**	**EI1805NPCSL**	
PNP-NC	**EI1805PPCSS**	**EI1805PPCSS-1**	**EI1805PPCSL**	**EI1805PPCSL-1**
Non-flush mountable				
Dimensions (mm)	M18 x 65	M18 x 63	M18 x 85	M18 x 83
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50	M18 x 1 x 50
Operating frequency	400 Hz	400 Hz	400 Hz	400 Hz
Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm
References				
NPN-NO	**EI1808NPOSS**	**EI1808NPOSS-1**	**EI1808NPOSL**	**EI1808NPOSL-1**
PNP-NO	**EI1808PPOSS**	**EI1808PPOSS-1**	**EI1808PPOSL**	**EI1808PPOSL-1**
NPN-NC	**EI1808NPCSS**	**EI1808NPCSS-1**		
PNP-NC	**EI1808PPCSS**	**EI1808PPCSS-1**	**EI1808PPCSL**	**EI1808PPCSL-1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 3-wire, DC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M30 x 59	M30 x 55.5	M30 x 79	M30 x 75.5
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	300 Hz	300 Hz	300 Hz	300 Hz
Sensing distance (Sn)	10 mm	10 mm	10 mm	10 mm
References				
NPN-NO	**EI3010NPOSS**		**EI3010NPOSL**	
PNP-NO	**EI3010PPOSS**	**EI3010PPOSS-1**	**EI3010PPOSL**	**EI3010PPOSL-1**
NPN-NC	**EI3010NPCSS**			
PNP-NC	**EI3010PPCSS**		**EI3010PPCSL**	
Non-flush mountable				
Dimensions (mm)	M30 x 71	M30 x 67.5	M30 x 91	M30 x 87.5
Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	100 Hz	100 Hz	100 Hz	100 Hz
Sensing distance (Sn)	15 mm	15 mm	15 mm	15 mm
References				
NPN-NO	**EI3015NPOSS**	**EI3015NPOSS-1**	**EI3015NPOSL**	
PNP-NO	**EI3015PPOSS**	**EI3015PPOSS-1**	**EI3015PPOSL**	**EI3015PPOSL-1**
NPN-NC	**EI3015NPCSS**		**EI3015NPCSL**	
PNP-NC	**EI3015PPCSS**			
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI

Inductive proximity sensors, 2-wire, DC, extended range

Types	M8 Extended - Short body	M12 Extended - Short body	
Connections	**2 m cable**	**2 m cable**	**M12 connector**
Flush mountable			
Dimensions (mm)	M8 x 30	M12 x 49	M12 x 63
Thread (mm)	M8 x 1 x 30	M12 x 1 x 38	M12 x 1 x 38
Operating frequency	2 kHz	1 kHz	1 kHz
Sensing distance (Sn)	2 mm	4 mm	4 mm
References			
NO	**IA08BSF02DO**	**IA12DSF04DO**	**IA12ASF04DOM1**
NC	**IA08BSF02DC**	**IA12DSF04DC**	**IA12ASF04DCM1**
Non-flush mountable			
Dimensions (mm)	M8 x 30	M12 x 53	M12 x 67
Thread (mm)	M8 x 1 x 26	M12 x 1 x 38	M12 x 1 x 38
Operating frequency	2 kHz	800 Hz	800 Hz
Sensing distance (Sn)	4 mm	8 mm	8 mm
References			
NO	**IA08BSN04DO**	**IA12DSN08DO**	**IA12ASN08DOM1**
NC	**IA08BSN04DC**	**IA12DSN08DC**	**IA12ASN08DCM1**
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 30 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 8 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load
Degree of protection	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	3 - 100 mA	5 - 100 mA	5 - 100 mA
Housing material	Stainless steel	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - CSA	CE - UL - CSA	CE - UL - CSA

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, 2-wire, DC, extended range

Types	M18 Extended - Short body		M30 Extended - Short body	
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
Flush mountable				
Dimensions (mm)	M18 x 42	M18 x 55	M30 x 44	M30 x 55
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	500 Hz	500 Hz	400 Hz	400 Hz
Sensing distance (Sn)	8 mm	8 mm	15 mm	15 mm
References				
NO	**IA18DSF08DO**	**IA18ASF08DOM1**	**IA30DSF15DO**	**IA30ASF15DOM1**
NC	**IA18DSF08DC**	**IA18ASF08DCM1**	**IA30DSF15DC**	**IA30ASF15DCM1**
Non-flush mountable				
Dimensions (mm)	M18 x 50	M18 x 63	M30 x 56	M30 x 67
Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
Operating frequency	400 Hz	400 Hz	200 Hz	200 Hz
Sensing distance (Sn)	14 mm	14 mm	22 mm	22 mm
References				
NO	**IA18DSN14DO**	**IA18ASN14DOM1**	**IA30DSN22DO**	**IA30ASN22DOM1**
NC	**IA18DSN14DC**	**IA18ASN14DCM1**	**IA30DSN22DC**	**IA30ASN22DCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	5 - 100 mA	5 - 100 mA	5 - 100 mA	5 - 100 mA
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, NAMUR, DC

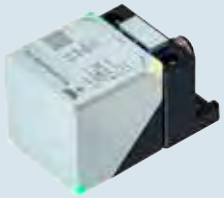
Types	M8	M12	M18	M30
Housing	**Stainless steel**	**Stainless steel**	**Stainless steel**	**Stainless steel**
Flush mountable				
Dimensions short body (mm)	Cable: M8 x 51	Cable: M12 x 46 Plug (M12): M12 x 54.5	Cable: M18 x 57 Plug (M12): M18 x 55	Cable: M30 x 59 Plug (M12): M30 x 55.5
Dimensions long body (mm)		Cable: M12 x 66 Plug (M12): M12 x 74.5	Cable: M18 x 77 Plug (M12): M18 x 75	Cable: M30 x 79 Plug (M12): M30 x 75.5
Thread (mm)	Short: M8 x 1 x 35	Short: M12 x 1 x 30 Long: M12 x 1 x 50	Short: M18 x 1 x 30 Long: M18 x 1 x 50	Short: M30 x 1.5 x 30 Long: M30 x 1.5 x 50
Operating frequency	2 kHz	1.4 kHz	500 Hz	300 Hz
Sensing distance (Sn)	1 mm	2 mm	5 mm	10 mm
References				
Short body cable	**EI0801NACS**	**IA12ESF02UC**	**IA18ESF05UC**	**IA30ESF10UC**
Long body cable		**IA12ELF02UC**	**IA18ELF05UC**	**IA30ELF10UC**
Short body plug		**IA12ESF02UCM1**	**IA18ESF05UCM1**	**IA30ESF10UCM1**
Long body plug		**IA12ELF02UCM1**	**IA18ELF05UCM1**	**IA30ELF10UCM1**
Non-flush mountable				
Dimensions short body (mm)	Cable: M8 x 54	Cable: M12 x 50 Plug (M12): M12 x 58.5	Cable: M18 x 65 Plug (M12): M18 x 63	Cable: M30 x 71 Plug (M12): M30 x 67.5
Dimensions long body (mm)		Cable: M12 x 70 Plug (M12): M12 x 78.5	Cable: M18 x 85 Plug (M12): M18 x 83	Cable: M30 x 91 Plug (M12): M30 x 87.5
Thread (mm)	Short: M8 x 1 x 35	Short: M12 x 1 x 30 Long: M12 x 1 x 50	Short: M18 x 1 x 30 Long: M18 x 1 x 50	Short: M30 x 1.5 x 30 Long: M30 x 1.5 x 50
Operating frequency	1.5 kHz	1.2 kHz	200 Hz	100 Hz
Sensing distance (Sn)	2 mm	4 mm	8 mm	15 mm
References				
Short body cable	**EI0802NACS**	**IA12ESN04UC**	**IA18ESN08UC**	**IA30ESN15UC**
Long body cable		**IA12ELN04UC**	**IA18ELN08UC**	**IA30ELN15UC**
Short body plug		**IA12ESN04UCM1**	**IA18ESN08UCM1**	**IA30ESN15UCM1**
Long body plug		**IA12ELN04UCM1**	**IA18ELN08UCM1**	**IA30ELN15UCM1**
Characteristics flush and non-flush mountable				
Rated operating voltage	7 - 9 VDC	7 - 9 VDC	7 - 9 VDC	7 - 9 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	P	P	P	P
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour		Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

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Inductive proximity sensors, switch, polyester housing

Types	Transistor NPN/PNP	Transistor NPN/PNP
Connections	**2 m cable**	**M12 connector**
Flush mountable		
Dimensions (mm)	75.5 x 35 x 15	68.3 x 35 x 15
Operating frequency	500 Hz	500 Hz
Sensing distance (Sn)	10 mm	10 mm
References		
NPN-NO+NC	**EI5510NPAP**	**EI5510NPAP-1**
PNP-NO+NC	**EI5510PPAP**	**EI5510PPAP-1**
Non-flush mountable		
Dimensions (mm)	75.5 x 35 x 15	68.3 x 35 x 15
Operating frequency	250 Hz	250 Hz
Sensing distance (Sn)	15 mm	15 mm
References		
NPN-NO+NC	**EI5515NPAP**	**EI5515NPAP-1**
PNP-NO+NC	**EI5515PPAP**	**EI5515PPAP-1**
Specifications		
Rated operating voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SP	SP
Output current	≤ 200 mA	≤ 200 mA
Housing material	Polycarbonate	Polycarbonate
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, switch, polyester housing

Types	Transistor NPN/PNP	Power MOSFET output AC/DC	
Connections	**M12 connector**	**Terminals**	**Terminals**
Flush mountable			
Dimensions (mm)	40 x 40 x 66		
Operating frequency	≤ 200 Hz		
Sensing distance (Sn)	22 mm		
References			
NPN - NO / NC	**IRC40SF22M1NA**		
PNP - NO / NC	**IRC40SF22M1PA**		
Non-flush mountable			
Dimensions (mm)	40 x 40 x 66	40 x 40 x 118.5	40 x 40 x 118.5
Operating frequency	≤ 200 Hz	≤ 25 Hz AC; 40 Hz DC	≤ 25 Hz
Sensing distance (Sn)	40 mm	30 mm	30 mm
References			
NPN - NO / NC	**IRC40SN40M1NA**		
PNP - NO / NC	**IRC40SN40M1PA**		
AC / DC - NO		**IC40CNN30COT1**	
AC / DC - NC		**IC40CNN30CCT1**	
AC - NO / NC			**IC40CNN30TAT1**
Specifications			
Rated operating voltage	10 - 30 VDC	20 - 250 VAC/DC	20 - 250 VAC
Degree of protection	IP67, IP68, IP69K	IP67	IP67
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 10 VAC; ≤ 8 VDC	≤ 10 VAC
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	S	
Output current	≤ 200 mA	5 - 200 mA @ 25°C 5 - 160 mA @ 70°C ≤ 2 A, t ≤ 20ms (Max. 1 pulse per S)	5 - 200 mA @ 25°C 5 - 160 mA @ 70°C ≤ 2 A, t ≤ 20ms (Max. 1 pulse per S)
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +70°C	-25°C to +70°C
LED colour	Green, Yellow	Red, Green	Red, Green
Approvals/Marks	CE - cULus	CE	CE

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Inductive proximity sensors, loop detector

Types	Single loop	Dual loop	Single loop	Dual loop
Connections	**Plug 11 pin circular**	**Plug 11 pin circular**	**DIN rail**	**DIN rail**
				
Dimensions HxWxD (mm)	81 x 35.5 x 60.2	81 x 35.5 x 60.2	84 x 22 x 99	84 x 22 x 99
Adjustment	Auto	Auto	Auto	Auto
Adjustable sensitivity via potentiometer	0.01% to 1.00%	0.01% to 1.00%	0.01% to 1.00%	0.01% to 1.00%
Loop inductance	20-1000 µH	20-1000 µH	20-1000 µH	20-1000 µH
Input	1 Loop	2 Loop	1 Loop	2 Loop
Output	2 x SPDT, relay output	2 x SPDT, relay output	2 x SPDT, relay output	2 x SPDT, relay output
References				
24-240 VAC/VDC	**LDP1PA2DU24**	**LDP2PA2DU24**	**LDD1PA2DU24**	**LDD2PA2DU24**
12-36 VAC/VDC	**LDP1PA2DU12**	**LDP2PA2DU12**		
Main features				
Automatic sensitivity boost (ASB)	Yes	Yes	Yes	Yes
Automatic loop frequency tuning	Yes	Yes	Yes	Yes
4 adjustable loop frequency channels	Yes	Yes	Yes	Yes
Selectable fail safe / fail secure mode	Yes	Yes	Yes	Yes
Multicolor LED for easy setup and advanced diagnostics	Yes	Yes	Yes	Yes
Directional logic	No	Yes	No	Yes
Specifications				
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Degree of protection	IP30	IP30	IP20	IP20
Mounting	11 pin circular plug	11 pin circular plug	DIN rail	DIN rail
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - cULus	CE - cULus

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Ultrasonic sensors, 1 x digital output - Short body

Types	UA18CSD..TI	UA18CSD..M1TI	UA18ESD..TI	UA18ESD..M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 53	M18 x 60	M18 x 53	M18 x 60
References				
Sensing distance (Sn)	40 - 300 mm	40 - 300 mm	40 - 300 mm	40 - 300 mm
Operating frequency	≤ 8 Hz	≤ 8 Hz	≤ 8 Hz	≤ 8 Hz
Blind zone	≤ 40 mm	≤ 40 mm	≤ 40 mm	≤ 40 mm
1 x NPN	**UA18CSD03NPTI**	**UA18CSD03NPM1TI**	**UA18ESD03NPTI**	**UA18ESD03NPM1TI**
1 x PNP	**UA18CSD03PPTI**	**UA18CSD03PPM1TI**	**UA18ESD03PPTI**	**UA18ESD03PPM1TI**
Sensing distance (Sn)	80 - 800 mm	80 - 800 mm	80 - 800 mm	80 - 800 mm
Operating frequency	≤ 5 Hz	≤ 5 Hz	≤ 5 Hz	≤ 5 Hz
Blind zone	≤ 80 mm	≤ 80 mm	≤ 80 mm	≤ 80 mm
1 x NPN	**UA18CSD08NPTI**	**UA18CSD08NPM1TI**	**UA18ESD08NPTI**	**UA18ESD08NPM1TI**
1 x PNP	**UA18CSD08PPTI**	**UA18CSD08PPM1TI**	**UA18ESD08PPTI**	**UA18ESD08PPM1TI**
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	Stainless steel AISI 316L	Stainless steel AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Ultrasonic sensors, analogue output - Short body

Types	UA18CSD..TI	UA18CSD..M1TI	UA18ESD..TI	UA18ESD..M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 53	M18 x 60	M18 x 53	M18 x 60
References				
Sensing distance (Sn)	40 - 300 mm	40 - 300 mm	40 - 300 mm	40 - 300 mm
Response time	≤ 400 mS	≤ 400 mS	≤ 400 mS	≤ 400 mS
Blind zone	≤ 40 mm	≤ 40 mm	≤ 40 mm	≤ 40 mm
4-20 mA	**UA18CSD03AGTI**	**UA18CSD03AGM1TI**	**UA18ESD03AGTI**	**UA18ESD03AGM1TI**
0-10 V	**UA18CSD03AKTI**	**UA18CSD03AKM1TI**	**UA18ESD03AKTI**	**UA18ESD03AKM1TI**
Sensing distance (Sn)	80 - 800 mm	80 - 800 mm	80 - 800 mm	80 - 800 mm
Response time	≤ 400 mS	≤ 400 mS	≤ 400 mS	≤ 400 mS
Blind zone	≤ 80 mm	≤ 80 mm	≤ 80 mm	≤ 80 mm
4-20 mA	**UA18CSD08AGTI**	**UA18CSD08AGM1TI**	**UA18ESD08AGTI**	**UA18ESD08AGM1TI**
0-10 V	**UA18CSD08AKTI**	**UA18CSD08AKM1TI**	**UA18ESD08AKTI**	**UA18ESD08AKM1TI**
Specifications				
Rated operating voltage NG or PG NK or PK	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	Supply: PT Analogue output: P	Supply: PT Analogue output: P	Supply: PT Analogue output: P	Supply: PT Analogue output: P
Housing material	PBT	PBT	Stainless steel AISI 316L	Stainless steel AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, 2 x digital outputs

Types	UA18CAD..TI	UA18CAD..M1TI	UA30CAD35..TI	UA30CAD35..M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	250 - 3500 mm	250 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 250 mm	≤ 250 mm
2 x NPN	**UA18CAD04NPTI**	**UA18CAD04NPM1TI**	**UA30CAD35NPTI**	**UA30CAD35NPM1TI**
2 x PNP	**UA18CAD04PPTI**	**UA18CAD04PPM1TI**	**UA30CAD35PPTI**	**UA30CAD35PPM1TI**
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
2 x NPN	**UA18CAD09NPTI**	**UA18CAD09NPM1TI**		
2 x PNP	**UA18CAD09PPTI**	**UA18CAD09PPM1TI**		
Sensing distance (Sn)	200 - 2200 mm	200 - 2200 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
2 x NPN	**UA18CAD22NPTI**	**UA18CAD22NPM1TI**		
2 x PNP	**UA18CAD22PPTI**	**UA18CAD22PPM1TI**		
Specifications				
Rated operating voltage	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 500 mA	< 500 mA	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

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Ultrasonic sensors, 2 x digital outputs

Types	UA30CAD60..TI	UA30CAD60..M1TI
Connections	**2 m cable**	**M12 connector**
		
Dimensions (mm)	M30 (Ø40) x 90	M30 (Ø40) x 90
References		
Sensing distance (Sn)	350 - 6000 mm	350 - 6000 mm
Operating frequency	≤ 1 Hz	≤ 1 Hz
Blind zone	≤ 350 mm	≤ 350 mm
2 x NPN	**UA30CAD60NPTI**	**UA30CAD60NPM1TI**
2 x PNP	**UA30CAD60PPTI**	**UA30CAD60PPM1TI**
Specifications		
Rated operating voltage	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA
Housing material	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus	CE - cULus

Ultrasonic sensors, 2 x digital outputs

Types	UA18EAD..TI	UA18EAD..M1TI	UA30EAD35..TI	UA30EAD35..M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	350 - 3500 mm	350 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 350 mm	≤ 350 mm
2 x NPN	**UA18EAD04NPTI**	**UA18EAD04NPM1TI**	**UA30EAD35NPTI**	**UA30EAD35NPM1TI**
2 x PNP	**UA18EAD04PPTI**	**UA18EAD04PPM1TI**	**UA30EAD35PPTI**	**UA30EAD35PPM1TI**
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
2 x NPN	**UA18EAD09NPTI**	**UA18EAD09NPM1TI**		
2 x PNP	**UA18EAD09PPTI**	**UA18EAD09PPM1TI**		
Sensing distance (Sn)	200 - 1500 mm	200 - 1500 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
2 x NPN	**UA18EAD15NPTI**	**UA18EAD15NPM1TI**		
2 x PNP	**UA18EAD15PPTI**	**UA18EAD15PPM1TI**		
Specifications				
Rated operating voltage	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 500 mA	< 500 mA	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Ultrasonic sensors, analogue and digital output

Types	UA18CAD..TI	UA18CAD..M1TI	UA30CAD35..TI	UA30CAD35..M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	250 - 3500 mm	250 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 250 mm	≤ 250 mm
NPN, 4-20 mA	**UA18CAD04NGTI**	**UA18CAD04NGM1TI**	**UA30CAD35NGTI**	**UA30CAD35NGM1TI**
PNP, 4-20 mA	**UA18CAD04PGTI**	**UA18CAD04PGM1TI**	**UA30CAD35PGTI**	**UA30CAD35PGM1TI**
NPN, 0-10 V	**UA18CAD04NKTI**	**UA18CAD04NKM1TI**	**UA30CAD35NKTI**	**UA30CAD35NKM1TI**
PNP, 0-10 V	**UA18CAD04PKTI**	**UA18CAD04PKM1TI**	**UA30CAD35PKTI**	**UA30CAD35PKM1TI**
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
NPN, 4-20 mA	**UA18CAD09NGTI**	**UA18CAD09NGM1TI**		
PNP, 4-20 mA	**UA18CAD09PGTI**	**UA18CAD09PGM1TI**		
NPN, 0-10 V	**UA18CAD09NKTI**	**UA18CAD09NKM1TI**		
PNP, 0-10 V	**UA18CAD09PKTI**	**UA18CAD09PKM1TI**		
Sensing distance (Sn)	200 - 2200 mm	200 - 2200 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
NPN, 4-20 mA	**UA18CAD22NGTI**	**UA18CAD22NGM1TI**		
PNP, 4-20 mA	**UA18CAD22PGTI**	**UA18CAD22PGM1TI**		
NPN, 0-10 V	**UA18CAD22NKTI**	**UA18CAD22NKM1TI**		
PNP, 0-10 V	**UA18CAD22PKTI**	**UA18CAD22PKM1TI**		
Specifications				
Rated operating voltage NG or PG NK or PK	 15 - 30 VDC 15 - 30 VDC	 15 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P
Load current	< 500 mA	< 500 mA	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, analogue and digital output

Types	UA30CAD60..TI	UA30CAD60..M1TI
Connections	**2 m cable**	**M12 connector**
		
Dimensions (mm)	M30 (Ø40) x 90	M30 (Ø40) x 90
References		
Sensing distance (Sn)	350 - 6000 mm	350 - 6000 mm
Operating frequency	≤ 1 Hz	≤ 1 Hz
Blind zone	≤ 350 mm	≤ 350 mm
NPN, 4-20 mA	**UA30CAD60NGTI**	**UA30CAD60NGM1TI**
PNP, 4-20 mA	**UA30CAD60PGTI**	**UA30CAD60PGM1TI**
NPN, 0-10 V	**UA30CAD60NKTI**	**UA30CAD60NKM1TI**
PNP, 0-10 V	**UA30CAD60PKTI**	**UA30CAD60PKM1TI**
Specifications		
Rated operating voltage NG or PG NK or PK	 12 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P
Load current	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA
Housing material	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Ultrasonic sensors, analogue and digital output

Types	UA18EAD..TI	UA18EAD..M1TI	UA30EAD35..TI	UA30EAD35..M1TI
Connections	**2 m cable**	**M12 connector**	**2 m cable**	**M12 connector**
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 93	M30 x 100
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	350 - 3500 mm	350 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 350 mm	≤ 350 mm
NPN, 4-20 mA	**UA18EAD04NGTI**	**UA18EAD04NGM1TI**	**UA30EAD35NGTI**	**UA30EAD35NGM1TI**
PNP, 4-20 mA	**UA18EAD04PGTI**	**UA18EAD04PGM1TI**	**UA30EAD35PGTI**	**UA30EAD35PGM1TI**
NPN, 0-10 V	**UA18EAD04NKTI**	**UA18EAD04NKM1TI**	**UA30EAD35NKTI**	**UA30EAD35NKM1TI**
PNP, 0-10 V	**UA18EAD04PKTI**	**UA18EAD04PKM1TI**	**UA30EAD35PKTI**	**UA30EAD35PKM1TI**
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
NPN, 4-20 mA	**UA18EAD09NGTI**	**UA18EAD09NGM1TI**		
PNP, 4-20 mA	**UA18EAD09PGTI**	**UA18EAD09PGM1TI**		
NPN, 0-10 V	**UA18EAD09NKTI**	**UA18EAD09NKM1TI**		
PNP, 0-10 V	**UA18EAD09PKTI**	**UA18EAD09PKM1TI**		
Sensing distance (Sn)	200 - 1500 mm	200 - 1500 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
NPN, 4-20 mA	**UA18EAD15NGTI**	**UA18EAD15NGM1TI**		
PNP, 4-20 mA	**UA18EAD15PGTI**	**UA18EAD15PGM1TI**		
NPN, 0-10 V	**UA18EAD15NKTI**	**UA18EAD15NKM1TI**		
PNP, 0-10 V	**UA18EAD15PKTI**	**UA18EAD15PKM1TI**		
Specifications				
Rated operating voltage NG or PG NK or PK	 15 - 30 VDC 15 - 30 VDC	 15 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC	 12 - 30 VDC 15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP67	IP67	IP67	IP67
Protection short-circuit (S) Reverse polarity (P) Transients (T)	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P
Load current	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

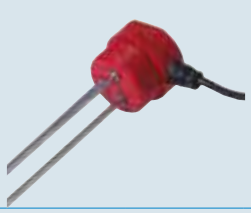
Ultrasonic sensors, DC, analogue, remote teach

	Programmable RS232	Integrated amplifier
Types	**UA30CLD..M7**	**UA12BLD..M1TR**
Connections	**M16 connector**	**M12 connector**
		
Dimensions (mm)	M30 x 136	M12 x 79
Diffuse reflective references		
Operating frequency	5 - 30 Hz programmable	20 Hz
Sensing distance (Sn)	150 - 1500 mm adj.	25 - 200 mm adj.
0-10 VDC	**UA30CLD15FKM7**	
4-20 mA	**UA30CLD15FGM7**	
NPN-NO/NC		**UA12BLD02NPM1TR**
PNP-NO/NC		**UA12BLD02PPM1TR**
Sensing distance (Sn)	250 - 2000 mm adj.	
0-10 VDC	**UA30CLD20FKM7**	
4-20 mA	**UA30CLD20FGM7**	
Sensing distance (Sn)	350 - 3500 mm adj.	
0-10 VDC	**UA30CLD35FKM7**	
4-20 mA	**UA30CLD35FGM7**	
Specifications		
Rated operating voltage	19 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.5 VDC	≤ 4.5 V
Degree of protection	IP67	IP65
Protection short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	< 100 mA Analogue see type	< 100 mA
Housing material	PBTB	Stainless steel
Operating temperature	-15°C to +70°C	-20°C to +70°C
LED colour	Yellow + Green	
Remarks	Hold/sync. input RS232	
Approvals/Marks	CE - UL - cUL	CE

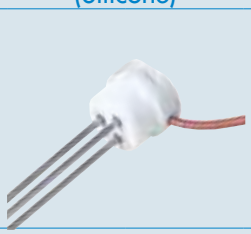
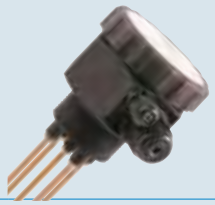
	Adapters
Types	**AUA - RT**
Connections	**M12 connector**
	
Dimensions (mm)	17 x 56
Specifications	
	Programming adapter for remote teach sensors ending with "RT"

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Conductive level sensors

Types	VN / VNI	VNY / VNYI	VPC	VPP
Connections	**Cable** (PVC) **2 m**	**Screw connection**	**Screw connection**	**Screw connection**
				
Electrodes				
Number of electrodes	1, 2, 3 or 4	1, 2, 3 or 4	1, 2 or 3	1, 2 or 3
Diameter/length (mm)	D5/1000	D5/1000	D4/500	D4/500
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Isolation of electrodes	Yes (VNI)	Yes (VNYI)	Yes	Yes
Isolation	Polyethylene	Polyethylene	Polyethylene	PVDF
Housing				
Pipe thread	1½"	1½"	½" [VPC x05] or 1" [VPC x10]	½" [VPC x05] or 1" [VPC x10]
Material	Nylon 6	Nylon 6	PVC	Polypropylene
References				
1 electrode	**VN1** **VNI1**	**VNY1** **VNYI1**	**VPC105** **VPC110**	**VPP105** **VPP110**
2 electrodes	**VN2** **VNI2**	**VNY2** **VNYI2**	**VPC205** **VPC210**	**VPP205** **VPP210**
3 electrodes	**VN3** **VNI3**	**VNY3** **VNYI3**	**VPC310**	**VPP310**
4 electrodes	**VN4** **VNI4**	**VNY4** **VNYI4**		
Specifications				
Degree of protection	IP67	IP67	IP67	IP67
Operating temperature	0°C to +90°C	0°C to +90°C	0°C to +60°C	0°C to +100°C
Approvals/Marks	CE	CE	CE	CE

Conductive level sensors

Types	VT / VTI	CLH	VH	A 94-10
Connections	**Cable** (Silicone)	**Screw connection**	**Cable** (Neoprene)	**Cable** (PVC)
				
Electrodes				
Number of electrodes	1, 2, 3 or 4	2 or 4 + reference	1 (hanging)	2 (hanging)
Diameter/length (mm)	D5/1000	D4	D18/36.5 or D32/75.5	D22/75.0
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Isolation of electrodes	Yes [VTI]	Yes	No [VH1,VH3,VH4] - Yes [VH2]	No
Isolation	Teflon	Kynar, Polyolefin	Nylon 6	
Housing				
Pipe thread	1½"	1½"		
Material	Teflon	Polypropylene	Nylon 6 [VH1,VH2] Polycarbonate [VH3, VH4]	Polyester
References				
1 electrode	**VT1** **VTI1**			
1 electrode with Neoprene cable			**VH1 or VH2**	
1 electrode with UV resistant PVC cable			**VH3**	
1 electrode without cable			**VH4**	
2 electrodes	**VT2** **VTI2**			**A 94-10**
3 electrodes	**VT3** **VTI3**	**CLH3***		
4 electrodes	**VT4** **VTI4**			
5 electrodes		**CLH5***		
Specifications				
Degree of protection	IP67	IP65	IP67	IP67
Operating temperature	0°C to +145°C	-20°C to +90°C	0°C to +90°C	0°C to +60°C
Approvals/Marks	CE	CE	CE	CE
Electrodes (Stainless steel ANSI316)				
No Insulation				
1 m		**CLE1**		
2 m		**CLE2**		
Extension 1 m		**CLE1X**		
Kynar (DVDP) insulation				
1 m		**CLE1K**		
2 m		**CLE2K**		
Extension 1 m		**CLE1KX**		
Polyolefin insulation				
1 m		**CLE1P**		
2 m		**CLE2P**		
Extension 1 m		**CLE1PX**		

* Electrodes shall be ordered separately

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Conductive level sensors

	Level controller			
Types	**CLD1**	**CLD2**	**CLP2 Basic**	**CLP2**
Connections	**DIN-rail**	**DIN-rail**	**Plug 11 pin circular**	**Plug 11 pin circular**
				
Function	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids
Adjustable	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer
Sensitivity	5 KΩ to 150 KΩ	250 Ω to 500 KΩ	5 KΩ to 150 KΩ	250 Ω to 500 KΩ
Functions switch	- Timer 1 to 30 sec. delay on filling or/and emptying	- Filling / Emptying - 3-levels: Low, Standard and High	- Filling / Emptying	- Filling / Emptying - 3-levels: Low, Standard and High
Input	1 + reference	2 + reference	2 + reference	2 + reference
Output	8 A / 250 VAC SPST	8 A / 250 VAC SPDT	8 A / 250 VAC SPDT	8 A / 250 VAC DPDT
Power Supply	24 VAC/DC	24 - 240 VAC/DC	24 VDC, 24 VAC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC
References				
24 240 VAC/DC		**CLD2EB1BU24**		
24 VDC			**CLP2EB1B724**	
24 VAC			**CLP2EB1B024**	
24 VAC/DC	**CLD1EA1CM24**			**CLP2EA1CM24**
115 VAC			**CLP2EB1B115**	**CLP2EA1C115**
230 VAC			**CLP2EB1B230**	**CLP2EA1C230**
Specifications				
Time delay	< 300 mS	< 2S	< 2S	< 300 mS
Housing material	ABS V0	PA66	NORYL PPO	NORYL PPO
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Output LED colour	Yellow	Yellow	Yellow	Yellow
Power LED colour	Green	Green	Green	Green
Approvals/Marks	CE - cURus - CSA	CE - cULus	CE - cURus - CSA	CE - cURus - CSA

Conductive level sensors

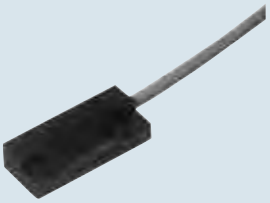
	Level controller			
Types	**CLD2**	**CLP2 Master-Slave**	**CLD4**	**CLP4**
Connections	**DIN-rail**	**Plug 11 pin circular**	**DIN-rail**	**Plug 11 pin circular**
				
Function	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids Master - Slave system	Filling, emptying or combinations. Selectable by rotary switches. Conductive liquids	Filling, emptying or combinations. Selectable by rotary switches. Conductive liquids
Adjustable	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer
Sensitivity	250 Ω to 500 KΩ	250 Ω to 500 KΩ	250 Ω to 500 KΩ	250 Ω to 500 KΩ
Functions switch	- Filling / Emptying - 3-levels: Low, Standard and High	- Filling / Emptying - 3-levels: Low, Standard and High	- Tank - well - Direct in to out 2 probe - Low and High alarm - 2 system in one, filling and/ or emptying - 3-levels: Low, Standard and High	- Tank - well - Direct in to out 2 probe - Low and High alarm - 2 system in one, filling and/ or emptying - 3-levels: Low, Standard and High
Input	2 + reference	2 + reference	2 to 4 + reference	2 to 4 + reference
Output	8 A / 250 VAC DPDT	8 A / 250 VAC SPDT	8 A / 250 VAC SPDT, SPST	8 A / 250 VAC 2 X SPST
Power Supply	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC
References				
24 VAC/DC	**CLD2EA1CM24**	**CLP2FA1BM24**	**CLD4MA2DM24**	**CLP4MA2AM24**
115 VAC	**CLD2EA1C115**	**CLP2FA1B115**	**CLD4MA2D115**	**CLP4MA2A115**
230 VAC	**CLD2EA1C230**	**CLP2FA1B230**	**CLD4MA2D230**	**CLP4MA2A230**
Specifications				
Time delay	< 300 mS	< 300 mS	< 300 mS	< 300 mS
Housing material	ABS V0	NORYL PPO	ABS V0	NORYL PPO
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Output LED colour	Yellow	Yellow	Yellow	Yellow
Power LED colour	Green	Green	Green	Green
Approvals/Marks	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Proximity magnetic sensors, rectangular

	Rectangular		
Types	**S series**	**SPB2 series**	**SPA1 series**
			
Dimensions (mm)	11.5 x 79 x 21.2	25.5 x 85 x 24	16 x 90 x 20
Electrical specifications			
Max. switch. voltage contact	250 VAC [SA / SC 2, SB2 / -S5] 1500 VAC [SA / SC 8] 230 VAC [SS2]	250 VAC	24 VDC [output 1 and 2]
Max. switch. current contact	1 A [SS2] 3 A [SA2, SC2, SB2, SB2S5, SA8, SC8]	3 A	0.5 A [output 1] 4 A [output 2]
Max. switch. power contact	100 VA [SA / SC 2, SB2 / -S5] 120 VA [SA / SC 8] 60 VA [SS2]	100 VA	5 VA [output 1] 100 VA [output 2]
Power supply			24 VDC
General specifications			
Operating distance	5 - 32 mm	5 - 30 mm	12 mm
Output connection	PVC cable, 0.5 m (0.24 m Type S5)	Faston [SPB2] 2 m PVC Cable [SPB22MT]	PVC cable, 19 cm Pig-tail
Degree of protection	IP67	IP67 [SPB22MT] IP65 [SPB2]	IP67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +80°C
Housing material	Plastic	Plastic	ABS class V0
References			
Normally open	**SA2** **SA8**		
Normally closed	**SC2** **SC8**		
Change - Over	**SS2**		
Bistable	**SB2** **SB2S5**	**SPB2** **SPB22MT**	
Normally closed, 2 outputs			**SPA1S2**

Proximity magnetic sensors, rectangular

	Rectangular	
Types	**M and MS series**	**MM series**
		
Dimensions (mm)	8.3 x 37 x 16	6.1 x 23.5 x 14 [A6] 7 x 27 x 11 [A3, S1]
Electrical specifications		
Max. switch. voltage contact	100 VAC [MS1] 230 VAC [MSA1] 500 VAC [MA3, MC3]	100 VAC [S1, A6] 500 VAC [A3]
Max. switch. current contact	0.25 A [MS1] 0.5 A [MA3, MC3] 0.75 A [MSA1]	0.25 A [S1] 0.5 A [A3, A6]
Max. switch. power contact	5 VA [MS1] 10 VA [MSA1, MA3, MC3]	5 VA [S1] 10 VA [A3, A6]
General specifications		
Operating distance	7 - 35 mm	10 - 40 mm
Output connection	PVC cable, 0.5 m (2 m, Type MSA1)	PVC cable [A3, S1] Twin lead cable [A6]
Degree of protection	IP67	IP67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing material	Plastic	Plastic
References		
Normally open	**MSA1** **MA3**	**MMA3** **MMA6**
Normally closed	**MC3**	
Change - Over	**MS1**	**MMS1**

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Proximity magnetic sensors, cylindrical

	Cylindrical		
Types	**FM... series**	**FMM... series**	**FMMP... series**
			
Dimensions (mm)	Ø 9.3 [A3, C3] M10 x 0.75 [A3S5, A6] M12 x 1 [C3S1, A9S1]	M8 x 1	Ø 6 x 25 [L25] Ø 6 x 33 [L33] Ø 6 x 38 [L38]
Electrical specifications			
Max. switch. voltage contact	100 VAC [A6] 230 VAC [A9S1] 500 VAC [A3, C3, A3S5, C3S1]	100 VAC [A6, S1] 500 VAC [A3]	140 VAC
Max. switch. current contact	0.5 A [A3, C3, A6, A3S5, C3S1] 3 A [A9S1]	0.25 A [S1] 0.5 A [A3, A6]	1 A
Max. switch. power contact	5 VA [A3, C3, A3S5, C3S1] 60 VA [A9S1] 100 VA [A6]	5 VA [S1] 10 VA [A3, A6]	10 VA
Max carry current			1.2 A
General specifications			
Operating distance	5 - 36 mm	8 - 27 mm	> 8 mm
Output connection	PVC cable 0.5 m for Ø 9.3 2 m for M10 and M12	PVC cable, 2 m	Twin lead cable, 0.5 m
Degree of protection	IP67	IP67	IP67
Operating temperature	-25°C to +75°C	-25°C to +70°C	-20°C to +75°C
Housing material	Plastic [A3, C3] Nickel plated brass [A6] Brass [A3S5, C3S1, A9S1]	Stainless steel [A3, S1] Nickel plated brass [A6]	Plastic
References			
Normally open	**FMA3** **FMA3S5** **FMA6** **FMA9S1**	**FMMA3** **FMMA6**	**FMMPA7L25**
Normally closed	**FMC3** **FMC3S1**		
Change - Over		**FMMS1**	

Proximity magnetic sensors, cylindrical

	Cylindrical		
Types	**FMP... series**	**FS... series**	**FSM... series**
			
Dimensions (mm)	M12 x 1 x 100	Ø 13.5 [A2, A8, C2, S2] M10 x 1.25 [A2S3, S2S1] M12 x 1 [A2S4, S2S4] M16 x 1.5 [B2]	M12 x 1 [A2, A7, S2] M16 x 1 [S2S2AT]
Electrical specifications			
Max. switch. voltage contact	120 VAC/DC [C7] 175 VDC, 120 VAC [S1] 200 VDC, 140 VAC [A7] 230 VAC/DC [A9, C9, A9S1] 250 VAC/DC [B2]	230 VAC [S2, S2S1, S2S4] 250 VAC [A2, B2, C2, A2S3, A2S4] 1500 VAC [A8]	24 VDC [A7] 230 VAC [S2, S2S2AT] 250 VAC [A2]
Max. switch. current contact	0.25 A [S1] 0.5 A [C7] 1 A [A7] 3 A [B2, A9, C9, A9S1]	1 A [S2, S2S4, S2S1] 3 A [A2, B2, C2, A8, A2S3, A2S4]	0.5 A [S2S2AT] 1 A [S2] 3 A [A2] 50 mA [A7]
Max. switch. power contact	5 VA [S1] 10 VA [A7, C7] 60 VA [A9, C9, A9S1] 120 VA [B2]	60 VA [S2S1, S2S4, S2] 100 VA [A2, B2, C2, A2S3, A2S4] 120 VA [A8]	30 VA [S2S2AT] 60 VA [S2] 100 VA [A2] (A7 negligible)
General specifications			
Operating distance	7 - 26 mm	3 - 32 mm	2 - 19 mm
Output connection	PVC cable, 2 m	PVC cable, 2 m 0.5 m for Ø 13.5	Silicone cable, 2 m [A7] Silicone cable, 0.5 m [S2S2AT] PVC cable, 2 m [A2, S2]
Degree of protection	IP67	IP67	IP67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +75°C [A2, A7, S2] -20°C to +150°C [S2S2AT]
Housing material	Plastic	Plastic [A2, A8, C2, S2, B2] Brass [A2S3 / S4, S2S1 / S4]	Brass [S2S2, S2S2AT] Nickel plated brass [A2, A7, S2]
References			
Normally open	**FMPA7** [black] **FMPA9** [black] **FMPA9S1** [black]	**FSA2** **FSA8** **FSA2S32MT** **FSA2S42MT**	**FSMA2** **FSMA7**
Normally closed	**FMPC7** [red] **FMPC9** [red]	**FSC2**	
Change - Over	**FMPS1** [blue]	**FSS2** **FSS2S12MT** **FSS2S42MT**	**FSMS2** **FSMS2S2AT**
Bistable	**FMPB2** [grey]	**FSB22MT**	

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Proximity magnetic sensors, slot

Slot

Types	ISY series	IM series
		
Dimensions (mm)	10 x 45 x 37	7 x 28 x 18.5
Electrical specifications		
Max. switch. voltage contact	100 VAC [S1] 500 VAC [C3]	100 VAC [S1]
Max. switch. current contact	0.25 A [S1] 0.5 A [C3]	0.25 A [S1]
Max. switch. power contact	5 VA [S1] 10 VA [C3]	5 VA [S1]
General specifications		
Output connection	PVC cable, 0.5 m	PVC cable, 0.5 m
Degree of protection	IP67	IP67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing materials	Plastic	Plastic
References		
Normally closed	**ISYC3**	
Change - Over	**ISYS1**	**IMS1**

Types — Magnetic units CL series

Shapes	Rectangular	Trapezoidal	Cylindrical
			

General specifications

Minimum separation:	Dimensions (mm)	References	Dimensions (mm)	References	Dimensions (mm)	References
10	25 x 14 x 8	**CL1**				
20	44.5 x 12 x 9	**CL2**				
30	59 x 18 x 9	**CL3**				
50	76 x 25 x 18	**CL4**				
Not mandatory			90 x 31 x 22.5	**CL90**	Ø 9.3 x 32	**CL10**
					Ø 13.5 x 65	**CL11**
					Ø 18 x 6	**CL18**
					Ø 23 x 9	**CL23**
					Ø 31 x 10	**CL31**
					Ø 20 x 10	**CL20S1**
					Ø 22.1 x 11.3	**CL20S3**

Level magnetic sensors

	Cylindrical		
Types	**ILM series**	**ILMM series**	**ILMP series**
			
Float Diameter (mm)	Ø 53	Ø 28	Ø 25
Output functions			
	Normally open, Normally closed [2, 8] Change-over [S2]	Normally open and normally closed [5, 590, 5ATS1] Normally open [5S1] Normally closed [5S2, 5S2AT]	Normally open, normally closed
Electrical specifications			
Max. switch. voltage contact	230 VAC [S2] - 250 VAC [2] 1500 VAC [8]	240 VAC, 220 VDC	240 VAC, 200 VDC
Max. switch. current contact	1 A [S2] 3 A [2, 8]	0.5 A	0.5 A
Max. switch. power contact	60 VA [S2] - 100 VA [2] 120 VA [8]	50 VA	50 VA
General specifications			
Output connection	Silicone cable, 0.5 m	XLPE cable, 0.3 m 1,1 m [ATS1]	PVC cable, 0.3 m
Min. liquid specific gravity	0.75 kg / dm^3	0.75 kg / dm^3	
Max. pressure	20 kg / cm^2	10 kg / cm^2	2 kg / cm^2
Degree of protection	IP67	IP67	IP67
Operating temperature	-25°C to +120°C [2, 8, S2]	-10°C to +120°C [5, 590] -10°C to +200°C [5ATS1, 5S2AT] -20°C to +120°C [5S1, 5S2]	-20°C to +80°C
Housing materials	AISI 316 stainless steel	"AISI 304 stainless steel [5, 590 5ATS1] AISI316 stainless steel [5S2AT, 5S1, 5S2]"	Plastic
References			
Normally open / Normally closed	**ILM.2** **ILM8**	**ILMM5** **ILMM590** **ILMM5ATS1**	**ILMP5** **ILMP5P**
Change - Over	**ILMS2**		
Normally closed		**ILMM5S2AT** **ILMM5S2**	
Normally open		**ILMM5S1**	

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Level magnetic sensors

	Cylindrical	
Types	**ILMPU - ILU - ILMU series**	**ILSP series**
		
Float Diameter (mm)	Ø 17.5 [ILMPU] Ø 31 [ILMU] Ø 45 [ILU]	Ø 44
Electrical specifications		
Max. switch. voltage contact	230 VAC [ILUS2] 240 VAC, 200 VDC [ILMPU5, ILMU5] 250 VAC [ILU2] 1000 VAC [ILU8]	230 VAC [S2] 250 VAC [2] 1500 VAC [8]
Max. switch. current contact	0.5 A [ILMP, ILM] 1 A [ILUS2] 3 A [ILU2, ILU8]	1 A [S2] 3 A [2, 8]
Max. switch. power contact	50 VA [ILMP, ILM] 60 VA [ILUS2] 100 VA [ILU2] 120 VA [ILU8]	60 VA [S2] 100 VA [2] 120 VA [8]
General specifications		
Output connection	XLPE cable, 0.3 m [ILMPU5] PVC cable, 0.3 m [ILMU5] Silicone cable, 0.5 m [ILU2, ILU8, ILUS2]	Silicone cable, 0.5 m
Min. liquid specific gravity	0.70 kg / dm^3 [ILMPU, ILMU] 0.75 kg / dm3 [ILU]	0.75 kg / dm^3
Max. pressure	2 kg / cm^2 [ILMPU, ILMU] 100 kg / cm2 [ILU]	0.6 kg / cm^2
Degree of protection	IP68	IP67
Operating temperature	-20°C to +80°C [ILMPU, ILMU] -25°C to +100°C [ILU]	-25°C to +100 °C
Housing materials	Non toxic polypropylene or plastic	Plastic
References		
Normally open / Normally closed	**ILMPU5** **ILMU5**	**ILSP2** **ILSP8**
Normally open	**ILU2** **ILU8**	
Change - Over	**ILUS2**	**ILSPS2**

Safety magnetic sensors

Safety magnetic sensors			
Types	**MC 88C... Left exit**		
Connections	**2 m cable**	**M8 connector**	**M12 pig-tail**
			
Dimensions (mm)	88 x 25 x 13	88 x 25 x 13	88 x 25 x 13
Operating frequency	100 Hz	100 Hz	100 Hz
Assured switching distance (Sao)	5 mm (with MC88CM1) 8 mm (with MC88CM2) 18 mm (with MC88CM3)	5 mm (with MC88CM1) 8 mm (with MC88CM2) 18 mm (with MC88CM3)	5 mm (with MC88CM1) 8 mm (with MC88CM2) 18 mm (with MC88CM3)
Assured switch-off distance (Sar)	15 mm (with MC88CM1) 18 mm (with MC88CM2) 30 mm (with MC88CM3)	15 mm (with MC88CM1) 18 mm (with MC88CM2) 30 mm (with MC88CM3)	15 mm (with MC88CM1) 18 mm (with MC88CM2) 30 mm (with MC88CM3)
Electrical specifications			
Rated operating voltage	12-24 VAC/DC	12-24 VAC/DC	12-24 VAC/DC
Rated operating current	0.25 A (resistive load)	0.25 A (resistive load)	0.25 A (resistive load)
Maximum switching load	6 W (resistive load)	6 W (resistive load)	6 W (resistive load)
General specifications			
Rated insulation voltage	120 V AC	60 V AC / 75 V DC	120 V AC
Degree of protection	IP67	IP67, IP69K	IP67
Reverse polarity protection	Yes	Yes	Yes
Housing material	PBT red	PBT red	PBT red
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
Output connection	2 m PVC cable, 4 x 0.25 mm² (2 NO or 1 NO+1 NC) or 6 x 0.25 mm² (2 NO+1 NC)	M8 4-pin connector	Pig tail with M12 connector, L=0.1 m
Vibration resistance	10 g (10…150 Hz)	10 g (10…150 Hz)	10 g (10…150 Hz)
Shock resistance	30 g (11 ms)	30 g (11 ms)	30 g (11 ms)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References - versions without LED			
2 NO outputs	**MC88CH2OLA2**	**MC88CH2OLM5** (IP69K)	**MC88CH2OLT1**
1 NO + 1 NC outputs	**MC88CH1O1CLA2**	**MC88CH1O1CLM5** (IP69K)	**MC88CH1O1CLT1**
2 NO + 1 NC outputs	**MC88CH2O1CLA2**		
References - versions with LED			
2 NO outputs	**MC88CH2OLA2L**	**MC88CH2OLM5L**	**MC88CH2OLT1L**
1 NO + 1 NC outputs	**MC88CH1O1CLA2L**	**MC88CH1O1CLM5L**	**MC88CH1O1CLT1L**
2 NO + 1 NC outputs	**MC88CH2O1CLA2L**		
LED color	Yellow	Yellow	Yellow
Actuator			
Dimensions (mm)	88 x 25 x 13	88 x 25 x 13	88 x 25 x 13
References	**MC88CM1, MC88CM2, MC88CM3**	**MC88CM1, MC88CM2, MC88CM3**	**MC88CM1, MC88CM2, MC88CM3**

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Safety magnetic sensors

Safety magnetic sensors			
Types	**MC 88C... Right exit**		
Connections	**2 m cable**	**M8 connector**	**M12 pig-tail**
			
Dimensions (mm)	88 x 25 x 13	88 x 25 x 13	88 x 25 x 13
Operating frequency	100 Hz	100 Hz	100 Hz
Assured switching distance (Sao)	5 mm (with MC88CM1) 8 mm (with MC88CM2) 18 mm (with MC88CM3)	5 mm (with MC88CM1) 8 mm (with MC88CM2) 18 mm (with MC88CM3)	5 mm (with MC88CM1) 8 mm (with MC88CM2) 18 mm (with MC88CM3)
Assured switch-off distance (Sar)	15 mm (with MC88CM1) 18 mm (with MC88CM2) 30 mm (with MC88CM3)	15 mm (with MC88CM1) 18 mm (with MC88CM2) 30 mm (with MC88CM3)	15 mm (with MC88CM1) 18 mm (with MC88CM2) 30 mm (with MC88CM3)
Electrical specifications			
Rated operating voltage	12-24 VAC/DC	12-24 VAC/DC	12-24 VAC/DC
Rated operating current	0.25 A (resistive load)	0.25 A (resistive load)	0.25 A (resistive load)
Maximum switching load	6 W (resistive load)	6 W (resistive load)	6 W (resistive load)
General specifications			
Rated insulation voltage	120 V AC	60 V AC / 75 V DC	120 V AC
Degree of protection	IP67	IP67, IP69K	IP67
Reverse polarity protection	Yes	Yes	Yes
Housing material	PBT red	PBT red	PBT red
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
Output connection	2 m PVC cable, 4 x 0.25 mm² (2 NO or 1 NO+1 NC) or 6 x 0.25 mm² (2 NO+1 NC)	M8 4-pin connector	Pig tail with M12 connector, L=0.1 m
Vibration resistance	10 g (10…150 Hz)	10 g (10…150 Hz)	10 g (10…150 Hz)
Shock resistance	30 g (11 ms)	30 g (11 ms)	30 g (11 ms)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References - versions without LED			
2 NO outputs	**MC88CH2ORA2**	**MC88CH2ORM5** (IP69K)	**MC88CH2ORT1**
1 NO + 1 NC outputs	**MC88CH1O1CRA2**	**MC88CH1O1CRM5** (IP69K)	**MC88CH1O1CRT1**
2 NO + 1 NC outputs	**MC88CH2O1CRA2**		
References - versions with LED			
2 NO outputs	**MC88CH2ORA2L**	**MC88CH2ORM5L**	**MC88CH2ORT1L**
1 NO + 1 NC outputs	**MC88CH1O1CRA2L**	**MC88CH1O1CRM5L**	**MC88CH1O1CRT1L**
2 NO + 1 NC outputs	**MC88CH2O1CRA2L**		
LED color	Yellow	Yellow	Yellow
Actuator			
Dimensions (mm)	88 x 25 x 13	88 x 25 x 13	88 x 25 x 13
References	**MC88CM1, MC88CM2, MC88CM3**	**MC88CM1, MC88CM2, MC88CM3**	**MC88CM1, MC88CM2, MC88CM3**

Safety magnetic sensors

Compact safety magnetic sensors

Types	MC 36C... Left exit		
Connections	**2 m cable**	**M8 connector**	**M12 pig-tail**
			
Dimensions (mm)	36 x 26 x 13	36 x 26 x 13	36 x 26 x 13
Operating frequency	100 Hz	100 Hz	100 Hz
Assured switching distance (Sao)	5 mm (with MC36CM)	5 mm (with MC36CM)	5 mm (with MC36CM)
Assured switch-off distance (Sar)	15 mm (with MC36CM)	15 mm (with MC36CM)	15 mm (with MC36CM)
Electrical specifications			
Rated operating voltage	12-24 VAC/DC	12-24 VAC/DC	12-24 VAC/DC
Rated operating current	0.25 A (resistive load)	0.25 A (resistive load)	0.25 A (resistive load)
Maximum switching load	6 W (resistive load)	6 W (resistive load)	6 W (resistive load)
General specifications			
Rated insulation voltage	120 V AC	60 V AC / 75 V DC	120 V AC
Degree of protection	IP67	IP67, IP69K	IP67
Reverse polarity protection	Yes	Yes	Yes
Housing material	PBT red	PBT red	PBT red
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
Output connection	2 m PVC cable 4 x 0.25 mm^2	M8 4-pin connector	Pig tail with M12 connector, L=0.1 m
Vibration resistance	10 g (10…150 Hz)	10 g (10…150 Hz)	10 g (10…150 Hz)
Shock resistance	30 g (11 ms)	30 g (11 ms)	30 g (11 ms)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References - versions without LED			
2 NO outputs	**MC36CH2OLA2**	**MC36CH2OLM5** (IP69K)	**MC36CH2OLT1**
1 NO + 1 NC outputs	**MC36CH1O1CLA2**	**MC36CH1O1CLM5** (IP69K)	**MC36CH1O1CLT1**
2 NO + 1 NC outputs	**MC36CH2O1CLA2**		
References - versions with LED			
2 NO outputs	**MC36CH2OLA2L**	**MC36CH2OLM5L**	**MC36CH2OLT1L**
1 NO + 1 NC outputs	**MC36CH1O1CLA2L**	**MC36CH1O1CLM5L**	**MC36CH1O1CLT1L**
2 NO + 1 NC outputs	**MC36CH2O1CLA2L**		
LED color	Yellow	Yellow	Yellow
Actuator			
Dimensions (mm)	36 x 26 x 13	36 x 26 x 13	36 x 26 x 13
References	**MC36CM**	**MC36CM**	**MC36CM**

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Safety magnetic sensors

Compact safety magnetic sensors			
Types	**MC 36C... Right exit**		
Connections	**2 m cable**	**M8 connector**	**M12 pig-tail**
			
Dimensions (mm)	36 x 26 x 13	36 x 26 x 13	36 x 26 x 13
Operating frequency	100 Hz	100 Hz	100 Hz
Assured switching distance (Sao)	5 mm (with MC36CM)	5 mm (with MC36CM)	5 mm (with MC36CM)
Assured switch-off distance (Sar)	15 mm (with MC36CM)	15 mm (with MC36CM)	15 mm (with MC36CM)
Electrical specifications			
Rated operating voltage	12-24 VAC/DC	12-24 VAC/DC	12-24 VAC/DC
Rated operating current	0.25 A (resistive load)	0.25 A (resistive load)	0.25 A (resistive load)
Maximum switching load	6 W (resistive load)	6 W (resistive load)	6 W (resistive load)
General specifications			
Rated insulation voltage	120 V AC	60 V AC / 75 V DC	120 V AC
Degree of protection	IP67	IP67, IP69K	IP67
Reverse polarity protection	Yes	Yes	Yes
Housing material	PBT red	PBT red	PBT red
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
Output connection	2 m PVC cable 4 x 0.25 mm^2	M8 4-pin connector	Pig tail with M12 connector, L=0.1 m
Vibration resistance	10 g (10…150 Hz)	10 g (10…150 Hz)	10 g (10…150 Hz)
Shock resistance	30 g (11 ms)	30 g (11 ms)	30 g (11 ms)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References - versions without LED			
2 NO outputs	**MC36CH2ORA2**	**MC36CH2ORM5** (IP69K)	**MC36CH2ORT1**
1 NO + 1 NC outputs	**MC36CH1O1CRA2**	**MC36CH1O1CRM5** (IP69K)	**MC36CH1O1CRT1**
2 NO + 1 NC outputs	**MC36CH2O1CRA2**		
References - versions with LED			
2 NO outputs	**MC36CH2ORA2L**	**MC36CH2ORM5L**	**MC36CH2ORT1L**
1 NO + 1 NC outputs	**MC36CH1O1CRA2L**	**MC36CH1O1CRM5L**	**MC36CH1O1CRT1L**
2 NO + 1 NC outputs	**MC36CH2O1CRA2L**		
LED color	Yellow	Yellow	Yellow
Actuator			
Dimensions (mm)	36 x 26 x 13	36 x 26 x 13	36 x 26 x 13
References	**MC36CM**	**MC36CM**	**MC36CM**

Safety magnetic sensors

Safety magnetic sensors

Types	SMS...	CLS...
		

Electrical specifications

Max. switch. voltage	100 VAC	
Max. switch. power	5 VA	
Max. switch. current	0.25 A	

General specifications

External dimensions (mm)	M18x1 SMSA2; M30x1.5 SMSA3P	
Suitable magnetic unit	CLSA2 (SMSA2P); CLSA3 (SMSA3P)	
Output connection	Cable (PVC, AWG 22 to 26, L=2 m.);	
Degree of protection	IP67	IP67
Operating temperature	-25°C to +70°C	-25°C to +70°C
Housing material	Plastic; PBT + 30 % glass	Plastic (CLS, CLSA2, CLS3); Stainless steel (CLSA2M)
Approvals/Marks	CE - (UL version is available for some items with different codification)	CE - (UL version is available for some items with different codification)

References

	Safety Aux. Outputs	Aux. Outputs	REFERENCES	Dimensions	REFERENCES
Housing type: Cylindrical Material: Plastic	1NO+1NC		**SMSA2P02**	Ø25.1 x 9.3	**CLSA2**
	2NO		**SMSA2P03**		
	1NO		**SMSA2P10**		
	2NO		**SMSA2P30**		
	1NO+1NC		**SMSA3P02**	Ø30 x 16	**CLSA3**

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Intrinsic safety

Explosion proof sensors

Types	Cylindrical series FSQ	Rectangular series MQ	Level series ILM
			
Exter. Dimensions (mm) Float Dimensions (mm)	Ø16 x 110	37 x 16 x 8.3	 Spherical Ø 53 [S], Cylindrical Ø 45x55 [C]
Category	2G, 2D	2G, 2D [MQx1EX] 1G, 1D [MQA0EX]	2G, 2D [ILMx2] 1G, 1D [ILMx0]
EX Identification	Ⓔx II2GExmbIICT5Gb Ⓔx II2DExmbIIICT100°CDbIP67	Ⓔx II2GExmbIICT5Gb [MQx1EX] Ⓔx II2DExmbIIICT100°CDbIP67 [MQx1EX] Ⓔx II1GExiaIICT6Ga [MQA0EX] Ⓔx II1DExiaIIICT100°CDaIP67 [MQA0EX]	Ⓔx II2GExmbIICT5Gb [ILMx2] Ⓔx II2DExmbIIICT100°CDbIP67 [ILMx2] Ⓔx II1GExiaIICT6Ga [ILMx0] Ⓔx II1DExiaIIICT100°CDaIP67 [ILMx0]
General specifications			
Max. switch. voltage contact	250 VAC	230 VAC/DC [MQA1EX, MQC1EX] 30 VAC/DC [MQA0EX] 150 VAC/DC [MQS1EX]	250 VAC/DC [ILMA2] 230 VAC/DC [ILMS2] 30 VAC/DC [ILMx0]
Max. switch. current contact	3 A	0.25 to 0.75 A [MQx1EX] 120 mA [MQA0EX]	3 A [ILMA2]; 1A [ILMS2] 120 mA [ILMx0]
Max. switch. power contact	100 VA	5 to 10 VA [MQx1EX] - [MQA0EX]	100 VA [ILMA2] 60 VA [ILMS2]
Operating distance	8 - 30 mm	10 - 35 mm	-
Degree of protection	IP67 IP66 (FSQA2HFEX)	IP67	IP67
Temperature Class	T5	T5 [MQx1EX] T6 [MQA0EX]	T5 [ILMx2] T6 [ILMx0]
Body material	Stainless steel AISI 303	Self-exting. PP + 30% glass fiber	Stainless steel AISI 316
Approvals/Marks	CE - TÜV Sud	CE - TÜV Sud	CE - TÜV Sud
References			
Normally open	**FSQA2B01SLEX** **FSQA2HFEX**	**MQA1EX** **MQA0EX**	**ILMA2SSLEX** **ILMA2CSLEX** **ILMA0CSLEX**
Normally closed		**MQC1EX**	
Change - Over		**MQS1EX**	**ILMS2SEX** **ILMS0SEX**

Safety modules

	Emergency stop, safety gates, lift levelling, interlocks		Safety gates	Two hand control
Types	**SMS20**	**SMS31**	**SMSA31**	**SM2H21**
				
Dimensions HxWxD (mm)	110.8 x 17.5 x 121.1	110.8 x 17.5 x 121.1	110.8 x 17.5 x 121.1	110.8 x 17.5 x 121.1
Safety category	Category 4	Category 4	Category 4	Category 4
Performance Level	PL e (EN ISO 13849-1)	PL e (EN ISO 13849-1)	PL e (EN ISO 13849-1)	PL e (EN ISO 13849-1)
Function	Category 0 emergency stop module, safety gates, safety magnetic switches, interlocks, lift levelling	Category 0 emergency stop module, safety gates, safety magnetic switches, interlocks, lift levelling	Safety gates, safety magnetic switches in antivalent mode	Two hand control Type IIIC
Output specifications				
	2 x NO safety relay	3 x NO safety relay + 1 NC relay	3 x NO safety relay + 1 NC relay	2 x NO safety relay + 1 NC relay, 1 NO PNP
Max. load AC1	6 A @ 250 VAC	6 A @ 250 VAC	6 A @ 250 VAC	6 A @ 250 VAC
Max. load DC1	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC
Electrical life	> 10^5 operations	> 10^5 operations	> 10^5 operations	> 10^5 operations
Input specifications				
Type	2 x NO, voltage free	2 x NO, voltage free	1 x NO + 1 x NC, voltage free	2 x NO, 2 x NC, voltage free
General specifications				
Power supply	24 VDC -10% +10% 24 VAC -15% +10%	24 VDC -10% +10% 24 VAC -15% +10%	24 VDC -10% +10% 24 VAC -15% +10%	24 VDC -10% +10% 24 VAC -15% +10%
Screw terminals	Detachable	Detachable	Detachable	Detachable
Start	Automatic, Manual and Monitored manual	Automatic, Manual and Monitored manual	Automatic, Manual and Monitored manual	Automatic
Approvals/Marks	CE - UL - TÜV - RoHS - EN 81-20, EN 81-50	CE - UL - TÜV - RoHS - EN 81-20, EN 81-50	CE - UL - TÜV - RoHS	CE - UL - TÜV - RoHS
References				
	SMS20	**SMS31**	**SMSA31**	**SM2H21**

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Safety modules

Multifunction safety modules

Types	Delayed outputs	Instantaneous outputs		Lift levelling
				
Dimensions HxWxD (mm)	90 x 17.5 x 63	90 x 17.5 x 63	90 x 17.5 x 63	90 x 17.5 x 63
Safety Integrity Level (EN 62061)	SIL CL 3	SIL CL 3	SIL CL 3	SIL CL 3
Safety Integrity Level (EN 61058)	SIL 3	SIL 3	SIL 3	SIL 3
Performance Level (EN ISO 13849-1:2015)	Cat 4, PL e	Cat 4, PL e	Cat 4, PL e	Cat 4, PL e
Lift Standards	-	-	-	EN 81-20 EN 81-50
Function	Category 0 emergency stop module, safety gates, safety magnetic switches, interlocks, safety light curtains (ESPE Type 4,Type 2), safety mats. Selectable delay time through HEX switch	Category 0 emergency stop module, safety gates, safety magnetic switches, interlocks, safety light curtains (ESPE Type 4,Type 2), safety mats.	Category 0 emergency stop module, safety gates, safety magnetic switches, interlocks, safety light curtains (ESPE Type 4,Type 2), safety mats.	Control of levelling, re-levelling and preliminary operation with doors not closed and locked
Output specifications				
Safety Output / Auxiliary Output	2 x OSSD direct + 2 x OSSD delayed	4 x OSSD (NO)	3 x OSSD (NO) + 1 OSSD Auxiliary (1 NC)	2 x OSSD Safety (NO) + 2 OSSD Auxiliary (1 NC and 1 NO)
Max. load DC24	≤400 mA	≤400 mA	≤400 mA	≤400 mA
Input specifications				
Type	24 VDC, >12 V = High, <2 V = Low, >6 mA min current	24 VDC, >12 V = High, <2 V = Low, >6 mA min current	24 VDC, >12 V = High, <2 V = Low, >6 mA min current	24 VDC, >12 V = High, <2 V = Low, >6 mA min current
General specifications				
Power supply	24 VDC ± 20%	24 VDC ± 20%	24 VDC ± 20%	24 VDC ± 20%
Screw terminals	Fixed	Fixed	Fixed	Fixed
Start	Manual or automatic start selectable	Manual or automatic start selectable	Manual or automatic start selectable	Manual or automatic start selectable
Approvals/Marks	CE - TÜV - cULus - RoHS	CE - TÜV - cULus - RoHS	CE - TÜV - cULus - RoHS	CE - TÜV - cULus - RoHS
References				
	CM22D0A	**CM40D0A**	**CM30D1A**	**CL20D2A**

Safety modules

	Safety expansion unit	Safety mat & edge		Safety light curtains
Types	**SME41**	**NSE02C**	**NST02C**	**NLG02D/NLG13D**
				
Dimensions HxWxD (mm)	110.8 x 17.5 x 121.1	84 x 22.5 x 100	84 x 22.5 x 100	99 x 22.5 x 114
Safety category	Category 4	Category 3 (EN ISO 13849-1)	Category 3 (EN ISO 13849-1)	Category 4 (EN ISO 13849-1)
Performance Level	PL e (EN ISO 13849-1)	PL d (EN ISO 13849-1)	PL d (EN ISO 13849-1)	PL e (EN ISO 13849-1)
Function	Safety expansion relay unit	Safety mat & edge module	Safety mat module	Light curtains safety modules
Output specifications				
	4 x NO safety relay + 1 x NC relay	2 x NO safety relay	2 x NO safety relay	3 x NO safety relay + 1 NC relay
Max. load AC1	6 A @ 250 VAC	5 A @ 230 VAC	5 A @ 230 VAC	6 A @ 230 VAC
Max. load DC1	6 A @ 24 VDC	5 A @ 24 VDC	5 A @ 24 VDC	6 A @ 24 VDC
Electrical life	> 10^5 operations	> 10^5 operations	> 10^5 operations	> 10^5 operations
Input specifications				
Type	2 x NO, voltage free or OSSD	2-wire mats or safety edges	4-wire mats	2 x NO min 10 mA / 17 V max 60 mA / 38 V [NLG02] max 30 mA / 38 V
General specifications				
Power supply	24 VDC -10% +10% 24 VAC -15% +10%	24 VAC/DC ±15%	24 VAC/DC ±15%	24 VDC - 15% +10%
Screw terminals	Detachable	Fixed	Fixed	Fixed [SA, SC] Detachable [DA, DC]
Start	-	Automatic / Manual [SA] Monitored manual [SC]	Automatic / Manual [SA] Monitored manual [SC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]
Approvals/Marks	CE - UL - TÜV - RoHS	CE - TÜV - RoHS	CE - TÜV - RoHS	CE - UL - TÜV - RoHS
References				
	SME41	**NSE02CB24SA**	**NST02CB24SA**	**NLG02D724SA**
		NSE02CB24SC	**NST02CB24SC**	**NLG02D724SC**
				NLG02D724DA
				NLG02D724DC
				NLG13D724SA
				NLG13D724SC
				NLG13D724DA
				NLG13D724DC

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Configurable safety modules

Configurable master module

Types	CMM
	
Dimensions HxWxD (mm)	108 x 22.5 x 114.5
Safety Level	Safety Integrity Level SIL 3, according to EN 61508 Safety Integrity Level SIL CL 3, according to EN 62061 Performance Level PL e and Cat. 4, according to EN ISO 13489-1
Function	Monitors and controls different safety signals; able to control single and multiple safety circuits. Manages up to 14 expansion units leaving out C2 R/C4 R modules
Safety inputs and outputs specifications	
CMM as a stand alone unit	- 8 digital inputs, PNP active high according to EN 61131-2 - 2 pairs of solid state programmable safety outputs (OSSD), PNP active high 400 mA at 24 VDC max
Max. digital inputs with expansion modules	128
Max. digital outputs with expansion modules	16 pairs (OSSD)
Max. n° of expansion modules	14, leaving out C2 R/C4 R modules
Non-Safety inputs and outputs specifications	
Test outputs	4
Programmable digital signal outputs	2
Input for Start/Restart interlock and EDM	2
General specifications	
Rated voltage	24 VDC ±20% / supply from Class II
Digital inputs	PNP active high, according to EN 61131-2
OSSD	PNP active high - 400 mA @ 24 VDC (every OSSD)
Enclosure protection class	IP20
Terminal blocks protection class	IP2x

I/O Expansion modules

Types	C 8I 2O	C 8I / C 16I	C 12I 8TO
			
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Performance Level	Cat. 4, PL e (EN ISO 13849-1)	Cat. 4, PL e (EN ISO 13849-1)	Cat. 4, PL e (EN ISO 13849-1)
Safety Integrity Level	SIL 3 (EN 61508)	SIL 3 (EN 61508)	SIL 3 (EN 61508)
Function	Expansion modules	Expansion modules	Expansion modules
General specifications			
PFHd (IEC 61508:1998)	5.72E-9	5.75E-9 [C 8I] 7.09E-9 [C 16I]	3.24E-9
Rated voltage	24 VDC ±20%	24 VDC ±20%	24 VDC ±20%
Dissipated power	3 W max	3 W max	3 W max
Digital inputs	8 / PNP active high according to EN 61131-2 [C 8I 2O]	PNP active high according to EN 61131-2 8 [C 8I] / 16 [C 16I]	12 / PNP active high according to EN 61131-2 [C 12I 8TO]
Digital output	2 OSSD pairs with 400 mA output current		
Test output	4 for sensor monitoring and checking short-circuits and overloads	4 for sensor monitoring and checking short-circuits and overloads	8 for sensor monitoring and checking short-circuits and overloads

Configurable safety modules

	OSSD	Relay expansion modules
Types	**C 2OSSD / C 4OSSD**	**C 2R / C 4R**
		
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Performance Level	Cat. 4, PL e (EN ISO 13849-1)	Cat. 4, PL e (EN ISO 13849-1)
Safety Integrity Level	SIL 3 (EN 61508)	SIL 3 (EN 61508)
Rated voltage	24 VDC ±20%	24 VDC ±20%
Function	Expansion modules	Expansion modules
General specifications		
PHFd (IEC 61508:1998)	3.16E-9 [C 2OSSD] / 3.44E-9 [C 4OSSD]	
Dissipated power	3 W max	3 W max
Digital output	PNP active high 2 [C 2OSSD]; PNP active high 4 [C 4OSSD]	
Switching voltage		240 VAC
Switching current		6 A max
Contacts		2 NO + 1 NC [C 2R] connectable to 1 OSSD pair 4 NO + 2 NC [C 4R] connectable to 2 OSSD pairs
Feedback contacts		1 NC [C 2R] / 2 NC [C 4R]

	Speed monitoring modules	
Types	**C PSS**	**C ES1 / C ES2**
		
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Performance Level	Cat. 4, PL e (EN ISO 13849-1)	Cat. 4, PL e (EN ISO 13849-1)
Safety Integrity Level	SIL 3 (EN 61508)	SIL 3 (EN 61508)
Rated voltage	24 VDC ±20%	24 VDC ±20%
Function	Can be used to control the following: Zero speed, Max. speed, Speed range; Direction of movement, rotation/translation; Up to 4 speed thresholds can be set for each logic output (axis). Each unit incorporates two logic outputs that can be configured using the software and is thus capable of controlling up to two independent axes	Can be used to control the following: Zero speed, Max. speed, Speed range; Direction of movement, rotation/translation; Up to 4 speed thresholds can be set for each logic output (axis). Each unit incorporates two logic outputs that can be configured using the software and is thus capable of controlling up to two independent axes
General specifications		
Dissipated power	3 W max	3 W max
Max number of axis	2	2
2 proximity inputs	2 axis Sin/Cos + 1 or 2 proximity [C PSS]	
1 encoder e 2 proximity inputs		1 encoder TTL 5V + 1 or 2 proximity [C ES1T] 1 encoder HTL + 1 or 2 proximity [C ES1H]
2 encoder e 2 proximity inputs		2 encoder TTL + 1 or 2 proximity [C ES2T] 2 encoder HTL + 1 or 2 proximity [C ES2H] 2 encoder Sin/Cos + 1 or 2 proximity [C ES2S]

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Configurable safety modules

	Data and diagnostics communication modules	Bus transfer expansion modules
Types	**C DDC**	**C BT**
		
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Performance Level	Cat. 4, PL e (EN ISO 13849-1)	Cat. 4, PL e (EN ISO 13849-1)
Safety Integrity Level	SIL 3 (EN 61508)	SIL 3 (EN 61508)
Rated voltage	24 VDC ±20%	24 VDC ±20%
Function	Communication with most common industrial fieldbus systems	Interface expansion module allowing the connection of remote expansions. Ideal solution for the interconnection of the safety functions of several machines in a production line
General specifications		
Connection		Shielded cable compatible with RS485
Max connection distance		50 m
Max number of CBT modules per system		6
References	Profibus [C PFBUS] DeviceNET [C DNET] CANopen [C CAN] Ethernet IP [C EIP] EtherCAT [C ECAT] PROFINET [C PFNET] Universal Serial Bus [C OMMS]	1 connection (1 input or 1 output) [C BT1] 2 connections (1 input and 1 output) [C BT2] The C BT1 is placed at the beginning or at the end of the network connected with a single cable, whilst the C BT2 goes in the middle.

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Limit switches






	PS21L	PS21L	PS31L	PS31L
Housing material	Plastic	Metal	Plastic	Metal
Housing dimensions WxHxD (mm)	30.3 x 63 x 30	30.3 x 65 x 32.5	41 x 74 x 40.5	40 x 76.5 x 43
Actuator type				
Nylon roller external bent lever	**BE**	**BE**	-	-
Metal roller bent lever	-	**BM**	-	-
Nylon roller internal bent lever	**BR**	**BR**	-	-
Adjustable stainless steel rod lever	**LA**	**LA**	**LA**	**LA**
Nylon actuator stainless steel spring	**LB**	**LB**	-	-
Adjustable fiberglass rod lever	**LG**	**LG**	**LG**	**LG**
Steel plunger nylon roller + gasket	**LO**	-	-	-
Multidir. nylon actuator stainless spring	**LP**	-	**LP**	**LP**
Stainless spring multidirection actuator	**LS**	-	**LS**	**LS**
Stainless spring multidirection cat whisker actuator	**LW**	-	**LW**	**LW**
Pull wire	**N6**	-	-	**N6**
Metal plain plunger	**PO**	**PO**	**PO**	**PO**
Metal plain plunger + gasket	**PH**	-	**PH**	-
Metal roller plunger	**PR**	**PR**	**PR**	**PR**
Adjustable lever nylon roller	**R1**	**R1**	**R1**	**R1**
Adjustable lever stainless steel roller	-	-	**R2**	**R2**
Plastic roller lever on metal plunger left	**RH**	-	**RH**	**RH**
Nylon roller lever	**RT**	**RT**	**RT**	**RT**
Plastic roller lever on metal plunger right	**RV**	-	-	-
Ø50 rubber roller lever	**WO**	**WO**	**WO**	**WO**
Adjustable lever Ø50 rubber roller	**W1**	**W1**	**W1**	**W1**
Contacts				
Snap 1NO+1NC ⊕	**S11**	**S11**	**S11**	**S11**
Slow 1NO+1NC ⊕	**T11**	**T11**	**T11**	**T11**
Slow Overlap 1NO+1NC ⊕	**O11**	**O11**	**O11**	**O11**
Slow 2NO	**T20**	**T20**	**T20**	**T20**
Slow 2NC ⊕	**T02**	**T02**	**T02**	**T02**
Snap 2NC ⊕	**S02**	**S02**	**S02**	**S02**
Slow 1NO+2NC ⊕	-	-	**T12**	**T12**
Slow 2NO+1NC ⊕	-	-	**T21**	**T21**
Slow 3NC ⊕	-	-	**T03**	**T03**
Slow 3NO	-	-	**T30**	**T30**
General specifications				
Connection	Selectable cable gland M20, M16, PG13.5, PG11, 1/2NPT			
Degree of protection	IP65	IP66 (IP65 with LG, W1 actuator)	IP65	IP66 (IP65 with LP, LS, W1 actuator)
Rated insulation voltage Ui				
according to IEC 60947-1 and EN 60947-1	500 V (S02 - Ui=400V)			
according to UL 508, CSA C22-2 n°14	A 600, Q 600	A 300, Q 300	A 600, Q 600	A 600, Q 600
Rated impulse withstand voltage Uimp	6 kV			
Rated operational current				
IEC 60947-5-1 - Ie/AC-15 240 VAC	6 A (3 A - S02)		6 A (3 A - S02, T12, T21, T03, T30)	
IEC 60947-5-1 - Ie/DC-13 24 VDC	6 A		6 A (2.8 A - T12, T21, T03, T30)	
UL 508, CSA C22-2 n°14	A 600, Q 600	A 300, Q 300	A 600, Q 600	A 600, Q 600
Electrical durability (IEC 60947-5-1)				
Max. switching frequency	3600 cycles/h			
Load factor	0.5			
Operating temperature	-25°C to +70°C			
Approvals	CE - UL - CSA			
Mechanical durability (different by head type)	$5x10^6 \div 15x10^6$ operations	$10x10^6 \div 15x10^6$ operations	$10x10^6 \div 30x10^6$ operations	$10x10^6 \div 30x10^6$ operations
B10d (different by head type)	$10x10^6 \div 30x10^6$ operations	$20x10^6 \div 30x10^6$ operations	$20x10^6 \div 60x10^6$ operations	$20x10^6 \div 60x10^6$ operations

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Limit switches





	PS42L	PS42L	PS43L
Housing material	Plastic	Metal	Metal
Housing dimensions WxHxD (mm)	50 x 56 x 33	52 x 64.5 x 36	60 x 75.5 x 36
Actuator type			
Nylon roller external bent lever	**BE**	**BE**	-
Metal roller bent lever	-	**BM**	-
Nylon roller internal bent lever	**BR**	**BR**	-
Adjustable stainless steel rod lever	**LA**	**LA**	**LA**
Nylon actuator stainless steel spring	-	**LB**	**LB**
Adjustable fiberglass rod lever	**LG**	**LG**	**LG**
Steel plunger nylon roller + gasket	**LO**	-	-
Multidir. nylon actuator stainless spring	**LP**	-	**LP**
Stainless spring multidirection actuator	**LS**	-	**LS**
Stainless spring multidirection cat whisker actuator	**LW**	-	**LW**
Pull wire	**N6**	-	**N6**
Metal plain plunger	**PO**	**PO**	**PO**
Metal plain plunger + gasket	**PH**	-	-
Metal roller plunger	**PR**	**PR**	**PR**
Adjustable lever nylon roller	**R1**	**R1**	**R1**
Plastic roller lever on metal plunger left	**RH**	-	**RH**
Nylon roller lever	**RT**	**RT**	**RT**
Ø50 rubber roller lever	**W0**	**W0**	**W0**
Adjustable lever Ø50 rubber roller	**W1**	**W1**	**W1**
Contacts			
Snap 1NO+1NC ⊕	**S11**	**S11**	**S11**
Slow 1NO+1NC ⊕	**T11**	**T11**	**T11**
Slow Overlap 1NO+1NC ⊕	**O11**	**O11**	**O11**
Slow 2NO	**T20**	**T20**	**T20**
Slow 2NC ⊕	**T02**	**T02**	**T02**
Snap 2NC ⊕	**S02**	**S02**	**S02**
Slow 1NO+2NC ⊕	-	-	**T12**
Slow 2NO+1NC ⊕	-	-	**T21**
Slow 3NC ⊕	-	-	**T03**
Slow 3NO	-	-	**T30**
General specifications			
Connection	Selectable cable gland M20, M16, PG13.5, PG11, 1/2NPT		
Degree of protection	IP65	IP66 (IP65 with LG, W1 actuator)	IP66 (IP65 with LP, LS, W1 actuator)
Rated insulation voltage Ui			
according to IEC 60947-1 and EN 60947-1		500 V (S02 - Ui=400V)	
according to UL 508, CSA C22-2 n°14	A 600, Q 600	A 300, Q 300	A 600, Q 600
Rated impulse withstand voltage U_{imp}		6 kV	
Rated operational current			
IEC 60947-5-1 - Ie/AC-15 240 VAC	6 A (3 A - S02)		6 A (3 A - S02, T12, T21, T03, T30)
IEC 60947-5-1 - Ie/DC-13 24 VDC	6 A		6 A (2.8 A - T12, T21, T03, T30)
UL 508, CSA C22-2 n°14	A 600, Q 600	A 300, Q 300	A 600, Q 600
Electrical durability (IEC 60947-5-1)			
Max. switching frequency		3600 cycles/h	
Load factor		0.5	
Operating temperature		-25°C to +70°C	
Approvals		CE - UL - CSA	
Mechanical durability (different by head type)	$5x10^6 \div 15x10^6$ operations	$10x10^6 \div 15x10^6$ operations	$10x10^6 \div 30x10^6$ operations
B10d (different by head type)	$10x10^6 \div 30x10^6$ operations	$20x10^6 \div 30x10^6$ operations	$20x10^6 \div 60x10^6$ operations

Limit switches






	PS21M	PS21M	PS31M	PS31M
Housing material	Plastic	Metal	Plastic	Metal
Housing dimensions WxHxD (mm)	30 x 49 x 16	30 x 49 x 16	35 x 49 x 16	35 x 49 x 16
Actuator type				
Adjustable stainless steel rod lever	**LA**	**LA**	**LA**	**LA**
Stainless spring multidir. actuator	**LS**	**LS**	**LS**	**LS**
Metal plain plunger	**P0**	**P0**	**P0**	**P0**
Cross metal roller plunger	**P9**	**P9**	**P9**	**P9**
Metal plain plunger + gasket	**PH**	**PH**	**PH**	**PH**
Metal roller plunger	**PR**	**PR**	**PR**	**PR**
Adjustable lever nylon roller	**R1**	**R1**	**R1**	**R1**
Metal roller lever	**RS**	**RS**	**RS**	**RS**
Nylon roller lever	**RT**	**RT**	**RT**	**RT**
Contacts				
Snap 1NO+1NC	**S11**	**S11**	**S11**	**S11**
Slow 1NO+1NC	**T11**	**T11**	**T11**	**T11**
General specifications				
Connection	1m PVC cable, 4x0.75 mm	1m PVC cable, 5x0.75 mm	1m PVC cable, 4x0.75 mm	1m PVC cable, 5x0.75 mm
Degree of protection	IP67			
Rated insulation voltage Ui				
according to IEC 60947-1 and EN 60947-1	400 V			
according to UL 508, CSA C22-2 n°14	B 300, R 300			
Rated impulse withstand voltage U_{imp}	4 kV			
Rated operational current				
IEC 60947-5-1 - Ie/AC-15 240 VAC	3 A			
IEC 60947-5-1 - Ie/DC-13 24 VDC	2.8 A			
UL 508, CSA C22-2 n°14	B 300, R 300			
Electrical durability (IEC 60947-5-1)				
Max. switching frequency	3600 cycles/h			
Load factor	0.5			
Operating temperature	-25°C to +70°C			
Approvals	CE - UL - CSA			
Mechanical durability	$10x10^6$ operations			
B10d	$20x10^6$ operations			

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Safety Interlocks and Safety Hinges

Electromagnetic Safety Interlock

Safety Hinges









	Electrical interlock	Mechanical interlock	Plug	Cable
Housing material	Plastic		Plastic	
Dimensions WxHxD (mm)	40 x 190 x 42		60 x 110 x 25	
Contacts				
1NO + 2NC (Coil) + 1NC (Actuator)	**ESI311E024**	**ESI311M024**		
1NO + 2NC (Coil) + 1NO (Actuator)	**ESI221E024**	**ESI221M024**		
2NC (Coil) + 1NO + 1NC (Actuator)	**ESI131E024**	**ESI131M024**		
Slow action: 2NO + 2NC			**PS38H-IT2205-T01**	**PS38H-CT2205-T01**
Slow action: 1NO + 3NC			**PS38H-IT1305-T01**	**PS38H-CT1305-T01**
General specifications				
Connection	M20 cable inlet		M12 plug	2 m PVC cable
Degree of protection	IP65		IP67	
Rated insulation voltage (Ui)				
according to IEC 60947-1 and EN 60947-1	250 V		24 V	400 V
according to UL 508, CSA C22-2 n°14	A 300, Q 300		Class II	C 300, Q 300
Rated impulse withstand voltage U_{imp}	2.5 kV		2.5 kV	4 kV
Rated operational current				
Ie/AC-15 230 VAC	4 A		4 A (250 VAC)	
Ie/DC-13 24 VDC	4 A		2 A	
Electrical durability (IEC 60947-5-1)				
Max. switching frequency	600 cycles/h		1200 cycles/h	
Load factor	0.5		0.5	
Temperature ratings				
Operating temperature	-25°C to +55°C		-20°C to +80°C	
Storage temperature	-30°C to +80°C		-20°C to +80°C	
Max actuating speed	20 m/min			
Retention force at locked actuator	1200 N			
Mechanical durability	$1x10^6$ operations		$1x10^6$ operations	
B10d	$4x10^6$ operations		$2x10^6$ operations	
Key actuator orientation	Adjustable head orientation, frontal, 90°, 180° and 270°; default frontal orientation			
Conformance	Interlock type 2 in accordance with EN ISO 14119 LVD 2014/35/EU in accordance with EN/IEC 60947-5-1 Machinery Directive 2006/42/CE SILCL 3 in accordance with EN 62061 PL e in accordance with EN ISO 13849-1		Interlock type 1 in accordance with EN ISO 14119 LVD 2014/35/EU in accordance with EN/IEC 60947-5-1 Machinery Directive 2006/42/CE SILCL 3 in accordance with EN 62061 PL e in accordance with EN ISO 13849-1	
Approvals	CE - UL - CSA		CE - UL - CSA	

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Safety limit switches

Key Actuator 90° or adjustable head (key must be ordered separately)






	PS21S	PS31S	PS42S	PS43S
Housing material	Plastic	Metal	Metal	Metal
Dimensions WxHxD (mm)	30.3 x 90 x 30	41.3 x 109.5 x 41	57 x 83 x 33	43 x 104.5 x 66
Contacts				
Snap 1NO+1NC	S11	S11	S11	S11
Snap 2NC	S02	S02	S02	S02
Slow 1NO+1NC	T11	T11	T11	T11
Slow Overlap 1NO+1NC	O11	O11	O11	O11
Slow 2NC	T02	T02	T02	T02
Slow 2NO+1NC	-	T21	-	T21
Slow 1NO+2NC	-	T12	-	T12
Slow 3NC	-	T03	-	T03
Specifications				
Degree of protection	IP65	IP66	IP66	IP66
Rated insulation voltage (Ui)				
according to IEC 60947-1 and EN 60947-1	500 V (S02 - Ui=400V)	500 V (S02, T12, T21, T03 - Ui=400V)	500 V (S02 - Ui=400V)	500 V (S02, T12, T21, T03 - Ui=400V)
according to UL 508, CSA C22-2 n°14	A 600, Q 600	A 600, Q 600	A 300, Q 300	A 600, Q 600 (T12, T21, T03 - A300, Q300)

Pull wire actuator, with or without manual reset






	PS21R	PS31R	PS42R	PS43R
Housing material	Metal	Metal	Metal	Metal
Dimensions WxHxD (mm)	30.3 x 145.75 x 32.5	40 x 162.75 x 43	52 x 145.25 x 36	63 x 158.25 x 43
Contacts				
Snap 1NO+1NC	S11	S11	S11	S11
Snap 2NC	S02	S02	S02	S02
Slow 1NO+1NC	T11	T11	T11	T11
Slow Overlap 1NO+1NC	O11	O11	O11	O11
Slow 2NC	T02	T02	T02	T02
Slow 2NO+1NC	-	T21	-	T21
Slow 1NO+2NC	-	T12	-	T12
Slow 3NC	-	T03	-	T03
Specifications				
Without reset button	N6-Y00	N6-Y00	N6-Y00	N6-Y00
With manual reset button	N7-YK0	N7-YK0	N7-YK0	N7-YK0
Degree of protection	IP66	IP66	IP66	IP66
Rated insulation voltage (Ui)				
according to IEC 60947-1 and EN 60947-1	500 V (S02 - Ui=400V)	500 V (S02, T12, T21, T03 - Ui=400V)	500 V (S02 - Ui=400V)	500 V (S02, T12, T21, T03 - Ui=400V)
according to UL 508, CSA C22-2 n°14	A 300, Q 300	A 600, Q 600 (A300, Q300 - T12, T21, T03)	A 300, Q 300	A 600, Q 600 (A300, Q300 - T12, T21, T03)

General specifications

Connection	Selectable cable gland M20, M16, PG13,5, PG11, 1/2NPT			
Rated impulse withstand voltage Uimp	6 kV			
Rated operational current				
IEC 60947-5-1 - Ie/AC-15 240 VAC	6 A (3 A - S02)	6 A (3 A - S02, T12, T21, T03)	6 A (3 A - S02)	6 A (3 A - S02, T12, T21, T03)
IEC 60947-5-1 - Ie/DC-13-24 VDC	6 A	6 A (2,8 A - T12, T21, T03)	6 A	6 A (2,8 A - T12, T21, T03)
UL 508, CSA C22-2 n°14	A 300, Q 300	A 600, Q 600	A 300, Q 300	A 600, Q 600 (T12, T21, T03 - A300, Q300)
Electrical durability (IEC 60947-5-1)				
Max. switching frequency	3600 cycles/h			
Load factor	0,5			
Operating temperature	-25 to +70°C			
Approvals	CE - UL - CSA			
Mechanical durability	1x10⁶ operations			
B10d	2x10⁶ operations			

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Safety limit switches and Limit switches with reset button

	Hinge Switches operated lever		Limit Switches with reset button	
				
	PS21H	**PS21H**	**PS21K**	**PS21K**
Housing material	Plastic	Plastic	Plastic	Metal
Housing dimensions WxHxD (mm)	30.3 x 79.5 x 42	30.3 x 79.5 x 51.2	30.3 x 63 x 30	30.3 x 65 x 32.5
Actuator type				
Hinged steel lever	**HC**	-	-	-
Shaft for hinge	-	**HZ**	-	-
Nylon roller internal bent lever	-	-	**BR**	**BR**
Metal plain plunger	-	-	**P0**	**P0**
Metal roller plunger	-	-	**PR**	**PR**
Nylon roller lever	-	-	**RT**	**RT**
Contacts				
Snap 1NO+1NC	**S11**	**S11**	**S11**	**S11**
Snap 2NC	**S02**	**S02**	**S02**	**S02**
Slow 1NO+1NC	**T11**	**T11**	**T11**	**T11**
Slow Overlap 1NO+1NC	**O11**	**O11**	-	-
Slow 2NC	**T02**	**T02**	**T02**	**T02**
General specifications				
Connection	Selectable cable gland M20, M16, PG13.5, PG11, 1/2NPT		Selectable cable gland M20, M16, PG13.5, PG11, 1/2NPT	
Degree of protection	IP65		IP65	IP66
Rated insulation voltage Ui				
according to IEC 60947-1 and EN 60947-1	500 V (S02 - Ui=400V)		500 V (S02 - Ui=400V)	
according to UL 508, CSA C22-2 n°14	A 600, Q 600		A 600, Q 600	A 300, Q 300
Rated impulse withstand voltage U_{imp}	6 kV		6 kV	
Rated operational current				
IEC 60947-5-1 - Ie/AC-15 240 VAC	6 A (3 A - S02)		6 A (3 A - S02)	
IEC 60947-5-1 - Ie/DC-13-24 VDC	6 A		6 A	
UL 508, CSA C22-2 n°14	A 600, Q 600		A 600, Q 600	A 300, Q 300
Electrical durability (IEC 60947-5-1)				
Max. switching frequency	3600 cycles/h		3600 cycles/h	
Load factor	0.5		0.5	
Operating temperature	-25°C to +70°C		-25°C to +70°C	
Approvals	CE - UL - CSA		CE - UL - CSA	
Mechanical durability	$1x10^6$ operations		$1x10^6$ operations	
B10d	$2x10^6$ operations		$2x10^6$ operations	

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Connectivity

	YN115	YL212
Function	**IO-Link masters**	**IO-Link masters**
		
Dimensions (mm)	99 x 45 x 114	212 x 65 x 30
Description	DIN rail mount fieldbus module	Machine mount fieldbus module
Function	Gateway between the controller of an EtherNet/IP™ [YN115CEI8RPIO] or PROFINET IO [YN115CPN8RPIO] fieldbus system and up to 8 IO-Link devices. Integrated web server and IODD interpreter for easy remote configuration and diagnostic of the module and attached IO-Link devices	Gateway between the controller of an EtherNet/IP™ [YL212CEI8M1IO] or PROFINET IO [YL212CPN8M1IO] fieldbus system and up to 8 IO-Link devices. Integrated web server and IODD interpreter for easy remote configuration and diagnostic of the module and attached IO-Link devices
Housing type	DIN rail mount enclosure	Machine mounting
Power Supply		
Supply voltage	18 - 30 VDC	20 - 30 VDC
Power connector type	Pluggable spring clamp or screw terminal blocks	1 power input + 1 power output; M12, L-coded, 4 + FE
IO-Link ports, configurable		
Channels	8 x IO-Link/Digital I/O (configurable), 8 x DI	8 x IO-Link/Digital I/O (configurable), 8 x DI
Connectors type	Pluggable spring clamp or screw terminal blocks	M12, A-coded Female
IO-Link version	V1.0 and V1.1	V1.0 and V1.1
Sensor supply	200 mA	1,6 A (Port 1), 1.0 A (Port 3), 500 mA (Port2, 4-8, each)
Output current [Ie]	200 mA per port via C/Q (pin 4)	200 mA per port via C/Q (pin 4)
IO-Link Mode Transfer Rates	4.8K (COM1); 38.4K (COM2); 230.4K (COM3)	4.8K (COM1); 38.4K (COM2); 230.4K (COM3)
Short circuit protection	Yes	Yes
Ethernet ports		
Number of ports and type	2, Industrial Ethernet	2, Industrial Ethernet
Connector type	RJ45	Fieldbus M12 D-coded
Transfer rate	10/100 Mbps	10/100 Mbps
Rotary switches for IP address setting		Yes
Protocols		
Simultaneous data access via different communication protocols	Yes	Yes
EtherNet/IP™	Yes [YN115CEI..]	Yes [YL212CEI8M1IO]
PROFINET IO	Yes [YN115CPN..]	Yes [YL212CPN8M1IO]
MODBUS TCP	Yes	Yes
OPC UA	Yes	Yes
IIoT and Industry 4.0		
OPC UA integrated web server	Allows Continuous and transparent data transfer between the field level and higher-level cloud systems	Allows Continuous and transparent data transfer between the field level and higher-level cloud systems
General specifications		
User interface	Web-based configuration of module and IO-Link devices	Web-based configuration of module and IO-Link devices
Indication	Multi-colour LEDs for device, network, and port status diagnostics	Multi-colour LEDs for device, network, and port status diagnostics
Degree of protection	IP20	IP67
Ambient air temperature	-40° to +70°C	-25° to +60°C
Storage temperature	-40°C to +85°C	-40°C to +70°C
Ambient humidity range	10% to 95%	10% to 95%
Approvals/Marks	CE - cULus - FCC	CE - cULus - FCC
Accessories		
Included accessories	Pluggable/removable spring clamp & screw terminal blocks for IO-Link and Power	
References		
EtherNet/IP™	**YN115CEI8RPIO**	**YL212CEI8M1IO**
PROFINET IO	**YN115CPN8RPIO**	**YL212CPN8M1IO**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Connectivity

	SCTL55
Function	**Smart configurator for IO-Link sensors**
	
Dimensions (mm)	62 x 222 x 90
Description	Portable self-powered device for an easy control, diagnosis and parameterization of IO-Link sensors
Function	Intuitive GUI with dedicated App for a simplified user experience. Access to an advanced diagnostics with the possibility to verify operating hours, number of detections, operating cycles, alarms and quality of run of the sensor connected. Easy management of operating parameters such as switchpoint mode, logic and timing functions, sensing distance, output configuration (PNP/NPN/push-pull, NO/NC).
Housing type	Handheld
IO-Link interface	
Supply voltage	24 VDC ± 20%
Maximum load	80 mA/Short circuit protected
Incorrect polarity protection	Yes
Connectors to sensor	Plug type: M8 3-wire, M8 4-wire and M12
IO-Link protocol support	IO-Link v1.1
IO-Link file administration	
Wi-Fi	Automatic download of IODD file via Configure App
Micro SD card	Import and save IODD file from/to Micro SD card (not included)
Electrical ratings and battery information	
Standard charger via micro USB	5 V/1 A or PC USB port
Battery type	High capacity LI-ION rechargeable battery
Operating time (with sensor connected)	Full operation: > 5 hours; Screen off: > 22 hours
Standby time	Device completely off: 6 months
General specifications	
User interface	High definition 5.5" touchscreen display, 720 x 1280 pixels
Indication	5 LEDs for main battery status LEDs for Power, IO-Link, Error, SIO2 and USB
Degree of protection	IP30
Pollution degree	2
Ambient air temperature	Charging: 10°C to +35°C; Operating: 0°C to +40°C
Storage temperature	0°C to +50°C
Ambient humidity range	Operating: 0 to 90% non condensing; Storage: 0 to +90% non condensing
Operating system	Carlo Gavazzi Store with dedicated Apps
Memory	Large internal memory, expandable with Micro SD card
App	"Configure" App with customized home page for each Carlo Gavazzi sensors family
Approvals/Marks	CE - RoHS - FCC - IC
Accessories	
Included accessories	Protective holster. Extension cable: 0.5 m M12 to 4 hooks for cable type sensors. Lanyard.
References	
5.5" touch screen display	**SCTL55**

Connectivity

Cordsets






Dimensions (mm)	Straight M8 connector PVC cable	Angled M8 connector PVC cable	Straight M8 connector PVC cable	Angled M8 connector PVC cable
Used for	3-wire DC sensors	3-wire DC sensors	4-wire DC sensors	4-wire DC sensors
2 m cable	**CONE53NF-S2**	**CONE53NF-A2**	**CONE54NF-S2**	**CONE54NF-A2**
5 m cable	**CONE53NF-S5**	**CONE53NF-A5**	**CONE54NF-S5**	**CONE54NF-A5**
Degree of protection	IP67	IP67	IP67	IP67
PUR version	Available on request	Available on request	Available on request	Available on request






Dimensions (mm)	Straight M12 connector TPE cable	Angled M12 connector TPE cable	Straight M12 connector PVC cable	Angled M12 connector PVC cable
Used for	4-wire DC	4-wire DC	3-, 4- or 5-wire DC	3-, 4- or 5-wire DC
2 m cable, 3-pin			**CONE13NF-S2**	**CONE13NF-A2**
5 m cable, 3-pin			**CONE13NF-S5**	**CONE13NF-A5**
2 m cable, 4-pin	**CONB14NF-S2W**	**CONB14NF-A2W**	**CONE14NF-S2**	**CONE14NF-A2**
5 m cable, 4-pin	**CONB14NF-S5W**	**CONB14NF-A5W**	**CONE14NF-S5**	**CONE14NF-A5**
2 m cable, 5-pin			**CONE15NF-S2**	Available on request
5 m cable, 5-pin			**CONE15NF-S5**	Available on request
Degree of protection	IP69K	IP69K	IP67	IP67
PUR version			Available on request	Available on request



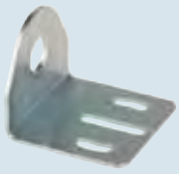



Dimensions (mm)	Straight M12 connector PVC cable	Angled M12 connector PVC cable	Straight M12 connector Terminal connection	Angled M12 connector Terminal connection
Used for	2-wire AC	2-wire AC	4-wire DC	4-wire DC
2 m cable, 3-pin	**CONH6A-S2**	**CONH6A-A2**		
5 m cable, 3-pin	**CONH6A-S5**	**CONH6A-A5**		
No cable 4-pin			**CONE14NF-S**	**CONE14NF-A**
Degree of protection	IP67	IP67	IP67	IP67

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Connectivity

Brackets angled

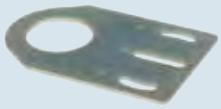





Steel, galvanized	**AMB8-A**	**AMB12-A**	**AMB18-A**	**AMB30-A**
Stainless steel AISI316L	-	**AMB12-A316L**	**AMB18-A316L**	-
Used for	M8 sensors	M12 sensors	M18 sensors	M30 sensors
Description	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket

Brackets straight



Steel, galvanized	**AMB8-S**	**AMB12-S**	**AMB18-S**	**AMB30-S**
Stainless steel AISI316L	-	**AMB12-S316L**	**AMB18-S316L**	-
Used for	M8 sensors	M12 sensors	M18 sensors	M30 sensors
Description	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket

General accessories




Dimensions (mm)		65 x 27 x 130
Used for	Cylindrical 4 - 30 mm sensor	Testing sensor
Item number	**AMB4-30**	**ST-03**
Description	Universal sensor mounting bracket	Sensor tester for: NAMUR and 2-, 3- or 4-wire DC NPN/PNP and NO/NC with LED and Buzzer

Wind sensors

	Wind vane
Types	**DWS-D**
	
Dimensions (mm)	**DWS-D-DAC13**: 207 x 174 **DWS-D-DDC13**: 183 x 145
Function	Wind direction
Wind vane references	
Wind indication	**DWS-D-DAC13**: 0° and 90° intervals **DWS-D-DDC13**: ±7° and left/right
General specifications	
Built-in heater	Yes
Electrical connections	13 m, shielded grey PVC, 8 x 0.25 mm^2
Rated operating voltage	12 - 24 VDC
Voltage drop	Typ. 4.9 VDC
Protection: reverse polarity (R), transients (T)	R, T
High ESD protection	Yes
Operating temperature	-20°C to 60°C
Ambient humidity	0 to 100% RH
Climatic protection	Against high humidity, salt and dust
Degree of protection	IP54
Signal output	NPN/PNP square wave 12.5 mA ± 2 mA
Mounting position	Vertical with M28 thread
Housing material	Body: black PVC Rotor: stainless steel
Approvals/Marks	CE
References	
	For ordering key details, please refer to www.gavazziautomation.com

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

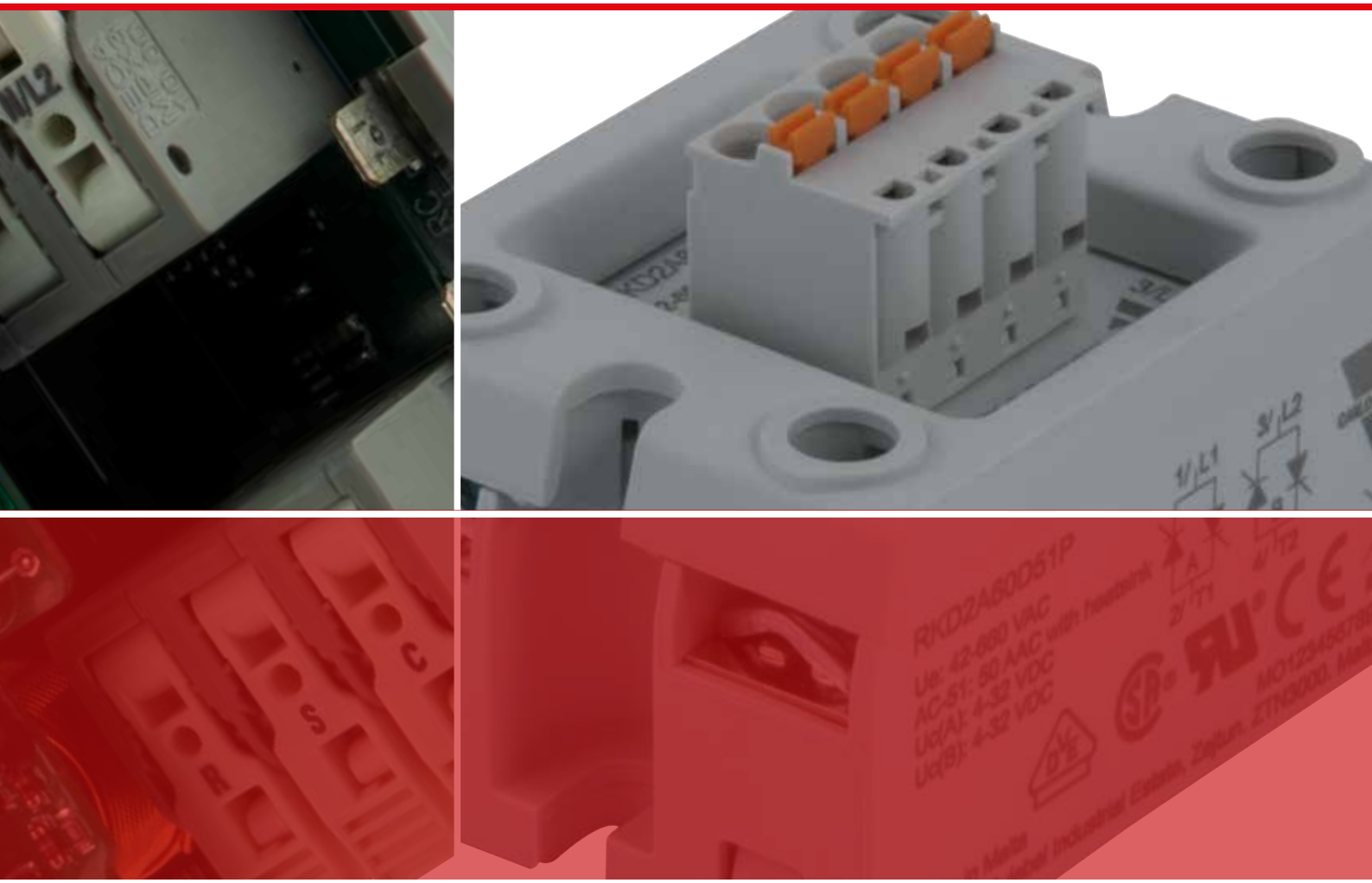
Wind sensors

	Cup anemometer
Types	**DWS-V**
	
Dimensions (mm)	**DWS-V-D....**: 183 x 145 **DWS-V-AGP**: 175 x 145
Function	Wind speed
Cup anemometer references	
Air velocity	**DWS-V-DAC13**: 1.5 to 30 m/s **DWS-V-DBC05**: 1.5 to 30 m/s **DWS-V-AGP**: 2 to 50 m/s
General specifications	
Built-in heater	**DWS-V-DAC13**: Yes **DWS-V-DBC05**: No **DWS-V-AGP**: Yes
Electrical connections	**DWS-V-DAC13**: 13 m, shielded grey PVC, 6 x 0.25 mm^2 **DWS-V-DBC05**: 5 m, unshielded grey PVC, 4 x 0.25 mm^2 **DWS-V-AGP**: Plug M16, 7-pole
Rated operating voltage	**DWS-V-DAC13**: 12 - 24 VDC **DWS-V-DBC05**: 12 - 24 VDC **DWS-V-AGP**: 20 - 24 VDC
Voltage drop	**DWS-V-DAC13**: Typ. 4.9 VDC **DWS-V-DBC05**: Typ. 4.9 VDC
Protection: reverse polarity (R), transients (T)	R, T
High ESD protection	Yes
Operating temperature	**DWS-V-DAC13**: -20°C to 60°C **DWS-V-DBC05**: 0°C to 60°C **DWS-V-AGP**: -20°C to 60°C
Ambient humidity	0 to 100% RH
Climatic protection	Against high humidity, salt and dust
Degree of protection	IP54
Signal output	**DWS-V-DAC13**: NPN/PNP square wave 12.5 mA ± 2 mA **DWS-V-DBC05**: NPN/PNP square wave 12.5 mA ± 2 mA **DWS-V-AGP**: 4-20 mA
Mounting position	Vertical with M28 thread
Housing material	Body: black PVC Rotor: stainless steel
Approvals/Marks	CE
References	
	For ordering key details, please refer to www.gavazziautomation.com

CARLO GAVAZZI
Automation Components



Switches



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CARLO GAVAZZI

Solid state relays, PCB type, 1-phase

	AC output		DC output
Types	**RP1A - RP1B** 3/5/5.5 AAC	**RP..10** 10 AAC	**RP1D** 1/4/8 ADC
PCB mounting SSRs, AC and DC operating. Rated isolation voltage ≥4000 Vrms.			
Dimensions HxWxD (mm)	25.4 x 43 x 10.5	37 x 43 x 22	25.4 x 43 x 10.5
Features	Standard AC switching SSR	With integral heatsink	DC switching SSR
Input specifications			
Control input range	3-32 VDC [RP1A23..] 3-32 VDC [RP1A40..] 4-32 VDC [RP1A48..] 16-32 VAC [RP1A23A6]	3-32 VDC [RP1A23..] 4-32 VDC [RP1A40..] 4-32 VDC [RP1A48..]	4.5 - 32 VDC
Max. input current	10 mA	10 mA	15 mA
Output specifications			
Rated operational current			DC1: 1/4/8 ADC
AC 51 @ Ta=25°C	3 A [RP1...3] 5 A [RP1...5] 5.5 A [RP1...6]	10 A	
AC 53a @ Ta=25°C	2 A [RP1...3] 3 A [RP1...5] 5 A [RP1...6]	7 A	
Min. operational current	20 mA	10 mA	1 mADC
Non rep. surge current (t=20 ms)	65 A_P [RP1...3] 80 A_P [RP1...5] 250 A_P [RP1...6]	250 A_P	
Off-state leakage current	≤ 1 mA	≤ 3 mA	0.01 mADC
I^2t for fusing (t=10 ms)	20 A^2s [RP1...3] 50 A^2s [RP1...5] 340 A^2s [RP1...6]	340 A^2s	
Critical dV/dt off-state	250 V/µs [RP1...3] 500 V/µs [RP1...5] 500 V/µs [RP1...6]	1000 V/µs	
General specifications			
Operational voltage range	12-265 VAC [RP1A23..] 20-440 VAC [RP1A40..] 20-530 VAC [RP1A48..]	12-265 VAC [RP1A23..] 20-440 VAC [RP1A40..] 20-530 VAC [RP1A48..]	1- 60 VDC [RP1D060...] 1 - 350 VDC [RP1D350...]
Blocking voltage	650 V_P [RP1A23..] 850 V_P [RP1A40..] 1000 V_P [RP1A48..]	650 V_P [RP1A23..] 850 V_P [RP1A40..] 1000 V_P [RP1A48..]	
Power factor	0.5	0.5	
Operating temperature	-20°C to +70°C (-4°F to +158°F)	-30°C to +80°C (-22°F to +176°F)	-20°C to +80°C (-4°F to +176°F)
Terminals	4 pins x Ø 0.1 mm	4 pins x Ø 0.1 mm	4 pins x Ø 0.1 mm
Approvals/Marks	CE - UR - cUR - EAC - UKCA - VDE	CE - UR - cUR - EAC -UKCA	CE - UR - cUR - EAC - UKCA
References			
	3 A	10 A	1 A
	RP1A23D3	**RP1A23D10**	**RP1D350D1**
	RP1A40D3	**RP1A40D10**	
	RP1A48D3	**RP1A48D10**	4 A
	5 A		**RP1D060D4**
	RP1A23D5		
	RP1A40D5		8 A
	RP1A48D5		**RP1D060D8**
	5.5 A		
	RP1A23D6		
	RP1A23A6		
	RP1A40D6		
	RP1A48D6		

* Other options available on request: Instant-on switching (RP1B..), see Accessories for DIN-rail adaptor.

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, Slimline, 1-phase

	AC output		
Types	**RGS1A..KKE** 25/50/75/90 AAC	**RGS1A..KGE** 50/90 AAC	**RGS1A..MKE** 25/50/90 AAC
Single-phase, chassis mounting with LED for control status indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, ≥4000 VACrms isolation voltage, 100 kArms short circuit current rating, certified motor ratings.			
Dimensions HxWxD (mm)	90 x 17.8 x 50.6	90 x 17.8 x 50.6	90 x 17.8 x 63.6
Features	17.8 mm wide solid state relay, screw terminals with captivated clamp for power and control connections, E-type layout	17.8 mm wide solid state relay, box clamp for power connections (up to 25 mm²/ AWG3), screw for control connections, E-type layout	17.8 mm wide solid state relay, screw terminals with captivated clamp for power connections and pluggable spring for control, E-type layout
Input specifications			
Control input range	3-32 VDC [RG..23D.] 4-32 VDC [RG..60D.] 20-275 VAC, 24-190 VDC [RG..A.]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D.] 4-32 VDC [RG..60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	25 AAC [RG..25] / 50 AAC [RG..50/51] 75 AAC [RG..75] / 90 AAC [RG..90/91/92]	50 AAC [RG..50] 90 AAC [RG..92]	25 AAC [RG..25] / 50 AAC [RG..50] 90 AAC [RG..90/92]
AC-53a @ Ta=40°C	5 AAC [RG..25] / 10 AAC [RG..50/51] 14.8 AAC [RG..75] 18 AAC [RG..90/91/92]	10 AAC [RG..50] 18 AAC [RG..92]	5 AAC [RG..25] / 10 AAC [RG..50] 18 AAC [RG..90/92]
Min. operational current	150 mAAC [RG..25] / 250 mAAC [RG..50/51] 400 mAAC [RG..75] 500 mAAC [RG..90/91/92]	250 mAAC [RG..50] 500 mAAC [RG..92]	150 mAAC [RG..25] / 250 mAAC [RG..50] 500 mAAC [RG..90/92]
Non rep. surge current (t=10 ms)	325 Ap [RG..25] / 600 Ap [RG..50/51] 800 Ap [RG..75] / 1150 Ap [RG..90/91] 1900 Ap [RGS..92]	600 Ap [RG..50] 1900 Ap [RG..92]	325 Ap [RG..25] / 600 Ap [RG..50] 1150 Ap [RG..90] / 1900 Ap [RG..92]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RG..25] / 1800 A^2s [RG..50/51] 3200 A^2s [RG..75] / 6600 A^2s [RG..90/91] 18000 A^2s [RGS..92]	1800 A^2s [RG..50] 18000 A^2s [RG..92]	525 A^2s [RG..25] / 1800 A^2s [RG..50] 6600 A^2s [RG..90] / 18000 A^2s [RG..92]
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-264 VAC [RG.23..] 42-660 VAC [RG.60...] 42-759 VAC [RG..69..]*	42-660 VAC	24-264 VAC [RG.23..] 42-660 VAC [RG.60...]
Blocking voltage	800 Vp [RG..23..] 1200 Vp [RG..60..] 1600 Vp [RG..60..51/91]	1200 Vp	800 Vp [RG..23..] 1200 Vp [RG..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cURus - CSA - EAC - UKCA - VDE	CE - cURus - CSA - EAC - UKCA - VDE	CE - cURus - CSA - EAC - UKCA - VDE
References			
230 VAC, 800 Vp	25 AAC: **RGS1A23X25KKE**		25 AAC: **RGS1A23X25MKE**
	50 AAC: **RGS1A23X50KKE**		50 AAC: **RGS1A23X50MKE**
600 VAC, 1200 Vp	25 AAC: **RGS1A60X25KKE**		25 AAC: **RGS1A60X25MKE**
	50 AAC: **RGS1A60X50KKE**	50 AAC: **RGS1A60X50KGE**	50 AAC: **RGS1A60X50MKE**
	75 AAC: **RGS1A60X75KKE**		
	90 AAC: **RGS1A60X90KKE**		90 AAC: **RGS1A60X90MKE**
	90 AAC: **RGS1A60X92KKE**	90 AAC: **RGS1A60X92KGE**	90 AAC: **RGS1A60X92MKE**
600 VAC, 1600 Vp	50 AAC: **RGS1A60X51KKE**		
	90 AAC: **RGS1A60X91KKE**		
690 VAC, 1600 Vp	90 AAC: **RGS1A69X91KKE***		

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGS1B.. models for Instant On (Random) switching are available on request
*690 VAC variants are CE marked only and do not include a varistor across the output

CARLO GAVAZZI

Solid state relays, Slimline, 1-phase

	AC output			DC output
Types	**RGS1A..MGE** 50/90 AAC	**RGS1A..KGU** 30 AAC	**RGS1A..DIN** 10/12 AAC	**RGS1D..KKE** 15/25 ADC
Single-phase, chassis mounting with LED for control status indication, IP20 protection, 45-65 Hz operating frequency, ≥4000 VACrms isolation voltage, 100 kArms short circuit current rating for AC output versions.				
Dimensions HxWxD (mm)	90 x 17.8 x 63.6	90 x 17.8 x 50.6	106 x 17.8 x 65	90 x 17.8 x 50.6
Features	17.8 mm wide solid state relay, box clamps for power connections (25 mm² / AWG3) and pluggable spring for control, E-type layout	17.8 mm wide solid state relay, box clamps for power and control connections, U-type layout	17.8 mm wide solid state relay mounted on DIN mountable module	17.8 mm wide solid state relay with IGBT output, integrated free wheeling diode, screw terminals with captivated clamp, E-type layout
Input specifications				
Control input range	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	4.5-32 VDC
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	13.7 mADC
Output specifications				
Rated operational current AC-51 @ Ta=40°C	50 AAC [RG..50] 90 AAC [RG..92]	30 AAC	10 AAC [RG..20/25..DIN] 12 AAC [RG..50/90..DIN]	
AC-53a @ Ta=40°C	10 AAC [RG..50] 18 AAC [RG..92]	8 AAC	5 AAC [RG..20/25..DIN] 5 AAC [RG..50/90..DIN]	
DC Rated operational current				15 ADC [RGS1D..15.] 25 ADC [RGS1D..25.]
Min. operational current	250 mAAC [RG..50] 500 mAAC [RG..92]	250 mAAC	150 mAAC [RG..20/25..DIN] 250 mAAC [RG..50..DIN] 400 mAAC [RG..90..DIN]	20 mA
Non rep. surge current (t=10 ms)	600 Ap [RG..50] 1900 Ap [RG..92]	600 Ap	325 Ap [RG..20/25..DIN] 600 Ap [RG..50..DIN] 1150 Ap [RG..90..DIN]	200 ADC [10µs]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC	1.5 mADC
I^2t for fusing (t=10 ms)	1800 A²s [RG..50] 18000 A²s [RG..92]	1800 A²s	525 A²s [RG..20/25..DIN] 1800 A²s [RG..50..DIN] 6600 A²s [RG..90..DIN]	
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	
General specifications				
Operational voltage range	42-660 VAC	42-660 VAC	24-264 VAC [RG..23..] 42-660 VAC [RG..60..]	24-1000 VDC [CE] 24-600 VDC [UL508]
Blocking voltage	1200 Vp	1200 Vp	800 Vp [RG..23..] 1200 Vp [RG..60..]	1200 VDC
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cURus - CSA - EAC - UKCA - VDE	CE - cURus - CSA - EAC - UKCA - VDE	CE - cURus - CSA - EAC - UKCA - VDE	CE - cURus - CSA - EAC - UKCA
References				
230 VAC, 800 Vp, E-type			10 AAC: **RGS1A23X25KKEDIN**	
			12 AAC: **RGS1A23X50KKEDIN**	
600 VAC, 1200 Vp, E-type	50 AAC: **RGS1A60X50MGE**		10 AAC: **RGS1A60X25KKEDIN**	
	90 AAC: **RGS1A60X92MGE**		12 AAC: **RGS1A60X50KKEDIN**	
			12 AAC: **RGS1A60D90KKEDIN**	
600 VAC, 1200 Vp, U-type		30 AAC: **RGS1A60X30KGU**	10 AAC: **RGS1A60D20KGUDIN**	
1000 VDC				15 ADC: **RGS1D1000D15KKE**
				25 ADC: **RGS1D1000D25KKE**

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGS1B.. models for Instant On (Random) switching are available on request

KK = screws for control terminals, screws for power terminals
KG = screws for control terminals, box clamps for power terminals

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, Slimline, 1-phase

	AC output, Integrated monitoring		AC output, Integrated current measurement	
Types	**RGS1A..KEM** 25/50/90 AAC	**RGS1A..GEM** 90 AAC	**RGS1S..EP** 30/90 AAC	**RGS1S..UP** 65 AAC
Single-phase, chassis mounting industrial relays with LED for control status indication, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating.				
Dimensions HxWxD (mm)	90 x 17.8 x 82	90 x 17.8 x 82	90 x 22.5 x 78	90 x 35.6 x 78
Features	17.8 mm wide solid state relay, integrated monitoring for SSR and load malfunction, transistor alarm output, screw terminals with captivated washer for power connections, E-type	17.8 mm wide solid state relay, integrated monitoring for SSR and load malfunction, transistor alarm output, box clamps for power connections, E-type	22.5 mm wide solid-state relay with thyristor output, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.	22.5 mm wide solid-state relay with thyristor output, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.
Input specifications				
Control input range	4-32 VDC	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	0.5 mADC at 24 VDC	0.5 mADC at 24 VDC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply voltage	19.2 - 28.8 VDC	19.2 - 28.8 VDC	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. supply current	40 mA	40 mA	50 mADC	50 mADC
Alarm specifications				
Output type	Transistor, NC, NO max. 35 VDC/100 mA	Transistor, NC, NO max. 35 VDC/100 mA	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA
Alarm indication	Mains loss, load loss, SSR open and short cct, SSR internal error, supply out of range	Mains loss, load loss, SSR open and short cct, SSR internal error, supply out of range	Red LED (flash rate)	Red LED (flash rate)
Output specifications				
Rated operational current AC-51 @ Ta=40°C	25 AAC [RGS1A..25] 50 AAC [RGS1A..50] 90 AAC [RGS1A..92]	90 AAC	30 AAC [RGS1S..30] 90 AAC [RGS1S..92]	65 AAC
Minimum operational current	150 mAAC [RGS1A..25] 250 mAAC [RGS1A..50] 500 mAAC [RGS1A..92]	500 mAAC		
Minimum TEACH / operational current			1.2 AAC [RGS1S..30] 5 AAC [RGS1S..92]	5 AAC
Minimum partial load current			0.2 AAC [RGS1S..30] 0.83 AAC [RGS1S..92]	0.83 AAC
Detectable partial load failure			> 16.67% from current setpoint	> 16.67% from current setpoint
Non rep. surge current (Itsm) (t=10 ms)	325 A_P [RGS1A..25] 600 A_P [RGS1A..50] 1900 A_P [RGS1A..92]	1900 A_P	600 A_P [RGS1S..30] 1900 A_P [RGS1S..92]	1900 A_P
Max. Off-state leak current	5 mAAC	5 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s [RGS1A..25] 1800 A^2s [RGS1A..50] 18000 A^2s [RGS1A..92]	18000 A^2s	1800 A^2s [RGS1S..30] 18000 A^2s [RGS1S..92]	18000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	42-265 VAC [RGS1A23..] 150-660 VAC [RGS1A60..]	150-660 VAC	42 - 660 VAC	42 - 660 VAC
Blocking voltage	800 V_P [RGS1A23..] 1200 V_P [RGS1A60..]	1200 V_P	1200 V_P	1200 V_P
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)
Approvals/Marks	CE - cURus - CSA - EAC - UKCA	CE - cURus - CSA - EAC - UKCA	CE - cURus - CSA - EAC - UKCA	CE - cURus - CSA - EAC - UKCA
References				
230 VAC, 800 V_P, 525 A^2s, Screw	25 AAC: **RGS1A23D25KEM**			
600 VAC, 1200 V_P, 525 A^2s, Screw	25 AAC: **RGS1A60D25KEM**			
600 VAC, 1200 V_P, 1800 A^2s, Screw	50 AAC: **RGS1A60D50KEM**			
600 VAC, 1200 V_P, 18000 A^2s, Screw	90 AAC: **RGS1A60D92KEM**			
600 VAC, 1200 V_P, 18000 A^2s, Box		90 AAC: **RGS1A60D92GEM**		
600 VAC, 1800 A^2s, E-type			30 AAC: **RGS1S60D30GKEP**	
600 VAC, 18000 A^2s, E-type			90 AAC: **RGS1S60D92GGEP**	
600 VAC, 18000 A^2s, U-type				65 AAC: **RGS1S60D61GGUP**

GK = box clamps for control terminals, screws for power terminals GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI

Solid state relays, Slimline, 1-phase

	Soft start switching		Proportional controllers	
Types	**RGS1P..K..** 50 AAC	**RGS1P..K..** 90 AAC	**RGS1P..AA.. / V..** 50 AAC	**RGS1P..AA.. / V..** 90 AAC
Single-phase, chassis mounting industrial relays with integrated overvoltage protection, LED for control and load status indication, IP20 protection, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating.				
Dimensions HxWxD (mm)	90 x 35.8 x 51	90 x 35.8 x 51	90 x 35.8 x 51	90 x 35.8 x 51
Features	DC control input solid state relay with soft starting feature for short wave infrared heaters	DC control input solid state relay with soft starting feature for short wave infrared heaters	Analogue input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analogue input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting
Supply specifications				
Supply voltage	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% [RG..V..ED] 24 VAC -15%, +15% [RG..V..ED] 90-250 VAC [RG..V..EA]	24 VDC -15%, +20% [RG..V..ED] 24 VAC -15%, +15% [RG..V..ED] 90-250 VAC [RG..V..EA]
Max. supply current	30 mA	30 mA	30 mA [RG..V..ED] 14 mA [RG..V..EA]	30 mA [RG..V..ED] 14 mA [RG..V..EA]
Control specifications				
Control input range	19.2 - 28.8 VDC	19.2 - 28.8 VDC	4-20 mA [RG..AA..] 0-10 V, 0-5 V, 1-5 V, POT [RG..V..]	4-20 mA [RG..AA..] 0-10 V, 0-5 V, 1-5 V, POT [RG..V..]
Input impedance	100 kΩ	100 kΩ	500 Ω [RG..AA..] 100 kΩ [RG..V..]	500 Ω [RG..AA..] 100 kΩ [RG..V..]
Output specifications				
Rated operational current AC-51 @ 40°C	50 AAC	90 AAC	50 AAC	90 AAC
Minimum operational current	250 mAAC	500 mAAC	250 mAAC	500 mAAC
Non rep. surge current (Itsm) (t=10 ms)	600 Ap	1900 Ap	600 Ap	1900 Ap
I^2t for fusing (t=10 ms)	1800 A^2s	18000 A^2s	1800 A^2s	18000 A^2s
Max. Off-state leakage current	5 mAAC	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	85 - 265 VAC [RGS1P23..] 190 - 550 VAC [RGS1P48..] 410 - 660 VAC [RGS1P60..]	85 - 265 VAC [RGS1P23..] 190 - 550 VAC [RGS1P48..] 410 - 660 VAC [RGS1P60..]	85 - 265 VAC [RGS1P23..] 190 - 550 VAC [RGS1P48..] 410 - 660 VAC [RGS1P60..]	85 - 265 VAC [RGS1P23..] 190 - 550 VAC [RGS1P48..] 410 - 660 VAC [RGS1P60..]
Blocking voltage	800 Vp [RGS1P23..] 1200 Vp [RGS1P48..] 1200 Vp [RGS1P60..]	800 Vp [RGS1P23..] 1200 Vp [RGS1P48..] 1200 Vp [RGS1P60..]	800 Vp [RGS1P23..] 1200 Vp [RGS1P48..] 1200 Vp [RGS1P60..]	800 Vp [RGS1P23..] 1200 Vp [RGS1P48..] 1200 Vp [RGS1P60..]
Power factor	> 0.7	> 0.7	> 0.7	> 0.7
Terminals	Screw with captive clamp	Box clamp	Screw with captive clamp	Box clamp
Operating temperature	-40°C to +70°C (-40°C to +158°F)	-40°C to +70°C (-40°C to +158°F)	-40°C to +70°C (-40°C to +158°F)	-40°C to +70°C (-40°C to +158°F)
Approvals/Marks	CE - cURus - CSA - EAC - UKCA	CE - cURus - CSA - EAC - UKCA	CE - cURus - CSA - EAC - UKCA	CE - cURus - CSA - EAC - UKCA
References				
External supply 24 VDC/AC				
Operational output 85 - 265 VAC	**RGS1P23K50ED**	**RGS1P23K92ED**		
Operational output 190 - 550 VAC	**RGS1P48K50ED**	**RGS1P48K92ED**		
Operational output 410 - 660 VAC	**RGS1P60K50ED**	**RGS1P60K92ED**		
Control input				
4-20 mA			**RGS1PXXAA50E**	**RGS1PXXAA92E**
0-10 VDC, 0-5 VDC, 1-5 VDC, POT				
External supply 24 VDC/AC			**RGS1PXXV50ED**	**RGS1PXXV92ED**
External supply 90-250 VAC			**RGS1PXXV50EA**	**RGS1PXXV92EA**

XX = 23 for operational voltage range 85 - 265 VAC
XX = 48 for operational voltage range 190 - 550 VAC
XX = 60 for operational voltage range 410 - 660 VAC

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, Industrial housing, 1-phase

AC output

Types	RF1A 25 AAC	RS1A 10/25/40 AAC	RAM1A..G 25/50/100/125 AAC	RM1A 25/50/75/100 AAC
Single-phase, chassis mounting, industrial relays with LED status indication and IP20 protection. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥4000 Vrms.				
Dimensions HxWxD (mm)	36 x 21 x 24	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	Zero Cross or Instant ON, Built-in transil, VDE, Glow wire acc. to IEC/EN 60335-1	Zero Cross, Ideal for Ohmic loads	Zero Cross, Built-in varistor, VDE, Glow wire acc. to IEC/EN 60335-1	Zero Cross or Instant ON, Built-in varistor
Input specifications				
Control input range	4.25 - 9 VDC [RF1A..L] 9 - 18 VDC [RF1A..M] 18 -28.8 VDC [RF1A..D]	3-32 VDC [RS1A23D] 4-32 VDC [RS1A.....D] 18-36 VAC/DC [RS1A...LA] 80-130 VAC [RS1A..A1-] 200-260 VAC [RS1A..A2-] 360-440 VAC [RS1A..A4-]	3-32 VDC [RAM1A23D..] 4-32 VDC [RAM1A60D..] 20-280 VAC / 22-48 VDC [RAM1A..A.]	3-32 VDC [RM1A23D.] 4-32 VDC [RM1A60D.] 20-280 VAC / 22-48 VDC [RM1A..A.]
Max. input current	15 mA [RF1A..L] 12 mA [RF1A..M] 12.5 mA [RF1A..D]	12 mA [RS1A..D] 15 mA [RS1A..LA] 13 mA [RS1A. . . .A1- /A2- /A4-]	12 mA [RAM1A..D.] 20 mA [RAM1A..A.]	12 mA [RM1A..D.] 20 mA [RM1A..A.]
Output specifications				
		RS1A..10 / 25 / 40	RAM1A..25/50/51/100/125	RM1A..25 / 50 / 75 / 100
Rated operational current				
AC 51 @ Ta=25°C	25 AAC	10 / 25 / 40 AAC	25 /50 /50 /100 /125 AAC	25 / 50 / 75 / 100 AAC
AC 53a @ Ta=25°C			5 /15 /15 /20 /30 AAC	5 / 15 / 20 / 30 AAC
Min. operational current	150 mAAC	150 / 150 / 250 mAAC	150 /250 /400 /400 /500 mAAC	150 / 250 / 400 / 500 mAAC
Non rep. surge current (t=10 ms)	325 A_P	100 / 325 / 600 A_P	325 /600 /800 /1150 /1900 A_P	325 / 600 / 1150 / 1900 A_P
Off-state leakage current	< 3 mA	< 3 mA	< 3 mA	< 3 mA
I^2t for fusing (t=10 ms)	525 A^2s	50 / 525 / 1800 A^2s	525 /1800 /3200 /6600 /18000 A^2s	525 / 1800 / 6600 / 18000 A^2s
Critical dV/dt	1000 V/µs	500 V/µs	1000 V/µs	
General specifications				
Operational voltage range	24 - 280 VAC	42-265 VAC [RS1A23..] 42-440 VAC [RS1A40..] 42-530 VAC [RS1A48..]	24-265 VAC [RAM1A23..] 42-660 VAC [RAM1A60..]	24-265 VAC [RM1A23..] 42-440 VAC [RM1A40..] 42-530 VAC [RM1A48..] 42-660 VAC [RM1A60..]
Blocking voltage	600V_P	650 V_P [RS1A23..] 850 V_P [RS1A40..] 1200 V_P [RS1A48..]	650 V_P [RAM1A23..] 1200 V_P [RAM1A60..]	650 V_P [RM1A23..] 850 V_P [RM1A40..] 1200 V_P [RM1A48..] 1400 V_P [RM1A60..]
Power factor	≥ 0.9	≥ 0.95	≥ 0.5	≥ 0.5
Operating temperature	-30°C to +80°C (-22°F to +176°F)	-20°C to +70°C (-4°F to +158°F)	-20°C to +70°C (-4°F to +158°F)	-20°C to +70°C (-4°C to +158°F)
Terminals	FASTONS	Screw type with clamp	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA - VDE -EAC - UKCA	CE - UR - CSA - EAC - UKCA	CE - UR - CSA - CCC - VDE - EAC - UKCA	CE - UR - CSA - CCC - EAC - UKCA
References				
	25 AAC	10 / 25 / 40 AAC	25 / 50 / 100 / 125 AAC	25 / 50 / 75 / 100 AAC
230 VAC	**RF1A23L25**	**RS1A23X10** (X = D, LA only)	**RAM1A23DYYG**	**RM1A23ZYY**
	RF1A23M25	**RS1A23X25**	**RAM1A23AYYG**	
	RF1A23D25	**RS1A23X40**		
400 VAC		**RS1A40X10** (X = D, LA only)		**RM1A40ZYY**
		RS1A40X25		
		RS1A40X40		
480 VAC		**RS1A48X10** (X = D, LA only)		**RM1A48ZYY**
		RS1A48X25 (X = D, LA only)		
		RS1A48X40 (X = D, LA only)		
600 VAC			**RAM1A60DYYG**	**RM1A60ZYY**
			RAM1A60AYYG	

RF1B.., RAM1B.., RM1B.. Instant On switching versions available on request.

X = D for DC control = 3-32 VDC (RS1A23..), 4-32 VDC (RS1A40.., RS1A48..)
X = LA for AC control = 18-36 VAC/DC
X = A1- for AC control = 80-130 VAC (not availble for RS1A40..)
X = A2- for AC control = 200-260 VAC
X = A4- for AC control = 360-440 VAC
YY = 25 for 25 AAC
YY = 50 for 50 AAC
YY = 51 for 50 AAC high I^2t (RAM1A60..G only)
YY = 100 for 100 AAC (not available for RAM1A23..G)
YY = 125 for 125 AAC (not available for RAM1A23..G)
Z = D for DC control = 3-32 VDC (RM1A23..), 4-32 VDC (RM1A40.., RM1A48.., RM1A60..)
Z = A for AC control = 20-280 VAC / 22-48 VDC

CARLO GAVAZZI

Solid state relays, Industrial housing, 1-phase

	Peak switching	Phase angle switching	AC output	
Types	**RM1C** 25/50/75/100 AAC	**RM1E** 25/50/100/125 AAC	**RA** 25/50/90/110 AAC	**RA Sense** 25/50/110 AAC
Single-phase, chassis mounting, industrial relays with LED status indication and IP20 protection, 45-65 Hz operating frequency. Rated isolation voltage ≥4000 Vrms.				
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	Ideal for transformers	Analogue phase-angle control	General purpose	Detects supply and load failure with transistor alarm output
Input specifications				
Control input range	4.25-32 VDC	4-20 mA [RM1E..AA..] 0-10 VDC [RM1E..V..]	3-32 VDC [RA..D..] 10-90 VAC/DC [RA..LA..] 90-280 VAC/DC [RA..HA..]	7-32 VDC
Max. input current	18 mA	0.15 mA [RM1E..V..]	22 mA [RA..D..] 17 mA [RA..LA..] 6.5 mA [RA..HA..]	4 mA
Supply voltage range		24 VDC [RM1E..V..]		20-32 VDC (40 mA)
Max. supply input current		20 mA [RM1E..V..]		
Alarm output				PNP: VCC - 2 VDC (100 mA) NPN: 2 VDC (100 mA)
Output specifications				
	RM1C..25 / 50 / 75 / 100	RM1E..25 / 50 / 100 / 125	25 / 50 / 90 / 110 AAC	25 / 50 / 110 AAC
Rated operational current				
AC 51 @ Ta=25°C	25 / 50 / 75 / 100 AAC	25 / 50 / 100 / 125 AAC	25 / 50 / 90 /110 AAC	25 / 50 / 110 AAC
AC 53a @ Ta=25°C		5 / 15 / 20 / 30 AAC	5/15/ 20/30 AAC	
AC 56a @ Ta=25°C	10 / 20 / 25 / 30 AAC			
Min. operational current	150 / 250 / 400 / 500 mAAC	150 / 250 / 400 /500 mAAC	20 mA	200 mArms
Non rep. surge current (t=10 ms)	325 / 600 / 1150 / 1900 A_P	325 / 600 / 1150 / 1900 A_P	325 / 600 / 1150 /1900 A_P	325 / 600 / 1900 A_P
Off-state leakage current	< 3 mA	< 3 mA	< 3 mA	< 6 mArms
I^2t for fusing (t=10 ms)	525 / 1800 / 6600 / 18000 A^2s	525 / 1800 / 6600 / 18000 A^2s	525 / 1800 / 6600 / 18000 A^2s	525 / 1800 /18000 A^2s
General specifications				
Operational voltage range	100-440 VAC [RM1C40D.] 340-660 VAC [RM1C60D.]	90-280 VAC [RM1E23AA..] 90-265 VAC [RM1E23V..] 340-460 VAC [RM1E40AA..] 200-550 VAC [RM1E48AA/V..] 410-660 VAC [RM1E60AA/V..]	24-280 VAC [RA24.06..] 42-480 VAC [RA44.08..] 42-530 VAC [RA48.12..] 24-690 VAC [RA60.16..]	60-140 VAC [RA12..S] 170-250 VAC [RA23..S] 150-440 VAC [RA40..S] 180-530 VAC [RA48..S]
Blocking voltage	850 V_P [RM1C40D..] 1400 V_P [RM1C60D..]	650 V_P [RM1E23..] 850 V_P [RM1E40..] 1200 V_P [RM1E48..] 1400 V_P [RM1E60..]	<650 V_P [RA24.06..] <850 V_P [RA44.08..] <1200 V_P [RA48.12..] <1600 V_P [RA60.16..]	650 V_P [RA12..S] 650 V_P [RA23..S] 1000 V_P [RA40..S] 1200 V_P [RA48..S]
Power factor	≥ 0.5	≥ 0.75	≥ 0.5	≥ 0.5
Operating temperature	-30°C to +80°C (-22°F to +176°F)	-20°C to +70°C (-4°C to +158°F)	-20°C to +70°C (-4°F to +158°F)	-20°C to +70°C (-4°F to +158°F)
Terminals	Screw type with clamp	Screw type with clamp	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA - EAC - UKCA	CE - UR - CSA - EAC - UKCA	CE - UR - CSA - EAC - UKCA	CE - UR - CSA - EAC - UKCA
References				
	25 / 50 / 75 / 100 AAC	25 / 50 / 100 /125 AAC	25 / 50 / 90 / 110 AAC	25 / 50 / 110 AAC
120 VAC				**RA12..06..S**
230 VAC		**RM1E23X25**	**RA24..-D..**	**RA23..06..S**
		RM1E23X50	**RA24..LA..**	
		RM1E23X100	**RA24..HA..**	
		RM1E23X125		
400 VAC	**RM1C40D25**	**RM1E40AA25**	**RA44..-D..**	**RA40..10..S**
	RM1C40D50	**RM1E40AA50**	**RA44..LA..**	
	RM1C40D75	**RM1E40AA100**	**RA44..HA..**	
480 VAC		**RM1E48X25**	**RA48..-D..**	**RA48..12..S**
		RM1E48X50	**RA48..LA..**	
		RM1E48X100	**RA48..HA..**	
		RM1E48X125		
600 VAC	**RM1C60D25**	**RM1E60X25**	**RA60..-D..**	
	RM1C60D50	**RM1E60X50**		
	RM1C60D100	**RM1E60X100**		

X = AA or V

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, Industrial housing, 1 / 3-phase

	DC output	AC output, 3 poles
Types	**RM1D** 10/20/50/100 ADC	**RZ3A** 25/55/75 AAC
DC switching solid state relay for chassis mounting and 3-phase industrial relays		
Dimensions HxWxD (mm)	58.2 x 44.8 x 29.5	74 x 103 x 41
Features	DC switching SSR, 4 kV isolation between input and output, fast response times	3-phase switching, integrated overvoltage protection
Input specifications		
Control input range	4-32 VDC [RM1D060..] 4.5 - 32 VDC [RM1D200/500..]	4-32 VDC [RZ3A..D.] 24-275 VAC [RZ3A..A.]
Max. input current	16 mA	23 mA [RZ3A..D.] 15 mA [RZ3A..A.]
Switching frequency	up to 1000 Hz	
Output specifications		
Rated operational current	DC1: 10 / 20 / 50 / 100 A, 60 VDC DC1: 20 / 50 A, 200 VDC DC1: 10 A, 500 VDC	AC51: 25 / 55 / 75 AAC AC53a: 5 / 15 / 20 AAC
Min. operational current	5 mADC	150 mAAC [RZ3..25] 250 mAAC [RZ3..55] 400 mAAC [RZ3..75]
Non rep. surge current (t=10 ms)		325 Ap [RZ3A..25..] 600 Ap [RZ3A..55..] 1150 Ap [RZ3A..75..]
Off-state leakage current	0.1 mADC	< 3 mA
I^2t for fusing (t=10 ms)		525 A^2s [RZ3A..25..] 1800 A^2s [RZ3A..55..] 6600 A^2s [RZ3A..75..]
General specifications		
Operational voltage range	1-60 VDC [RM1D060..] 1-200 VDC [RM1D200..] 1-500 VDC [RM1D500..]	24-440 VAC [RZ3A40.] 42-530 VAC [RZ3A48.] 42-660 VAC [RZ3A60.] 42-750 VAC [RZ3A69.]
Blocking voltage	-	800 Vp [RZ3A40..] 1200 Vp [RZ3A48..] 1600 Vp [RZ3A60..] 1600 Vp [RZ3A69.]
Operating temperature	-20°C to +80°C (-4°F to +176°F)	-30°C to +80°C (-22°F to +176°F)
Terminals	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA - EAC - UKCA	CE - UR - CSA - EAC - UKCA
References		
DC output voltage:		25 / 55 / 75 AAC per pole
60 VDC	10 A: **RM1D060D10**	
	20 A: **RM1D060D20**	
	50 A: **RM1D060D50**	
	100 A: **RM1D060D100**	
200 VDC	20 A: **RM1D200D20**	
	50 A: **RM1D200D50**	
500 VDC	10 A: **RM1D500D10**	
AC output voltage:		
400 VAC		**RZ3A40DYY***
		RZ3A40AYY*
480 VAC		**RZ3A48DYY***
		RZ3A48AYY*
600 VAC		**RZ3A60DYY***
		RZ3A60AYY*
690 VAC		**RZ3A69D75****
		RZ3A69A75**

* Add suffix 'P' for additional integrated Over Temperature Protection, ** CE only, YY = 25 for 25 AAC, YY = 55 for 55 AAC, YY = 75 for 75 AAC

CARLO GAVAZZI

Solid state relays, Industrial housing, 2-poles

	AC output			
Types	**RA2A** 25/40 AAC	**RA2A..C** 25/40 AAC	**RKD2..C** **RK2..C** 50/75 AAC	**RKD2..P** **RK2..P** 50/75 AAC
2-pole industrial solid state relays.				
Dimensions HxWxD (mm)	57.8 x 44.5 x 31.7	57.8 x 44.5 x 34.8	53 x 44.5 x 33	58 x 44.5 x 33 (w/o plug) 58 x 44.5 x 44 (incl. plug)
Features	Two independent poles, RA2A..M for inductive loads	Two independent poles with integrated varistor on output	2-poles with independent control [RKD2] or common control [RK2], control connection via connector pins	2-poles with independent control [RKD2] or common control [RK2], control connection via provided spring plug
Input specifications				
Control input range	4.5-32 VDC	4.5-32 VDC	4-32 VDC	4-32 VDC
Max. input current	2 x 10 mA	2x 10 mA	2 x 12 mA [RKD2..] 1 x 24 mA [RK2..]	2 x 12 mA [RKD2..] 1 x 24 mA [RK2..]
Output specifications				
Rated operational current				
AC 51 @ Ta=25°C	25 / 40 AAC per pole	25 / 40 AAC per pole	50 AAC per pole [RK..50/51] 75 AAC per pole [RK..75]	50 AAC per pole [RK..50/51] 75 AAC per pole [RK..75]
AC 53a @ Ta=25°C	5 / 15 AAC per pole [RA2A..M]		12 AAC	12 AAC
Min. operational current	150 mArms [RA2A…25] 250 mArms [RA2A…40]	150 mArms [RA2A…25C] 250 mArms [RA2A…40C]	250 mArms [RK..50] 400 mArms [RK..51/75]	250 mArms [RK..50] 400 mArms [RK..51/75]
Non rep. surge current (t=10 ms)	325 Ap [RA2A..25] 600 Ap [RA2A..40]	325 Ap [RA2A…25C] 600 Ap [RA2A…40C]	500 Ap [RK..50] 775 Ap [RK..51] 1400 Ap [RK..75]	500 Ap [RK..50] 775 Ap [RK..51] 1400 Ap [RK..75]
Off-state leakage current	<3 mArms	<3 mArms	≤3 mArms	≤3 mArms
I^2t for fusing (t=10 ms)	525 A^2s [RA2A..25] 1800 A^2s [RA2A..40]	525 A^2s [RA2A..25C] 1800 A^2s [RA2A..40C]	1500 A^2s [RK..50] 3000 A^2s [RK..51] 9800 A^2s [RK..75]	1500 A^2s [RK..50] 3000 A^2s [RK..51] 9800 A^2s [RK..75]
General specifications				
Operational voltage range	24-265 VAC [RA2A23..] 42-530 VAC [RA2A48..] 42-660 VAC [RA2A60..]	24-265 VAC [RA2A23..] 42-660 VAC [RA2A60..]	24-265 VAC [RK..23..] 42-660 VAC [RK..60]	24-265 VAC [RK..23] 42-660 VAC [RK..60]
Blocking voltage	650 Vp [RA2A23..] 1200 Vp [RA2A48..] 1200 Vp [RA2A60..]	650 Vp [RA2A23..] 1200 Vp [RA2A60..]	600 Vp [RK..23..] 1200 Vp [RK..60..]	600 Vp [RK..23..] 1200 Vp [RK..60..]
Power factor	≥0.95 [RA2A...] / ≥0.50 [RA2A...M]	≥0.95	≥0.5	≥0.5
Operating temperature	-20°C to +70°C (-4°F to +158°F)	-20°C to +70°C (-4°F to +158°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Terminals	FASTONS 6.35 mm	FASTONS 6.35 mm /4 way plug	M4 screw / Control pins	M4 screw / Plug terminal
Approvals/Marks	CE - UR - CSA - EAC - UKCA	CE - cURus - EAC - UKCA	CE - UR - CSA - VDE - EAC - UKCA	CE - UR - CSA - VDE - EAC - UKCA
References				
	25 / 40 AAC per pole	25 / 40 AAC per pole	50 / 75 AAC per pole	50 / 75 AAC per pole
230 VAC	25 AAC: **RA2A23D25**	25 AAC: **RA2A23D25C**	50 AAC: **RKD2A23D50C**	50 AAC: **RKD2A23D50P**
	RA2A23D25M	40 AAC: **RA2A23D40C**	50 AAC: **RKD2A23D51C**	50 AAC: **RKD2A23D51P**
	40 AAC: **RA2A23D40**		75 AAC: **RKD2A23D75C**	75 AAC: **RKD2A23D75P**
	RA2A23D40M			
480 VAC	25 AAC: **RA2A48D25**			
	RA2A48D25M			
	40 AAC: **RA2A48D40**			
	RA2A48D40M			
600 VAC	25 AAC: **RA2A60D25**	25 AAC: **RA2A60D25C**	50 AAC: **RKX2Y60D50C**	50 AAC: **RKX2Y60D50P**
	RA2A60D25M	40 AAC: **RA2A60D40C**	50 AAC: **RKX2A60D51C**	50 AAC: **RKX2A60D51P**
	40 AAC: **RA2A60D40**		75 AAC: **RKX2Y60D75C**	75 AAC: **RKX2Y60D75P**
	RA2A60D40M			

X = must be replaced with 'D' for dual control, blank for common control
Y = must be replaced with 'A' for zero corss switching, 'B' for instant on switching

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output

Types	RGC..15KKE 20 AAC	RGC..25KKE RGC..32KKE 25/30 AAC	RGC..32KGE 37 AAC	RGC..30KKE 30 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings				
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 22.5 x 141
Features	17.8 mm wide solid state contactor, DC or AC control voltage, screw terminals for power and control, E-type layout	17.8 mm wide solid state contactor, DC or AC control voltage, screw terminals for power and control, E-type layout	17.8 mm wide solid state contactor, DC control voltage, box clamps for power terminals and screw terminals for control, E-type layout	22.5 mm wide solid state contactor, DC or AC control voltage, screw terminals for power and control, E-type layout
Input specifications				
Control input range	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	4-32 VDC	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output specifications				
Rated operational current AC 51 @ Ta=40°C	20 AAC	25 AAC [RGC..25.] 30 AAC [RGC..32.]	37 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	5 AAC	8 AAC
Min. operational current	150 mA	250 mA [RGC..25.] 500 mA [RGC..32.]	500 mA	250 mA
Non rep. surge current (t=10 ms)	325 A_P	600 A_P [RGC..25.] 1900 A_P [RGC..32.]	1150 A_P	600 A_P
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s	1800 A^2s [RGC..25.] 18000 A^2s [RGC..32.]	18000 A^2s	1800 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	42-660 VAC	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]
Blocking voltage	800 V_P [RGC.23.] 1200 V_P [RGC.60.]	800 V_P [RGC.23.] 1200 V_P [RGC.60.]	1200 V_P	800 V_P [RGC.23.] 1200 V_P [RGC.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80 °C (-40°F to +176°F)	-40°C to +80 °C (-40°F to +176°F)	-40°C to +80 °C (-40°F to +176°F)	-40°C to +80 °C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA - GL	CE - cULus - VDE* - EAC - UKCA - GL*	CE - cULus - EAC - UKCA	CE - cULus - VDE - EAC - UKCA - GL
References				
DC control voltage				
230 VAC, 800 V_P	20 AAC: **RGC1A23D15KKE**	25 AAC: **RGC1A23D25KKE**		30 AAC: **RGC1A23D30KKE**
600 VAC, 1200 V_P	20 AAC: **RGC1A60D15KKE**	25 AAC: **RGC1A60D25KKE**		30 AAC: **RGC1A60D30KKE**
600 VAC, 1200 V_P, 18000 A^2s		30 AAC: **RGC1A60D32KKE**	37 AAC: **RGC1A60D32KGE**	
AC/DC control voltage				
230 VAC, 800 V_P	20 AAC: **RGC1A23A15KKE**	25 AAC: **RGC1A23A25KKE**		30 AAC: **RGC1A23A30KKE**
600 VAC, 1200 V_P	20 AAC: **RGC1A60A15KKE**	25 AAC: **RGC1A60A25KKE**		30 AAC: **RGC1A60A30KKE**

Instant On (Random) Switching available on request (RGC1B60D...)
* not applicable to RGC..32

CARLO GAVAZZI

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output

Types	RGC..15MKE 20 AAC	RGC..25MKE RGC..32MKE 25/30 AAC	RGC..32MGE 37 AAC	RGC..30MKE 30 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings				
Dimensions HxWxD (mm)	110 x 17.8 x 114.5	110 x 17.8 x 114.5	110 x 17.8 x 114.5	110 x 22.5 x 152
Features	17.8 mm wide solid state contactor, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout	17.8 mm wide solid state contactor, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout	17.8 mm wide solid state contactor, DC control voltage range, box clamps for power terminals and spring plug for control, E-type layout	22.5 mm wide solid state contactor, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout
Input specifications				
Control input range	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	4-32 VDC	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output specifications				
Rated operational current				
AC 51 @ Ta=40°C	20 AAC	25 AAC [RGC..25.] 30 AAC [RGC..32.]	37 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	5 AAC	8 AAC
Min. operational current	150 mA	250 mA [RGC..25.] 500 mA [RGC..32.]	500 mA	250 mA
Non rep. surge current (t=10 ms)	325 A_P	600 A_P [RGC..25.] 1900 A_P [RGC..32.]	1900 A_P	600 A_P
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s	1800 A^2s [RGC..25.] 18000 A^2s [RGC..32.]	18000 A^2s	1800 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	42-660 VAC	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]
Blocking voltage	800 V_P [RGC.23.] 1200 V_P [RGC.60.]	800 V_P [RGC.23.] 1200 V_P [RGC.60.]	1200 V_P	800 V_P [RGC.23.] 1200 V_P [RGC.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA - GL	CE - cULus - VDE* - EAC - UKCA - GL*	CE - cULus - EAC - UKCA	CE - cULus - VDE - EAC - UKCA - GL
References				
DC control voltage				
230 VAC, 800 V_P	20 AAC: **RGC1A23D15MKE**	25 AAC: **RGC1A23D25MKE**		30 AAC: **RGC1A23D30MKE**
600 VAC, 1200 V_P	20 AAC: **RGC1A60D15MKE**	25 AAC: **RGC1A60D25MKE**		30 AAC: **RGC1A60D30MKE**
600 VAC, 1200 V_P, 18000 A^2s		30 AAC: **RGC1A60D32MKE**	37 AAC: **RGC1A60D32MGE**	
AC/DC control voltage				
230 VAC, 800 V_P	20 AAC: **RGC1A23A15MKE**	25 AAC: **RGC1A23A25MKE**		30 AAC: **RGC1A23A30MKE**
600 VAC, 1200 V_P	20 AAC: **RGC1A60A15MKE**	25 AAC: **RGC1A60A25MKE**		30 AAC: **RGC1A60A30MKE**

Instant On (Random) Switching available on request (RGC1B60D...)
* not applicable to RGC..32

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output

Types	RGC..15KGU 20 AAC	RGC..25KGU 25 AAC	RGC..30KGU 30 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings			
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 22.5 x 141
Features	17.8 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, U-type layout	17.8 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, U-type layout	22.5 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, U-type layout
Input specifications			
Control input range	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC
Min. operational current	150 mA	250 mA	250 mA
Non rep. surge current (t=10 ms)	325 Ap	600 Ap	600 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	525 A^2s	1800 A^2s	1800 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA - GL	CE - cULus - VDE - EAC - UKCA - GL	CE - cULus - VDE - EAC - UKCA - GL
References			
DC control voltage			
230 VAC, 800 Vp	20 AAC: **RGC1A23D15KGU**	25 AAC: **RGC1A23D25KGU**	30 AAC: **RGC1A23D30KGU**
600 VAC, 1200 Vp	20 AAC: **RGC1A60D15KGU**	25 AAC: **RGC1A60D25KGU**	30 AAC: **RGC1A60D30KGU**
AC/DC control voltage			
230 VAC, 800 Vp	20 AAC: **RGC1A23A15KGU**	25 AAC: **RGC1A23A25KGU**	30 AAC: **RGC1A23A30KGU**
600 VAC, 1200 Vp	20 AAC: **RGC1A60A15KGU**	25 AAC: **RGC1A60A20KGU**	30 AAC: **RGC1A60A30KGU**

Instant On (Random) Switching available on request (RGC1B60D...)

CARLO GAVAZZI

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output

Types	RGC..40/42KGE 40/43 AAC	RGC..40/42MGE 40/43 AAC	RGC..60/62KGE 60/65 AAC	RGC..62MGE 65 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings				
Dimensions HxWxD (mm)	110 x 35.6 x 141	110 x 35.6 x 152	110 x 69.1 x 141	110 x 69.1 x 152
Features	35 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, E-type layout	35 mm wide solid state contactor, spring plug for control terminals and box clamps for power terminals, E-type layout	70 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, E-type layout	70 mm wide solid state contactor, spring plug for control terminals and box clamps for power terminals, E-type layout
Input specifications				
Control input range	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications				
Rated operational current AC 51 @ Ta=40°C	40 AAC [RGC..40] 43 AAC [RGC..42]	40 AAC [RGC..40] 43 AAC [RGC..42]	60 AAC [RGC..60] 65 AAC [RGC..62]	65 AAC
AC 53a @ Ta=40°C	13 AAC [RGC..40] 16 AAC [RGC..42]	13 AAC [RGC..40] 16 AAC [RGC..42]	14.8 AAC [RGC..60] 20 AAC [RGC..62]	20 AAC
Min. operational current	400 mAAC [RGC..40] 500 mAAC [RGC..42]	400 mAAC [RGC..40] 500 mAAC [RGC..42]	400 mAAC [RGC..60] 500 mAAC [RGC..62]	500 mAAC
Non rep. surge current (t=10 ms)	800 A_P [RGC..40] 1900 A_P [RGC..42]	800 A_P [RGC..40] 1900 A_P [RGC..42]	800 A_P [RGC..60] 1900 A_P [RGC..62]	1900 A_P
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	3200 A^2s [RGC..40] 18000 A^2s [RGC..42]	3200 A^2s [RGC..40] 18000 A^2s [RGC..42]	3200 A^2s [RGC..60] 18000 A^2s [RGC..62]	18000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	42-660 VAC	24-264 VAC [RG.23..] 42-660 VAC [RG.60..]	42-660 VAC
Blocking voltage	800 V_P [RGC..23..] 1200 V_P [RGC..60..]	1200 V_P	800 V_P [RGC..23..] 1200 V_P [RGC..60..]	1200 V_P
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA
References				
230 VAC, 800 V_P, 3200 A^2s	40 AAC: **RGC1A23X40KGE**		60 AAC: **RGC1A23X60KGE**	
230 VAC, 800 V_P, 18000 A^2s	43 AAC: **RGC1A23X42KGE**		65 AAC: **RGC1A23X62KGE**	
600 VAC, 1200 V_P, 3200 A^2s	40 AAC: **RGC1A60X40KGE**	40 AAC: **RGC1A60X40MGE**	60 AAC: **RGC1A60X60KGE**	
600 VAC, 1200 V_P, 18000 A^2s	43 AAC: **RGC1A60X42KGE**	43 AAC: **RGC1A60X42MGE**	65 AAC: **RGC1A60X62KGE**	65 AAC: **RGC1A60X62MGE**

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGC1B.. models for Instant On (Random) switching are available on request
*690 VAC variants are CE marked only and do not include a varistor across the output

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output

Types	RGC..40/42KGU 40/43 AAC	RGC..60/62KGU 60/65 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings		
Dimensions HxWxD (mm)	110 x 35.6 x 141	110 x 69.1 x 141
Features	35 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, U-type layout	70 mm wide solid state contactor, screw terminals with captivated clamp for control terminals and box clamps for power terminals, U-type layout
Input specifications		
Control input range	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications		
Rated operational current		
AC-51 @ Ta=40°C	40 AAC [RGC..40] 43 AAC [RGC..42]	60 AAC [RGC..60] 65 AAC [RGC..62]
AC-53a @ Ta=40°C	13 AAC [RGC..40] 16 AAC [RGC..42]	14.8 AAC [RGC..60] 20 AAC [RGC..62]
Min. operational current	400 mAAC [RGC..40] 500 mAAC [RGC..42]	400 mAAC [RGC..60] 500 mAAC [RGC..62]
Non rep. surge current (t=10 ms)	800 A_P [RGC..40] 1900 A_P [RGC..42]	800 A_P [RGC..60] 1900 A_P [RGC..62]
Off-state leakage current	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	3200 A^2s [RGC..40] 18000 A^2s [RGC..42]	3200 A^2s [RGC..60] 18000 A^2s [RGC..62]
Critical dV/dt (@ Tj init= 40°C)	1000 V/µs	1000 V/µs
General specifications		
Operational voltage range	42-660 VAC	42-660 VAC
Blocking voltage	1200 V_P	1200 V_P
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA
References		
600 VAC, 1200 V_P, 3200 A^2s	40 AAC: **RGC1A60X40KGU**	60 AAC: **RGC1A60X60KGU**
600 VAC, 1200 V_P, 18000 A^2s	43 AAC: **RGC1A60X42KGU**	65 AAC: **RGC1A60X62KGU**

X must be replaced with D for DC control 4-32 VDC. X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGC1B.. models for Instant On (Random) switching are available on request

CARLO GAVAZZI

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output, high blocking voltage

Types	RGH..15KKE 23 AAC	RGH..31KKE 30 AAC	RGH..41KGE RGH..41KGU 40 AAC	RGH..60KGE RGH..60KGU 60 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings				
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 22.5 x 141	110 x 35.6 x 141	110 x 69.1 x 141
Features	17.8 mm wide solid state contactor, screw terminals with captivated clamp for control and power terminals, E-type layout	22.5 mm wide solid state contactor, screw terminals with captivated clamp for control and power terminals, E-type layout	35 mm wide solid state contactor, screw terminals with captivated clamp for control terminals, box clamps for power terminals, E-type or U-type layout	70 mm wide solid state contactor, screw terminals with captivated clamp for control terminals, box clamps for power terminals, E-type or U-type layout
Input specifications				
Control input range	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications				
Rated operational current AC 51 @ Ta=40°C	23 AAC	30 AAC	40 AAC	60 AAC
AC 53a @ Ta=40°C	5 AAC	10 AAC	13 AAC	18 AAC
Min. operational current	400 mAAC	400 mAAC	400 mAAC	400 mAAC
Non rep. surge current (t=10 ms)	1150 Ap	1150 Ap	1150 Ap	1150 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	6600 A^2s	6600 A^2s	6600 A^2s	6600 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC [RG..60..] 42-759 VAC [RG..69..]*	42-660 VAC [RG..60..] 42-759 VAC [RG..69..]*
Blocking voltage	1600 Vp	1600 Vp	1600 Vp	1600 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA
References				
E-type				
600 VAC, 1600 Vp, DC control	23 AAC: **RGH1A60D15KKE**	30 AAC: **RGH1A60D31KKE**	40 AAC: **RGH1A60D41KGE**	60 AAC: **RGH1A60D60KGE**
600 VAC, 1600 Vp, AC control	23 AAC: **RGH1A60A15KKE**	30 AAC: **RGH1A60A31KKE**	40 AAC: **RGH1A60A41KGE**	60 AAC: **RGH1A60A60KGE**
690 VAC, 1600 Vp, DC control			40 AAC: **RGH1A69D41KGE***	60 AAC: **RGH1A69D60KGE***
690 VAC, 1600 Vp, AC control			40 AAC: **RGH1A69A41KGE***	60 AAC: **RGH1A69A60KGE***
U-type				
600 VAC, 1600 Vp, DC control			40 AAC: **RGH1A60D41KGU**	60 AAC: **RGH1A60D60KGU**
600 VAC, 1600 Vp, AC control			40 AAC: **RGH1A60A41KGU**	60 AAC: **RGH1A60A60KGU**

*690 VAC variants are CE marked only and do not include a varistor across the output

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output, high blocking voltage

Types	RGH..15MKE 23 AAC	RGH..31MKE 30 AAC	RGH..41MGE 40 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings			
Dimensions HxWxD (mm)	110 x 17.8 x 114.5	110 x 22.5 x 152	110 x 35.6 x 152
Features	17.8 mm wide solid state contactor, spring plug for control termianls, screw terminals with captivated clamp for power terminals, E-type layout	22.5 mm wide solid state contactor, spring plug for control termianls, screw terminals with captivated clamp for power terminals, E-type layout	35 mm wide solid state contactor, spring plug for control termianls, box clamp power terminals, E-type layout
Input specifications			
Control input range	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications			
Rated operational current AC 51 @ Ta=40°C	23 AAC	30 AAC	40 AAC
AC 53a @ Ta=40°C	5 AAC	10 AAC	13 AAC
Min. operational current	400 mAAC	400 mAAC	400 mAAC
Non rep. surge current (t=10 ms)	1150 Ap	1150 Ap	1150 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	6600 A^2s	6600 A^2s	6600 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC
Blocking voltage	1600 Vp	1600 Vp	1600 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA
References			
600 VAC, 1600 Vp, DC control	23 AAC: **RGH1A60D15MKE**	30 AAC: **RGH1A60D31MKE**	40 AAC: **RGH1A60D41MGE**
600 VAC, 1600 Vp, AC control		30 AAC: **RGH1A60A31MKE**	40 AAC: **RGH1A60A41MGE**

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Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output with over temperature protection

Types	RG..30..P 30 AAC	RG..40/42..P 40/43 AAC	RG..60/62..P 60/65 AAC	RG..90/92..P 85 AAC
Single-phase, semiconductor contactors with integrated heatsink, LED indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, certified motor ratings				
Dimensions HxWxD (mm)	110 x 22.5 x 168	110x 35.6 x 168	110 x 69.1 x 168	126 x 69.1 x 168 (with fan)
Features	Integrated over temperature protection against over heating, screw terminals with captivated clamp for power terminals and box clamps for control terminals	Integrated over temperature protection against over heating, box clamps for connection of power and control terminals	Integrated over temperature protection against over heating, box clamps for connection of power and control terminals	Integrated over temperature protection against over heating, box clamps for connection of power and control terminals
Input specifications				
Control input range	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	24 mADC [RG..D.] 35 mAAC [RG..A.]	24 mADC [RG..D.] 35 mAAC [RG..A.]	23 mADC [RG..D.] 35 mAAC [RG..A.]	23 mADC [RG..D.] 35 mAAC [RG..A.]
Supply voltage				
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC	50 mADC (fan rating 24 VDC/50 mA)
Over temperature alarm				
Alarm output	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P]
	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]
Output specifications				
Rated operational current				
AC 51 @ Ta=40°C	30 AAC	40 AAC [RGC..40], 43 AAC [RGC..42]	60 AAC [RGC..60] 65 AAC [RGC..62]	85 AAC
AC 53a @ Ta=40°C	8 AAC	13 AAC [RGC..40], 16 AAC [RGC..42]	14.8 AAC [RGC..60] 20 AAC [RGC..62]	18 AAC [RGC..90] 20 AAC [RGC..92]
Min. operational current	250 mA	400 mAAC [RGC..40], 500 mAAC [RGC..42]	400 mA [RGC..60] 500 mA [RGC..62]	400 mA [RGC..90] 500 mA [RGC..92]
Non rep. surge current (t=10 ms)	600 A_P	800 A_P [RGC..40] 1900 A_P [RGC..42]	800 A_P [RGC..60] 1900 A_P [RGC..62]	1150 A_P [RGC..90] 1900 A_P [RGC..92]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	1800 A^2s	3200 A^2s [RGC..40], 18000 A^2s [RGC..42]	3200 A^2s [RGC..60] 18000 A^2s [RGC..62]	6600 A^2s [RGC..90] 18000 A^2s [RGC..92]
Critical dV/dt off-state (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC	42-660 VAC
Blocking voltage	1200 V_P	1200 V_P	1200 V_P	1200 V_P
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Approvals/Marks	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA	CE - cULus - VDE - EAC - UKCA
References				
DC control voltage				
600 VAC, 1200 V_P, U-type		40 AAC: **RGC1A60D40GGUP**	60 AAC: **RGC1A60D60GGUP**	85 AAC: **RGC1A60D90GGUP**
600 VAC, 1200 V_P, E-type	30 AAC: **RGC1A60D30GKEP**	43 AAC: **RGC1A60D42GGEP**	65 AAC: **RGC1A60D62GGEP**	85 AAC: **RGC1A60D90GGEP**
600 VAC, 1200 V_P, E-type, high I^2t				85 AAC: **RGC1A60D92GGEP**
AC/DC control voltage				
600 VAC, 1200 V_P, U-type		40 AAC: **RGC1A60A40GGUP**	60 AAC: **RGC1A60A60GGUP**	85 AAC: **RGC1A60A90GGUP**
600 VAC, 1200 V_P, E-type	30 AAC: **RGC1A60A30GKEP**	43 AAC: **RGC1A60A42GGEP**	65 AAC: **RGC1A60A62GGEP**	85 AAC: **RGC1A60A90GGEP**
600 VAC, 1200 V_P, E-type, high I^2t				85 AAC: **RGC1A60A92GGEP**

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Solid state contactors, Slimline, 1-phase

DIN-rail mounting - DC output

Types	RGC1D..15KKE 15 ADC
Single-phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, rated isolation voltage ≥4000 Vrms	
Dimensions HxWxD (mm)	110 x 17.8 x 141
Features	17.8 mm wide solid state contactor for DC switching with integrated free wheeling diode, DC control, screw terminals with captivated washer for power and control, E-type layout
Input specifications	
Control input range	4.5-32 VDC
Max. input current	13.7 mADC
Output specifications	
DC 1 @ 40°C	15 ADC
Min. operational current	20 mADC
Non rep. surge current (Itsm) (t=10 ms)	200 ADC (10us)
Off-state leakage current	1.5 mADC
General specifications	
Operational voltage range	24-1000 VDC [CE] 24-600 VDC [UL508]
Blocking voltage	1200 V_P
Operating temperature	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - EAC - UKCA
References	
1000 VDC	15 ADC: **RGC1D1000D15KKE**

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Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output, integrated system monitoring

Types	RGC1A..15/25/31KEM 20/25/30 AAC	RGC1A..30KEM 30 AAC	RGC1A..42GEM 43 AAC	RGC1A..62GEM 65 AAC
Single-phase, semiconductor contactors with integrated monitoring, integrated overvoltage protection, LED indication and IP20 protection, 45-65 Hz operating frequnecy, isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating, E-type layout.				
Dimensions HxWxD (mm)	110 x 17.8 x 134	110 x 22.5 x 171.5	110 x 35.6 x 171.5	110 x 70 x 171.5
Features	17.8 mm wide solid state contactor, integrated monitoring for SSR and load malfunction, transistor alarm output	22.5 mm wide solid state contactor, integrated monitoring for SSR and load malfunction, transistor alarm output	35 mm wide solid state contactor, integrated monitoring for SSR and load malfunction, transistor alarm output	70 mm wide solid state contactor, integrated monitoring for SSR and load malfunction, transistor alarm output
Input specifications				
Control input range	4-32 VDC	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	0.5 mADC at 24 VDC	0.5 mADC at 24 VDC	0.5 mADC at 24 VDC	0.5 mADC at 24 VDC
Supply voltage				
Rated supply voltage	19.2-28.8 VDC	19.2-28.8 VDC	19.2-28.8 VDC	19.2-28.8 VDC
Max. current rating	40 mA	40 mA	40 mA	40 mA
Alarm specifications				
Output type	Transistor, NC, NO max. 35 VDC/100 mA	Transistor, NC, NO max. 35 VDC/100 mA	Transistor, NC, NO max. 35 VDC/100 mA	Transistor, NC, NO max. 35 VDC/100 mA
Alarm Condition	Mains loss, load loss, SSR open and short cct, SSR internal error, supply out of range	Mains loss, load loss, SSR open and short cct, SSR internal error, supply out of range	Mains loss, load loss, SSR open and short cct, SSR internal error, supply out of range	Mains loss, load loss, SSR open and short cct, SSR internal error, supply out of range
Output specifications				
Rated operational current AC 51 @ Ta=40°C	20 AAC [RGC..15] 25 AAC [RGC..25] 30 AAC [RGC..31]	30 AAC	43 AAC	65 AAC
Minimum operational current	150 mAAC [RGC..15] 250 mAAC [RGC..25] 400 mAAC [RGC..31]	250 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	325 A_P [RGC..15] 600 A_P [RGC..25] 1150 A_P [RGC..31]	600 A_P	1900 A_P	1900 A_P
Max. off state leakage current	5 mAAC	5 mAAC	5 mAAC	5 mAAC
I^2t for fusing (t=10ms)	525 A^2s [RGC..15] 1800 A^2s [RGC..25] 6600 A^2s [RGC..31]	1800 A^2s	18000 A^2s	18000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	42-265 VAC [RGC1A23..] 150-660 VAC [RGC1A60..]	150-660 VAC	150-660 VAC	150-660 VAC
Blocking voltage	800 V_P [RGC1A23..] 1200 V_P [RGC1A60..]	1200 V_P	1200 V_P	1200 V_P
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)
Approvals/Marks	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA
References				
230 VAC, 800 V_P, 525A^2s	20 AAC: **RGC1A23D15KEM**			
230 VAC, 800 V_P, 6600 A^2s	30 AAC: **RGC1A23D31KEM**			
600 VAC, 1200 V_P, 525 A^2s	20 AAC: **RGC1A60D15KEM**			
600 VAC, 1200 V_P, 1800 A^2s	25 AAC: **RGC1A60D25KEM**	30 AAC: **RGC1A60D30KEM**		
600 VAC, 1200 V_P, 6600 A^2s	30 AAC: **RGC1A60D31KEM**			
600 VAC, 1200 V_P, 18000 A^2s			43 AAC: **RGC1A60D42GEM**	65 AAC: **RGC1A60D62GEM**

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Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output, integrated current measurement

Types	RGC1S..20/30/31GKEP 23/30 AAC	RGC1S..25GKEP 25 AAC	RGC1S..26GGEP 25 AAC
Single-phase, semiconductor contactor with LED for control status indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 22.5 x 163	110 x 22.5 x 126	110 x 22.5 x 126
Features	22.5 mm wide solid state contactor, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.	22.5 mm wide solid state contactor, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.	22.5 mm wide solid state contactor, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.
Input specifications			
Control input range	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	10 mADC at 24 VDC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply voltage			
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC
Alarm specifications			
Output type	NC PNP open collector max. 35 VDC/50 mA	NC PNP open collector max. 35 VDC/50 mA	NC PNP open collector max. 35 VDC/50 mA
Alarm Indication	Red LED (flash rate)	Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	23 AAC [RGC1S..20] 30 AAC [RGC1S..30] 30 AAC [RGC1S..31]	25 AAC	25 AAC
Minimum TEACH / operational current	1.2 AAC	1.2 AAC	1.2 AAC
Minimum partial load current	0.2 AAC	0.2 AAC	0.2 AAC
Detectable partial load failure	>16.67% from current setpoint	>16.67% from current setpoint	>16.67% from current setpoint
Non. rep. surge current Itsm (t=10ms)	325 A_P [RGC1S..20] 600 A_P [RGC1S..30] 1150 A_P [RGC1S..31]	600 A_P	1900 A_P
Max. off state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10ms)	525 A^2s [RGC1S..20] 1800 A^2s [RGC1S..30] 6600 A^2s [RGC1S..31]	1800 A^2s	18000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC
Blocking voltage	1200 V_P	1200 V_P	1200 V_P
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)
Approvals/Marks	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA
References			
600 VAC, 1200 V_P, 525A^2s	23 AAC: **RGC1S60D20GKEP**		
600 VAC, 1200 V_P, 1800A^2s	30 AAC: **RGC1S60D30GKEP**	25 AAC: **RGC1S60D25GKEP**	
600 VAC, 1200 V_P, 6600A^2s	30 AAC: **RGC1S60D31GKEP**		
600 VAC, 1200 V_P, 18000A^2s			25 AAC: **RGC1S60D26GGEP**

GK = screws for control terminals, box clamps for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - AC output, integrated current measurement

Types	RGC1S..41GG.P 43 AAC	RGC1S..61GG.P 65 AAC	RGC1S..90GGEP 85 AAC
Single-phase, semiconductor contactor with LED for control status indication, integrated overvoltage protection, IP20 protection, 45-65 Hz operating frequency, rated isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 35.6 x 163	110 x 69.1 x 163	126 x 69.1 x 163 (with fan)
Features	35 mm wide solid state contactor, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.	70 mm wide solid state contactor, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.	70 mm wide solid state contactor, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.
Input specifications			
Control input range	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	10 mADC at 24 VDC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply voltage			
Supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC (fan rating 24 VDC / 50 mA)
Alarm specifications			
Output type	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA
Alarm Indication	Red LED (flash rate)	Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	43 AAC	65 AAC	85 AAC
Minimum TEACH / operational current	1.2 AAC	5 AAC	5 AAC
Minimum partial load current	0.2 AAC	0.83 AAC	0.83 AAC
Detectable partial load failure	>16.67% from current setpoint	>16.67% from current setpoint	>16.67% from current setpoint
Non. rep. surge current Itsm (t=10 ms)	1900 Ap	1900 Ap	1900 Ap
Max. off state leakage current	3 mAAC	3 mAAC	3 mAAC
I^2t for fusing (t=10 ms)	18000 A^2s	18000 A^2s	18000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)	-25°C to +70°C (-13°F to +158°F)
Approvals/Marks	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA	CE - cULus - EAC - UKCA
References			
600 VAC, 1200 Vp, E-type	43 AAC: **RGC1S60D41GGEP**	65 AAC: **RGC1S60D61GGEP**	85 AAC: **RGC1S60D90GGEP**
600 VAC, 1200 Vp, U-type	43 AAC: **RGC1S60D41GGUP**	65 AAC: **RGC1S60D61GGUP**	

GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - Soft start switching

Types	RGC1P..K.. 30 AAC	RGC1P..K.. 43 AAC	RGC1P..K.. 63 AAC
Single-phase, semiconductor contactor with integrated overvoltage protection, LED for control and load status indication, IP20 protection, isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 35.8 x 104	110 x 35.8 x 104	110 x 72 x 126
Features	DC control input solid state contactor with soft starting feature for short wave infrared heaters	DC control input solid state contactor with soft starting feature for short wave infrared heaters	DC control input solid state contactor with soft starting feature for short wave infrared heaters
Supply specifications			
Supply voltage	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% 24 VAC -15%, +15%
Max. supply current	30 mA	30 mA	30 mA
Control specifications			
Control input	19.2 - 28.8 VDC	19.2 - 28.8 VDC	19.2 - 28.8 VDC
Input impedance	100 kΩ	100 kΩ	100 kΩ
Output specifications			
Rated operational current AC-51 @ 40°C	30 AAC	43 AAC	63 AAC
Minimum operational current	250 mAAC	500 mAAC	500 mAAC
Non rep. surge current (Itsm) (t=10 ms)	600 Ap	1900 Ap	1900 Ap
I^2t for fusing (t=10 ms)	1800 A^2s	18000 A^2s	18000 A^2s
Max. Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..] 410 - 660 VAC [RGC1P60..]	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..] 410 - 660 VAC [RGC1P60..]	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..] 410 - 660 VAC [RGC1P60..]
Blocking voltage	800 Vp [RGC1P23..] 1200 Vp [RGC1P48..] 1200 Vp [RGC1P60..]	800 Vp [RGC1P23..] 1200 Vp [RGC1P48..] 1200 Vp [RGC1P60..]	800 Vp [RGC1P23..] 1200 Vp [RGC1P48..] 1200 Vp [RGC1P60..]
Power factor	> 0.7	> 0.7	> 0.7
Terminals	Screw with captive clamp	Box clamp	Box clamp
Operating temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Approvals/Marks	CE - UL - cUL - EAC - UKCA	CE - UL - cUL - EAC - UKCA	CE - UL - cUL - EAC - UKCA
References			
External supply 24 VDC/AC			
Operational output 85 - 265 VAC	**RGC1P23K30ED**	**RGC1P23K42ED**	**RGC1P23K62ED**
Operational output 190 - 550 VAC	**RGC1P48K30ED**	**RGC1P48K42ED**	**RGC1P48K62ED**
Operational output 410 - 660 VAC	**RGC1P60K30ED**	**RGC1P60K42ED**	**RGC1P60K62ED**

CARLO GAVAZZI

Solid state contactors, Slimline, 1-phase

DIN-rail mounting - Proportional controllers

Types	RGC1P..AA.. / V.. 12 AAC	RGC1P..AA.. / V.. 30 AAC	RGC1P..AA.. / V.. 43 AAC	RGC1P..AA.. / V.. 50 / 63 AAC
Single-phase, semiconductor contactor with integrated overvoltage protection, LED for control and load status indication, IP20 protection, isolation voltage ≥4000 Vrms, 100 kArms short circuit current rating.				
Dimensions HxWxD (mm)	106 x 35.8 x 65	110 x 35.8 x 104	110 x 35.8 x 104	110 x 72 x 126
Features	Analogue input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analogue input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analogue input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analogue input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting
Supply specifications				
Supply voltage	24 VDC -15%, +20% [RG..V..ED] 24 VAC -15%, +15% [RG..V..ED] 90-250 VAC [RG..V..EA]	24 VDC -15%, +20% [RG..V..ED] 24 VAC -15%, +15% [RG..V..ED] 90-250 VAC [RG..V..EA]	24 VDC -15%, +20% [RG..V..ED] 24 VAC -15%, +15% [RG..V..ED] 90-250 VAC [RG..V..EA]	24 VDC -15%, +20% [RG..V..ED] 24 VAC -15%, +15% [RG..V..ED] 90-250 VAC [RG..V..EA]
Max. supply current	30 mA [RG..V..ED] 14 mA [RG..V..EA]	30 mA [RG..V..ED] 14 mA [RG..V..EA]	30 mA [RG..V..ED] 14 mA [RG..V..EA]	30 mA [RG..V..ED] 14 mA [RG..V..EA]
Control specifications				
Control input range	4-20 mA [RG..AA..] 0-10 V, 0-5 V, 1-5 V, POT [RG..V..]	4-20 mA (RG..AA..) 0-10 V, 0-5 V, 1-5 V, POT [RG..V..]	4-20 mA [RG..AA..] 0-10 V, 0-5 V, 1-5 V, POT [RG..V..]	4-20 mA [RG..AA..] 0-10 V, 0-5 V, 1-5 V, POT [RG..V..]
Input impedance	500 Ω [RG..AA..] 100 kΩ [RG..V..]	500 Ω [RG..AA..] 100 kΩ [RG..V..]	500 Ω [RG..AA..] 100 kΩ [RG..V..]	500 Ω [RG..AA..] 100 kΩ [RG..V..]
Output specifications				
Rated operational current AC-51 @ 40°C	15 AAC	30 AAC	43 AAC	50 AAC [RG..50] 63 AAC [RG..62]
Minimum operational current	250 mAAC	250 mAAC	500 mAAC	500 mAAC
Non rep. surge current (Itsm) (t=10 ms)	600 AP	600 AP	1900 AP	800 AP [RG..50] 1900 AP [RG..62]
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	18000 A^2s	3200 A^2s [RG..50] 18000 A^2s [RG..62]
Max. Off-state leakage current	5 mAAC	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..]	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..] 410 - 660 VAC [RGC1P60..]	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..] 410 - 660 VAC [RGC1P60..]	85 - 265 VAC [RGC1P23..] 190 - 550 VAC [RGC1P48..] 410 - 660 VAC [RGC1P60..]
Blocking voltage	800 VP [RGC1P23..] 1200 VP [RGC1P48..]	800 VP [RGC1P23..] 1200 VP [RGC1P48..] 1200 VP [RGC1P60..]	800 VP [RGC1P23..] 1200 VP [RGC1P48..] 1200 VP [RGC1P60..]	800 VP [RGC1P23..] 1200 VP [RGC1P48..] 1200 VP [RGC1P60..]
Power factor	> 0.7	> 0.7	> 0.7	> 0.7
Terminals	Screw with captive clamp	Screw with captive clamp	Box clamp	Box clamp
Operating temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Approvals/Marks	CE - UL - cUL - EAC - UKCA	CE - UL - cUL - EAC - UKCA	CE - UL - cUL - EAC - UKCA	CE - UL - cUL - EAC - UKCA
References				
Control input				
4-20 mA	**RGC1PYYAA12E**	**RGC1PXXAA30E**	**RGC1PXXAA42E**	50 AAC: **RGC1PYYAA50E** 63 AAC: **RGC1PXXAA62E**
0-10 VDC, 0-5 VDC, 1-5 VDC, POT				
External supply 24 VDC/AC	**RGC1PYYV12ED**	**RGC1PXXV30ED**	**RGC1PXXV42ED**	50 AAC: **RGC1PYYV50ED** 63 AAC: **RGC1PXXV62ED**
External supply 90-250 VAC	**RGC1PYYV12EA**	**RGC1PXXV30EA**	**RGC1PXXV42EA**	63 AAC: **RGC1PXXV62EA**

XX = 23 for operational voltage range 85 - 265 VAC
48 for operational voltage range 190 - 550 VAC
60 for operational voltage range 410 - 660 VAC
YY = 23 for operational voltage range 85 - 265 VAC
48 for operational voltage range 190 - 550 VAC

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Solid state relays with communication interface

	NRG controller PROFINET	NRG controller EtherNet/IP™	NRG controller EtherCAT	NRG controller Modbus TCP
Types	**NRGC-PN**	**NRGC-EIP**	**NRGC-ECAT**	**NRGC-MBTCP**
Solid state solutions with real-time monitoring. The NRG controller and NRG BUS cables are required for the operation of the NRG solid state relays.				
Dimensions HxWxD (mm)	90 x 38.5 x 64 (without plugs) 107 x 38.5 x 64 (with plug)	90 x 38.5 x 64 (without plugs) 107 x 38.5 x 64 (with plug)	90 x 38.5 x 64 (without plugs) 107 x 38.5 x 64 (with plug)	90 x 38.5 x 64 (without plugs) 107 x 38.5 x 64 (with plug)
	Controller of the NRG BUS chain with PROFINET interface. The NRGC-PN auto addresses the NRG solid state relays on startup. Each NRGC-PN can handle a maximum of 32 NRG solid state relays	Controller of the NRG BUS chain with EtherNet/IP interface. The NRGC-EIP auto addresses the NRG solid state relays on startup. Each NRGC-EIP can handle a maximum of 32 NRG solid state relays	Controller of the NRG BUS chain with EtherCAT interface. The NRGC-ECAT auto addresses the NRG solid state relays on startup. Each NRGC-ECAT can handle a maximum of 32 NRG solid state relays	Controller of the NRG BUS chain with Modbus TCP interface. The NRGC-MBTCP auto addresses the NRG solid state relays on startup. Each NRGC-MBTCP can handle a maximum of 32 NRG solid state relays
Supply specifications				
Supply voltage	19.2 - 32 VDC	19.2 - 32 VDC	19.2 - 32 VDC	19.2 - 32 VDC
Power consumption	<12 W	<12 W	<12 W	<12 W
Alarm specifications				
Alarm output	Red LED, Diagnostics messages via the PROFINET Diagnostic System	Red LED, Diagnostics messages via EtherNet/IP implicit messages	Red LED, Diagnostics messages via EtherCAT Service Data Objects	Red LED, Diagnostics messages via NRGC-MBTCP status register
General specifications				
Communication protocol	PROFINET	EtherNet/IP	EtherCAT	Modbus TCP
Communication parameters	GSDML file	EDS file	ESI file	
Physical interface	2x RJ45 plugs ports (X1, X2) 100 Mbit, full duplex	2x RJ45 plugs ports (Link, ACT) 100 Mbit, full duplex	2x RJ45 plugs ports (X1, X2) 100 Mbit, full duplex	2x RJ45 plugs ports (Link, RX/TX) 100 Mbit, full duplex
	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)
Approvals/Marks	CE - cULus - EAC - UKCA - PI certified	CE - cULus - EAC - UKCA - ODVA conformant	CE - cULus - EAC - UKCA - EtherCAT conformance tested	CE - cULus - EAC - UKCA
References				
NRG controller	**NRGC-PN**	NRGC-EIP	NRGC-ECAT	**NRGC-MBTCP**

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Solid state relays with communication interface

	NRG controller Modbus RTU	NRG BUS cables
Types	**NRGC**	**RCRGN..**
The NRG controller is the communication interface between the main controller and the NRG solid state relays. The NRG bus cables are required to connect the NRG bus chain.		
Dimensions HxWxD (mm)	90 x 38.5 x 64 (without plugs) 107 x 38.5 x 64 (with plugs)	
	Controller of the NRG BUS chain with Modbus RTU over RS485 interface. The NRGC is the master of the BUS chain when configuration is required for the NRG SSRs. It acts as a gateway when the PLC needs to access the NRG SSRs. Each NRGC can handle a maximum of 48 RG..D..N (NRG SSRs with external control) or 32 RG..CM..N (NRGS SSRs with control via bus)	Terminated proprietary cables for the NRG internal BUS connecting respective RG..N solid state relays and RG..N solid state relays to the NRG controller. The BUS terminator terminates the internal BUS

Supply specifications

Supply voltage	19.2 - 32 VDC
Power consumption	<12 W

Auxiliary output specifications

Relay output	EMR, 3 pins (1 Form C)
Relay output function	Configurable as an auxiliary output or an alarm output. Default is set as an alarm output (operates in case of NRGC related alarms)
Relay output ratings	2 A, 250 VAC / 30 VDC

Alarm specifications

Alarm output	Red LED, Relay output if set to operate as an alarm output, status register of the NRGC

General specifications

Communication protocol	Modbus RTU, 2-wire half duplex
Communication parameters	Baudrate: 115200 bits/s (selectable 9600, 19200, 38400, 57600)
Physical interface	2x RJ45 plugs
	-20°C to +65°C (-4°F to +149°F)
Approvals/Marks	CE - cULus - EAC - UKCA

References

NRG controller	**NRGC**	
NRG BUS cabes		10 cm: **RCRGN-010-2**
		25 cm: **RCRGN-025-2**
		75 cm: **RCRGN-075-2**
		150 cm: **RCRGN-150-2**
		350 cm: **RCRGN-350-2**
		500 cm: **RCRGN-500-2**
NRG internal BUS termination		**RGN-TERMRES***

* 1x RGN-TERMRES is provided with each NRG Controller

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Solid state relays with communication interface, 1-phase

NRG Solid state relays

Types	RGS..N 50/90 AAC	RGC..N 25/30/37 AAC	RGC..N 43 AAC	RGC..N 65 AAC
Switching components within the NRG system; Single-phase, AC operating frequency 45-65 Hz, rated isolation ≥4000 Vrms, IP20 protection, 100 kArms short circuit current rating according to UL508, integrated varistor on output.				
Dimensions HxWxD (mm)	90 x 17.8 x 82	110 x 17.8 x 134	110 x 35 x 172	110 x 70 x 172
Features	Solid state relays with integrated monitoring and a communication interface to provide real time data through an internal BUS: Current, Voltage, Frequency, Power, Energy consumption, SSR running hours and Load running hours. Interface to the PLC is done through the NRGC... RG..**D**..N versions are switched via an external voltage. A max. of 48 RG..**D**..Ns can be connected to 1x **NRGC**. RG..**CM**..N versions can be switched via the communication interface as default or through an external voltage. RGx1**A**..**CM**..N allows selection of switching mode in ON/OFF, Full cycle, Advanced full cycle or Burst. The RGx1**P**..**CM**..N variant includes also phase angle and soft start switching. A max. of 32 RG..**CM**..Ns can be connected to 1x **NRGC**...			
Control specifications				
Control input range	4-32 VDC	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	12.5 mA	12.5 mA	12.5 mA	12.5 mA
Supply specifications				
Supply voltage	Provided through internal BUS using cables RCRGN…			
Alarm specifications				
Alarm output	Red LED on the RG..N, alarm presence is identified through the status register of the solid state relay. Alarms that can be detected include: load deviation, system failure (mains loss, load loss, SSR open circuit), SSR short circuit, current out of range, voltage out of range, frequency out of range, over-temperature protection, communication and internal errors.			
Output specifications				
Rated operational current				
AC 51 @ Ta=40°C	50 AAC [RGS..50..] 90 AAC [RGS..92..]	25 AAC [RGC..25KEN] 30 AAC [RGC..32KEN] 37 AAC [RGC..32GEN]	43 AAC [RGC..42..]	65 AAC [RGC..62..]
Min. operational current	250 mAAC [RGS..50..] 500 mAAC [RGS..92..]	250 mAAC [RGC..25..] 500 mAAC [RGC..32..]	500 mAAC	500 mAAC
Non-rep. surge current (t=10 ms)	600 A_P [RGS..50..] 1900 A_P [RGS..92..]	600 A_P [RGC..25..] 1900 A_P [RGC..32..]	1900 A_P	1900 A_P
Off-state leakage current	< 5 mAAC	< 5 mAAC	< 5 mAAC	< 5 mAAC
I^2t for fusing (t=10 ms)	1800 A^2s [RGS..50..] 18000 A^2s [RGS..92..]	1800 A^2s [RGC..25..] 18000 A^2s [RGC..32..]	18000 A^2s	18000 A^2s
Critical dV/dt off-state	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC	42-660 VAC
Blocking voltage	1200 V_P	1200 V_P	1200 Vp	1200 Vp
Power factor	≥ 0.9	≥ 0.9	≥ 0.9	≥ 0.9
Operating temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)
Output terminals	Screw [RG..KEN] Box clamp [RG..GEN]	Screw [RG..KEN] Box clamp [RG..GEN]	Box clamp	Box clamp
Approvals/Marks	CE - UR - CSA - EAC - UKCA -CCC	CE - cULus - EAC - UKCA-CCC	CE - cULus - EAC - UKCA - CCC	CE - cULus - EAC - UKCA - CCC
References				
Zero cross switching	50 AAC: **RGS1A60X50KEN** 90 AAC: **RGS1A60X92KEN** 90 AAC: **RGS1A60X92GEN**	25 AAC: **RGC1A60X25KEN** 30 AAC: **RGC1A60X32KEN** 37 AAC: **RGC1A60X32GEN**	43 AAC: **RGC1A60X42GEN**	65 AAC: **RGC1A60X62GEN**
Proportional switching	50 AAC: **RGS1P60CM50KEN** 90 AAC: **RGS1P60CM92KEN** 90 AAC: **RGS1P60CM92GEN**	25 AAC: **RGC1P60CM25KEN** 30 AAC: **RGC1P60CM32KEN** 37 AAC: **RGC1P60CM32GEN**	43 AAC: **RGC1P60CM42GEN**	65 AAC: **RGC1P60CM62GEN**

X = 'D' for versions with external control only. Compatabile with NRGC only
X = 'CM' for versions that can be switched via the communication interface or optionally through external control.
Compatabile with NRGC, NRGC-PN, NRGC-EIP, NRGC-ECAT, NRGC-MBTCP

Solid state contactors, 45 mm, 3-phase

DIN-rail mounting - AC output, 3 poles

Types	RGCM3A..15.. 15 AAC / 2.2 kW
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥4000 Vrms.	
Dimensions HxWxD (mm)	105 x 45 x 105
Features	45 mm solid state contactor, enclosed heatsink, integrated varistors for over-voltage protection, 5 kArms SCCR, screw with clamp for power connection
Control specifications	
Control input range	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]
Output specifications	
Rated operational current AC-51 @ Ta=40°C	15.5 AAC
AC-53a @ Ta=40°C	5.8 AAC
Motor rating	2.2 kW @ 400 VAC 3 HP @ 600 VAC
Minimum operational current	250 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 AP
I^2t for fusing (t=10 ms)	1800 A^2s
Off-state leakage current	3 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs
General specifications	
Operational voltage range	42-660 VAC
Blocking voltage	1200 V_P
Power factor	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F)
Approvals/Marks	CE - cULus - EAC - UKCA
References	
DC control voltage	**RGCM3A60D15GKE**
AC control voltage	**RGCM3A60A15GKE**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, 3-phase

DIN-rail mounting - AC output, 2 + 1 poles

Types	RGC2A..10.. 10 AAC	RGC2A..25.. 27 AAC	RGC2A..40.. 40 AAC	RGC2A..75..F 75 AAC
Semiconductor contactors with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating, certified motor ratings.				
Dimensions HxWxD (mm)	106 x 54 x 65	110 x 54 x 103	110 x 72 x 126	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, screw with captivated clamp for power connections	54 mm solid state contactor, screw with captivated clamp for power connections	72 mm solid state contactor, box clamp for power connections	72 mm solid state contactor with integrated fan and overtemperature protection, box clamp for power connections
Input specifications				
Control input range	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RG..D..DF] 5-32 VDC [RG..D..AF] 20-275 VAC [RG..A..AF]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	12.5 mADC [RG..D..DF] 5.5 mADC [RG..D..AF] 4.3 mAAC [RG..A..AF]
External supply voltage				24 VDC [RG..D..DF] 90-250 VAC [RG..D..AF] 90-250 VAC [RG..A..AF]
Max. supply current				150 mADC [RG..D..DF] 80 mADC [RG..D..AF] 80 mAAC [RG..A..AF]
Alarm specifications				
Alarm output				EMR: 2 A 230 VAC / 30 VDC
Alarm condition				Over Temperature
Output specifications				
Rated operational current AC-51 @ Ta=40°C	10 AAC	27 AAC	40 AAC	75 AAC
AC-53a @ Ta=40°C	5 AAC	11.5 AAC	16.5 AAC	28 AAC
Motor rating	1.5 kW @ 400 VAC 3 HP @ 600 VAC VAC	5.5 kW @ 400 VAC 10 HP @ 600 VAC	7.5 kW @ 400 VAC 15 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC
Minimum operational current	250 mAAC	250 mAAC	400 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 A_P	600 A_P	1150 A_P	1750 A_P
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	6600 A^2s	15000 A^2s
General specifications				
Operational voltage range	42-660 VAC	42-242 VAC [RG..22.] 42-660 VAC [RG..60.]	42-660 VAC	42-660 VAC
Blocking voltage	1200 V_P	800 V_P [RG..22.] 1200 V_P [RG..60.]	1200 V_P	1200 V_P
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +70°C (-40°F to +158°F) [RG..DF] -40°C to +60°C (-40°F to +140°F) [RG..AF]
Approvals/Marks	CE - cULus - EAC - VDE - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA
References				
DC control voltage				
220 VAC, 800 V_P		**RGC2A22D25KKE**		
600 VAC, 1200 V_P	**RGC2A60D10KKE**	**RGC2A60D25KKE**	**RGC2A60D40KGE**	
AC/DC control voltage				
220 VAC, 800 V_P		**RGC2A22A25KKE**		
600 VAC, 1200 V_P	**RGC2A60A10KKE**	**RGC2A60A25KKE**	**RGC2A60A40KGE**	
DC control voltage, DC external supply				**RGC2A60D75GGEDF**
DC control voltage, AC external supply				**RGC2A60D75GGEAF**
AC control voltage, AC external supply				**RGC2A60A75GGEAF**

KK = screws for control terminals, screws for power terminals
KG = screws for control terminals, box clamps for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI

Solid state contactors, 3-phase

DIN-rail mounting - AC output with monitoring, 2 + 1 poles

Types	RGC2A..25..M 27 AAC	RGC2A..40..M 40 AAC	RGC2A..75..FM 75 AAC
Semiconductor contactors with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DFM] 5-32 VDC [RG..D..AFM] 20-275 VAC [RG..A..AFM]
Control current @ max. control voltage	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DFM] 5.5 mADC [RG..D..AFM] 4.3 mAAC [RG..A..AFM]
External supply voltage	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DFM] 90-250 VAC [RG..D..AFM] 90-250 VAC [RG..A..AFM]
Max. supply current	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	150 mADC [RG..D..DFM] 80 mAAC [RG..D..AFM] 80 mAAC [RG..A..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Output specifications			
Rated operational current AC-51 @ Ta=40°C	27 AAC	40 AAC	75 AAC
Minimum operational current	250 mAAC	400 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10 ms)	1800 A^2s	6600 A^2s	15000 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
General specifications			
Operational voltage range	90-660 VAC	90-660 VAC	90-660 VAC
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Operating temperature	-40°C to +80°C (-40°F to +176°F) [RG..DM] -40°C to +60°C (-40°F to +140°F) [RG..AM]	-40°C to +80°C (-40°F to +176°F) [RG..DM] -40°C to +60°C (-40°F to +140°F) [RG..AM]	-40°C to +70°C (-40°F to +158°F) [RG..DFM] -40°C to +60°C (-40°F to +140°F) [RG..AFM]
Approvals/Marks	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA
References			
600 VAC, 1200 Vp			
DC control voltage, DC external supply	**RGC2A60D25GKEDM**	**RGC2A60D40GGEDM**	**RGC2A60D75GGEDFM**
DC control voltage, AC external supply	**RGC2A60D25GKEAM**	**RGC2A60D40GGEAM**	**RGC2A60D75GGEAFM**
AC control voltage, AC external supply	**RGC2A60A25GKEAM**	**RGC2A60A40GGEAM**	**RGC2A60A75GGEAFM**

GK = box clamps for control terminals, screws for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, 3-phase

DIN-rail mounting - AC output, 3 poles

Types	RGC3A..10.. 10 AAC	RGC3A..20.. 20 AAC	RGC3A..25.. / 30.. 28/30 AAC
Semiconductor contactors with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating, certified motor ratings.			
Dimensions HxWxD (mm)	110 x 54 x 63.5	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor, screw with captivated clamp for power connections	54 mm solid state contactor, screw with captivated clamp for power connections	70 mm solid state contactor, screw with captivated clamp or box clamp for power connections
Input specifications			
Control input range	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	10 AAC	20 AAC	28 AAC [RGC3..25] 30 AAC [RGC3..30]
AC-53a @ Ta=40°C	5 AAC	10 AAC	11 AAC [RGC3..25] 14 AAC [RGC3..30]
Motor rating	1.5 kW @ 400 VAC 3 HP @ 600 VAC	4 kW @ 400 VAC 10 HP @ 600 VAC	4 kW @ 400 VAC [RGC3..25] 5.5 kW @ 400 VAC [RGC3..30] 10 HP @ 600 VAC [RGC3..25] 15 HP @ 600 VAC [RGC3..30]
Minimum operational current	250 mAAC	250 mAAC	250 mAAC [RGC3..25] 400 mAAC [RGC3..30]
Non. rep. surge current Itsm (t=10 ms)	600 Ap	600 Ap	600 Ap [RGC3..25] 1150 Ap [RGC3..30]
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	1800 A^2s [RGC3..25] 6600 A^2s [RGC3..30]
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-242 VAC [RG..22.] 42-660 VAC [RG..60.]	42-242 VAC [RG..22.] 42-660 VAC [RG..60.]	42-660 VAC
Blocking voltage	800 Vp [RG..22.] 1200 Vp [RG..60.]	800 Vp [RG..22.] 1200 Vp [RG..60.]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - EAC - VDE - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA
References			
DC control voltage			
220 VAC, 800 Vp	**RGC3A22D10KKE**	**RGC3A22D20KKE**	
600 VAC, 1200 Vp	**RGC3A60D10KKE**	**RGC3A60D20KKE**	28 AAC: **RGC3A60D25KKE**
			30 AAC: **RGC3A60D30KGE**
AC/DC control voltage			
220 VAC, 800 Vp	**RGC3A22A10KKE**	**RGC3A22A20KKE**	
600 VAC, 1200 Vp	**RGC3A60A10KKE**	**RGC3A60A20KKE**	28 AAC: **RGC3A60A25KKE**
			30 AAC: **RGC3A60A30KGE**

KK = screws for control terminals, screws for power terminals
KG = screws for control terminals, box clamps for power terminals

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Solid state contactors, 3-phase

	DIN-rail mounting - AC output, 3 poles		Panel mounting - AC output, 3 poles
Types	**RGC3A..40..F** 42 AAC	**RGC3A..65..F** 66 AAC	**RGC3A..48** 48 AAC
Semiconductor contactors with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating, certified motor ratings.			
Dimensions HxWxD (mm)	135 x 54 x 118 (with fan)	141 x 72 x 141 (with fan)	175 x 157 x 119
Features	54 mm solid state contactor + fan, integrated overheat protection with EMR alarm output, box clamp for power connection	72 mm solid state contactor + fan, integrated overheat protection with EMR alarm output, box clamp for power connection	157 mm solid state contactor, box clamps for power connection
Input specifications			
Control input range	5-32 VDC [RG..D..DF] 20-275 VAC [RG..A..AF]	5-32 VDC [RG..D..DF] 5-32 VDC [RG..D..AF] 20-275 VAC [RG..A..AF]	5-32 VDC [RG..D] 20-275 VAC, 24-190 VDC [RG..A]
Input current @ max. control voltage	12.5 mADC [RG..D..DF] 4.3 mAAC [RG..A..AF]	12.5 mADC [RG..D..DF] 5.5 mADC [RG..D..AF] 4.3 mAAC [RG..A..AF]	31.5 mADC [RG..D] 19 mAAC [RG..A]
External supply voltage	24 VDC [RG..D..DF] 90-250 VAC [RG..A..AF]	24 VDC [RG..D..DF] 90-250 VAC [RG..D..AF] 90-250 VAC [RG..A..AF]	
Max. supply current	150 mADC [RG..D..DF] 80 mAAC [RG..A..AF]	150 mADC [RG..D..DF] 80 mAAC [RG..D..AF] 80 mAAC [RG..A..AF]	
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	
Alarm condition	SSR Over temperature	SSR Over temperature	
Output specifications			
Rated operational current AC-51 @ Ta=40°C	42 AAC	66 AAC	48 AAC
AC-53a @ Ta=40°C	17 AAC	25 AAC	23 AAC
Motor rating	7.5 kW @ 400 VAC 15 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC
Minimum operational current	400 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	1150 Ap	1750 Ap	1750 Ap
I^2t for fusing (t=10 ms)	6600 A^2s	15000 A^2s	15000 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	42-660 VAC	42-660 VAC	42-660 VAC
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F) [RG..DF] -40°C to +60°C (-40°F to +140°F) [RG..AF]	-40°C to +70°C (-40°F to +158°F) [RG..DF] -40°C to +60°C (-40°F to +140°F) [RG..AF]	-40°C to +80°C (-40°F to +176°F)
Approvals/Marks	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - UKCA
References			
600 VAC, 1200 Vp			
DC control voltage, DC external supply	**RGC3A60D40GGEDF**	**RGC3A60D65GGEDF**	
DC control voltage, AC external supply		**RGC3A60D65GGEAF**	
AC control voltage, AC external supply	**RGC3A60A40GGEAF**	**RGC3A60A65GGEAF**	
DC control voltage			**RGC3A60D48KGE**
AC control voltage			**RGC3A60A48KGE**

KG = screws for control terminals, box clamps for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, 3-phase

Types	DIN-rail mounting - AC output with monitoring, 3 poles RGC3A..20..M 20 AAC	DIN-rail mounting - AC output with monitoring, 3 poles RGC3A..25/30..M 28/30 AAC	DIN-rail mounting - AC output with monitoring, 3 poles RGC3A..65..FM 66 AAC	Panel mounting - AC output with monitoring, 3 poles RGC3A..48..M 48 AAC
Semiconductor contactors with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating.				
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)	175 x 157 x 119
Features	54 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp or box clamp for power connection	72 mm solid state contactor + fan, EMR alarm output and electronic auxiliary output, box clamp for power connection	157 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection
Input specifications				
Control input range	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DFM] 5-32 VDC [RG..D..AFM] 20-275 VAC [RG..A..AFM]	5-32 VDC [RG..D..D] 20-275 VAC [RG..A..A]
Control current @ max. control voltage	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DFM] 5.5 mADC [RG..D..AFM] 4.3 mAAC [RG..A..AFM]	12.5 mADC [RG..D..D] 4.3 mAAC [RG..A..A]
External supply voltage	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DFM] 90-250 VAC [RG..D..AFM] 90-250 VAC [RG..A..AFM]	24 VDC [RG..D..D] 90-250 VAC [RG..A..A]
Max. supply current	80 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	80 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	150 mADC [RG..D..DFM] 80 mAAC [RG..D..AFM] 80 mAAC [RG..A..AFM]	80 mADC [RG..D..D] 60 mAAC [RG..A..A]
Alarm specifications				
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR Open cct., SSR Short cct., SSR Over temperature
Output specifications				
Rated operational current AC-51 @ Ta=40°C	20 AAC	28 AAC [RGC3..25] 30 AAC [RGC3..30]	66 AAC	48 AAC
Minimum operational current	250 mAAC	250 mAAC [RGC3..25] 400 mAAC [RGC3..30]	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 Ap	600 Ap [RGC3..25] 1150 Ap [RGC3..30]	1750 Ap	1750 Ap
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC	5 mAAC
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s [RGC3..25] 6600 A^2s [RGC3..30]	15000 A^2s	15000 A^2s
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs	1000 V/µs
General specifications				
Operational voltage range	90-660 VAC	90-660 VAC	90-660 VAC	90-660 VAC
Blocking voltage	1200 Vp	1200 Vp	1200 Vp	1200 Vp
Operating temperature	-40°C to +80°C (-40°F to +176°F)* -40°C to +60°C (-40°F to +140°F)**	-40°C to +80°C (-40°F to +176°F)* -40°C to +60°C (-40°F to +140°F)**	-40°C to +80°C (-40°F to +176°F)* -40°C to +60°C (-40°F to +140°F)**	-40°C to +80°C (-40°F to +176°F)* -40°C to +60°C (-40°F to +140°F)**
Approvals/Marks	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus -EAC - UKCA
References				
DC control voltage, DC external supply	**RGC3A60D20GKEDM**	28 AAC: **RGC3A60D25GKEDM** 30 AAC: **RGC3A60D30GGEDM**	**RGC3A60D65GGEDFM**	**RGC3A60D48GGEDM**
DC control voltage, AC external supply	**RGC3A60D20GKEAM**	28 AAC: **RGC3A60D25GKEAM** 30 AAC: **RGC3A60D30GGEAM**	**RGC3A60D65GGEAFM**	
AC control voltage, AC external supply	**RGC3A60A20GKEAM**	28 AAC: **RGC3A60A25GKEAM** 30 AAC: **RGC3A60A30GGEAM**	**RGC3A60A65GGEAFM**	**RGC3A60A48GGEAM**

* [RG..DM]
** [RG..AM]
GK = box clamps for control terminals, screws for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI

Solid state contactors, 3-phase

4-20 mA Proportional controllers, 2 + 1 poles

Types	RGC2P60AA15C1 15 AAC	RGC2P60AA25C1 27 AAC	RGC2P60AA40C1 40 AAC
3-phase semiconductor proportional controllers with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 54 x 103	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor, screw with clamp for power connection	54 mm solid state contactor, screw with clamp for power connection	72 mm solid state contactor,box clamps for power connection
Input specifications			
Control input	4-20 mADC	4-20 mADC	4-20 mADC
Voltage drop	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC
Types			
Switching mode	1 Full Cycle [RGC..C1..]	1 Full Cycle [RGC..C1..]	1 Full Cycle [RGC..C1..]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	15 AAC	27 AAC	40 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 A_P	600 A_P	1150 A_P
I^2t for fusing (t=10 ms)	1800 A^2s	1800 A^2s	6600 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	180-660 VAC	180-660 VAC	180-660 VAC
Blocking voltage	1200 V_P	1200 V_P	1200 V_P
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Approvals/Marks	CE - cULus - EAC -CCC - UKCA	CE - cULus - EAC -CCC - UKCA	CE - cULus - EAC -CCC - UKCA
References			
Control Input:	4-20 mADC	4-20 mADC	4-20 mADC
1 Full Cycle	**RGC2P60AA15C1**	**RGC2P60AA25C1**	**RGC2P60AA40C1**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, 3-phase

Proportional controllers with monitoring, 2 + 1 poles

Types	RGC2P..25..M 27 AAC	RGC2P..40..M 40 AAC	RGC2P..75..FM 75 AAC
3-phase semiconductor proportional controllers with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor with integrated system monitoring, screw with clamp for power connection	72 mm solid state contactor with integrated system monitoring,box clamps for power connection	72 mm solid state contactor with fan and overtemperature protection, integrated system monitoring, box clamps for power connection
Input specifications			
Control input	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]
Input impedance	<250 Ω [RGC..I..] 100 kΩ [RGC..V..]	<250 Ω [RGC..I..] 100 kΩ [RGC..V..]	<250 Ω [RGC..I..] 100 kΩ [RGC..V..]
External supply voltage	24 VDC/AC	24 VDC/AC	24 VDC/AC [RGC..DFM] 90-250 VAC [RGC..AFM]
Max. supply current	90 mADC/AC	90 mADC/AC	175 mADC/AC [RGC..DFM] 60 mAAC [RGC..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Types			
Switching mode	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	27 AAC	40 AAC	75 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10 ms)	1800 A^2s	6600 A^2s	15000 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	180-660 VAC	180-660 VAC	180-660 VAC
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F) max. +60°C +140°F for 24 VAC supply	-40°C to +70°C (-40°F to +158°F) max. +60°C +140°F for 24 VAC supply	-40°C to +70°C (-40°F to +158°F) max. +60°C +140°F for 24 VAC supply
Approvals/Marks	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA
References			
Control Input:	0-20, 4-20, 12-20 mADC	0-20, 4-20, 12-20 mADC	0-20, 4-20, 12-20 mADC
1 Full Cycle, DC external supply	**RGC2P60I25C1DM**	**RGC2P60I40C1DM**	**RGC2P60I75C1DFM**
1 Full Cycle, AC external supply			**RGC2P60I75C1AFM**
4 Full Cycles, DC external supply	**RGC2P60I25C4DM**	**RGC2P60I40C4DM**	**RGC2P60I75C4DFM**
4 Full Cycles, AC external supply			**RGC2P60I75C4AFM**
Control Input:	0-10, 0-5, 1-5 VDC, Pot	0-10, 0-5, 1-5 VDC, Pot	0-10, 0-5, 1-5 VDC, Pot
1 Full Cycle, DC external supply	**RGC2P60V25C1DM**	**RGC2P60V40C1DM**	**RGC2P60V75C1DFM**
1 Full Cycle, AC external supply			**RGC2P60V75C1AFM**

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Solid state contactors, 3-phase

4-20 mA Proportional controllers, 3 poles

Types	RGC3P60AA20.. 20 AAC	RGC3P60AA30.. 30 AAC
3-phase semiconductor proportional controllers with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating.		
Dimensions HxWxD (mm)	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor, screw with clamp for power connection	72 mm solid state contactor,box clamps for power connection
Input specifications		
Control input	4-20 mADC	4-20 mADC
Voltage drop	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC
Types		
Switching mode	Phase Angle [RGC..E] 1 Full Cycle [RGC..C1]	Phase Angle [RGC..E] 1 Full Cycle [RGC..C1]
Output specifications		
Rated operational current AC-51 @ Ta=40°C	20 AAC	30 AAC
Minimum operational current	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10 ms)	600 Ap	1150 Ap
I^2t for fusing (t=10 ms)	1800 A^2s	6600 A^2s
Off-state leakage current	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs
General specifications		
Operational voltage range	180-660 VAC	180-660 VAC
Blocking voltage	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Approvals/Marks	CE - cULus - EAC -CCC - UKCA	CE - cULus - EAC -CCC - UKCA
References		
Control Input:	4-20 mADC	4-20 mADC
Phase Angle	**RGC3P60AA20E**	**RGC3P60AA30E**
1 Full Cycle	**RGC3P60AA20C1**	**RGC3P60AA30C1**

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Solid state contactors, 3-phase

Proportional controllers with monitoring, 3 poles

Types	RGC3P..20..EP RGC3P..20..M 20 AAC	RGC3P..30..EP RGC3P..30..M 30 AAC	RGC3P..65..EFP RGC3P..65..FM 66 AAC
3-phase semiconductor proportional controllers with integrated heatsink, integrated overvoltage protection, switching frequency 45-65 Hz, isolation voltage 4000 Vrms, 100 kArms short circuit current rating.			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor with integrated system monitoring, screw with clamp for power connection	72 mm solid state contactor with integrated system monitoring,box clamps for power connection	72 mm solid state contactor with fan and overtemperature protection, integrated system monitoring, box clamps for power connection
Input specifications			
Control input	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]
Input impedance	<250 Ω [RGC..I..] 100 kΩ [RGC..V..]	<250 Ω [RGC..I..] 100 kΩ [RGC..V..]	<250 Ω [RGC..I..] 100 kΩ [RGC..V..]
External supply voltage	24 VDC/AC [RGC..DM] 90-250 VAC [RGC..AM]	24 VDC/AC [RGC..DM] 90-250 VAC [RGC..AM]	24 VDC/AC [RGC..DFM] 90-250 VAC [RGC..AFM]
Max. supply current	90 mADC/AC [RGC..DM] 30 mAAC [RGC..AM]	90 mADC/AC [RGC..DM] 30 mAAC [RGC..AM]	175 mADC/AC [RGC..DFM] 60 mAAC [RGC..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Types			
Switching mode	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	20 AAC	30 AAC	66 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	1150 Ap	1750 Ap
I^2t for fusing (t=10 ms)	1800 A^2s	6600 A^2s	15000 A^2s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	180-660 VAC	180-660 VAC	180-660 VAC
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C (-40°F to +158°F) max. +60°C +140°F for 24 VAC supply	-40°C to +70°C (-40°F to +158°F) max. +60°C +140°F for 24 VAC supply	-40°C to +70°C (-40°F to +158°F) max. +60°C +140°F for 24 VAC supply
Approvals/Marks	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA	CE - cULus - EAC - CCC - UKCA
References			
Phase Angle, DC external supply	**RGC3P60Y20EDP**	**RGC3P60Y30EDP**	**RGC3P60Y65EDFP**
Phase Angle, AC external supply		**RGC3P60Y30EAP**	**RGC3P60Y65EAFP**
X Full Cycle, DC external supply	**RGC3P60Y20CXDM** (X = 1/4/16)	**RGC3P60Y30CXDM** (X = 1/4/16)	**RGC3P60Y65CXDFM** (X = 1/4/16)
X Full Cycle, AC external supply		**RGC3P60Y30CXAM** (X= 1/4/16)	**RGC3P60Y65CXAFM** (X = 1/4/16)
Softstart + 16 Full Cycles, DC external supply	**RGC3P60V20S16DM**	**RGC3P60V30S16DM**	**RGC3P60V65S16DFM**
Digitial Control Input (5-10 VDC):	5-10 VDC	5-10 VDC	5-10 VDC
Softstart + ON/OFF, DC external supply	**RGC3P60V20SDM**	**RGC3P60V30SDM**	**RGC3P60V65SDFM**

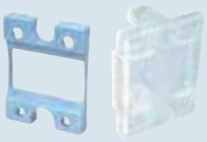
Y = 'I' for 0-20 mA, 4-20 mA or 12-20 mA or 'V' for 0-10 V, 0-5 V, 1-5 V or pot

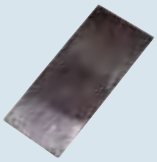
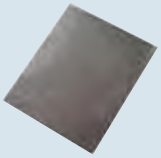
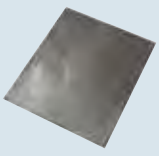
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Solid state relays accessories

General accessories

Types	RPM1	RPM1P	RPM1V	RPM2
				
Dimensions HxWxD (mm)	84 x 12.5 x 42	84 x 12.5 x 42	84 x 12.5 x 42	82 x 25 x 39
Description	DIN-rail adaptor for PCB relays. (Relay excluded)	DIN-rail adaptor with sockets for plug-in PCB relays. (Relay excluded)	DIN-rail adaptor for PCB relays with LED and varistor across output terminals. (Relay excluded)	DIN-rail adaptor for PCB relays with an operational voltage ≥ 230 V. (Relay excluded)
Pack quantity	1	1	1	2
References				
	RPM1	**RPM1P** (no LED)	**RPM1V**	**RPM2**
		RPM1PD (with LED)		
Selection guide for SSR assemblies*				
	RP...M1	**RP...M1P** (no LED)	**RP...M1V**	**RP...M2**
		RP...M1PD (with LED)		

Types	DIN adaptor	DIN adaptor RG	Protection cover RM/RA/RK	Tamper proof cover RGS1P, RGC1P
				
Dimensions HxWxD (mm)	81 x 44 x 13.5	106 x 17.8 x 14	58 x 45 x 9 / 26	59 x 45 x 25.5
Description	DIN-rail adaptor for 1-phase SSR & heatsink assemblies. Integrated in heatsink kits	DIN-rail adaptor for RGS relays	Clip-on IP20 protection Cover	Tamper proof protection cover for RGS1P, RGC1P
Pack quantity	1	1	10 (RK)/20 [RMIP20]/25 [BBR..]	5
References				
	RHS00	**RGS1DIN**	**RMIP20** (for RM, RS, RAM series)	**RGTMP**
			RKIP20 (for RK series)	
			BBR (for RA series)	
			BBR-S (for RA..S series)	
Selection guide for SSR assemblies*				
	R...H8	**RGS...DIN**		

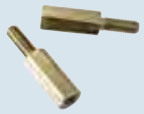
Types	Thermal paste	Thermal pad Slim SSRs	Thermal pad RM, RA	Thermal pad RZ3
				
Dimensions HxWxD (mm)		34.6 x 14 x 0.13 (RG) 21 x 19 x 0.13 (RF)	42 x 35 x 0.25	70 x 77 x 0.25
Description	2.38 ml (5 g) sachet silicon based thermal compound	Thermal pad for RG and RF series	Graphite thermal pad for RA, RM, RAM, RS series	Graphite thermal pad for RZ3 series
Pack quantity	1	10	50	10
References				
	HTS02S	**RGHT** (for RG series)	**KK071CUT**	**RZHT**
		RFHT (for RF series)		

* Conditions may apply. Please ask your Sales representative for further details.

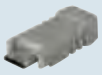
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Solid state relays accessories

General accessories

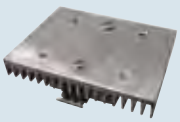
Types	RM fork terminal	RM FASTON terminals	RM spacers	Overload relay adaptor
				
Dimensions HxWxD (mm)	35 x 16.5 x 25 / 29	4.8 / 6.3	M3 x 12	
Description	RM, RS, RK and RAM terminal adaptor for 16 mm² and 35 mm² cable	Screw FASTON terminals, flat or 45° angled for output (6.3 mm) and input (4.8 mm) RM, RS, RAM terminals	Standoff spacer for RM, RS, RAM series M3 control terminals	Overload Relay Adaptor for REC and RGCM3 series
Pack quantity	10	20	20	5
References				
	RM625FK (16 mm²)	**RM48F0** (4.8 mm, flat)	**RMSP03**	**REC3ADAPTOR**
	RM635FK (35 mm²)	**RM48F4** (4.8 mm, 45°)		
	RM635FKP (35 mm²)	**RM63F0** (6.3 mm, flat)		
		RM63F4 (6.3 mm, 45°)		

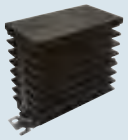
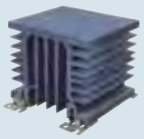
Types	RG plug terminals	RGCM plug terminals	RK plug terminals	RG..M plug terminals
				
Description	2-pole spring loaded plug terminal, 2.5 mm² for RG series	3 way, 2-pole box clamp plug terminal, 2.5 mm² for RGCM3 series	4 way, 4-pole/2-pole spring loaded plug terminal, 5.08 mm for RK series	3-pole spring loaded plug terminal, 5.00 mm for RG..M series
Pack quantity	10	10	10	10
References				
	RGM25	**RG3G25**	**RK4MT** (4 way, 4-pole)	**RG3M15AL** (labelled 'NC NO COM')
	RGMREF (for RG..N)		**RK2MT** (4 way, 2-pole)	**RG3M15CTR** (labelled 'A1+ A2- Us+')

Types	Cables	Termination resistor	Fans	Screw kits
				
Dimensions HxWxD (mm)			40 x 40 x 20 (RHSF40) 60 x 60 x 20 (RHSF60) 120 x 120 x 38 (RHS301F)	
Description	Cable for RM1E...V, RA2A..C, RK...C and RA...S models with one-end terminated with a female plug for mounting on the SSR	Termination resistor to be fitted on the last RG..N on the NRG bus chain	RHSF40-24 to be mounted with RHS45C, RHS45B, RHS540, RHS542 RHSF60-24/240 to be mounted with RHS90A, RHS112A, RHS703 RHS301F115/230 to be mounted with RHS301 incl. bracket	Screw kits for assembling SSRs to heatsinks. M5 x 10 mm to be used with RA, RM, RAM, RS, RK and RZ3 series. M4 x 15 mm used for RHS38AD heatsink. M5 x 23 / 30 mm to be used with RG series
	1		1	20
References				
	RCS3-100-1 [RM1E..V]	**RGN-TERMRES**	**RHSF40-24** (24 VDC)	**SRWKITM5X10MM**
	RCS4-100-1 [RA2A..C]		**RHSF60-24** (24 VDC)	**SRWKITM4X15MM**
	RCS4-400-1 [RA2A..C]		**RHSF60-230** (240 VAC)	**SRWKITM5X23MM**
	RCS5-200-1 [RA..S]		**RHS301F115** (115 VAC)	**SRWKITM5X30MM**
	RCK4-100-1 [RKD2..C]		**RHS301F230** (230 VAC)	
	RCK2-100-1 [RK2..C]			

Solid state relays accessories

	General accessories		DIN mount heatsinks for solid state relays	
Types	**Varistors**	**Temperature limit switches**	**RHS300**	**RHS37A**
				
Dimensions HxWxD (mm) (SSR not included)		6.5 x 5.5 x 3	105 x 82 x 20	18 x 110 x 52
Description	Surge / transient voltage protection for SSRs	Temperature limit switches that may be fitted in the RZ3 housing between SSR and heatsink	Heatsink for 1x 3-phase RZ3 series	Heatsink for 1x 1-phase RG series
Pack quantity	10	1		
Thermal resistance**				
Without fan	-	-	5.40°C/W (>30 W)	4.00°C/W (>20 W)
References / Selection guide for heatsink assemblies*				
	275 V: **RV02** 420 V: **RV04**	**UP62-70**		
	510 V: **RV05** 625 V: **RV06**	**UP62-80**		
	680 V: **RV07**	**UP62-90**		
Without fan			**R...H1**	**R...H51**

	DIN mount heatsinks for solid state relays			
Types	**RHS10015**	**RHS100**	**RHS45C**	**RHS52A**
				
Dimensions HxWxD (mm) (SSR not included)	100 x 82 x 29	44 x 82 x 48	45 x 103 x 55	22.5 x 110 x 90
Description	Heatsink for max. 2x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RG series
Thermal resistance**				
Without fan	4.00°C/W (>30 W)	3.10°C/W (>25 W)	2.20°C/W (>45 W)	2.00°C/W (>45 W)
Selection guide for heatsink assemblies*				
Without fan	**R...H47**	**R...H0**	**R...H15**	**R...H61**

Types	**RHS45B**	**RHS54.**	**RHS703**	**RHS90A**
				
Dimensions HxWxD (mm) (SSR not included)	45 x 103 x 80	54 x 110 x 51	72 x 110 x 75	90 x 103 x 80
Description	Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RM, RAM, RS and RK series: **RHS540** Heatsink for max. 2x 1-phase RG series: **RHS542**	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series
Thermal resistance**				
Without fan	1.85°C/W (>50 W)	1.85°C/W (>60 W)	1.10°C/W (>60 W)	0.97°C/W (>60 W)
Selection guide for heatsink assemblies*				
Without fan	**R...H5**	**R...H65** [RHS540] **R...H66** [RHS542]	**R...H75** [RHS703]	**R...H16**

* Conditions may apply. Please ask your Sales representative for further details.
** Refer to specific heatsink datasheet for further details on heatsink characteristics and assemblies.

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Solid state relays accessories

DIN mount heatsinks for solid state relays

Types	RHS301	RHS112A	RHS11267DIND
			
Dimensions HxWxD (mm) (SSR not included)	119 x 82 x 94	112 x 103 x 80	119 x 125 x 94
Description	Heatsink for 1x 3-phase RZ3, 2x 1-phase RA, RM, RAM, RS and RK series: **RHS301**	Heatsink for 1x 3-phase RZ3, 2x 1-phase RA, RM, RAM, RS and RK series: **RHS112A**	Heatsink for 1x 3-phase RZ3 series, max 3x 1-phase RG series, 2x 1-phase RA, RM, RAM, RS and RK series
Thermal resistance**			
Without fan	0.82°C/W (> 80 W)	0.76°C/W (>100 W)	0.54°C/W (>150 W)
Selection guide for heatsink assemblies*			
Without fan	**R...H2** [RHS301]	**R...H17**	**R...H78D**

Types	RHS54.F..	RHS703F..	RHS301F..
			
Dimensions HxWxD (mm) (SSR not included)	54 x 135 x 51	72 x 141 x 75	124 x 146 x 122
Description	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RM, RAM, RS and RK series: **RHS540F40-24** (24 VDC fan) Heatsink for max. 2x 1-phase RG series: **RHS542F40-24** (24 VDC fan)	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RM, RAM, RS and RK series: **RHS703F60-24** (24 VDC fan) **RHS703F60-230** (240 VAC fan)	Heatsink for 1x 3-phase RZ3, 2x 1-phase RA, RM, RAM, RS and RK series: **RHS301F115C** [115 VAC fan] **RHS301F230C** [230 VAC fan]
Thermal resistance**			
With fan	0.65°C/W	0.37°C/W	0.28°C/W
Selection guide for heatsink assemblies*			
With fan	**R...H67** [RHS540F40-24] **R...H68** [RHS542F40-24]	**R...H76** [RHS703F60-24] **R...H77** [RHS703F60-230]	**R...H10** [RHS301F115C] **R...H12** [RHS301F230C]

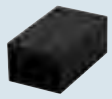
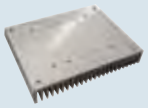
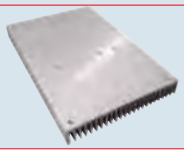
Types	RHS112AF..	RHS28009F80-24P	RHS28011F80-24P
			
Dimensions HxWxD (mm) (SSR not included)	112 x 103 x 80 112 x 120 x 80 (with fan)	280 x 87 x 122	280 x 87 x 122
Description	Heatsink for 1x 3-phase RZ3, 2x 1-phase RA, RM, RAM, RS and RK series: **RHS112AF60-24** [24 VDC fan] **RHS112AF60-230** [230 VAC fan]	Heatsink for max. 9x 1-phase RG series or 4x 1-phase RA, RM, RAM, RS and RK series with integrated fan and overtemperature protection	Heatsink for max. 11x 1-phase RG series or 3x 1-phase RA, RM, RAM, RS and RK series with integrated fan and overtemperature protection
Thermal resistance**			
With fan	0.35°C/W	0.12°C/W (24 VDC)	0.12°C/W (24 VDC)
Selection guide for heatsink assemblies*			
With fan	**R...H18** [RHS112AF60-24] **R...H52** [RHS112AF60-230]	**R...H41**	**R...H44**

* Conditions may apply. Please ask your Sales representative for further details.
** Refer to specific heatsink datasheet for further details on heatsink characteristics and assemblies.

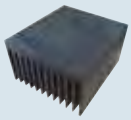
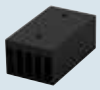
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Solid state relays accessories

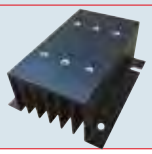
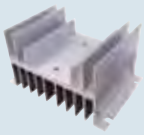
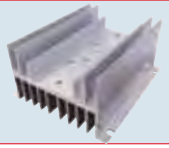
Thru wall mount heatsinks for solid state relays

Types	RHS38ARFD	RHS10025D	RHS16225D	RHS16225LD
				
Dimensions HxWxD (mm) (SSR not included)	46 x 76 x 33	100 x 100 x 25	162 x 100 x 25	162 x 250 x 25
Description	Heatsink for 1x 1-phase RF series	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 1x 3-phase RZ3 series, max. 3x 1-phase RA, RM, RAM, RS, RK and RG series	Heatsink for 1x 3-phase RZ3 series, max. 3x 1-phase RA, RM, RAM, RS, RK and RG series
Thermal resistance**				
Without fan	2.85°C/W (>40 W)	1.85°C/W (>60 W)	1.30°C/W (>90 W)	0.84°C/W (>120 W)
References / Selection guide for heatsink assemblies*				
Without fan	**R..H53**	**R...H49**	**R...H55**	**R...H55L**

Thru wall mount heatsinks for solid state relays / Panel mount heatsinks for solid state relays

Types	RHS11267D	RHS30040D	RHS5050..	RHS38A..
				
Dimensions HxWxD (mm) (SSR not included)	112 x 125 x 67	300 x 200 x 40	80 x 50 x 51	46 x 76 x 33
Description	Heatsink for max. 3x 1-phase RG series or 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for max. 12x 1-phase RG series or 8x 1-phase RA, RM, RAM, RS and RK series	**RHS5050D**: Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series **RHS5050RFD**: Heatsink for 1x 1-phase RF series	**RHS38AD**: Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series **RHS38ARFD**: Heatsink for 1x 1-phase RF series
Thermal resistance**				
Without fan	0.54°C/W (>150 W)	0.40°C/W (>180 W)	3.50°C/W (>25 W)	2.85°C/W (>40 W)
Selection guide for heatsink assemblies*				
Without fan	**R...H78**	**R...H57**	**R...H60**	**R...H53**

Panel mount heatsinks for solid state relays

Types	RHS5840D	RHS10067D	RHS10067LD	RHS320
				
Dimensions HxWxD (mm) (SSR not included)	81 x 100 x 40	121 x 76 x 67	121 x 140 x 67	240 x 100 x 93
Description	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RA, RM, RAM, RS and RK series	Heatsink for 2x 1-phase RA, RM, RAM, RS, RK and RG series	Heatsink for 1x 3-phase RZ3 series, max. 3x 1-phase RA, RM, RAM, RS, RK and RG series
Thermal resistance**				
Without fan	1.80°C/W (>60 W)	1.70°C/W (>20 W)	0.88°C/W (>80 W)	0.40°C/W (>120 W)
Selection guide for heatsink assemblies*				
Without fan	**R...H48**	**R...H58**	**R...H58L**	**R...H13**

* Conditions may apply. Please ask your Sales representative for further details.
** Refer to specific heatsink datasheet for further details on heatsink characteristics and assemblies.

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Soft starters

Scroll compressor soft starters

Types	RSBS	RSBD 45 & 75 mm	RSBT 45 & 120 mm
Soft starting of 1-phase (RSBS) and 3-phase (RSBD, RSBT) scroll compressors.			
Dimensions (mm)	70.6 x 137 x 81.4	12 A to 45 A: 106 x 45 x 125 55 A to 95 A: 150 x 75 x 170	16 A to 32 A (no output module): 81 x 45 x 125 16 A to 32 A (with RFPM module): 97.5 x 45 x 125 55 A to 95 A: 150 x 120 x 170
Features	Internally bypassed, current limit start, auxiliary relay output, HP algorithm for high pressure starts, Option for external start capacitor.	Compact 2-phase (RSBD) controlled soft starter for scroll compressors. Patented auto-adapt function for reduction of inrush current and for current balancing. No user settings required. HP algorithm optimised for multi-compressor systems.	3-phase (RSBT) controlled solution with internal bypass. Patented self-learning algorithm for optimal current reduction. Compliant to Class B (residential limits) for EMC emissions (16 A to 32 A). Optional serial communication for energy variables, alarms, start/stop.
Control specifications			
Control input range	230 VAC	Option E: 110 - 400 VAC Option F: 24 VAC/DC	Option E: 110 - 400 VAC [RSBT 45 mm] Option F: 24VAC/DC [RSBT 45 mm] Option C: 24 VAC/DC & 110-400 VAC [RSBT 120 mm]
Controlled phases	1	2	3
Output specifications			
Rated operational current (Ie)	32 A	RSBD 45 mm: 12/16/25/32/37/45 A RSBD 75 mm: 55/70/95 A	RSBT 45 mm: 16/25/32 A RSBT 120 mm: 55/70/95 A
Operational voltage	230 VAC (-15%, +10%)	RSBD 45 mm: 220 - 400 VAC (-15%, +10%) RSBD 75 mm: 220 - 600 VAC (-15%, +10%)	RSBT 45 mm: 220- 400 VAC (-15%, +10%) RSBT 120 mm: 220 - 480 VAC (-15%, +10%)
Number of starts per hour	10 (evenly distributed)	12 (evenly distributed)	12 (evenly distributed)
Assigned compressor rating @ 400 V	4 kW (5 HP) [@ 230 V]	RSBD 45 mm: 5.5 kW (5 HP) to 22 kW (25 HP) RSBD 75 mm: 30 kW (30 HP) to 55 kW (50 HP)	RSBT 45 mm: 7.5 kW (7.5 HP) to 15 kW (15 HP) RSBT 120 mm: 22 kW (30 HP) to 45 kW (50 HP)
General specifications			
Internally bypassed	Yes	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz ±10 Hz	50/60 Hz ±10 Hz
Ramp up/Ramp down	< 1 s / 0 s	<1 s / 0 s	<1 s / 0 s
Default Current limit	45 Arms (80 Arms in HP mode)	3.5xIe	RSBT 45 mm RSBT..16: 40 A, RSBT..25: 90 A, RSBT..32: 110 A RSBT 120 mm: 3.5xIe
Operating temperature	RSBS...C00HP: -20°C to +65°C (-4°F to +149°F) RSBS...CXXHP: -20°C to +55°C (-4°F to +131°F)	-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C(-4°F to +140°F)
Storage temperature	-30°C to +70°C (-22°F to +158°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +85°C (-40°F to +185°F)
Wrong phase sequence indication	N/A	Yes	Yes
Degree of protection	IP20	RSBD 45 mm: IP20 RSBD 75 mm: IP20 (Housing) / IP10 (Terminals)	RSBT 45 mm: IP20 RSBT 120 mm: IP20 (Housing) / IP10 (Terminals)
Approvals	CE- UL - cULus - EAC	RSBD 45 mm: CE - cULus - EAC RSBD 75 mm: CE - cULus - EAC	RSBT 45 mm: CE - cULus - VDE* - CCC RSBT 120 mm: CE - cULus - CCC - EAC

* Up to 15 AAC
XX = 10, 17, 24

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Soft starters

General purpose soft starters

Types	RSGT 45 mm	RSGT 75 & 120 mm
Soft starters with self learning algorithm for induction motors. Three phase controlled with internal bypass. Modbus RTU communication on selected models.		
Dimensions (mm)	RSGT4012/RSGT4016: 130 x 45 x 125 RSGT4025: 157 x 45 x 125	RSGT 75 mm: 177 x 75 x 206 RSGT 120 mm: 177 x 120 x 206
Features	3-phase controlled, internally bypassed. Self-learning algorithm for induction motors. Integrated overload protection (Class 10). Optional: Modbus RTU [Version: V10C].	3-phase controlled and internally bypassed. Integrated overload protection, PTC i/p, remote alarm reset. 3 output relays for alarm, top of ramp and run indication. Modbus RTU built-in.
Control specifications		
Control input range	Option E: 110 - 400 VAC [RSGT40…] Option F: 24 VAC/DC [RSGT40…] Option GG: 100 - 240 VAC [RSGT60..] Option FF: 24 VAC/DC [RSGT60..]	Option E: 110 - 400 VAC [RSGT40…] Option F: 24 VAC/DC [RSGT40…] Option GG: 100 - 240 VAC [RSGT60..] Option FF: 24 VAC/DC [RSGT60..]
Controlled phases	3	3
Output specifications		
Rated operational current AC 53b	12/16/25 A	32/45/55/70/90 A
Operational voltage	RSGT40: 220 - 400 VAC (-15%, +10%) RSGT60: 220 - 600 VAC (-15%, +10%)	RSGT40: 220 - 400 VAC (-15%, +10%) RSGT60: 220 - 600 VAC (-15%, +10%)
Number of starts per hour @ 40°C	12	12
Assigned motor rating @ 400 V	RSGTXX12: 5.5 kW (5 HP) RSGTXX16: 7.5 kW (7.5 HP) RSGTXX25: 11 kW (10 HP)	RSGTXX32: 15 kW (20 HP) RSGTXX45: 22 kW (30 HP) RSGTXX55: 25 kW (35 HP) RSGTXX70: 37 kW (40 HP) RSGTXX90: 45 kW (50 HP)
General specifications		
Internally bypassed	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz ±10%
Ramp up/Ramp down	1-20 s / 0-20 s	1-20 s / 0-20 s
Initial torque	Self-adjusted by RSWT	Self-adjusted by RSWT
Operating temperature	-20°C to 60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)
Storage temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Integrated overload protection	Yes	Yes
Degree of protection	IP20	IP20 (control circuit) IP10 (power terminals)
Approvals	CE - cULus - EAC	CE - cULus - EAC

XX = 40 or 60

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Soft starters

General purpose soft starters

Types	RSGD 45 mm	RSGD 75 mm
Soft starting and stopping of 3-phase motors. Self-learning algorithm on RSGD series for better ease of use.		
Dimensions (mm)	106 x 45 x 125 [RSGD..VD2.0] 137 x 45 x 137 [RSGD..VX2.0]	177 x 75 x 206 [RSGD..55.. - RSGD..85..] 177 x 75 x 221 [RSGD..100..]
Features	Self-learning 2-phase controlled general purpose soft starter. Improved current reduction capability. 2-relay outputs for top of ramp and alarm indication. Optional motor overload protection (Class 10) and serial communication (Modbus RS485). QR code for quicker troubleshooting.	Self-learning 2-phase controlled general purpose soft starter. Integrated motor overload protection (Class 10) and serial communication (Modbus RS485).
Control specifications		
Control input range	Option E0: 110 - 400 VAC [RSGD40..] Option F0: 24 VAC/DC [RSGD40..] Option GG: 100 - 240 VAC [RSGD60..]	Option E0: 110 - 400 VAC [RSGD40..] Option F0: 24 VAC/DC [RSGD40..] Option FF: 24 VAC/DC [RSGD60..] Option GG: 100 - 240 VAC [RSGD60..]
Controlled phases	2	2
Output specifications		
Rated operational current AC 53b	12/16/25/32/45 A	55/70/85/100 A
Operational voltage	RSGD40: 220 - 400 VAC (-15%, +10%) RSGD60: 220 - 600 VAC (-15%, +10%)	RSGD40: 220 - 400 VAC (-15%, +10%) RSGD60: 220 - 600 VAC (-15%, +10%)
Number of starts per hour @ 40°C	20 - [RSGD..12, RSGD..16, RSGD..25..VX210, RSGD..32] 10 - [RSGD..25..VD200, RSGD..45]	10
Assigned motor rating @ 400 V	RSGD..12: 5.5 kW/5 HP RSGD..16: 7.5 kW/7.5 HP RSGD..25: 11 kW/10 HP RSGD..32: 15 kW/15 HP RSGD..45: 22 kW/25 HP	RSGD..55: 30 kW/30 HP RSGD..70: 37 kW/40 HP RSGD..85: 45 kW/50 HP RSGD..100: 55 kW/50 HP
General specifications		
Internally bypassed	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz ±10%
Ramp up/Ramp down	1 - 20 s / 0 - 20 s	1 - 30 s / 0 - 30 s
Initial torque	Not required	Not required
Operating temperature	-20°C to 60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)
Storage temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Wrong phase sequence indication	Yes	Yes
Motor overload protection	V.200: No V.210: Yes (Class 10)	Yes (Class 10)
PTC input	No	Yes
Degree of protection	IP20	IP20 (control circuit) IP10 (power terminals)
Approvals	CE - cULus - CCC - EAC	CE - cULus - CCC - EAC

Soft starters

	Dynamic motor starter
Types	**HDMS**
Single phase motor starter for scroll compressors and submersible pumps.	
Dimensions (mm)	153 x 85.6 x 86.7
Features	Eliminates the start capacitor Self-learning algorithm Tool-free terminals NFC & Modbus interface Coated PCBs
Control specifications	
Control input range	110 - 230 VAC
Controlled phases	1
Output specifications	
Rated operational current AC 53b	12, 25, 32, 37 AAC
Operational voltage	110 - 230 VAC
Number of starts per hour @ 40°C	10
Assigned motor rating @ 110 VAC	HDMS2312...: 0.56 kW / 0.75 HP HDMS2325...: 1.1 kW / 2 HP HDMS2332...: 1.5 kW / 2 HP HDMS2337...: 2.2 kW / 3 HP
Assigned motor rating @ 230 VAC	HDMS2312...: 1.5 kW/2 HP HDMS2325...: 3.7 kW / 5 HP HDMS2332...: 4 kW / 5.5 HP HDMS2337...: 5.5 kW / 7.5 HP
General specifications	
Internally bypassed	Yes
Operational frequency	50/60 Hz ±10%
Ramp up/Ramp down	< 1 s / 0 s
Initial torque	Automatically adjusted
Operating temperature	-20°C to +65°C (-4°F to +149°F)
Storage temperature	-40°C to +80°C (-40°F to +176°F)
Wrong phase sequence indication	No
Motor overload protection	Yes
Communication interface	NFC, Modbus RTU
Degree of protection	IP 00
Approvals	CE - cULus

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Soft starters

Solid state soft starters and motor reversing

Types	RGTS 1-phase	RR2A Reversing
Single phase solid state soft starter and three phase motor reversing with built-in interlock.		
Dimensions (mm)	113 x 54 x 110	41 x 103 x 74
Features	Single phase solid state soft starter. Wide operational voltage range. 100 kArms short circuit current rating.	Reversing with built-in interlock, optoisolation 2-pole change-over, built-in transient overvoltage protection, LED status indication.
Control specifications		
Control input range	No control signal required (starts as soon as mains voltage is present)	10 - 40 VDC [RR2A..D...] 90 - 140 VAC [RR2A..LA...] 180 - 265 VAC [RR2A..HA...]
Controlled phases	1	2
Output specifications		
Rated operational current AC 53a	12 A [RGTS2412..] 16 A [RGTS2416..] 25 A [RGTS2425..]	5 A [RR2A40D150/RR2A48D220] 11 A [RR2A40D400/RR2A48D550]
Operational voltage	100 - 240 VAC	40 - 440 VAC [RR2A40D...] 40 - 530 VAC [RR2A48D...]
Number of starts per hour @ 40°C	10	60 - [RR2A..150/RR2A..220] 40 - [RR2A..400/RR2A..550]
Assigned motor rating @ 400 V (for RR2A only) Assigned motor rating @ 230 V (for RGTS only)	RGTS2412..: 1.1 kW / 2 HP RGTS2416..: 1.5 kW / 2 HP RGTS2425..: 3.0 kW / 3 HP	RR2A..150: 1.5kW / 2 HP RR2A..220: 2.2kW / 3 HP RR2A..400: 4.0 kW / 5 HP RR2A..550: 5.5 kW / 7.5 HP
General specifications		
Internally bypassed	No	No
Operational frequency	50/60 Hz ±10%	50/60 Hz ±10%
Ramp up/Ramp down	0.5 - 5 s/0 s	No ramp-up/ramp-down
Initial torque	10 - 80 %	Not applicable
Operating temperature	-40°C to +60°C (-40°F to +140°F)	-20°C to +80°C (-4°F to +176°F)
Storage temperature	-40°C to +100°C (-40°F to +212°F)	-40°C to +100°C (-40°F to +212°F)
Wrong phase sequence indication	No	No
Motor overload protection	No	No
PTC input	No	No
Degree of protection	IP20	IP20
Approvals	CE - cULus	CE - UL - cUL

Soft starters accessories

Types	Pluggable module	EMC filter	Interconnecting clips	USB connection cable
				
Function	RFPMV10 - changeover (NO/NC) relay output for alarm indication RFPMVC0 - Modbus RTU pluggable module	Pluggable EMC filter. Typical attenuation: 5 dB	Interconnecting clips for manual motor starters (MMS) attachment	History data download from soft starters
Compatability	RSBT 45 mm series	RSBT 45 mm series	RSBT 45 mm series RSBD 45 mm series RSGD 45 mm [VD2.0] series	RSGD 45 mm series RSGT 45 mm series
References				
	RFPMV10	**RFILT4032V00**	**RTPMGMS32HL**	**RS-USB**
	RFPMVC0		**RTPMGMS32SL**	

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Variable frequency drives

VariFlex³ variable frequency drives - RVLF series

Types	Size A	Size B	Size C	Size D
Drives, inverters.				
Dimensions HxWxD (mm)	141 x 72 x 139	144 x 118 x 147	197 x129 x 148	273 x 187 x 190
Features	V/F and Sensorless vector control algorithm. Conform to EMC standard EN 61800-3. In-built PTC and PID functions. In-built RJ45 for Modbus and BACnet communication. Additional communication protocol via add-on modules.			
Technical specifications				
AC Supply voltage	1-ph: 100 -120 VAC 1-ph: 200 - 240 VAC 3-ph: 200 - 240 VAC	1-ph: 200 - 240 VAC 3-ph: 200 - 240 VAC 3-ph: 380 - 480 VAC	3-ph: 380 - 480 VAC	3-ph: 380 - 480 VAC
AC Supply frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output voltage	3-ph: 0 - 240 VAC [RVLFA1../RVLFA320...]	3-ph: 0 - 240 VAC [RVLFB1../RVLFB320..] 3-ph: 0 - 480 VAC [RVLFB340..]	3-ph: 0 - 480 VAC [RVLFC340..]	3-ph: 0 - 480 VAC [RVLFD340..]
Output frequency	0.01 - 599 Hz	0.01 - 599 Hz	0.01 - 599 Hz	0.01 - 599 Hz
Rated output current	2.6 A [RVLFA..040..] 4.3 A [RVLFA..075..] 7.5 A [RVLFA..150..]	7.5 A [RVLFB..150..] 10.5 A [RVLFB..220..] 2.3 A [RVLFB34..075..] 3.8 A [RVLFB34..150..] 5.2 A [RVLFB34..220..]	9.2 A [RVLFB34..370..] 13.0 A [RVLFB34..550..]	17.5 A [RVLFB34..750..] 24.0 A [RVLFB34..1100..]
Allowable momentary power loss		2.0 s	2.0 s	2.0 s
General specifications				
Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
Digital inputs	5	5	5	5
Digital outputs	1 (Programmable)	1 (Programmable)	1 (Programmable)	1 (Programmable)
Analogue inputs	2 (0 - 10 VDC, 0 - 20 mA)	2 (0 - 10 VDC, 0 - 20 mA)	2 (0 - 10 VDC, 0 - 20 mA)	2 (0 - 10 VDC, 0 - 20 mA)
Analogue outputs	1 (0 - 10 VDC)	1 (0 - 10 VDC)	1 (0 - 10 VDC)	1 (0 - 10 VDC)
Mounting	Panel mount DIN-rail (with accessory)	Panel mount DIN-rail (with accessory)	Panel mount	Panel mount
Integrated cooling fan	No	Yes	Yes	Yes
Switching frequency	1 to 16 kHz	1 to 16 kHz	1 to 16 kHz	1 to 16 kHz
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
References				
100 - 120 VAC, 1-phase	**RVLFA110040A** [0.4kW] **RVLFA110075A** [0.75kW]			
200 - 240 VAC, 1-phase	**RVLFA120040FA** [0.4kW] **RVLFA120075FA** [0.75kW]	**RVLFB120150FA** [1.5kW] **RVLFB120220FA** [2.2kW]		
200 - 240 VAC, 3-phase	**RVLFA320040A** [0.4kW] **RVLFA320075A** [0.75kW]	**RVLFB320150A** [1.5kW] **RVLFB320220A** [2.2kW]		
380 - 480 VAC, 3-phase		**RVLFB340075FA** [0.75kW] **RVLFB340150FA** [1.5kW] **RVLFB340220FA** [2.2kW]	**RVLFC340370FA** [3.7kW] **RVLFC340550FA** [5.5kW]	**RVLFC340750FA** [7.5kW] **RVLFC3401100FA** [11kW]

Accessories

Types	DIN-clip RVLF size A	DIN-clip RVLF size B	USB connection cable
			
Features	Plastic DIN-clip and mounting screws for RVLF Size A models	Plastic DIN-clip and mounting screws for RVLF Size B models	Isolated USB to RJ45 cable for RVLF configuration
References			
	RVLF-DIN01	**RVLF-DIN02**	**RV-USB**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Variable frequency drives

Variable Frequency Drives - OEM solutions

Types	RVDS	RVPM
Drives, inverters.		
Dimensions HxWxD (mm)	162 x 54.6 x 128	75 x 220 x 295 156 x 220 x 295
Features	VFD for industrial doors and entrances. Sensorless vector control algorithm. Conform to EMC standard IEC/EN 61800-3. In-built RJ45 for Modbus communication	VFD for PM/B:DC/IM compressors. Sensorless vector control and V/F algorithm. Conform to EMC standard IEC/EN 61800-3. In-built RJ45 for Modbus communication
Technical specifications		
AC Supply voltage	1-ph: 200 - 240 VAC	1-ph: 200 - 240 VAC 3-ph: 380 - 480 VAC"
AC Supply frequency	50 - 60 Hz	50 - 60 Hz
Output voltage	3-ph: 0-240 VAC	3-ph: 0 - 240 VAC (RVPM1200500FP / RVPM1200500FPF) 3-ph: 0 - 480 VAC (RVPM3400800FP / RVPM3400800FPF)
Output frequency	0 - 90Hz	0 - 400Hz
Rated output current	**RVDS120055F**: 2.5 AAC **RVDS120075F**: 4.2 AAC	**RVPM1200500FP**: 16 AAC **RVPM1200500FPF**: 12 AAC **RVPM3400800FP**: 24 AAC **RVPM3400800FPF**: 22 AAC
General specifications		
Operating temperature	-30 °C to +60 °C	-30 °C to +60 °C
Storage temperature	-30 °C to +60 °C	-30 °C to +60 °C
Digital inputs	5	0
Digital outputs	2	0
Analogue inputs	0	0
Analogue outputs	0	0
Mounting	Panel mounting	Panel mounting
Integrated cooling fan	No	No
Switching frequency	2 KHz to 10KHz	4 KHz to 6 KHz
Approvals	CE - UKCA	CE
References		
200 - 240 VAC, 1-phase	**RVDS120055F** (0.55Kw) **RVDS120075F** (0.75kW)	**RVPM1200500FP** (4.5kW) **RVPM1200500FPF** (4.5kW)
380 - 480 VAC, 3-phase		**RVPM3400800FP** (8 kW) **RVPM3400800FPF** (8 kW)

Accessories

Types	RV-Keypad	PFC reactor	DC choke
			
Features	Remote keypad LED display + Cable	PFC reactor for 1ph RVPM	DC choke for 3ph RVPM
References			
	RV-KEYPAD	**RVDC0500**	**RVDC0800**

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Industrial and Midi industrial relays

	Industrial relays		Midi industrial relays	
Types	**RCP 8** (2 Poles)	**RCP 11** (3 Poles)	**RMI 2-10** (2 Poles)	**RMI 4-5** (4 Poles)
				
Dimensions HxWxD (mm)	56 x 35.5 x 35.5	56 x 35.5 x 35.5	37 x 21.5 x 28	37 x 21.5 x 28
No. of Contacts	2 Change-over (octal)	3 Change-over (undecal)	2 Change-over	4 Change-over
Contact rating	10 A	10 A	10 A	6 A
Features	Test button / Flag / LED	Test button / Flag / LED	Test button / Flag / LED	Test button / Flag / LED
Output specifications				
Max. load AC1	12 A / 250 VAC	12 A / 250 VAC	12 A / 250 VAC	6 A / 250 VAC
Min. load	100 mA / 12 VDC	100 mA / 125 VDC	100 mA / 5 VDC	100 mA / 5 VDC
Electrical life	> 100.000 cycles	> 100.000 cycles	> 100.000 cycles	> 100.000 cycles
Switching power	2500 VA (resistive)	2500 VA (resistive)	2500 VA (resistive)	1250 VA (resistive)
General specifications				
Voltage ranges VDC	6 - 12 - 24 - 48 - 60 - 110	6 - 12 - 24 - 48 - 60 - 110	12 - 24 - 48 - 60 - 110	12 - 24 - 48 - 60 - 110
Voltage ranges VAC	6 - 12 - 24 - 48 - 115/120 - 230	6 - 12 - 24 - 48 - 115/120 - 230	12 - 24 - 48 - 115/120 - 230	12 - 24 - 48 - 115/120 - 230
Insulation according to	EN 61810-1	EN 61810-1	EN 61810-1	EN 61810-1
Consumption	1.5 W DC-2.5 VA AC	1.5 W DC-2.5 VA AC	1 W DC-1.4 VA AC	1 W DC-1.4 VA AC
Approvals / Conformity	CE - cURus - CSA - IMQ - RINA	CE - cURus - CSA - IMQ - RINA	CE - cURus - CSA - IMQ - RINA	CE - cURus - CSA - IMQ - RINA
References				
6 VDC	**RCP80026 VDC**	**RCP110036 VDC**		
12 VDC	**RCP800212 VDC**	**RCP1100312 VDC**	**RMIA21012 VDC**	**RMIA4512 VDC**
24 VDC	**RCP800224 VDC**	**RCP1100324 VDC**	**RMIA21024 VDC**	**RMIA4524 VDC**
48 VDC	**RCP800248 VDC**	**RCP1100348 VDC**	**RMIA21048 VDC**	**RMIA4548 VDC**
60 VDC	**RCP800260 VDC**	**RCP1100360 VDC**	**RMIA21060 VDC**	**RMIA4560 VDC**
100 VDC	**RCP8002100 VDC**	**RCP11003100 VDC**		
11 0VDC	**RCP8002110 VDC**	**RCP11003110 VDC**	**RMIA210110 VDC**	**RMIA45110 VDC**
6 VAC	**RCP80026 VAC**	**RCP110036 VAC**		
12 VAC	**RCP800212 VAC**	**RCP1100312 VAC**	**RMIA21012 VAC**	**RMIA4512 VAC**
24 VAC	**RCP800224 VAC**	**RCP1100324 VAC**	**RMIA21024 VAC**	**RMIA4524 VAC**
48 VAC	**RCP800248 VAC**	**RCP1100348 VAC**	**RMIA21048 VAC**	**RMIA4548 VAC**
115/120 VAC	**RCP8002115/120 VAC**	**RCP11003115/120 VAC**	**RMIA210115/120 VAC**	**RMIA45115/120 VAC**
230 VAC	**RCP8002230 VAC**	**RCP11003230 VAC**	**RMIA210230 VAC**	**RMIA45230 VAC**
Options	Consult your Carlo Gavazzi partner or distributor			

	Industrial relays sockets		Midi industrial relays sockets	
Types	**ZPD 8XA ZPD 11XA**	**ZPD 8A ZPD 11A**	**ZMI 2NA ZMI 4NA**	**ZMI 2 / 3 / 4SA**
				
General specifications				
Dimensions HxWxD (mm)	65 x 27 x 38	65 x 27 x 38	42.5 x 75 x 27	42.5 x 75 x 27
Rated volt. / Rated curr.	10 A @ 400 VAC	10 A @ 400 VAC	10 A @ 300 VAC	10/12 A @ 300 VAC
Insulation voltage	> 3 kV	> 3 kV	> 4 kV	> 4 kV
Socket material	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V2)	Self-ext. PA6 + GF (V2)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP20	IP20	IP20	IP20
Approvals	CE - cURus - CSA (10 A 300 VAC)	CE - cURus - CSA - IMQ	CE - cURus - CSA	CE - cURus - CSA
References				
For RCP 8 / RCP 11	**ZPD 8XA / ZPD 11XA**	**ZPD 8A / ZPD 11A**		
For RMI2-10 / RMI4-5			**ZMI 2NA / ZMI 4NA**	**ZMI 2 / 3 / 4SA**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Midi industrial relays

Midi industrial relays

Types	RPY 1	RPY 2	RPY 3	RPY 4
				
Dimensions HxWxD (mm)	36 x 21.5 x 28	36 x 21.5 x 28	36 x 31.5 x 28	36 x 41.5 x 28
No. of Contacts	1 Change-over	2 Change-over	3 Change-over	4 Change-over
Contact rating	16 A	10 A	10 A	10 A
Terminal types	Faston or PCB	Faston or PCB	Faston or PCB	Faston or PCB
Output specifications				
Max. load AC1	16 A	10 A	10 A	10 A
Electrical life	1 x 10^5	1 x 10^5	1 x 10^5	1 x 10^5
Switching power	1 HP at 240 VAC 1/2 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC
General specifications				
Voltage ranges VDC	6 - 12 - 24 - 36 - 48 - 110	6 - 12 - 24 - 36 - 48 - 110	6 - 12 - 24 - 36 - 48 - 110	6 - 12 - 24 - 36 - 48 - 110 - 220
Voltage ranges VAC	6 - 12 - 24 - 120 - 230	6 - 12 - 24 - 120 - 230	6 - 12 - 24 - 120 - 230	6 - 12 - 24 - 120 - 230
Insulation Coil / Contact	2000/1200 VAC	2000/1200 VAC	2000/1200 VAC	2000/1200 VAC
Consumption	DC=0.9 W - AC=1.2 VA	DC=0.9 W - AC=1.2 VA	DC=1.4 W - AC=2 VA	DC=1.5 W - AC=2.5 VA
Approvals / Conformity	CE - cURus - CSA - TÜV	CE - cURus - CSA - TÜV	CE - cURus - CSA - TÜV	CE - cURus - CSA - TÜV
References				
6 VDC	**RPYA0016**	**RPYA0026**	**RPYA0036**	**RPYA0046**
12 VDC	**RPYA00112**	**RPYA00212**	**RPYA00312**	**RPYA00412**
24 VDC	**RPYA00124**	**RPYA00224**	**RPYA00324**	**RPYA00424**
36 VDC	**RPYA00136**	**RPYA00236**	**RPYA00336**	**RPYA00436**
48 VDC	**RPYA00148**	**RPYA00248**	**RPYA00348**	**RPYA00448**
110 VDC	**RPYA001110**	**RPYA002110**	**RPYA003110**	**RPYA004110**
6 VAC	**RPYA001A6**	**RPYA002A6**	**RPYA003A6**	**RPYA004A6**
12 VAC	**RPYA001A12**	**RPYA002A12**	**RPYA003A12**	**RPYA004A12**
24 VAC	**RPYA001A24**	**RPYA002A24**	**RPYA003A24**	**RPYA004A24**
120 VAC	**RPYA001A120**	**RPYA002A120**	**RPYA003A120**	**RPYA004A120**
230 VAC	**RPYA001A230**	**RPYA002A230**	**RPYA003A230**	**RPYA004A230**
Options	Consult your Carlo Gavazzi partner or distributor			

Midi industrial relays sockets

Types	ZPY08A	ZPY11A	ZPY14A
			
General specifications			
Dimensions HxWxD (mm)	27.8 x 30 x 69.8	27.8 x 40 x 69.8	27.8 x 50.5 x 69.8
Rated volt. / Rated curr.	10 A @ 300 VAC	10 A @ 300 VAC	10 A @ 300 VAC
Insulation voltage	> 4 kV	> 4 kV	> 4 kV
Socket material	PA6 - V2	PA6 - V2	PA6 - V2
Mounting	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP 00	IP 00	IP 00
Approvals	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA
References			
Consult your Carlo Gavazzi Partner or Distributor	For Relays: RPYA 001 and RPYA 002	For Relays: RPYA 003	For Relays: RPYA 004

CARLO GAVAZZI

Midi and Slim industrial relays

	Midi industrial relays		Slim industrial relays	
Types	**RPYS 001**	**RPYS 002**	**RSLM100**	**RSLM001**
				
Dimensions HxWxD (mm)	28 x 29 x 12.6	28 x 29 x 12.6	15 x 28 x 5	15 x 28 x 5
No. of Contacts	1 Change-over	2 Change-over	1 Normally open	1 Change-over
Contact rating	12 A	8 A	6 A	6 A
Terminal types	Faston or PCB	Faston or PCB	PCB	PCB
Output specifications				
Max. load AC1	12 A	8 A	6 A / 250 VAC	6 A / 250 VAC
Min. load	10 mA / 12 VDC	10 mA / 12 VDC	170 mW / 24 VDC 210 mW/ 48~60 VDC	170 mW / 24 VDC 210 mW/ 48~60 VDC
Mechanical endurance	≥ 10, 000, 000 cycles (18000 Ops / h)	≥ 10, 000, 000 cycles (18000 Ops / h)	> 100,000 cycles	> 100,000 cycles
Electrical life	1 x 10^5	1 x 10^5		
Switching power	1/3 HP, 24 0VAC (Motor load)	1/6 HP, 240 VAC (Motor load)	1500 VA	1500 VA
General specifications				
Voltage ranges VDC	12 - 24	12 - 24	12 - 24 - 48 - 60	12 - 24 - 48 - 60
Voltage ranges VAC	24 - 115 - 230	24 - 115 - 230		
Insulation Coil / Contact	4000 VAC/1min	4000 VAC/1min		
Consumption	DC (W) approx. 0.53 AC (VA) approx. 1.0	DC (W) approx. 0.53 AC (VA) approx. 1.0	170 mW ~ 210 mW	170 mW ~ 210 mW
Approvals / Conformity	CE - cURus	CE - cURus	cURus - CSA - VDE - CQC	cURus - CSA - VDE - CQC
References				
12 VDC	**RPYS001012D**	**RPYS002012D**	**RSLM100012**	**RSLM001012**
24 VDC	**RPYS001024D**	**RPYS002024D**	**RSLM100024**	**RSLM001024**
24 VAC	**RPYS001024A**	**RPYS002024A**		
48 VDC			**RSLM100048**	**RSLM001048**
60 VDC			**RSLM100060**	**RSLM001060**
115 VAC	**RPYS001115A**	**RPYS002115A**		
230 VAC	**RPYS001230A**	**RPYS002230A**		
Options	Consult your Carlo Gavazzi partner or distributor			

	Midi industrial relays sockets		Slim relay sockets		
Types	**ZPYS1S**	**ZPYS2S**	**ZRLS1.NA**	**ZRLS1.GA**	**ZRLP**
					
General specifications					
Dimensions HxWxD (mm)	61.5 x 80 x 15.8	61.5 x 80 x 15.8	88 x 55 x 6	101 x 80 x 6	33 x 30 x 6
Rated volt. / Rated curr.	16 A @ 300 VAC	10 A @ 300 VAC	6 A @ 300 VAC	6 A @ 300 VAC	6 A @ 300 VAC
Insulation voltage	4 Kv	4 Kv	> 3 kV	> 3 kV	> 3 kV
Socket material	PA6 - V2	PA6 - V2	PA66 + GF (V0)	PA66 + GF (V0)	PA66 + GF (V0)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail	PCB
Terminal Type	IP00	IP00	Screw cage	Spring loaded	
Approvals	CE - cURus	CE - cURus	CE - cURus - CSA	CE - cURus - CSA	CSA - cURus
References					
Consult your Carlo Gavazzi Partner or Distributor	For Relays: RPYS001 and RPYS002				
Input Voltage 6~24 VAC/VDC			**ZRLS12NA**	**ZRLS12GA**	
Input Voltage 48~60 VAC/VDC			**ZRLS13NA**	**ZRLS13GA**	
Input Voltage 110~125 VAC/VDC			**ZRLS14NA**	**ZRLS14GA**	
Input Voltage 220~240 VAC/VDC			**ZRLS15NA**	**ZRLS15GA**	
					ZRLP

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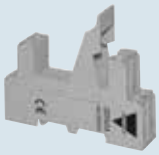
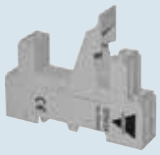
Power relays

Power relays

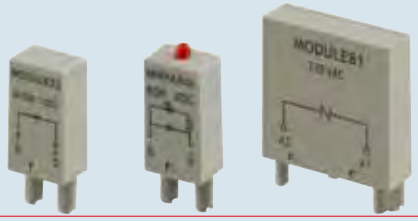
Types	NB (1/2 Poles)	NF (1/2 Poles)	CF (2 Poles)	CS (2 Poles)
				
Dimensions HxWxD (mm)	55 x 50.5 x 54.5	36 x 50.5 x 54.5	26.42 x 68.58 x 34.54	26.42 x 52.32 x 34.54
No. of Contacts	1 Normally open 2 Normally open	1 Normally open 2 Normally open	2 Normally open 2 Change-over	2 Normally open 2 Change-over
Contact rating	30 A	30 A	30 A	30 A
Terminal types	Bolt	Faston	Faston	PCB
Output specifications				
Max. load AC1	30 A (1 NO) - 25 A (2 NO)	30 A (1 NO) - 25 A (2 NO)	30 A (2 NO) - 30 A (2 CO)	30 A (2 NO) - 30 A (2 CO)
Electrical life	1 x 10^5	1 x 10^5	1 x 10^5	1 x 10^5
Switching power	7500 VA / 840 W	7500 VA / 840 W	8310 VA / 840 W	8310 VA / 840 W
General specifications				
Voltage ranges VDC	6 - 12 - 24 - 48 - 100 - 110	6 - 12 - 24 - 48 - 100 - 110	5 - 6 - 12 - 24 - 48 - 110	5 - 6 - 12 - 24 - 48 - 110
Voltage ranges VAC	12 - 24 - 48 - 115 - 230	12 - 24 - 48 - 115 - 230	24 - 120 - 208 - 240 - 277	24 - 120 - 208 - 240 - 277
Insulation according to	4000 VAC	4000 VAC	4000 VAC	4000 VAC
Consumption	DC=1.9 W - AC=2.7 VA	DC=1.9 W - AC=2.7 VA	DC=1.7 W - AC=4 VA	DC=1.7 W - AC=4 VA
Approvals / Conformity	CE - cURus	CE - cURus	cURus	cURus
References				

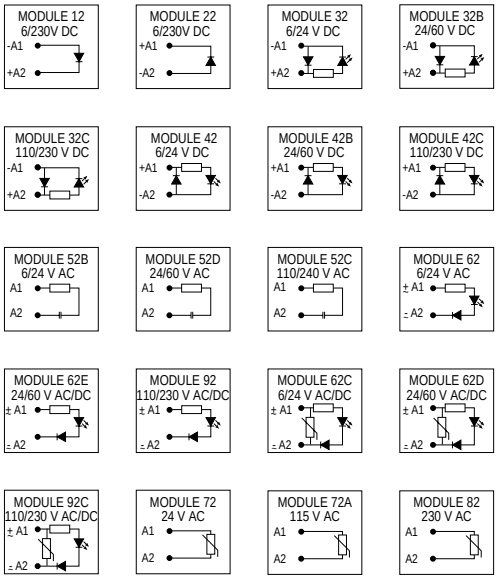
	1NO Contact	2NO Contact	1NO Contact	2NO Contact	2NO Contact	2CO Contact	2NO Contact	2CO Contact
5 VDC					**CF30 D2005**	**CF30 D0025**	**CS30 D2005**	**CS30 D0025**
6 VDC	**NBD 100 6**	**NBD 200 6**	**NFD 100 6**	**NFD 200 6**	**CF30 D2006**	**CF30 D0026**	**CS30 D2006**	**CS30 D0026**
12 VDC	**NBD 100 12**	**NBD 200 12**	**NFD 100 12**	**NFD 200 12**	**CF30 D20012**	**CF30 D00212**	**CS30 D20012**	**CS30 D00212**
24 VDC	**NBD 100 24**	**NBD 200 24**	**NFD 100 24**	**NFD 200 24**	**CF30 D20024**	**CF30 D00224**	**CS30 D20024**	**CS30 D00224**
48 VDC	**NBD 100 48**	**NBD 200 48**	**NFD 100 48**	**NFD 200 48**	**CF30 D20048**	**CF30 D00248**	**CS30 D20048**	**CS30 D00248**
100 VDC	**NBD 100 100**	**NBD 200 100**	**NFD 100 100**	**NFD 200 100**	**CF30 D200110**	**CF30 D002110**	**CS30 D200110**	**CS30 D002110**
12 VAC	**NBA 100 12**	**NBA 200 12**	**NFA 100 12**	**NFA 200 12**				
24 VAC	**NBA 100 24**	**NBA 200 24**	**NFA 100 24**	**NFA 200 24**	**CF30 A20024**	**CF30 A00224**	**CS30 A20024**	**CS30 A00224**
48 VAC	**NBA 100 48**	**NBA 200 48**	**NFA 100 48**	**NFA 200 48**				
115 VAC	**NBA 100 115**	**NBA 200 115**	**NFA 100 115**	**NFA 200 115**				
120 VAC					**CF30 A200120**	**CF30 A002120**	**CS30 A200120**	**CS30 A002120**
208 VAC (only 60Hz)					**CF30 A200208**	**CF30 A002208**	**CS30 A200208**	**CS30 A002208**
220 VAC (only 50Hz)					**CF30 A200220**	**CF30 A002220**	**CS30 A200220**	**CS30 A002220**
230 VAC	**NBA 100 230**	**NBA 200 230**	**NFA 100 230**	**NFA 200 230**				
240 VAC					**CF30 A200240**	**CF30 A002240**	**CS30 A200240**	**CS30 A002240**
277 VAC					**CF30 A200277**	**CF30 A002277**	**CS30 A200277**	**CS30 A002277**
Options	Consult your Carlo Gavazzi partner or distributor							

Sockets for electromechanical relays

Types	ZD 35/2A	ZD 50/2A	ZD 35/3A	ZD 50/3A
				
General specifications				
Rated volt. / Rated curr.	12 A @ 300 VAC	12 A @ 300 VAC	12 A @ 300 VAC	12 A @ 300 VAC
Insulation voltage	> 5 kV	> 5 kV	> 5 kV	> 5 kV
Socket material	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP20	IP20	IP20	IP20
Approvals	CE - cURus - CSA (12 A, 300 VAC)	CE - cURus - CSA (12 A, 300 VAC)	CE - cURus - CSA (12 A, 300 VAC)	CE - cURus - CSA (12 A, 300 VAC)
References				
For relay:	MZ 1P 5/10 A M15 M 8 A M25 1P 12 A LC 10 A	MZ B 1P 5/10 A MZ 2P 5/10 A MZ 1P 16 A M15 M 8 A M25 1P 16 A M25 2P 8 A LC 5/16 A	MZ 1P 5/10 A M15 M 8 A M25 1P 12 A LC 10 A	MZ B 1P 5/10 A MZ 2P 5/10 A MZ 1P 16 A M15 M 8 A M25 1P 16 A M25 2P 8 A LC 5/16 A
For detailed information consult your Carlo Gavazzi Partner or Distributor	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays

Types — Additional modules for ZMI and ZD sockets





General specifications	
Dimensions (mm) WxHxD	23 x 12.5 x 8.5
Terminal material	CuSn
Degree of protection	IP40
Operating temperature	-40°C to + 70°C
Ambient humidity	85RH non condensing
Approvals / Conformity	No approvals
References	
Consult your Carlo Gavazzi Partner or Distributor	

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Switching power supplies

Single-phase switching power supplies

Types	SPD 5 / 10 / 18 W				SPD 30 / 60 W			SPD 90 / 100 W		
										
Dimensions HxWxD (mm)	90 x 22.5 x 114				90 x 40.5 x 114			90 x 54 x 114		
Output specifications										
Voltage	5 VDC	12 VDC	15 VDC	24 VDC	12 VDC	24 VDC	48 VDC	12 VDC	24 VDC	48 VDC
Current SPD 5 W	1 A	420 mA	340 mA	210 mA						
Current SPD 10 W	2 A	840 mA	670 mA	420 mA						
Current SPD 18 W	3 A	1.5 A	1.2 A	750 mA						
Current SPD 30 W					2.5 A	1.25 A	625 mA			
Current SPD 60 W					5 A	2.5 A	1.25 A			
Current SPD 90 W									3.8 A	
Current SPD 100 W								8.4 A	4.2 A	2.1 A
Line regulation		±1%				±0.5%			±1%	
Load regulation		±2%				±0.5%			±1%	
Efficiency	75%	77%	77%	77%	86%	89%	89%		85%	
Input specifications										
Voltage range	Multi voltage: 90 to 265 VAC or 120 to 370 VDC				Multi voltage: 85 to 264 VAC or 90 to 375 VDC			Multi voltage: 90 to 264 VAC or 120 to 375 VDC		
Frequency range	47 to 63 Hz				47 to 63 Hz			47 to 63 Hz		
General specifications										
Ambient temperature	-40°C to +71°C				-40°C to +71°C			-35°C to +71°C		
Storage	-40°C to +85°C				-40°C to +85°C			-40°C to +85°C		
Derating (>60°C)	3 % / °C				2.5 % / °C			2.5 % / °C		
Approvals/Marks	CE - cULus - cURus - UL1310 Class 2 - ISA 12.12.1 Class I Div2 - UKCA				CE - cULus - cURus - UL1310 Class 2 - ISA 12.12.1 Class I Div2 - UKCA			CE - cULus - cURus - UL1310 Class 2 (up to 90W) - ISA 12.12.1 Class I Div2 - UKCA		
Installation	DIN-rail				DIN-rail			DIN-rail		
Connection	Screw terminals / Spring terminals (B)				Screw terminals / Spring terminals (B)			Screw terminals / Spring terminals (B)		
Main features										
	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-135%)				Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-135%). Output "Power ready" signal VDC (only model 24 VDC)			Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (102-108%), PFC. Overvoltage protection (102-106%). Output "Power ready" signal VDC		
LED indicator for "power on"	Yes				Yes			Yes		
LED indicator for DC "too low"	Yes				No - SPD24 with transistor output			Yes with relay output		
References										
5 VDC										
Screw terminals	**SPD05051 / SPD05101 SPD05181**									
12 VDC										
Screw terminals	**SPD12051 / SPD12101 SPD12181**				**SPD12301 / SPD12601**					
Spring terminals	**SPD12101B**				**SPD12301B / SPD12601B**					
24 VDC										
Screw terminals	**SPD24051 / SPD24101 SPD24181**				**SPD24301 / SPD24601**			**SPD24901L / SPD241001**		
Spring terminals	**SPD24101B / SPD24181B**				**SPD24301B / SPD24601B**					
48 VDC										
Screw terminals					**SPD48301 / SPD48601**					

Switching power supplies

Single-phase switching power supplies

Types	SPD 120 W(N)	SPD 240 W	SPD 300 W
			
Dimensions HxWxD (mm)	124.5 x 64 x 123.6	124.5 x 83.5 x 123.6	124.5 x 83.5 x 123.6
Output specifications			
Voltage	12 VDC / 24 VDC / 48 VDC	24 VDC / 48 VDC	24 VDC / 48 VDC
Current	10 A / 5 A / 2.5 A	10 A / 5 A	12.5 A / 6.25 A
Line regulation	±0.5% / ±0.5%	±0.5%	±0.5%
Load regulation	±1% / ±1%	±1%	±1%
Efficiency	84% / 86% / 86%	89% / 90%	89% / 90%
Input specifications			
Voltage range	Autoselect: 90 to 132 VAC, 180 to 264 VAC, 120 to 375 VDC	Autoselect: 90 to 132 VAC, 180 to 264 VAC, 120 to 375 VDC	Autoselect: 90 to 132 VAC, 180 to 264 VAC 120 to 375 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
PFC	0.7	0.75	0.75
General specifications			
Ambient temperature	-35°C to +71°C	-40°C to +71°C	-30°C to +71°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Derating (>60°C)	2.5 % / °C	2.5 % / °C	2.5 % / °C
Approvals/Marks	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA
Installation	DIN-rail	DIN-rail	DIN-rail
Connection	Screw terminals / Detachable (B)	Screw terminals / Detachable (B)	Screw terminals
Main features			
	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-145%). Parallel connection up to 3 supplies and PFC function on (N) model only	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-145%). Parallel connection up to 3 supplies standard. PFC function integrated	Parallel function, PFC and Output ready
LED indicator for "power on"	Yes	Yes	Yes, 24 V with output ready
LED indicator for DC "too low"	Yes - with relay output (SPD24 only)	Yes - with relay output (SPD24 only)	Yes
References			
12 VDC			
Screw terminals	**SPD121201N**		
24 VDC			
Screw terminals	**SPD241201N**	**SPD242401**	**SPD243001**
Detatch. screw terminals	**SPD241201BN**	**SPD242401B**	
48 VDC			
Screw terminals		**SPD482401**	

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Switching power supplies

	Single-phase switching power supplies		Bi-phase switching power supplies		
Types	**SPD 480 W**		**SPD 100 W**		
					
Dimensions HxWxD (mm)	124.5 x 175.5 x 123.6		90 x 54 x 114		
Output specifications					
Voltage	24 VDC	48 VDC	12 VCC	24 VCC	48 VCC
Current	20 A	10 A	8.4 A	4.2 A	2.1 A
Line regulation	±0.5%			±1.0%	
Load regulation	±1%			±1.0%	
Efficiency (typ)	89%	90%	86%	87%	89%
Input specifications					
Voltage range	Autoselect: 90 to 132 VAC, 186 to 264 VAC, 120 to 370 VDC		340 to 575 VAC, 480 to 820 VAC		
Frequency range	47 to 63 Hz		47 to 63 Hz		
PFC	0.99		0.55		
General specifications					
Ambient temperature	-40°C to +71°C		-40°C to +71°C		
Storage	-40°C to +85°C		-40°C to +85°C		
Derating (>60°C)	2.5 % / °C > 56°C		2.5% / °C		
Approvals/Marks	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA		CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA		
Installation	DIN-rail		DIN-rail		
Connection	Screw terminals / Detachable (B)		Screw terminals		
Main features					
	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (120-140%). Parallel connection up to 3 supplies standard. PFC function integrated		Parallel function, PFC and Output ready		
LED indicator for “power on”	Yes		Yes - with relay output (SPD24 only)		
LED indicator for DC “too low”	Yes - with relay output (SPD24 only)		Yes		
References					
24 VDC					
Screw terminals	**SPD244801**		**SPD 241002**		
Detatch. screw terminals	**SPD244801B**				
48 VDC					
Screw terminals	**SPD484801**				

CARLO GAVAZZI

Switching power supplies

Three-phase switching power supplies

Types	SPD 120 W 3-ph	SPD 240 W 3-ph	SPD 480 W 3-ph	SPD 960 W 3-ph
				
Dimensions HxWxD (mm)	124 x 74.3 x 118.8	124 x 89.0 x 118.8	124 x 150 x 118.8	126.2 x 275.8 x 118.8
Output specifications				
Voltage	12 VDC / 24 VDC	24 VDC / 48 VDC	24 VDC / 48 VDC	24 VDC / 48 VDC
Current	10 A / 5 A	10 A / 5 A	20 A / 10 A	40 A / 20 A
Line regulation	±1%	±1%	±1%	±1%
Load regulation	±1%	±1%	±1%	±1%
Efficiency	87% / 89%	90% / 91%	90% / 91%	92% / 93%
Input specifications				
Voltage range	340 to 575 VAC 480 to 820 VDC	340 to 575 VAC 480 to 820 VDC	340 to 575 VAC 480 to 820 VDC	340 to 575 VAC 480 to 820 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
PFC	0.55	0.55	0.65	0.80
General specifications				
Ambient temperature	-40°C to +71°C	-25°C to +71°C	-30°C to +71°C	-40°C to +71°C
Storage	-40°C to +85°C	-25°C to +85°C	-40°C to +85°C	-40°C to +85°C
Derating	2.5 % / °C > 61°C	2.5 % / °C > 61°C	2.5 % / °C > 61°C	3.5 % / °C > 61°C
Approvals/Marks	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA	CE - cULus - cURus - ISA 12.12.1 Class I Div2 - UKCA
Installation	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Connection	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Main features				
	Can be used as Bi or Three-phase, Parallel function and PFC	Can be used as Bi or Three-phase, Parallel function and PFC	Can be used as Bi or Three-phase, Parallel function and PFC	Can be used as Bi or Three-phase. Active parallel function and PFC
LED indicator for "power on"	Yes, 24 V with output ready	Yes, 24 V with output ready	Yes, 24 V with output ready	Yes, 24 V with output ready
LED indicator for DC "too low"	Yes	Yes	Yes	Yes
References				
12 VDC				
Screw terminals	**SPD121203**			
24 VDC				
Screw terminals	**SPD241203**	**SPD242403**	**SPD244803**	**SPD249603**
48 VDC				
Screw terminals		**SPD482403**	**SPD484803**	**SPD489603**

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Switching power supplies

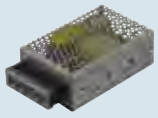
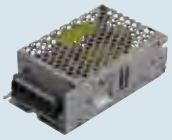
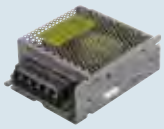
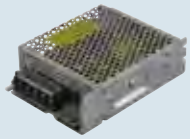
Compact Low profile DIN-rail mounting

Types	SPMA 15 12 W to 15 W	SPMA 30 25 W to 36 W	SPMA 60 54 W to 60 W	SPMA 100 85 W to 100 W
				
Dimensions HxWxD (mm)	91 x 18 x 63	91 x 52.5 x 63	91 x 52.5 x 63	91 x 70 x 63
Output specifications				
Voltage	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC, 24 VDC (S ver.)
Current	2.4 A - 1.25 A 1 A - 0.63 A	6.0 A - 2.1 A 2.0 A - 1.5 A	4.5 A 4.0 A - 2.5 A	7.1 A - 6.12 A 4.2 A - 3.83 A
Output Power	5 V - 12 W, 12 V - 15 W 15 V - 15 W, 24 V - 15 W	5 V - 30 W, 12 V - 25 W 15 V - 30 W, 24 V - 36 W	12 V - 54 W 15 V - 60 W, 24 V - 60 W	12 V - 85 W 15 V - 92 W 24 V - 100 W or 24 V - 92 W (for class 2 compliance)
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%
Load regulation	±1%	±1%	±1%	±1%
Input specifications				
Voltage range	85 to 264 VAC, 120 to 350 VDC	85 to 264 VAC, 120 to 350 VDC	85 to 264 VAC 120 to 350 VDC	85 to 264 VAC, 120 to 350 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications				
Ambient temperature	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Derating (>60°C)	2.5 % / °C	2.5 % / °C	2.5 % / °C	2.5 % / °C
Approvals/Marks	CE - cULus - cURus UL 1310 Class 2 - ISA 12.12.1 Class I Div2	CE - cULus - cURus UL 1310 Class 2 - ISA 12.12.1 Class I Div2	CE - cULus - cURus UL 1310 Class 2 - ISA 12.12.1 Class I Div2	CE - cULus - cURus UL 1310 Class 2 (up to 91.92 W) - ISA 12.12.1 Class I Div2
Installation	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Connection	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Main features				
	Adjustable output voltage	Adjustable output voltage	Adjustable output voltage	Adjustable output voltage
LED indicator for “power on”	Yes	Yes	Yes	Yes
LED indicator for DC “too low”	Yes	Yes	Yes	Yes
References				
5 VDC	**SPMA05151**	**SPMA05301**		
12 VDC	**SPMA12151**	**SPMA12301**	**SPMA12601**	**SPMA121001**
15 VDC	**SPMA15151**	**SPMA15301**	**SPMA15601**	**SPMA151001**
24 VDC	**SPMA24151**	**SPMA24301**	**SPMA24601**	**SPMA241001**
24 VDC (Not UL Class 2)				**SPMA241001S**

CARLO GAVAZZI

Switching power supplies

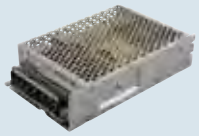
Enclosed switching power supplies

Types		SPPC 25 W	SPPC 35 W	SPPC 50 W	SPPC 75 W
					
Dimensions HxWxD (mm)		79 x 51 x 28.8	101.6 x 63.5 x 33	99 x 82 x 35	129 x 98 x 38
Output specifications					
Voltage		5 V, 12 V, 24 V	5 V, 12 V, 24 V	5 V, 12 V, 15 V, 24 V, 48 V	5 V, 12 V, 24 V, 48 V
Current		5 A, 2.1 A, 1.1 A	6 A, 3 A, 1.5 A	8 A, 4.2 A, 3.4 A, 2.2 A, 1.12 A	12 A, 6 A, 3.2 A, 1.62 A
Line regulation		±0.5%	±0.5%	±0.5%	±0.5%
Load regulation		±2.0%, ±1.0%, ±1.0%	±1.0%	±1.0%	±2.0%
Efficiency (typ)	115 VAC 230 VAC	76%, 80%, 84% 78%, 82%, 85%	79%, 83%, 86% 80%, 84%, 87%	79%, 84%, 85%, 86%, 88% 80%, 85%, 86%, 87%, 89%	79%, 84%, 87%, 88% 80%, 85%, 88%, 89%
Input specifications					
Voltage range		90 to 264 VAC 127 to 370 VDC	90 to 264 VAC 127 to 370 VDC	90 to 264 VAC 27 to 370 VDC	90 to 264 VAC 127 to 370 VDC
Frequency range		47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications					
Ambient temperature		-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage		-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Derating (>50°C)		2% / °C	2% / °C	1.5% / °C	1.5% / °C
Cooling		Free air convection	Free air convection	Free air convection	Free air convection
Approvals/Marks		CE - cURus	CE - cURus	CE - cURus	CE - cURus
Installation		Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features					
Mounting		Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)
References					
5 VDC		**SPPC 525 1**	**SPPC 535 1**	**SPPC 550 1**	**SPPC 575 1**
12 VDC		**SPPC 1225 1**	**SPPC 1235 1**	**SPPC 1250 1**	**SPPC 1275 1**
15 VDC				**SPPC 1550 1**	
24 VDC		**SPPC 2425 1**	**SPPC 2435 1**	**SPPC 2450 1**	**SPPC 2475 1**
48 VDC				**SPPC 4850 1**	**SPPC 4875 1**

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Switching power supplies

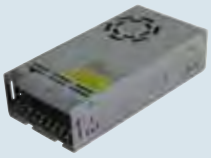
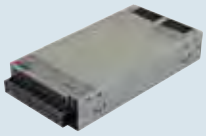
Compact enclosed switching power supplies

Types	SPPC 150 W	SPPC 200 W	SPPC 240 W
			
Dimensions HxWxD (mm)	160 x 98 x 38	199 x 99 x 50	199 x 99 x 50
Output specifications			
Voltage	12 VDC, 24 VDC	5 V, 12 V, 24 V, 48 V	12 V, 24 V
Current	12.5 A, 6.3 A	40 A, 16.7 A, 8.4 A, 4.2 A	20 A, 10 A
Line regulation	±0.5%	±0.5%	±0.5%
Load regulation	±1%	±1.0%	±1.0%
Efficiency (typ)	82.5%, 85%	79%, 84%, 86%, 87.5%	84%, 86%
Built-in active PFC	Active PFC, PF >0.95	(115 VAC): PF>0.98 (230 VAC): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96
Input specifications			
Voltage range	90 to 264 VAC 120 to 370 VDC	85 to 264 VAC 120 to 370 VDC	85 to 264 VAC 120 to 370 VDC
Frequency range	47 - 63 VAC	47 to 63 Hz	47 to 63 Hz
General specifications			
Ambient temperature	- 20° C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage	- 30° C to +85°C	-40°C to +85°C	-40°C to +85°C
Output short circuit	Long-term, auto recovery	Long-term, auto recovery	Long-term, auto recovery
Derating (>50°C)	Refer to derating diagram	2% / °C	2% / °C
Cooling	Free air convection	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus
Installation	Screw terminal	Screw terminal	Screw terminal
Main features			
Mounting	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)
References			
5 VDC		**SPPC5200 1FC**	
12 VDC	**SPPC12150 1FC**	**SPPC12200 1FC**	**SPPC12240 1FC**
15 VDC			
24 VDC	**SPPC24150 1FC**	**SPPC24200 1FC**	**SPPC24240 1FC**
48 VDC		**SPPC48200 1FC**	

CARLO GAVAZZI

Switching power supplies

Compact enclosed switching power supplies

Types	SPPC 320 W	SPPC 480 W	SPPC 600 W	SPPC 800 W
				
Dimensions HxWxD (mm)	199 x 99 x 50	218 x 116.5 x 41	218 x 116.5 x 41	226 x 116.5 x 41
Output specifications				
Voltage	12 V, 24 V, 48 V	12 V, 24 V, 36 V, 48 V	12 V, 24 V, 36 V, 48 V	24 V, 48 V
Current	25 A, 13 A, 6.7 A	34 A, 22 A, 14 A, 11 A	(100 to 127 VAC): 34 A, 22 A, 14 A, 11 A (128 to 264 VAC): 42 A, 26.5 A, 17.5 A, 13.6 A	(100 to 127 VAC): 27 A, 14 A (128 to 264 VAC): 33 A, 16.5 A
Line regulation	±0.5%	±0.5%, ±0.5%, ±0.5%, ±0.2%	±0.5%	±0.5%
Load regulation	±1.0%	±1.0%	±1.0%	±1.0%
Efficiency (typ)	84.5%, 87%, 87.5%	88%, 89%, 90%, 90%	88%, 89%, 90%, 90%	88%, 89%
Built-in active PFC	(115 VAC): PF>0.98 (230 VAC): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96	(115 VAC): PF>0.98 (230 VCA): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96
Input specifications				
Voltage range	85 to 264 VAC 120 to 370 VDC	90 to 264 VAC 127 to 370 VAC	90 to 264 VAC 127 to 370 VAC	90 to 264 VAC 127 to 370 VAC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications				
Ambient temperature	-25°C to +70°C	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Output short circuit			Yes	Yes
Derating (>50°C)	2% / °C	2% / °C	2% / °C	2% / °C
Cooling	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus	CE - cURus
Installation	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features				
Mounting	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)	Horizontal and vertical (DIN-rail mounting accessories available)
References				
12 VDC	**SPPC12320 1FC**	**SPPC12480 1FC**	**SPPC12600 1FC**	
15 VDC		**SPPC24480 1FC**	**SPPC24600 1FC**	**SPPC 24800 1FC**
24 VDC	**SPPC24320 1FC**	**SPPC36480 1FC**	**SPPC36600 1FC**	
48 VDC	**SPPC48320 1FC**	**SPPC48480 1FC**	**SPPC48600 1FC**	**SPPC 48800 1FC**

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Switching power supplies

Compact DIN-rail power supplies

Types	SPDM 30 W	SPDM 50 W	SPDM 75 W
			
Dimensions HxWxD (mm)	90 x 22.4 x 100	90 x 30 x 100	90 x 40.5 x 100
Output specifications			
Voltage	12 V, 24 V	12 V, 24 V	12 V, 24 V
Current	2 A (12 V) 1.25 A (24 V)	4 A (12 V) 2.1 A (24 V)	5.5 A (12 V) 3 A (24 V)
Line regulation	±1.0%	±1.0%	±1.0%
Load regulation	±1.0%	±1.0%	±1.0%
Efficiency (typ)	85% to 89%	85% to 89%	85% to 89%
Input specifications			
Voltage range	85 to 264 VAC 120 to 375 VDC	85 to 264 VAC 120 to 375 VDC	85 to 264 VAC 120 to 375 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications			
Ambient temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Output short circuit	Yes	Yes	Yes
Derating (>50°C)	Refer to datasheet	Refer to datasheet	Refer to datasheet
Cooling	Natural air convection	Natural air convection	Natural air convection
Approvals/Marks	CE - cULus - UL1310 Class 2 - UKCA	CE - cULus - UL1310 Class 2 - UKCA	CE - cULus - UL 1310 Class 2 only for 24 VDC models (SPDM24751 and SPDM24751B) - UKCA
Installation	DIN-rail	DIN-rail	DIN-rail
Connection	Screw or Spring terminals	Screw or Spring terminals	Screw or Spring terminals
Main features			
LED indicator for "DC OK"	Yes	Yes	Yes
References			
12 VDC			
Screw terminals	**SPDM12301**	**SPDM12501**	**SPDM12751** (Not UL Class 2)
24 VDC			
Screw terminals	**SPDM24301**	**SPDM24501**	**SPDM24751**
Spring terminals	**SPDM24301B**	**SPDM24501B**	**SPDM24751B**

Switching power supplies

Compact DIN-rail power supplies

Types	SPDM 120 W	SPDM 240 W
		
Dimensions HxWxD (mm)	124 x 45 x 119	124 x 70 x 127
Output specifications		
Voltage	12 V, 24 V, 48 V	24 V, 48 V
Current	10 A (12 V) 5 A (24 V) 2.5 A (48 V)	10 A (24 V) 5 A (48 V)
Line regulation	±0.5%	±0.5%
Load regulation	±1.0%	±1.0%
Efficiency (typ)	85% (12 V) 88% (24 V) 89% (48 V)	87% (24 V) 88% (48 V)
Input specifications		
Voltage range	90 to 264 VAC 127 to 370 VDC	90 to 264 VAC 127 to 370 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz
General specifications		
Ambient temperature	-20°C to +70°C	-20°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C
Output short circuit	Yes	Yes
Derating (>50°C)	Refer to datasheet	Refer to datasheet
Cooling	Natural air convection	Natural air convection
Approvals/Marks	CE - cULus - cURus	CE
Installation	DIN-rail	DIN-rail
Connection	Screw terminals	Screw terminals
Main features		
LED indicator for "DC OK"	Yes	Yes
References		
12 VDC	**SPDM121201**	
24 VDC	**SPDM241201**	**SPDM242401**
48 VDC	**SPDM481201**	**SPDM482401**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Switching power supplies

High compactness DIN-rail power supplies

Types	SPDC 120 W	SPDC 240 W	SPDC 480 W
			
Dimensions HxWxD (mm)	124 x 32 x 119	124 x 45 x 119	124 x 70 x 127
Output specifications			
Voltage	12 V, 24 V	24 V	24 V, 48 V
Current	10 A, 5 A	10 A	20 A, 10 A
Line regulation	±0.5%	±0.5%	±0.5%
Load regulation	±1.0%	±1.0%	±1.0%
Efficiency (typ)	From 89.5% to 91%	88.00%	93.80%
Built-in active PFC	>0.95	>0.95	>0.95
Input specifications			
Rated input voltage	100 VAC - 240 VAC	100 VAC - 240 VAC	100 VAC - 240 VAC
Voltage range	85 to 264 VAC 127 to 360 VDC	85 to 264 VAC 127 to 375 VDC	85 to 264 VAC 130 to 350 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications			
Ambient temperature	-25°C to 70°C	-25°C to 70°C	-25°C to 70°C
Storage	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Output short circuit	Yes	Yes	Yes
Derating (>50°C)	Refer to datasheet diagram	Refer to datasheet diagram	Refer to datasheet diagram
Cooling	Free air convection	Free air convection	Free air convection
Approvals/Marks	CE - cULus - cURus	CE - cULus - cURus	CE - cULus - cURus
Installation	DIN-rail	DIN-rail	DIN-rail
Connection	Screw terminals	Screw terminal	Screw terminal
Main features			
DC OK Out	SPST relay	SPST relay	SPST relay
References			
12 VDC	**SPDC121201**		
24 VDC	**SPDC241201**	**SPDC242401**	**SPDC244801**
48 VDC			**SPDC484801**

Switching power supplies, redundancy modules

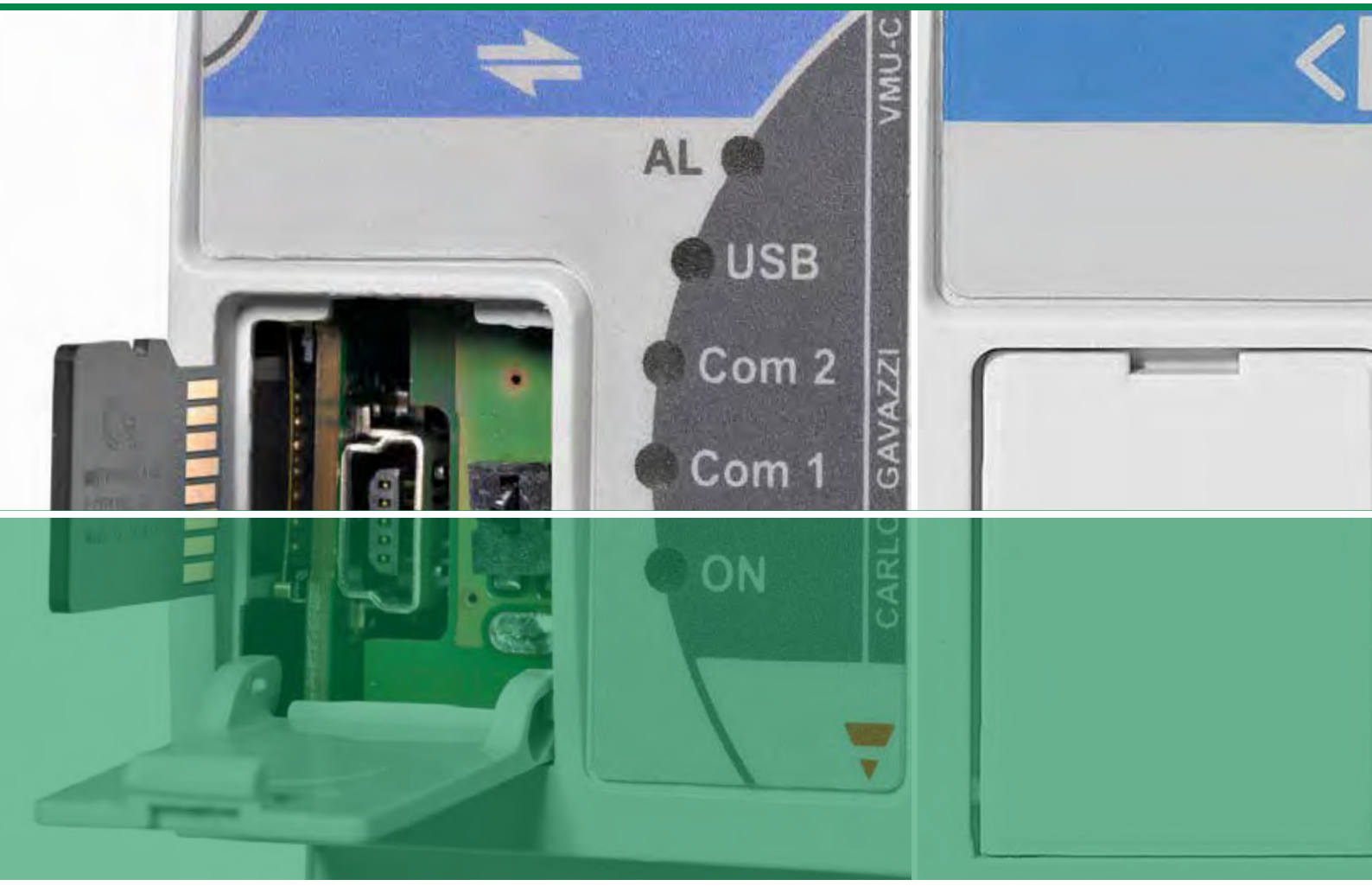
	Redundancy modules
Types	**SPD Redundancy module**
	
Dimensions HxWxD (mm)	90 x 54 x 114
Output specifications	
Voltage	24 VDC
Current	20 A
Input specifications	
Voltage range	21 to 28 VDC
General specifications	
Ambient temperature	-40°C to +71°C
Storage	-40°C to +85°C
Approvals/Marks	CE - cULus - cURus - UKCA
Installation	DIN-rail
Connection	Screw terminals
Main features	
LED indicator for "power on"	Yes - with relay output (SPD24 only)
Features	2 Relay outputs for remote monitoring
References	
24 VDC	**SPD24RM20**

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Switching power supplies, backup systems

	UPS controller	Switching power supply and UPS	Low profile DIN battery charger	Battery racks for UPS and chargers
Types	**SPUC**	**SPUBC**	**SPM5BC**	**SPUBAT 24V**
				
Dimensions HxWxD (mm)	90 x 54 x 114	115 x 65 x 135	91 x 90 x 57	175 x 62 x 120 200 x 82 x 160 210 x 145 x 130 210 x 210 x 210
Output specifications				
Voltage	12 / 24 VDC	24 VDC	12 V / 24 V	24 VDC
Charging voltage	12 V Model: Min. 9.1 VDC ~ 13.75 VDC Max. 24 V Model; Min. 18.7 VDC ~ 28 VDC Max.	27.5 VDC (Std.), 28.8 VDC (Boost)	13.6 VDC / 27.2 VDC	
Power supply current	30 A	5 A + 5 A with battery charged + 5 A for 4 s	30 W / 60 W	
Charging current max	2.5 A	5 A	1.25 A - 2.5 A 30 W / 2.5 A - 5 A 60 W	120 mA, 320 mA, 720 mA, 1.2 A
Battery capacity				1.2 / 3.2 / 7.2 / 12 Ah
Battery type				AGM VRLA
Input specifications				
Rated voltage input	12 / 24 VDC	115 VAC, 230 VAC, 277 VAC	110 VAC / 240 VAC	24 V
Voltage range	12 V Model: 11 VDC to 14 VDC 24 V Model: 22.5 VDC to 28 VDC	90 to 305 VAC	90 to 264 VAC 120 to 375 VDC	27.5 @ 20°C 26.8 @ 30°C 26.1 @ 40°C VDC End of charge voltage (trickle)
Frequency range		47 to 63 Hz	47 to 63 Hz	
Max charging current				0.36 / 0.9 / 2.16 A
General specifications				
Ambient temperature	-40°C to +71°C	-25°C to +70°C	-40°C to +51°C	0°C to +40°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	0°C to +40°C
Derating (+51°C to +70°C)	2.5% /°C	Refer to datasheet diagram	Refer to datasheet diagram	
Cooling	Free air convection	Free air convection	Free air convection	Free air convection
Approvals/Marks	CE - cULus - cURus - UKCA	CE - cURus	CE	CE
Installation	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features				
Mounting	DIN-rail mounting	DIN-rail mounting	Horizontal and vertical (DIN-rail mounting accessories available)	Wall / DIN-rail mounting
Battery diagnostics	No	Yes	No	
DC OK Out	Yes	Yes	No	
Battery OK Out	Yes	Yes	No	
Mains / Backup Out	Yes	Yes	Yes	
References				
12 V 30 A max	**SPUC12360**			
24 V 30 A max	**SPUC24720**			
PS + UPS 24 V 120 W		**SPUBC24120**		
12 V 30 W			**SPM5BC 1230**	
24 V 30 W			**SPM5BC 2430**	
12 V 60 W			**SPM5BC 1260**	
24 V 60 W			**SPM5BC 2460**	
24 V 1.2 Ah Battery				**SPUBAT241A2**
24 V 3.2 Ah Battery				**SPUBAT243A2**
24 V 7.2 Ah Battery				**SPUBAT247A2**
24 V 12 Ah Battery				**SPUBAT2412A**

CARLO GAVAZZI
Automation Components



Controls



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CARLO GAVAZZI

Digital panel meters

Ammeters, voltmeters and frequency meters

Types	DI3 DIN	DI3 72	LDI 3
			
Dimensions HxWxD (mm)	89 x 52.5 x 58.5	72 x 72 x 75.5	48 x 96 x 83
Function	3-digit meter. 1-phase AC, DC. Voltmeter, ammeter frequency meter	Microprocessor based indicator. AC / DC ammeter, voltmeter. Freq. meter 3-digit display red LED. Height: 14.2 mm	Microprocessor based indicator. AC / DC ammeter, voltmeter. Freq. meter 3-digit display
Input specifications			
Range code	1 A / 100 VAC [AV1] 5 A / 500 VAC [AV5] 1 A / 60 mV / 100 V / 500 VDC [AV6] 1 Hz to 1000 Hz [F1K]	[AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC	[AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC [F1K]: 1 to 1000 Hz
Accuracy	0.5% FS (0.1% FS frequency meter)	±0.5% FS	±0.5% FS (±0.3% FS frequency meter)
Indication – Max.	999 [AV1 / AV5]	999 [AV1 / AV5], 000 [AV1 / AV5]	999
Indication – Min.	000 [AV1 / AV5] -99 [AV6]	000 [AV1 / AV5] -99 [AV6]	000 [AV1 / AV5] -99 [AV6]
Range selection / decimal point pos.	Selectable by DIP-switch	Selectable by DIP-switch	Selectable by DIP-switch
Display refresh time	1 time/s	1 time/s	1 time/s
General specifications			
Power supply	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]
Option		IP65[EX]	IP65[IX], tropicalization [XT]
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - CSA	CE - CSA	CE - c CSA us
References			
	For ordering key details, please refer to www.gavazziautomation.com		

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Digital panel meters

	Ammeters and voltmeters		Thermometer and ohmmeter
Types	**LDI 35 AV0**	**LDI 35 AV2**	**LDI 35 CF**
			
Dimensions HxWxD (mm)	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	Microprocessor based indicator/controller, AC / DC ammeter, voltmeter, 3½-digit or 3-digit + dummy zero display	Microprocessor based indicator/controller, AC / DC ammeter, voltmeter, 3½-digit or 3-digit + dummy zero display	Microprocessor based indicator/controller, Temperature resistance Measurem. in C° or F° 3½-digit or 3-digit + dummy zero display
Input specifications			
Range code	Current: 2 mA DC, 20 mA DC Voltage: 200 mV DC, 20 VDC, 200 VDC [AV0]	Current: 2 AAC/DC 5 AAC/DC, Voltage: 200 VAC/DC, 500 VAC/DC [AV2]	Pt100, Ni100 [CFX]; Pt1000 [CFP]; TC-J-LK-S-T [CFX/CFP]; 200.0Ω [CFX]; 2000Ω [CFP]
Accuracy	±0.3% FS	DC: ±0.3% FS, AC: ±0.5% FS	TC, PT100/1000, resistance ±0.3% FS Ni 100 ±0.5% FS
Indication Max.	3½-dgt: 1999, 3+0-dgt: 9990	3½-dgt: 1999, 3+0-dgt: 9990	Depending on range and type of the temperature probe
Indication Min.	3½-dgt: -1999, 3+0-dgt: -1990	3½-dgt: -1999 (DC), 0 (AC), 3+0-dgt:-1990 (DC), 0 (AC)	
Resistance			0 to 200 Ω (2000 Ω)
Range election / decimal point pos.	Programmable	Programmable	Programmable
Display refresh time	4 times/s	4 times/s	4 times/s
Functions			
	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.
Output specifications			
Setpoints	1 optional alarm [1] 5 A / 250 VAC/DC Excit. output 40 mA / 15 VDC [AX]	1 optional alarm [1] 5 A / 250 VAC/DC Excit. output 40 mA / 15 VDC [AX]	1 optional alarm [1] 5 A / 250 VAC/DC Excit. output 40 mA / 15 VDC [AX]
General specifications			
Power supply	120 [E], 230 [D], 240 [F], 24 [A], 48 [B], 115 [C] VAC, 9 - 32 [3] VDC, 40 - 150 [6] VDC	120 [E], 230 [D], 240 [F], 24 [A], 48 [B], 115 [C] VAC, 9 - 32 [3] VDC, 40-150 [6] VDC	120 [E], 230 [D], 240 [F], 24 [A], 48 [B], 115 [C] VAC, 9 - 32 [3] VDC, 40-150 [6] VDC
Option	IP65[IX], excit. out [AX], tropicalization [XT]	IP65[IX], excit. out [AX], tropicalization [XT]	IP65[IX], excit. out [AX], tropicalization [XT]
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - c CSA us	CE - c CSA us	CE - c CSA us
References			
	For ordering key details, please refer to www.gavazziautomation.com		

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Digital panel meters

Ammeters and voltmeters

Types	LDM 30	LDM 35 H	LDM 40
			
Dimensions HxWxD (mm)	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	3-dgt + dummy 0 µP-based indicator, red LED display	3 ½-dgt µP-based indicator and controller, 3 ½-dgt or 3-dgt + dummy 0 red LED display	4-dgt µP-based indicator and controller
Input specifications			
Range code	1 A / 100 VAC [AV1]; 5 A / 500 VAC [AV5]	(0.2-2-20 mA, 0.2-2-20 V) [LSE]; (0.2- 2-5 A, 20-200-500 V) [HSX]; DC and AC TRMS	(0.2-2-20 mA, 0.2-2-20 V) [LSE]; (0.2- 2-5 A, 20-200-500 V) [HSX]; DC and AC TRMS
Accuracy	±0.5%FS, ±1-dgt	DC: ±(0.3%RDG + 3-dgt) AC: ±(0.5%RDG + 3-dgt)	DC: ±(0.1%RDG + 2-dgt) AC: ±(0.3%RDG + 2-dgt)
Indication – Max.	9990		9999
Indication – Min.	000		0 (AC) -9999 (DC) 4-dgt LED red
Range selection / decimal point pos.	Selectable by dipswitch	Programmable	Programmable
Display refresh time	2 times/s	5 times/s	5 times/s
Functions			
		Signal / display scaling. Digital filter. Peak and valley.	Signal / display scaling. Digital filter. Peak and valley.
Output specifications			
		Up to 2 Alarm relays, [1-2]	Up to 2 Alarm relays, [1-2], Analogue 0 to 20 mA, 0 to 10 V [AV], RS485
General specifications			
Power supply	24 / 48 VAC [B], 115 / 230 VAC [D]	90 to 260 VAC/DC [H], 18 to 60 VAC/DC [L]	90 to 260 VAC/DC [H], 18 to 60 VAC/DC [L]
Option	Tropicalization [XT], IP65 [IX]	Tropicalization [TX]	Tropicalization [T]
Safety Standards	EN61010-1 IEC61010-1	EN61010-1 IEC61010-1	EN61010-1 IEC61010-1
Approvals/Marks	CE - cURus - cCSAus	CE - cURus - cCSAus	CE - cURus - cCSAus
References			
	For ordering key details, please refer to www.gavazziautomation.com		

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Digital panel meters

Modular meter and conditioner

Types	UDM 35	UDM 40	USC
			
Dimensions HxWxD (mm)	48 x 96 x 105	48 x 96 x 105	44 x 113 x 107
Function	MODULAR Microprocessor-based indicator / controller AC/DC Ammeter / Voltmeter / Resistance / temperature measurement	MODULAR Microprocessor-based indicator / controller AC/DC Ammeter / Voltmeter / Resistance / temperature measurement	MODULAR Microprocessor-based converter / controller AC/DC Ammeter / Voltmeter / Resistance / temperature measurement
Input specifications			
Range code	0.2-2-20 mA DC/AC 0.2-2-20 VDC/AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC/AC; 20-200-500 V DC/AC [HSX]; TC: J-K-S-T-E, Pt100-250-500-1000 [TRX]; 0.02-0.2-2-20 kΩ [TRX] 0.001 Hz to 50 Hz for DC signal [TF1] 0.001 Hz to 50 Hz for AC signal [TF2]	0.2-2-20 mA DC/AC 0.2-2-20 VDC/AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC/AC; 20-200-500 VDC/AC [HSX]; TC: J-K- S-T-E, Pt100-250-500-1000 [TRX]; 0.02-0.2-2-20 kΩ [TRX] 0.001 Hz to 50 Hz for DC signal [TF1] 0.001 Hz to 50 Hz for AC signal [TF2]	0.2-2-20 mA DC/AC 0.2-2-20 VDC/AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC/AC; 20-200-500 VDC/AC [HSX]; TC: J-K- S-T-E, Pt100-250-500-1000 [TRX]; 0.02-0.2-2-20 kΩ [TRX] 0.001 Hz to 50 Hz for DC signal [TF1] 0.001 Hz to 50 Hz for AC signal [TF2]
Accuracy	0.1% RDG	0.1% RDG	0.1% RDG
Indication – Max.	1999	9999	
Indication – Min.	0 (AC) -1999 (DC), 3 ½-dgt LED red	0 (AC) -9999 (DC), 4-dgt LED. Colours: red, green, orange	
Range selection / decimal	Programmable	Programmable	
Display refresh time	5 times/s	5 times/s	5 times/s
Functions			
	Password protection. Scaling factor. Min Max data storage. Programmable digital filter Analog signal re-transmission Range selection. Programmable via PC.	Password protection. Scaling factor. Min Max data storage. 16 linearization points. Programm.digital filter. Analog signal re-transmission Range selection. Programmable via PC.	Password protection. Scaling factor. Min Max data storage. 16 linearization points. Programm.digital filter. Analog signal re-transmission Range selection. Programmable via PC.
Output specifications			
Setpoints	Analogue 0 to 20 mA, 0 to 10 V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [R5]	Analogue 0 to 20 mA, 0 to 10 V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [R5]	Analogue 0 to 20 mA, 0 to 10 V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [R5]
General specifications			
Power supply	90 to 260 AC/DC [H], 18 to 60 VAC/DC [L] 10 to 28 VDC [3]	90 to 260 AC/DC [H], 18 to 60 VAC/DC [L] 10 to 28 VDC [3]	90 to 260 AC/DC [H], 18 to 60 VAC/DC [L] 10 to 28 VDC [3]
Option	Tropicalization [TX]	Tropicalization [TX]	Tropicalization [TX]
Safety Standards	EN 61010-1, IEC 61010-1	EN 61010-1, IEC 61010-1	EN 61010-1, IEC 61010-1
Approvals/Marks	CE - cURus - cCSAus	CE - cURus - cCSAus	CE - cURus - cCSAus
References			
	For ordering key details, please refer to www.gavazziautomation.com		

Energy analyzers

		Energy analyzers	
Types	**EM110**	**EM111**	**EM112**
			
Dimensions HxWxD (mm)	90 x 18 x 63	90 x 18 x 63	90 x 36 x 63
Description	1-phase kWh meter 1-DIN module	1-phase energy analyzer with Touch Tech technology 1-DIN module	1-phase energy analyzer with Touch Tech technology 2-DIN modules
Function	kWh	V_{LN}, A, Hz, ±W, W_{dmd}, $W_{dmd\ max}$, ±var, PF, ±kWh, ±kvarh, kWh+ by tariff (2) TRMS method	V_{LN}, A, Hz, ±W, W_{dmd}, $W_{dmd\ max}$, ±var, PF, ± kWh, ±kvarh, kWh+ by tariff (2) TRMS method
Input specifications			
Range code	120 VAC [AV7] 230 VAC [AV8] Ib: 5 A, I_{max}: 45 AAC; 1-phase	120 VAC [AV7] 230 VAC [AV5, AV8, MV5] I_{nom}: 32A; I_{max}: 45 AAC [AV7, AV8] I_{nom}: 5A; I_{max}: 6 AAC [AV5] I_{nom}: 333 mV [MV5] 1-phase	120 VAC [AV1] 230 VAC [AV0] Ib: 5 A, I_{max}: 100 AAC; 1-phase
Accuracy	n.a.	±0.5% RDG (V, A)	±0.5% RDG (V, A)
Active energy	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)
Reactive energy	n.a.	Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	Electromechanical 6+1 dgt (energy)	Backlit LCD with touch keypad 4-dgt (inst. variables) 5+2, 6+1, 7-dgt (energies)	Backlit LCD with touch keypad and supercapacitor backup (up to 48h) up to 2 x 4-dgt (inst. variables) 6+2, 7+1, 8-dgt (energies)
Output specifications			
Pulse output	1-open collector [O1]	1-open collector [AV7, AV8] [O1]	1-open collector [O1]
Alarm output			
Communication		Modbus RTU [S1] M-Bus [AV7, AV8] [M1]	Modbus RTU [S1] M-Bus [M1]
Inputs		1 (dual tariff management)	1 (dual tariff management)
General specifications			
Power supply	Self power supply [X]	Self power supply [X]	Self power supply [X]
Approvals/Marks	CE - MID - cULus [AV7 only]	CE - MID [AV8 only] - cULus [AV7 only]	CE - MID - cULus [AV1 only]
References			
	For ordering key details, please refer to www.gavazziautomation.com		

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Energy analyzers

	Energy analyzers		
Types	**EM330**	**EM340**	**EM24 DIN**
			
Dimensions HxWxD (mm)	90 x 54 x 63	90 x 54 x 63	90 x 72 x 67
Description	3-phase energy analyzer with Touch Tech technology and wrong connection detection 3-DIN modules	3-phase energy analyzer with Touch Tech technology and wrong connection detection 3-DIN modules	3-phase energy analyzer 4 DIN modules
Function	System: ±kWh, ±kvarh, kWh+ by tariff (2), V_{LN}, V_{LL}, PF, Hz, ±W, W_{dmd}, $W_{dmd\ max}$, ±var, VA, h Single-phase: kWh, V_{LN}, V_{LL}, A, PF, W, var, VA TRMS method	System: ±kWh, ±kvarh, kWh+ by tariff (2), V_{LN}, V_{LL}, PF, Hz, ±W, W_{dmd}, $W_{dmd\ max}$, ±var, VA Single-phase: kWh, V_{LN}, V_{LL}, A, PF, W, var, VA TRMS method	System: ±kWh, ±kvarh, V_{LL}, V_{LN}, var, VA, W_{dmd}, W, VA_{dmd}, Hz, hour counter, gas and water Max: A_{dmd}, W_{dmd}, VA_{dmd} Single-phase: V_{LL}, V_{LN}, A, W, var, VA, PF, kWh, kvarh TRMS method
Input specifications			
Range code	3-phase 400-480 V_{LL} AC [AV5] Ib: 5 A, I_{max}: 6 AAC; 3-phase	3-phase 208-400 V_{LL} AC [AV2] Ib: 5 A, I_{max}: 65 AAC; 3-phase	120 / 208 V_{LL} [AV6]; 400 V_{LL} [AV5] In: 1 / 5 A, I_{max}: 10 AAC [AV5 and AV6]; 208/400 V_{LL} [AV2] Ib: 10 A, I_{max}: 65 AAC [AV2]
Accuracy	±0.5% RDG (V, A)	±0.5% RDG (V, A)	±0.5% RDG (V, A)
Active energy	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)
Reactive energy	Class 2 (EN62053-23)	Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	Backlit LCD with touch keypad 3x 4-dgt (inst. variables) 3x 6+2, 7+1, 8-dgt (energies)	Backlit LCD with touch keypad 3x 4-dgt (inst. variables) 3x 6+2, 7+1, 8-dgt (energies)	LCD 3x 4-dgt (inst. variables) 6+2, 7+1, 8-dgt (energies)
Output specifications			
Pulse output	1-open collector [O1]	1-open collector [O1]	2-open collector [O2]; Relay [R2]
Alarm output			2-open collector [O2]; Relay [R2]
Communication	Modbus RTU [S1] M-Bus [M1]	Modbus RTU [S1] M-Bus [M1]	Modbus RTU [IS] Modbus Ethernet [E1] M-Bus [Mx] Wireless M-Bus [W1] Dupline [DP]
Inputs	1 (dual tariff management)	1 (dual tariff management)	3 digital inputs [IS]
General specifications			
Power supply	90 to 260 VAC/DC [H]	Self power supply [X]	Self power supply [X]. Auxiliary power supply: 18 to 60 VAC/DC [L], 115 / 230 VAC [D], according to the model [AV5, AV6]
Approvals/Marks	CE - cULus - MID	CE - MID	CE - cULus [AV5 and AV6] - MID [X..PF..]
References			
	For ordering key details, please refer to www.gavazziautomation.com		

Energy analyzers

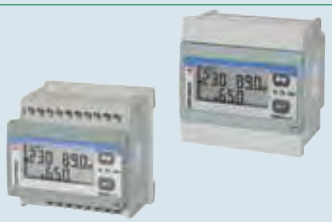
	Energy analyzers	
Types	**EM530**	**EM540**
		
Dimensions HxWxD (mm)	90 x 54 x 63	90 x 54 x 63
Description	3-phase energy analyzer with quick setup wizard and wrong connection detection 3-DIN modules	3-phase energy analyzer with quick setup wizard and wrong connection detection 3-DIN modules
Function	System: ±kWh, ±kvarh, kVAh, kWh by tariff (2), V_{LL}, V_{LN}, var, VA, W, W_{dmd}, VA_{dmd}, VA, PF, Hz, THD, ± hour counter Max: A_{dmd}, W_{dmd}, VA_{dmd} Single-phase: V_{LL}, V_{LN}, A, W, var, VA, PF, A_{dmd}, kWh TRMS method	System: ±kWh, ±kvarh, kVAh, kWh by tariff (2), V_{LL}, V_{LN}, var, VA, W, W_{dmd}, VA_{dmd}, VA, PF, Hz, THD, ± hour counter Max: A_{dmd}, W_{dmd}, VA_{dmd} Single-phase: V_{LL}, V_{LN}, A, W, var, VA, PF, A_{dmd}, kWh TRMS method
Input specifications		
Range code	3-phase 208-415 V_{LL} AC [AV5] In: 5 A, Imax: 6 AAC; 3-phase	3-phase 208-415 V_{LL} AC [AV2] Ib: 5 A, Imax: 65 AAC; 3-phase
Accuracy	±0.2% RDG (V) ±0.3% RDG (A)	±0.5% RDG (V, A)
Active energy	Class 0.5S (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)
Reactive energy	Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	Backlit LCD with push buttons 3x 5+2-dgt (inst. variables) 8+3 dgt (energies)	Backlit LCD with push buttons 3x 5+2-dgt (inst. variables) 8+3 dgt (energies)
Output specifications		
Pulse output	1-open collector [O1]	1-open collector [O1]
Communication	Modbus RTU [S1] M-Bus [M1]	Modbus RTU [S1] M-Bus [M1]
Inputs	1 (dual tariff management)	1 (dual tariff management)
General specifications		
Power supply	Self power supply	Self power supply
Approvals/Marks	CE - cULus - MID - UKCA	CE - cULus - MID - UKCA
References		
	For ordering key details, please refer to www.gavazziautomation.com	

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Energy analyzers

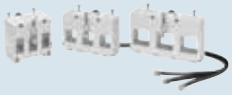
	Energy transducers			Compact transducers
Types	**ET112**	**ET330**	**ET340**	**CPT DIN Basic and Advanced**
				
Dimensions HxWxD (mm)	90 x 36 x 63	90 x 54 x 63	90 x 54 x 63	83.5 x 45 x 98.5
Description	1-phase energy transducer 2-DIN modules	3-phase energy transducer with wrong connection detection 3-DIN modules	3-phase energy transducer with wrong connection detection 3-DIN modules	3-phase compact power transducer
Function	V_{LN}, A, Hz, ±W, W_{dmd}, $Wd_{md\ max}$, ±var, PF, ± kWh, ±kvarh, kWh+ by tariff (2) TRMS method	System: ±kWh, ±kvarh, kWh+ by tariff (2), V_{LN}, V_{LL}, PF, Hz, ±W, W_{dmd}, $W_{dmd\ max}$, ±var, VA Single-phase: kWh, V_{LN}, V_{LL}, A, PF, W, var, VA, TRMS method	System: ±kWh, ±kvarh, kWh+ by tariff (2), V_{LN}, V_{LL}, PF, Hz, ±W, W_{dmd}, $W_{dmd\ max}$, ±var, VA Single-phase: kWh, V_{LN}, V_{LL}, A, PF, W, var, VA, TRMS method	4-digit data format instantaneous variable, 8+1-digit format energies, 5+2-digit format hours TRMS method System: kWh, kvarh, V_{LL}, V_{LN}, An, PF, W, var, VA, W_{dmd}, VA_{dmd}, Hz, hour meter Max: W_{dmd}, VA_{dmd} [Adv] Single-phase: V_{LL}, V_{LN}, A, A_{dmd}, PF, W, var, VA, THD (A, V) [Adv] Max [Adv]: V_{LN}, A, A_{dmd}, W Min [Adv]: V_{LN}, A, PF
Input specifications				
Range code	120 VAC [AV1] 230 VAC [AV0] Ib: 5 A, I_{max}: 100 AAC; 1-phase	3-phase 400-480 V_{LL} AC [AV5] Ib: 5 A, I_{max}: 6 AAC; 3-phase	3-phase 208-400 V_{LL} AC [AV2] Ib: 5 A, I_{max}: 65 AAC; 3-phase	120 / 208 VAC [AV6], 400 / 690 VAC [AV5], 1 AAC and 5 AAC
Accuracy	±0.5% RDG (V, A)	±0.2% RDG (V, A)	±0.5% RDG (V, A)	±0.5% F.S. (A,V)
Active energy	Class 1 (EN62053-21)	Class 0.5S (EN62053-22)	Class 1 (EN62053-21)	kWh: Class 1 (EN62053-21)
Reactive energy	Class 2 (EN62053-23)	Class 2 (EN62053-23)	Class 2 (EN62053-23)	kvarh: Class 2 (EN62053-23)
Output specifications				
Pulse output				2 (open collector) [O2 Advanced]
Alarm output				2 (relays) with PLC-type control function on 16 variables (AND / OR) [R2 Advanced]
Analogue output				Up to 3: 20 mA [A1-3 Advanced], 10 VDC [V1-3 Advanced]
Communication	Modbus RTU [S1]	Modbus RTU [S1]	Modbus RTU [S1]	RS485 [S1]
Inputs	1 (dual tariff management)	1 (dual tariff management)	1 (dual tariff management)	
General specifications				
Power supply	Self power supply [X]	Self power supply [X]	Self power supply [X]	18 to 60 VAC/DC [L], 90 to 260 VAC/DC [H]
Approvals/Marks	CE	CE - cULus	CE	CE - cURus - CSA
References				
		For ordering key details, please refer to www.gavazziautomation.com		

Energy analyzers

	Energy meters	Energy analyzers	
Types	**EM21 72R**	**EM210 AV**	**EM210 MV**
			
Dimensions HxWxD (mm)	72 x 72 x 65	72 x 72 x 65	72 x 72 x 65
Description	3-phase energy meter 4-DIN modules and 72 x 72 panel mounting	3-phase energy analyzer 4-DIN modules and 72 x 72 panel mounting	3-phase energy analyzer 4-DIN modules and 72 x 72 panel mounting
Function	System: kWh, kvarh, W, var, PF, Hz, Phase sequence Single-phase: V_{LN}, V_{LL}, A, PF TRMS method	System: ±kWh, kvarh, W, var, PF, An and h-meter (only [X]), Phase-sequence Single-phase: V_{LL}, V_{LN}, A,PF, THD (V, A, up to 15th H. THD only [X]) TRMS method	System: ±kWh, kvarh, W, var, PF, An, h-meter, Phase-sequence Single-phase: V_{LL}, V_{LN}, A,PF, THD (V, A, up to 15th H.) TRMS method
Input specifications			
Range code	120 / 230 VAC, 400 VAC 3-phase current input by included current sensors (three ranges available: 90 A - 150 A - 250 A)	120 / 230 VAC, 400 VAC In: 5 A; I_{max}: 6 A (current connection by CT)	120 / 230 VAC, 400 VAC By 333 mV CT [CTV] or by Rogowski sensors [ROG4K]
Accuracy	±0.5% RDG (V) ±1% RDG (A)	±0.5% RDG (V, A)	±0.5% RDG (V, A)
Active energy	Class 2 (EN62053-21)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21)
Reactive energy		Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	LCD 3 dgt (inst. variables) 6+1, 7 dgt (energies)	LCD 3 dgt (inst. variables) 6+1, 7 dgt (energies)	LCD 3 dgt (inst. variables) 6+1, 7 dgt (energies)
Output specifications			
Pulse output	1 static opto-mosfet	1 static opto-mosfet	1 static opto-mosfet
Communication	RS485 (2-wire, Modbus) M-Bus by means of VMU-B	RS485 (2-wire, Modbus)	RS485 (2-wire, Modbus)
General specifications			
Power supply	Self power supply	Self power supply [X] Universal power supply 90-260 VAC/DC [H] (MID version)	Self power supply
Approvals/Marks	CE - cULus	CE - cULus - MID [PF]	CE - cULus
References			
		For ordering key details, please refer to www.gavazziautomation.com	

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Quick-fit energy meters

	Quick-fit dual energy meters	3-phase current transformers	Panel adapter for energy meters
Types	**EM270**	**TCD X**	**EM200-96 Adapter**
			
Dimensions HxWxD (mm)	72 x 72 x 65	TCD1X: 72 x 75 x 66.8 TCD2X: 72 x 105 x 50 TCD3X: 78 x 135 x 50	96 x 96 x 41.4
Description	3-phase energy meter 4-DIN modules and 72 x 72 panel mounting	3-phase current transformers for EM270 quick fit meter. Connection to the meter by means of RJ11 connector (included).	Adapter frame from 72 x 72 mm to 96 x 96 mm panel mounting. Installation by fixing brackets included in the meter.
Function	System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W_{dmd}, $W_{dmd\ max}$, A, V_{LL}, V_{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	Suitable to be installed downstream the circuit breakers (same width). Automatic setting of the CT ratio in the meter	Suitable for EM210, EM270, EM271, EM280, EM21-72D, EM21-72R, EM21-72V
Input specifications			
Range	120 / 230 VAC, 415 VAC In: from 160 to 630 A by TCD X	TCD1X: 160 A TCD2X: 250 A TCD3X: 630 A	
Accuracy	±0.5% RDG (V, A)	Equivalent to Class 0.5 (IEC61869-2)	
Active energy	Equivalent to Class 1 (EN62053-21)		
Reactive energy	Equivalent to Class 2 (EN62053-23)		
Display	LCD 3-dgt (inst. variables) 6+1, 7-dgt (energies)		
Output specifications			
Pulse output	2 static opto-mosfet		
Communication	RS485 (2-wire, Modbus) M-Bus by means of VMU-BM2...B		
General specifications			
Power supply	Self power supply	n.a.	
Approvals/Marks	CE - cULus	CE - cULus (with EM 270)	CE
References			
		For ordering key details, please refer to www.gavazziautomation.com	

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Quick-fit energy meters

	Quick-fit dual energy meters	3-phase current transformers	Quick-fit 6-channel energy meters	6-channel current transformer blocks
Types	**EM271**	**TCD M**	**EM280**	**TCD06B**
				
Dimensions HxWxD (mm)	72 x 72 x 65	TCD0M: 3 by 26 x 40 x 26, hole 9.6 TCD1M: 3 by 31 x 46 x 31, hole 15.7 TCD2M: 3 by 41 x 66 x 38, hole 15.5 TCD3M: 3 by 50 x 78 x 39, hole 20.5	72 x 72 x 65	TCD06BX (solid core): 118 x 53 x 34, hole 7.0, hole centre distance 17.5 TCD06BS (split core): 118 x 45 x 59, hole 8.5, hole centre distance 17.5
Description	Quick-fit energy meter with daisy chaining of voltage and serial connections and fast RJ connection of TCD M 3-phase split-core current sensors, for retrofit applications. Managing of two 3-phase or six 1-phase loads. 4-DIN modules and 72 x 72 panel mounting	TCD M: 3-phase split core current sensors for EM271 quick-fit meter. Connection to the meter by means of RJ11 connector (included). TCDMM: adaptor for 3 CT by 333 mV up to 10000 A	Quick-fit energy meter with daisy chaining of voltage and serial connections and fast RJ connection of TCD06B 6-channel current transformer block. Managing of two 3-phase or six 1-phase loads. 4-DIN modules and 72 x 72 panel mounting	6-channel current transformer blocks with hole centre distance 17.5 mm (same of miniature circuit breakers) for EM280 quick-fit meter. Connection to the meter by means of RJ11 connector (included)
Function	System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W_{dmd}, Wdmd max, A, V_{LL}, V_{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	Suitable to be installed in any existing installation. Automatic setting of the CT ratio in the meter	System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W_{dmd}, $W_{dmd\ max}$, A, V_{LL}, V_{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	Suitable to be installed in any new and existing installation. Automatic setting of the CT ratio in the meter
Input specifications				
Range	120 / 230 VAC, 415 VAC In: from 60 to 400 A by TCD M	TCD0M: 60 A TCD1M: 100 A TCD2M: 200 A TCD3M: 400 A TCDMM: suitable to be connected to standard CT up to 10 kA	120 / 230 VAC, 415 VAC In: 32 A by TCD06BX and TCD06BS	TCD06B: 32 A
Accuracy	±0.5% RDG (V, A)	Equivalent to Class 1 (IEC61869-2)	±0.5% RDG (V, A)	Equivalent to Class 0.5 (IEC61869-2)
Active energy	Equivalent to Class 1 (EN62053-21)		Equivalent to Class 1 (EN62053-21)	
Reactive energy	Equivalent to Class 2 (EN62053-23)		Equivalent to Class 2 (EN62053-23)	
Display	LCD 3-dgt (inst. variables) 6+1, 7-dgt (energies)		LCD 3-dgt (inst. variables) 6+1, 7-dgt (energies)	
Output specifications				
Pulse output	2 static opto-mosfet		2 static opto-mosfet	
Communication	RS485 (2-wire, Modbus)		RS485 (2-wire, Modbus)	
General specifications				
Power supply	Self power supply		Self power supply	
Approvals/Marks	CE - cULus	CE - cULus (with EM271)	CE - cULus	CE - cULus (with EM280)
References				
		For ordering key details, please refer to www.gavazziautomation.com		

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Power analyzers

	Self-addressing Quick-fit energy transducers	Power analyzers
Types	**ET272**	**WM15 96**
		
Dimensions HxWxD (mm)	72 x 72 x 65	96 x 96 x 59
Description	Self-addressing quick-fit energy transducer with fast RJ connection of TCD M 3-phase split-core current sensors, for retrofit or new applications. Managing of two 3-phase or six 1-phase loads. 4-DIN modules mounting	3-phase power analyzer 96 x 96 panel mounting
Function	Innovative self-addressing Modbus function (it requires VMU-C EM) System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W_{dmd}, $W_{dmd\ max}$, A, V_{LL}, V_{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	System: ±kWh, ±kvarh, V_{LL}, V_{LN}, var, VA, W, W_{dmd}, VA_{dmd}, VA, PF, Hz, THD, ± hour counter Max: A_{dmd}, W_{dmd}, VA_{dmd} Single-phase: V_{LL}, V_{LN}, A, W, var, VA, PF, A_{dmd}, kWh TRMS method
Input specifications		
Range code	230 VAC, 400 VAC In: from 60 to 400 A by TCD M up to 10000 A by TCDMM	277 / 415 V_{LL} AC [X], 347 / 600 V_{LL} AC [H], In: 5 A, Imax: 6 ACA
Accuracy	±0.5% RDG (V, A)	±0.5% RDG (V, A)
Active energy	Equivalent to Class 1 (EN62053-21)	Class 1 (EN62053-21) Class 0.5S (EN62053-22) [05 option]
Reactive energy	Equivalent to Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display		Matrix LCD backlight up to 4x 4-dgt (inst. variables) 3x 8+2-dgt (energies)
Output specifications		
Pulse output		1 open collector [OX or OS]
Alarm output		1 open collector [OX or OS]
Communication	RS485 (2-wire, Modbus)	RS485 (2-wire) [OS] M-Bus [OM]
General specifications		
Power supply	Self power supply	Self power supply [X] 120 to 240 VAC/DC [H]
Approvals/Marks	CE - cULus	CE - cULus - MID [X power supply]
References		
	For ordering key details, please refer to www.gavazziautomation.com	

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Power analyzers

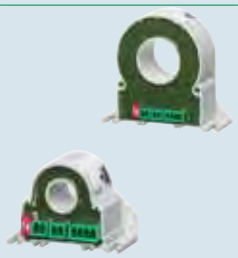
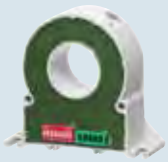
	Modular power analyzers	Modular power quality analyzers	
Types	**WM20 96**	**WM30 96**	**WM40 96**
			
Dimensions HxWxD (mm)	96 x 96 x 50	96 x 96 x 50	96 x 96 x 50
Description	3-phase modular power quality analyzer 96 x 96 panel mounting	3-phase modular power quality analyzer 96 x 96 panel mounting	3-phase modular power quality analyzer 96 x 96 panel mounting
Function	System: total/partial ±kWh and ±kvarh, VLN, VLL, VA, W, var, PF, Hz, THD (V,A) Single-phase: VLN, VLL, VA, AL, An, W, var, PF, THD Phase-sequence-asymmetry loss	System: total/partial ±kWh and ±kvarh, VLN, VLL, VA, W, var, PF, Hz, THD (V,A) Single-phase: VLN, VLL, VA, AL, An, W, var, PF, THD Phase-sequence-asymmetry loss	System: Total/partial ±kWh and ±kvarh (multi-tariff), VLN, VLL, VA, W, var, PF, Hz, THD, K-factor Single-phase: VLN, VLL, VA, AL An (calculated or measured), W, var, PF, THD, TDD; Phase sequence-asymmetry-loss Load profile, event stamping, data logger, utility and hour counters
Input specifications			
Range code	400 / 690 VLL AC 1(2) AAC [AV4] 400 / 690 VLL AC 5(6) AAC [AV5] 100 / 208 VLL AC 5(6) AAC [AV6] 100 / 208 VLL AC 1(2) AAC [AV7]	400 / 690 VLL AC 1(2) AAC [AV4] 400 / 690 VLL AC 5(6) AAC [AV5] 100 / 208 VLL AC 5(6) AAC [AV6] 100 / 208 VLL AC 1(2) AAC [AV7]	400 / 690 VLL AC 1(2) AAC [AV4] 400 / 690 VLL AC 5(6) AAC [AV5] 100 / 208 VLL AC 5(6) AAC [AV6] 100 / 208 VLL AC 1(2) AAC [AV7]
Accuracy	±0.2% RDG (V, A)	±0.2% RDG (V, A)	±0.2% RDG (V, A)
Active energy	Class 0.5S according to EN62053-22	Class 0.5S according to EN62053-22	Class 0.5S according to EN62053-22
Reactive energy	Class 2 according to EN62053-23	Class 2 according to EN62053-23	Class 2 according to EN62053-23
Display	LCD backlight 3x 4-dgt (inst. variables) 8+2, 9+1, 10-dgt (energies)	LCD backlight 4x 4 dgt (inst. variables) 8+2, 9+1, 10 dgt (energies)	LCD backlight 4x 4 dgt (inst. variables) 8+2, 9+1, 10 dgt (energies)
Output specifications			
Pulse output	Up to 2 digital outputs	Up to 2 digital outputs	Up to 8 digital outputs
Alarm output	Up to 2 freely configurable virtual alarms	Up to 4 freely configurable virtual alarms	Up to 16 freely configurable virtual alarms
Communication	Optical port Modbus RS485/232 port [MC485232], BACnet SMTP [MCBACMS], Modbus TCP Ethernet port [MCETH], BACNet-IP [MCBACIP], Profibus [MCPB]	Optical port Modbus RS485/232 port [MC485232], BACnet SMTP [MCBACMS], Modbus TCP Ethernet port [MCETH], BACNet-IP [MCBACIP], Profibus [MCPB]	Optical port Modbus RS485/232 port [MC485232 or MC485232M], BACnet SMTP [MCBACMS or MCBACMSM], Modbus TCP Ethernet port [MCETH or MCETHM], BACNet-IP [MCBACIP or MCBACIPM], Profibus [MCPB or MCPBM]
Analogue output		Up to 2	Up to 4
Inputs			Up to 6 digital inputs
General specifications			
Power supply	24 - 48 VAC/DC [L], 100 - 240 VAC/DC [H]	24 - 48 VAC/DC [L], 100 - 240 VAC/DC [H]	24 - 48 VAC/DC [L], 100 - 240 VAC/DC [H]
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
	For ordering key details, please refer to www.gavazziautomation.com		

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Power analyzers

	Modular branch circuit analyzers	12-channel current transformer blocks	Wiring system for WM50	Optical communication interface
Types	**WM50 96**	**TCD12 BS**	**TCD12 WS**	**OPTOPROG**
				
Dimensions HxWxD (mm)	96 x 96 x 50	221 x 58 x 49,50		52 x 17.5 x 50.8
Description	96-channel branch circuit analyzer 96 x 96 panel mounting	Split-core CT block for WM50: hole 8.5, hole centre distance 17.5	Wiring system for WM50 branch circuit monitoring system	
Function	Mains power analysis and single branch circuit measurement Mains, system: Total/partial ±kWh and ±kvarh (multi-tariff), V_{LN}, V_{LL}, VA, W, var, PF, Hz, THD, K-factor Mains, Single-phase: V_{LN}, V_{LL}, VA, A_L An (calculated or measured), W, var, PF, THD, TDD; Phase sequence-asymmetry-loss, event stamping, utility and hour counters Single branch channels: A, W, var, VA, PF, kWh, THD (A), daily min and max for 1 of the above variables	12-channel current transformer blocks with hole centre distance 17.5 mm (same as miniature circuit breakers) for WM50 branch circuit analyzer. Connection to the meter by means of dedicated cable [TCD12WS]	Set of cables to connect WM50 with TCD12BS and 2 consecutive TCD12BS')	Bluetooth and USB interface for meters and analysers with optical port
Input specifications				
Range code	208..480 V_{LL} AC 5(6) AAC [AV5]	Nominal 32 AAC (max 65 AAC)	[030]: 30 cm length cable [050]: 50 cm length cable [100]: 100 cm length cable [200]: 200 cm length cable [500]: 500 cm length cable	
Accuracy	±0.2% RDG (V, A), mains	±0.5% RDG (A), branch channels		
Active energy	Mains: Class 0.5S according to EN62053-22 Branch channels: Class 2 according to EN62053-21			
Reactive energy	Class 2 according to EN62053-23			
Display	LCD backlight 4x 4 dgt (inst. variables) 8+2, 9+1, 10 dgt (energies), only mains			
Output specifications				
Pulse output	Up to 6 digital outputs			
Alarm output	Up to 16 freely configurable virtual alarms			
Communication	Optical port Modbus RS485 port [MC485232], Modbus TCP Ethernet port [MCETH]	High speed communication to WM50		
Inputs	Up to 6 digital inputs			
Port				
Port 1 - connections				Bluetooth, Micro-USB
Port 2 - connections				Optical
General specifications				
Power supply	100 to 277 VAC/DC	Power supply from WM50		Battery
Approvals/Marks	CE - cULus	CE - cULus (with WM50)	CE - cULus (with WM50)	CE - FCC - IC - Bluetooth 4.0
References				
		For ordering key details, please refer to www.gavazziautomation.com		

DC Energy meters

	Contactless power analyzers		Energy analyzers	
Types	**CPA050/CPA300**	**CPA300-V**	**VMU-E**	**VMU-X**
				
Dimensions HxWxD (mm)	CPA050 63 x 46 x 25 (without connectors) CPA0300 99 x 89 x 30 (without connectors)	99 x 89 x 30 (without connectors)	1-DIN module	1-DIN module
Description	Contactless power analyzers	Contactless current transducer for PV installations up to 1500 VDC	DC energy analyzer: V, A, W, kWh	Power supply and communication module for VMU-E unit
Function	CPA monitors electrical variables (V, A, W, var, VA, kWh, PF, HZ, THD) in 1-phase AC (from 1 to 400 Hz) or DC systems	CPA monitors electrical variables (A,Ah) in 1-phase AC (from 1 to 400 Hz) or DC systems		
Input specifications				
Range code	One current input (Hall effect): 50 AAC/50 ADC [CPA300] 300 AAC/400 ADC One voltage input: 800 VAC/1000 VDC	One current input (Hall effect): 300 AAC/400 ADC	400 VDC 20 ADC [AV00] (up 1000 ADC by external shunt 120 mV) 400 VDC 1000 ADC [AV10] (by 10 VDC current sensor)	
Accuracy	±0.5%F.S. (V, A, W)	±0.5%F.S. (A)	±0.5% RDG (V, A)	
Active energy			Class 1	
Display	Front LED to show the Power-ON status of the device	Front LED to show the Power-ON status of the device	LCD 6 dgt	
Output specifications				
Pulse output			1 opto-mosfet through VMU-X unit [X]	1 opto-mosfet
Alarm output	Virtual alarm detection of over-range voltage and over-range current	Virtual alarm detection of over-range current	1 opto-mosfet through VMU-X unit [X]	1 opto-mosfet
Communication	RS485 Modbus RTU	RS485 Modbus RTU	RS485 Modbus RTU through VMU-X unit [X]	RS485 Modbus RTU
Analogue output		Programmable scale 0-10 Vdc		
General specifications				
Power supply	9 to 30 VDC power supply	9 to 30 VDC power supply	Self power supply through VMU-X unit [X]	38 to 265 VAC/DC [U]
Approvals/Marks	CE - cURus	CE - cURus	CE	CE
References				
		For ordering key details, please refer to www.gavazziautomation.com		

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Current transformers

Current transformers

Types	CTD 1Z	TADK	TADK2
			
Dimensions HxWxD (mm)	76 x 44 x 31	115.5 x 75 x 44	115.5 x 75 x 44
Input specifications			
	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV / 1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5
Output specifications			
Secondary current	5 A	5 A standard (1 A on request)	5 A standard (1 A on request)
General specifications			
Class	1 / 3	0.5	0.5
Bus-bar size (mm) [diameter]	[22]	no (wound primary)	25 x 5 (fixed bar)
Standards	EN 61869-2	CE	CE
Primary current			

	Burden (VA)		Burden (VA)		Burden (VA)	
Accuracy class depending on the burden of the secondary circuit	Class 1	3	Class 0.5		Class 0.5	
	50 A	1.5	1 A	10	1 A	10
	100 A	1.5	5 A	10	5 A	10
	125 A	2.5	10 A	10	10 A	10
	150 A	2.5	15 A	10	15 A	10
	200 A	3.75	25 A	10	25 A	10
			40 A	10	40 A	10
					50 A	10
					60 A	10
					80 A	10
					100 A	10
					150 A	10
					200 A	10
					250 A	10

References

For ordering key details, please refer to www.gavazziautomation.com

Current transformers

Current transformers

Types	CTD 1X	CTD 2X	CTD 3X	CTD 4X
				
Dimensions HxWxD (mm)	66 x 46 x 30	86 x 56 x 42	109 x 77 x 42	113 x 90 x 42
Input specifications				
	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5	≤ 5
Output specifications				
Secondary current	5 A 1 A	5 A 1 A	5 A 1 A	5 A 1 A
General specifications				
Class	0.5 / 1 / 3	0.5 / 1 / 3	0.5 / 1 / 3	0.5 / 1 / 3 / 5P5
Bus-bar size (mm) [diameter]	20 x 5 [23]	32 x 5 / 30 x 10 / 25 x 20 / 25 x 12 [24]	51 x 15 / 40 x 20 / 32 x 32 / 40 x 20 [41]	64 x 20 / 51 x 43 / [51]
Standards	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA

Primary current

Accuracy class depending on the burden of the secondary circuit

Burden (VA)				Burden (VA)				Burden (VA)				Burden (VA)			
Class	0.5	1	3	Class	0.5	1	3	Class	0.5	1	3	Class	0.50	1	3
50 A		1	1.25	40 A			1.25	50 A			1.75	150 A		2.5	5
60 A		1	1.25	50 A			1.5	60 A			2	200 A		3.25	6
70 A		1.5	1.75	60 A			2	70 A			2.25	250 A	2.5	4.5	
75 A	1	1.25	1.75	70 A			2.5	75 A			3	300 A	3	4	
80 A	1.25	1.5	2	75 A		1.75	2.5	80 A			3	400 A	6	9	
100 A	1.5	1.75	2.25	80 A		2	2.75	100 A		2	3.5	500 A	10	12.5	
120 A	1.75	2	2.5	100 A		2.5	3	120 A		2.25	4	600 A	11	13.5	
125 A	2	2.25	2.75	120 A		2.75	3.75	125 A		2.5	4.5	700 A	12.5	15	
150 A	2.25	2.5	3	125 A	2	2.75	3.75	150 A	2.25	3	6	750 A	13	15.5	
160 A	2.5	2.75	3.25	150 A	3	4	5	160 A	2.5	3.5	6.5	800 A	14	16.5	
200 A	3	3.25	3.75	160 A	3	4	5	200 A	3	4.5	8.5	1000 A	17.5	20	
250 A	4.5	4.75	5.25	200 A	4	5	6.5	250 A	3.5	6.5	10.5	1200 A	20	22.5	
300 A	5	5.5	6	250 A	5.5	7	8	300 A	7	10	13	1250 A	20	22.5	
				300 A	7	8.5	9.5	400 A	9	14	17	1500 A	27.5	30	
				400 A	12	13.5	14.5	500 A	14	18	21	1600 A	27.5	30	
				500 A	14	15.5	16.5	600 A	17	21	24				
				600 A	17.5	19	20	700 A	22	26	29				
								750 A	24	28	31				
								800 A	25	29	32				

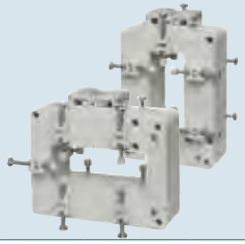
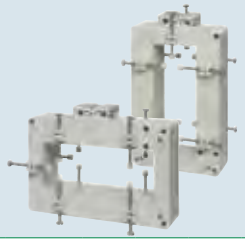
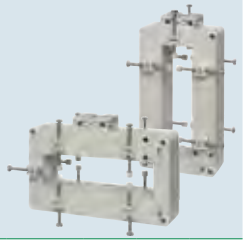
References

For ordering key details, please refer to www.gavazziautomation.com

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Current transformers

Current transformers

Types	CTD 8V CTD 8H	CTD 8Q	CTD 9V CTD 9H	CTD 10V CTD 10H
				
Dimensions HxWxD (mm)	133 x 87 x 40 104 x 117 x 40	144 x 129 x 40	178 x 92 x 40 109 x 162 x 40	178 x 107 x 40 124 x 162 x 40
Input specifications				
	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV / 1 min @ 50 Hz	3 kV / 1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5	≤ 5
Output specifications				
Secondary current	5 A 1 A	5 A 1 A	5 A 1 A	5 A 1 A
General specifications				
Class	0.5 / 1 / 3	0.5	0.5 / 1 / 3	0.5 / 1 / 3
Bus-bar size (mm) [diameter]	80 X 30	55 x 100	125 x 35	125 x 50
Standards	EN 61869-2, cURus, CSA	EN61869-2	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA
Primary current				

Accuracy class depending on the burden of the secondary circuit

Burden (VA)				Burden (VA)		Burden (VA)				Burden (VA)			
Class	0.5	1	3	Class	0.5	Class	0.5	1	3	Class	0.50	1	3
150 A			2	1000 A	15	400 A		3	6	400 A	1	7	10
200 A			4	1500 A	15	500 A	2	4	8	500 A	3	10	14
250 A			5	2000 A	15	600 A	4	6	10	600 A	5	12	17
300 A		2	6	2500 A	15	700 A	4	8	10	700 A	8	15	20
400 A	3	5	8	3000 A	15	750 A	4	8	10	750 A	10	15	20
500 A	5	7	10	4000 A	15	800 A	4	8	10	800 A	10	15	20
600 A	6	10	12			1000 A	6	10	13	1000 A	12	20	25
700 A	6	10	12			1200 A	8	12	15	1200 A	15	25	30
750 A	8	12	15			1250 A	8	12	15	1250 A	15	25	30
800 A	8	12	15			1500 A	10	15	18	1500 A	20	30	40
1000 A	10	15	20			1600 A	10	15	18	1600 A	20	30	40
1200 A	12	15	20			2000 A	15	20	24	2000 A	25	40	50
1250 A	12	15	20			2500 A	20	25	30	2500 A	30	50	60
1500 A	15	20	25			3000 A	25	30	35	3000 A	30	50	60
1600 A	15	20	25			3200 A	25	30	35	3200 A	30	50	60
2000 A	20	25	30										
2500 A	25	30	40										

References

For ordering key details, please refer to www.gavazziautomation.com

Current transformers

	Current transformers		Split core current transformers	
Types	**CTD 11V CTD 11H**	**CTD 12V CTD 12H**	**CTD 5S**	**CTD 6S**
				
Dimensions HxWxD (mm)	178 x 98 x 40 115 x 160 x 40	178 x 125 x 40 140 x 157 x 40	94 x 83 x 40	114 x 107 x 40
Input specifications				
	Current transformer 1-phase AC	Current transformer 1-phase AC	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5	≤ 5
Output specifications				
Secondary current	5 A 1 A	5 A 1 A	5 A 1 A	5 A 1 A
General specifications				
Class	0.5	0.5	1	1
Bus-bar size (mm)	125 x 37	125 x 53	27 x 32	52 x 51
Standards	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA
Primary current				

	Burden (VA)		Burden (VA)		Burden (VA)			Burden (VA)		
	Class	0.5	Class	0.5	Class	1	3	Class	1	3
Accuracy class depending on the burden of the secondary circuit	1000 A	15	1000 A	15	100 A		1.5	150 A		1.5
	1500 A	15	1500 A	15	125 A	1.5	1.5	200 A	1.5	2
	2000 A	15	2000 A	15	150 A	1.5	2.5	250 A	1.5	3.75
	2500 A	15	2500 A	15	200 A	1.5	5	300 A	1.5	5
	3000 A	15	3000 A	15	250 A	1.5	5	400 A	2.5	5
	4000 A	15	4000 A	15	300 A	2.5	7.5	500 A	5	10
					400 A	5	10	600 A	7.5	15
								700 A	7.5	15
								750 A	7.5	15
								800 A	10	15
								1000 A	10	15

References

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Current transformers

Split core current transformers

Types	CTD 8S	CTD 9S	CTD 10S
			
Dimensions HxWxD (mm)	133 x 87 x 40	178 x 92 x 40	178 x 107 x 40
Input specifications			
	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC
Operating frequency	50/60 Hz	50/60 Hz	50/60 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5
Output specifications			
Secondary current	5 A 1 A	5 A 1 A	5 A 1 A
General specifications			
Class	1	1	1
Bus-bar size (mm)	81 x 31	125 x 35	125 x 50
Standards	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA	EN 61869-2, cURus, CSA
Primary current			

Accuracy class depending on the burden of the secondary circuit

Burden (VA)			Burden (VA)			Burden (VA)		
Class	1	3	Class	1	3	Class	1	3
150 A		1.5	400 A		3	400 A	1	7
200 A		1.5	500 A	2	4	500 A	3	10
250 A		2	600 A	4	6	600 A	5	12
300 A		2	700 A	4	8	700 A	8	15
400 A	3	5	750 A	4	8	750 A	10	15
500 A	5	7	800 A	4	8	800 A	10	15
600 A	6	10	1000 A	6	10	1000 A	12	20
700 A	6	10	1200 A	8	12	1200 A	15	25
750 A	8	12	1250 A	8	12	1250 A	15	25
800 A	8	12	1500 A	10	15	1500 A	20	30
1000 A	10	15	1600 A	10	15	1600 A	20	30
1200 A	12	15	2000 A	15	20	2000 A	25	40
1250 A	12	15	2500 A	20	25	2500 A	30	50
1500 A	15	20	3000 A	25	30	3000 A	30	50
1600 A	15	20	3200 A	25	30	3200 A	30	50
2000 A	20	25						
2500 A	25	30						

References

For ordering key details, please refer to www.gavazziautomation.com

Current transformers

Split core and Rogowski current sensors for EM210_MV

Types	CTV-1X	CTV-2X	CTV-3X	CTV-4X
				
Input / output specifications				
Primary current 50/60 Hz	60 A	100 A	200 A	200 or 400 A
Secondary output	333 mV	333 mV	333 mV	333 mV
General specifications				
Accuracy	1%	1%	1%	1%
Linearity	0.5%	0.5%	0.5%	0.5%
Phase error at nominal current	≤4°	≤2°	≤2°	≤2°
Max. system voltage	660 V	660 V	660 V	660 V
Opening angle	180°	180°	180°	180°
Certifications	CE - cURus	CE - cURus	CE - cURus	CE - cURus
References				
	CTV1X60A333MV	**CTV2X100A333MV**	**CTV3X200A333MX**	**CTV4X200A333MV**
				CTV4X400A333MV

Types	CTV-6X	CTV-8X	ROG4X	ROG4U
				
Input / output specifications				
Primary current 50/60 Hz	400 A	800 A	4000 A	2000 A
Secondary output	333 mV	333 mV		
General specifications				
Accuracy	1%	1%	1%	1%
Linearity	0.5%			
Phase error at nominal current	≤2°	≤2°		
Max. system voltage	660 V	660 V	600 V (cat III)	600 V (cat III)
Opening angle	180°			
Coil length			250, 350, 600 or 900	250, 400
Certifications	CE - cURus	CE - cURus	CE - cURus	CE - cULus (UL2808)
References				
	CTV6X400A333MV	**CTV8X800A333MV**	**ROG4X1002M2503X**	**ROG4U1002M3003X**
			ROG4X1002M3503X	**ROG4U1002M4003X**
			ROG4X1002M6003X	
			ROG4X1002M9003X	

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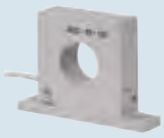
Current transformers

	Split core current transformers	
Types	**CTA-5X**	**CTA-6X**
		
Input/Output specifications		
Primary current 50/60 Hz	100 to 300 A	200 to 600 A
Secondary output	5 A	5 A
General specifications		
Accuracy	cl. 1 or 3	cl. 1 or 3
Max. rated system voltage	600 V	600 V
Rated insulation level	0.72 kV AC, dielectric strength 3 kV AC for 1min	0.72 kV AC, dielectric strength 3 kV AC for 1min
Insulation class	B	B
Opening angle	180°	180°
Certifications	CE - cURus	CE - cURus
References		
	CTA5XxxxA5A	**CTA6XxxxA5A**

CARLO GAVAZZI

Current transformers

Current transformers for monitoring relays

Types	MI	MP	A 82	E 83
				
Dimensions HxWxD (mm)	45 x 52 x 16 [5 / 20] 67.5 x 95 x 20 [100 / 500]	45 x 120 x 16 [5 / 20] 114 x 150 x 23 [100 / 500]	67.5 x 95 x 20	56 x 22.5 x 49
Function	1-phase AC. Output voltage. Cable hole.	3-phase AC. Output voltage. Cable hole.	1-phase AC. Output 0 / 4-20 mA DC, 0-10 VDC (A82-30). Cable hole. Led indication.	1-phase AC. Output 4-20 mA DC. Cable hole. DIN-rail mounting.
Input specifications				
Input current	0.5 - 5 AAC [5] 2 - 20 AAC [20] 10 - 100 AAC [100] 50 - 500 AAC [500]	0.5 - 5 AAC [5] 2 - 20 AAC [20] 10 - 100 AAC [100] 50 - 500 AAC [500]	0 - 25 AAC [25] 0 - 50 AAC [50] 0 - 100 AAC [100] 0 - 250 AAC [250] 0 - 500 AAC [500]	0 - 5 AAC 0 - 10 AAC 0 - 15 AAC 0 - 20 AAC 0 - 25 AAC 0 - 30 AAC 0 - 50 AAC
Max. continuous current	20 AAC [5] 50 AAC [20] 250 AAC [100] 750 AAC [500]	20 AAC [5] 50 AAC [20] 250 AAC [100] 750 AAC [500]	600 AAC	100 AAC
Dielectric voltage	6 kV ACrms	6 kV ACrms	6 kV ACrms	
Output specifications				
Output value	0.4 - 4 V_P The output voltage is proportional to the input current	0.4 - 4 V_P The output voltage is proportional to the highest current value in the 3 conductors which are drawn through the holes of the current metering transformer	A82 - 10: 0-20 mA DC A82 - 20: 4-20 mA DC A82 - 30: 0-10 VDC The output current (A82-10, A82-20) and voltage (A82-30) are proportional to the input current	4 - 20 mA DC The output current is proportional to the input current
Output tolerance	± 5% @ In	± 5% @ In	± 2% @ 50 Hz	± 2% @ 50 Hz
Rated insulation voltage (cable)	250 VACrms	250 VACrms	250 VACrms	
General specifications				
Cable hole diameter	10.5 mm [5 / 20] 27 mm [100 / 500]	3 x 12 mm [5 / 20] 3 x 27 mm [100 / 500]	27 mm	12 mm
Connection cable	2 m PVC 2 x 0.5 mm^2	2 m PVC 2 x 0.5 mm^2	A82-10, A82-30: 2 m, 3x0.25 m^2 A82-20: 2 m, 2x0.25 m^2	Screw terminal 2 x 1.5 mm^2
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
References				
	MI 5	**MP 3005**	**A 82-XX 25**	**E 83-20 50**
	MI 20	**MP 3020**	**A 82-XX 50**	
	MI 100	**MP 3100**	**A 82-XX 100**	
	MI 500	**MP 3500**	**A 82-XX 250**	
			A 82-XX 500	
			XX = 10: 0-20 mA DC = 20: 4-20 mA DC = 30: 0-10 VDC	

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Current transformers

Core balance transformers

Types	CTG
	
Dimensions HxWxD (mm)	Hole Ø 35, 50, 70, 120, 160 or 210 mm
Function	Zero current transformer for DEA71 and DEB71
Input specifications	
Input type	1-phase 3-phase 3-phase + N
Max. Input voltage	750 VAC
Operating frequency	50 Hz - 60 Hz
Dielectric voltage	3 kV ACrms
Output specifications	
Reduction ratio	1:1000
Output type	Bi-polar
Output terminals	Screw connector
General specifications	
Cable hole diameter	From 35 mm to 210 mm
Connection	2.5 mm^2
Operating temperature	-5°C to +55°C
References	
	CTG035
	CTG050
	CTG070
	CTG120
	CTG160
	CTG210

Data aggregation solutions

	Web-server	Cloud Portal
Types	**UWP 3.0 - UWP 3.0 SE**	**MAIA Cloud**
		
Dimensions HxWxD (mm)	2-DIN module	
Description	Web-Server, gateway and controller for energy efficiency management and building automation; compatible with Carlo Gavazzi meters, analyzers and building automation solutions, it provides easy integration with local or remote BMS/EMS/Server solutions and a configurable Web interface for analysis, alerting and reporting. Secure remote access via MAIA Cloud	Cloud Portal for secure remote access to IoT devices. Compatible with UWP 3.0, UWP 3.0 SE, SBP2CPY. User authentication and organization management. Secure VPN to remote endpoints. Remote connection to gateways, connected endpoints and meters
Type	Micro PC	
Storage memory	4 GB	
Back-up memory	Micro-SD / Micro-SDHC / USB	
LED		
Status and colour	One LED with different colours for BUS communication, communication ports, status and power supply	
Communication port and Output specifications		
RS485	2 ports for power analyzers, energy meters and Modbus devices	
Ethernet	1 port for Internet / LAN connection, BACnet clients and Modbus/ TCP devices	
USB	1 USB “mini-A” (service port)	
Connections		
RS485	3 screw terminals per port	
Ethernet	RJ-45 connector (10 / 100 Base-T)	
USB	High Speed USB 2.0	
General specifications		
Voltage supply	From 12 to 28 VDC	
Power consumption	≤ 5 W	
Approvals/Marks	CE - cULus listed - BTL/BACnet - Cybersecurity UL IoT Rating Silver (UWP 3.0 SE)	
References		
	For ordering key details, please refer to www.gavazziautomation.com	

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Data aggregation solutions

	USB dongle connection module	Wireless endpoint gateway	Wireless master gateway
Types	**SH2DSP24**	**UWP-A**	**UWP-M**
			
Dimensions HxWxD (mm)	2-DIN module	2-DIN module	2-DIN module
Description	Accessory module for connecting third party USB dongle modems (3G or 4G) approved by Carlo Gavazzi to VMU-C systems	RS485 to long range wireless, LoRaWAN® adapter converting a CG meter or power analyzer into a wireless endpoint	Long range wireless concentrator to connect multiple UWP A endpoints to the UWP 3.0 controller
Type	USB dongle connection module	Gateway	Gateway
Remote communication specifications			
SIM card	Mobile, SIM Card	Long range wireless, LoRaWAN® (EU868 and US915 Bands, Europe and North America)	Long range wireless (868 MHz, Europe only)
Compatibility	Compatible with USB modems (3G or 4G) approved by Carlo Gavazzi	CG Meters and analyzers	UWP 3.0
Supported services	Internet communication; SMS		
LED			
Status and colour	Single colour green for power supply status	Power ON, bus communication, diagnostics	Power ON, bus communication, diagnostics
Communication port and Output specifications			
RS485		1 port for one power analyzer or energy meter	
USB	1 USB "A" (for USB dongle modem connection)	1 USB for Set-up via UCS software	
Antenna			
Connector	Depending on the modem unit	SMA	SMA
Type	Depending on the modem unit	High performance antenna 868 MHz	High performance antenna 868 MHz
Connections			
RS485		3 screw terminals per port	
Ethernet			
USB		High Speed USB 3.0/2.0	
General specifications			
Voltage supply	From 12 to 28 VDC	24 VDC, 115-240 VAC	24 VDC, 115-240 VAC
Power consumption	IN/OUT connection to supply also the VMU-C unit; consumption depending on the connected optional modules (range: from 8.6 W to 18.6 W)		1.3 W max
Approvals/Marks	CE - cULus listed	CE - LoRaWAN®	CE
References			
		For ordering key details, please refer to www.gavazziautomation.com	

Data aggregation solutions

	Pulse counters concentrators		Aggregation server
Types	**VMU-MC**	**VMU-OC**	**Em²-Server**
			
Dimensions	1-DIN module	1-DIN module	
Description	Pulse counter concentrator	Pulse input extender	Em²-Server is a Cloud/On-Premise EMS solution capable of aggregating information from up to 100 installations powered by UWP 3.0 or VMU-C EM units. Data from the plants is transmitted through Internet, stored inside the embedded database and presented by the integrated web interface. Em²-Server + UWP 3.0 or VMU-C EM is a solid, reliable and plug'n'play architecture aimed at managing multiple sites projects
Function	VMU-MC concentrates 2 pulse counter inputs (up to 11 with optional VMU-OC extender), and makes the relevant totalizers available via Modbus/RTU	3 additional S0 pulse counter inputs	Multi-user, Multi-Language. Energy data aggregation. Database storage. Present and Historical data analytics. PDF and Excel Reports. Set-up and operation via Web Interface
Type			Virtual Machine Software
Input specifications			
Range code	2 S0 inputs (either pulse for pulse counting or ON/OFF status monitoring)	3 S0 inputs (either pulse for pulse counting or ON/OFF status monitoring)	
Pulse frequency	Max 100 Hz	Max 100 Hz	
Output specifications			
Serial communication	Local bus: up to 3 VMU-OC units RS485 communication port (Modbus)	Local bus: up to 3 VMU-OC units	
Others	LCD for Status, totalizers, active tariff display Front multicolor LED for power, MODBUS communication, local bus alert	Front multicolour LED to show the status of the unit	
Compatibility			
Host operating system			Operating system compatible with VMWARE 64 bit technology
Virtual Machine compatibility			VMWARE 64 bit
Hardware compatibility			64 bit architecture compatible with VMWARE 64 bit
Cloud compatibility			Hosting providers compatible with VMWARE technology
Software/Firmware specification			
Data acquisition			By means of Carlo Gavazzi's DP (Data push) protocol
Integrated operating system			64 bit Linux
Integrated data base			Industrial class SQL relational database
User interface			Integrated multi-user, multilingual web interface
General specifications			
Power supply	15 to 24 VDC power supply	Self-power supply from VMU-MC unit	
Approvals/Marks	cULus approved	cULus approved	
Managed UWP 3.0 or VMU-C EM units			From 20 to 100
Software installation			By DVD or USB stick containing the Em²-Server Virtual machine
Licensing			Perpetual license based on connected UWP 3.0 or VMU-C EM units
References			
	For ordering key details, please refer to www.gavazziautomation.com		

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Data aggregation solutions

	Serial converter	Ethernet gateway	M-Bus and wireless M-Bus to MODBUS/ TCP gateways	M-bus converter	Optical communication interface
Types	**SIU-PC3**	**SIU-TCP**	**SIU-MBM**	**VMU-B**	**OPTOPROG**
					
Dimensions HxWxD (mm)	Front: 60 x 37.5	Front: 78 x 65	Front: 95 x 71	Front: 90 x 17.5	52 x 17.5 x 50.8
Function	RS422 / RS485 to USB converter	[SIU TCP2] RS232 / 485 to Ethernet Gateway [SIU TCP3] RS232 / 485 to Ethernet Modbus Gateway	Wireless M-Bus [only SIU-MBM-02] and M-Bus to Modbus/TCP gateway	Modbus to M-bus converter	Bluetooth and USB interface for meters and analysers with optical port
Port 1					
Port connections	USB type A	Ethernet, 10 / 100 Mbps RJ45	Ethernet, 10 / 100 Mbps RJ45	RS485	Bluetooth, Micro-USB
Baud rate	Max 961.6 kBaud	Max 230400 Baud			
Port 2					
Port connections	RS232, RS485 2-wire communication	[SIU TCP2] RS232, RS485 2-wire and 4-wire communication [SIU TCP3] RS232, RS485 2-wire communication	M-Bus, [SIU-MBM-02] wireless M-Bus (EU868MHz)	M-bus	Optical
General specifications					
Power supply	Self supplied by USB port	9 to 30 VDC AD5V1A: AC / DC power supply adapter (on request)	15 to 21 VAC; 18 to 35 VDC	18 to 260 VAC/DC	Battery
Approvals/Marks	CE - FCC	CE	CE	CE	CE - FCC - IC - Bluetooth 4.0
References					
	SIU PC3	**SIU TCP2**	**SIU-MBM-01** **SIU-MBM-01-160** (M-Bus)	**VMUBM2US1B1A** (for EM210, EM26)	**OPTOPROG**
		SIU TCP3	**SIU-MBM-02** (M-Bus and wireless M-Bus)	**VMUBM2US1B1B** (for EM27x, EM280)	
				VMUBM2US1B1C (for WM15)	

PV monitoring solutions

EOS-Array solar control solution

Types	VMU-M	VMU-S	VMU-P	VMU-O
				
Dimensions HxWxD (mm)	1-DIN module	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-dgt readout	String unit, with built-in protection fuseholder	Environment variable measurement unit	Inputs/outputs unit
Function	VMU-M performs the local bus management of VMU-S, VMU-P both measuring units and VMU-O I/O unit	Variables measuring unit, DC current, voltage, power and energy metering. String control and efficiency measurement	PV module temperature, air temperature, sun irradiance and wind speed metering	VMU-O allows to add for every single unit available in the local bus two digital inputs and two relay outputs
Input specifications				
Range code	2 Pt100 or Pt1000, 3-wire (-50.0°C to +200.0°C) or one digital input and one pulse input. [T2]	Direct connections 16 A / 1000 VDC [AV10]. Measurements: V, A, W, Wh	2 Pt100 or Pt1000, 3-wire (PV and air temperature). 1 irradiance input (up to 120 mV [2TIW] or 4-20 mA [2TCW]). 1 wind speed input (0 to 1000 Hz max.)	2 digital inputs for "Protection trip detection or others" [I2]
Accuracy	±(0.5% RDG + 5dgt)	±(0.5% RDG + 2dgt)	±(0.2% RDG + 1dgt)	
Output specifications				
Alarm	Real and virtual alarm management of all variables coming from VMU-M, VMU-S, and VMU-P with event logging			2 digital outputs for alarm notification as string alarm or as a digital input status change. SPST relay type. [R2]
Serial communication	Local bus: up to 15 mixed VMU-S, VMU-P and VMU-O units RS485 communication port (Modbus) [S1]	Local bus: up to 15 VMU-S units in the same bus [S]	Local bus: one VMU-P unit per bus [S]	Local bus: up to 7 VMU-O units
Others	Data logger (V, A, W, PV cell and air temperature, irradiation, wind speed) DC/AC efficiency	Diagnostics functions: antitheft control, fuse blow detection, wrong PV panel connection. Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit
General specifications				
Power supply	12 to 28 VDC power supply [A]	Self-power supply from VMU-M unit [X]	Self-power supply from VMU-M unit [X]	Self-power supply from VMU-M unit [X]
Approvals/Marks	CE - cULus listed	CE - cULus listed	CE - cULus listed	CE - cULus listed
References				
		For ordering key details, please refer to www.gavazziautomation.com		

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PV monitoring solutions

EOS-Array Lite solar control solution

Types	VMU-ML	VMU-S0	VMU-P
			
Dimensions HxWxD (mm)	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-dgt readout	String unit, with built-in protection fuseholder	Environment variable measurement unit
Function	VMU-ML performs the local bus management of VMU-S0, VMU-P both measuring units and VMU-O output unit	Variables measuring unit, DC current and voltage	PV module temperature, air temperature, sun irradiance
Input specifications			
Range code		Direct connections 16 A / 1000 VDC [AV10]. Measurements: V, A	1 Pt100 or Pt1000, 3-wire (PV and air temperature). 1 irradiation input (up to 120 mV [1TI] or 4 - 20 mA [2TCW])
Accuracy		±(0.5%RDG + 2dgt)	±(0.2%RDG + 1dgt)
Output specifications			
Alarm	Single real or virtual alarm management of all variables coming from VMU-ML, VMU-S0, and VMU-P		
Serial communication	Local bus: up to 15 mixed VMU-S0, VMU-P and VMU-O units RS485 communication port (Modbus) [S1]	Local bus: up to 15 VMU-S0 units in the same bus [S]	Local bus: one VMU-P unit per bus [S]
Others	Front dual colour LED to show the status of the unit	Diagnostics functions: wrong PV panel connection	Front multicolor LED to show the status of the unit
General specifications			
Power supply	12 to 28 VDC power supply [A]	Self-power supply from VMU-ML unit [X]	Self-power supply fromVMU-ML unit [X]
Approvals/Marks	CE - cULus listed	CE - cULus listed	CE - cULus listed
References			
	For ordering key details, please refer to www.gavazziautomation.com		

PV monitoring solutions

	Solar irradiance sensor	Pyranometer
Types	**PVS-1V**	**PVS-2A**
		
Dimensions (mm)	57 x 48 x 15 (not including clamp)	162 x 215 x 40
Description	Solar irradiance sensor based on photovoltaic technology built with a solid aluminium case and anti-UV encapsulating resin	Global solar radiation sensor based on a thermopile transducer compliant with WMO (World Meteorological Organization) standards for environmental monitoring, provided with worldwide valid calibration certificate
Environmental specifications		
Operating temperature	-10°C to 80°C	-40°C to 80°C
Degree of protection	IP67	IP67
General specifications		
Technology	Crystalline calibrated cell	2nd Class Thermopile Pyranometer according to ISO9060
Output	80 mV @ 1000 W/m2 STC	4-20 mA
Calibration	According to IEC 60904-2 and 60904-4 (calibration certificate as option)	According to ISO9847 (calibration certificate included)
Solar irradiance range	0-1250 W/m²	0-2000 W/m²
Connector	3 PIN Phoenix M8 IP67 connector (male and female included)	7 pin IP68 connector (male, female and 10 meters cable included)
Housing material	Aluminium	Aluminium
Power supply	Self-powered	10-28 VDC, power consumption < 0.1 W
Approvals/Marks	CE	CE
References		
	For ordering key details, please refer to www.gavazziautomation.com	

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Building automation

	Automation server	Controllers	Cloud Portal
Function	**Building**	**Building**	**Cybersecurity**
			
Dimensions HxWxD (mm)	2-DIN module	2-DIN module	
Description	It is an automation server, a powerful IIoT gateway and a programmable unit for building automation functions. It is enhanced by a configurable web interface which makes it an outstanding interface. It integrates the standard IEC 61131 PLC (Codesys), so that any building automation function can be programmed by means of a standard and well-known tool	Web-Server, gateway and controller for energy efficiency management and building automation; compatible with Carlo Gavazzi meters, analyzers and building automation solutions, it provides easy integration with local or remote BMS/EMS/Server solutions and a configurable Web interface for analysis, alerting and reporting. Secure remote access via MAIA Cloud	Cloud Portal for secure remote access to IoT devices. Compatible with UWP 3.0, UWP 3.0 SE, SBP2CPY. User authentication and organization management. Secure VPN to remote endpoints. Remote connection to gateways, connected endpoints and meters
Type	Micro PC	Micro PC	
Storage memory	4 GB	4 GB	
Back-up memory	SD / Micro-SD / Micro-SDHC / USB	Micro-SD / Micro-SDHC / USB	
LED			
Status and colour		One LED with different colours for BUS communication, communication ports, status and power supply	
Communication port and output specifications			
RS485	1 port for power analyzers, energy meters and Modbus devices	2 ports for power analyzers, energy meters and Modbus devices	
Ethernet	2 ports for Internet / LAN connection, IIoT, BACnet, Modbus, KNX IP	1 port for Internet / LAN connection, BACnet clients and Modbus/TCP devices	
USB	1 USB "A" (for USB stick)	1 USB "A" (for USB stick) and 1 USB "mini-A" (service port)	
Connections			
RS485	3 screw terminals per port	3 screw terminals per port	
Ethernet	RJ-45 connector (10 / 100 Base-T)	RJ-45 connector (10 / 100 Base-T)	
USB	High Speed USB 2.0	High Speed USB 2.0	
General specifications			
Voltage supply	From 10 to 32 VDC	From 12 to 28 VDC	
Power consumption	≤ 9 W	≤ 5 W	
Approvals/Marks	CE - cULus listed	CE - cULus listed - BTL/BACnet - Cybersecurity UL IoT Rating Silver (UWP 3.0 SE)	
References			
	XAP10RSEXX	**UWP30RSEXXXSE UWP30RSEXXX**	**MAIA Cloud**

Building automation

Bus generators

Function	Wired	Wired	Wireless
			
Dimensions (mm)	2-DIN module	2-DIN module	2-DIN module
Functions	Smart Dupline® generator	Dupline® generator	Wireless base unit for generating wireless network
Electrical specifications			
Power supply	24 VDC ± 20%	24 VDC ± 20%	24 VDC, 115-240 VAC
General specifications			
LEDs	Green, yellow	Green, yellow	Green, yellow, blue
Mounting	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Smart Dupline® bus generator. Connection of up to 250 slave modules	Dupline® bus generator	Wireless bus generator. Connection of up to 250 slave modules. Based on IEEE 802.15.4, @ 2.4 GHz Range up to 700 m
References			
	SH2MCG24	**SH2DUG24**	**SH2WBU230N**

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Building automation

	DALI		USB dongle
Function	**Master**	**Ballast**	**Connection module**
			
Dimensions (mm)	2-DIN module	210 x 50 x 32	2-DIN module
Functions	DALI Master and DALI Power supply	DALI driver for DT6 and DT8 LEDs	Remote access by Internet when a wired connection is not available Plug'n'play configuration SMS alerting SMS commands Email alerting
Electrical specifications			
Power supply	230 VAC	230 VAC	12 to 28 VDC
General specifications			
LEDs	Green, yellow, yellow		Green
Mounting	DIN-rail (2 modules)		DIN-rail (2 modules)
Degree of protection	Front: IP40, Screw terminal: IP20	IP20	Front: IP40, Screw terminal: IP20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	
Operating temperature	-20°C to +50°C	-20°C to +45°C	-25°C to +65°C
Storage temperature	-40°C to +70°C	-40°C to +80°C	-30°C to +70C
Humidity (non condensing)	20 to 80 %	10 to 95 %	
Main features	Acts as a gateway between Smart Dupline® and DALI. Enables the use of DALI lighting actuators in the system - Tunable white management	DALI approved driver for standard and tunable white LEDs. It controls warm white and cool white output via a single DALI address, providing high power factor and efficiency. The output current is programmed by means of dip-switches, while the address can be assigned either by a DALI master or manually by means of the push-button	Compatible with UWP 3.0 controller Mobile Internet connection Compatible with USB dongle modems. Watchdog features to prevent common mobile network hassles
References			
	SB2DALIT8230	**SBBADT8CCT**	**SH2DSP24**

CARLO GAVAZZI

Building automation

	Network module		Relay modules	
Function	**Wireless repeater**	**Wired repeater**	**SPST relay**	**Bistable relay**
				
Dimensions (mm)	2-DIN module	2-DIN module	2-DIN module	2-DIN module
Functions	Wireless repeater for wireless I/O modules Simplifies the network design	Repeater and isolator	Four-relay output module	Four-relay output module
Electrical specifications				
Outputs			4	4
Power supply	24 VDC - 115-240 VAC	230 VAC	24 VDC	Bus
General specifications				
LEDs	Green, blue	Green, yellow, yellow	Green, yellow, red	Green, yellow, red
Mounting	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	0°C to +50°C	0°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 90 %	20 to 90 %	20 to 80 %	20 to 80 %
Main features	Extends the network length to cover distances longer than 700 m line of sight. Up to four repeaters can be programmed between SH2WBU230N base and the wireless I/O modules	Extends the transmission distance by regenerating the carrier signal and providing 300 mA bus output. Acts as an isolator between primary and secondary Dupline®	Load: 5 A, voltage free x 4 Local bus	Load: 16 A, 230 VAC x 4 Local bus
References				
	SBP2WREP230	**SB2REP230**	**SH2RE1A424**	**SH2RE16A4**

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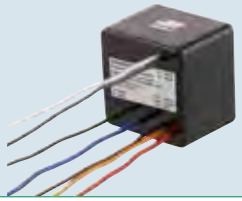
Building automation

Relay modules

Output type	Bistable relay	Bistable relay	Wireless relay
			
Dimensions (mm)	2-DIN module	26 x 39 x 17	40 x 45 x 31
Functions	Two-relay output module with energy measurement	Small sized remote relay output	Wireless relay output module with energy measurement
Electrical specifications			
Outputs	2	1	1
Power supply	230 VAC	Bus	230/110 VAC
General specifications			
LEDs	Green, yellow, red		Green, blue
Mounting	DIN-rail (2 modules)	Decentralized	
Degree of protection	Front: IP40, Screw terminal: IP20		
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	3 (IEC 60664)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°Cto +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Load: 16 A, 230 VAC x 2 Energy reading, Local bus	Load: 13 A, 250 VAC	Load: 10 A, 250 VAC Energy reading, Wireless
References			
	SH2RE16A2E230	**BDA-RE13A-U**	
230 VAC			**SHJWRE10AE230**
115 VAC			**SHJWRE10AE115**
Capacitive push buttons			**SHJWRE10AExLS230**

Building automation

Roller blind modules

Output type	SPST relay	SPST relay	SPST relay
			
Dimensions (mm)	50 x 50 x 30	2-DIN module	2-DIN module
Functions	Decentralized module for up/down control of one rollerblind motor	Relay output module for up/down control of two AC rollerblind motors	Relay output module for up/down control of two DC rollerblind motors
Electrical specifications			
Outputs	1 SPST relay & 1 SPDT relay	2 SPST + 2 SPDT relay	2 SPST + 2 SPDT relay
Inputs	AC	AC	DC
Power supply	230 VAC ± 15%	24 VDC ± 20%	24 VDC ± 20%
General specifications			
LEDs		Green, yellow, red	Green, yellow, red
Mounting	Eurobox	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection		Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20
Pollution degree	3 (IEC 60664)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Up/down control, tilting, local bus	Up/down control, tilting, local bus	Up/down control, tilting, local bus
References			
	SHDRODC230	**SH2ROAC224**	**SH2RODC224**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Building automation

	Dimmer modules			Output modules
Output type	**Power mosfet**	**Wireless dimmer**	**1 to 10 V output**	**Solid state relay**
				
Dimensions (mm)	2-DIN module	40 x 45 x 31	2-DIN module	2-DIN module
Functions	Power dimmer up to 500 W for R, L, C load and LED lamps	Power dimmer up to 200 W for R, L, C load and LED lamps	Analogue output dimmer for adjustable ballast with 1 to 10 V input	Four-solid-state relay output module
Electrical specifications				
Outputs	1	1	4	4
Power supply	230 VAC	230/110 VAC	24 VDC ± 20%	24 VDC ± 20%
General specifications				
LEDs	Green, yellow, red	Green, blue	Green, yellow, red	Green, yellow, red
Mounting	DIN-rail (2 modules)		DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP40, Screw terminal: IP20		Front: IP40, Screw terminal: IP20	Front: IP40, Screw terminal: IP20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Local bus / Energy reading	Wireless universal dimmer with energy reading		Load: 10 W x 4 Local bus
References				
With energy reading	**SH2D500WE230**			
Without energy reading	**SH2D500W1230**			
230 VAC		**SHJWD200WE230**		
115 VAC		**SHJWD200WE115**		
Capacitive push buttons		**SHJWD200WExLS230**		
			SH2D10V424	**SH2SSTRI424**

CARLO GAVAZZI

Building automation

	Energy meter modules		Digital input module	Fire damper
Function	**Dupline® connection**	**Wireless**	**4 inputs**	**I/O module**
				
Dimensions (mm)	2-DIN module	40 x 45 x 31	2-DIN module	150 x 110 x 70
Functions	Energy meter with direct connection up to 16 A	Energy meter with direct connection up to 16 A	Input module, configurable as contact or pulse counter	I/O-module for control of two fire dampers
Electrical specifications				
Inputs			4	4
Outputs				2 (T6 ONLY)
Power supply	115...240 VAC	115...240 VAC	24 VDC ± 20%	24...230 VAC
General specifications				
LEDs	Green, yellow, red	Green, blue	Green, yellow, red	Green, yellow (3)
Mounting	DIN-rail (2 modules)		DIN-rail (2 modules)	Box ready for wall mounting
Degree of protection	Front: IP40, Screw terminal: IP20		Front: IP40, Screw terminal: IP20	IP55
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°Cto +50°C	-20°Cto +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %	20 to 90 %
Main features	Values readout: A, V, W, W_{dmd}, VA, var, PF, kWh	Values readout: A, V, W, W_{dmd}, VA, var, PF, kWh	Voltage free, NPN, PNP, counter	Box ready for decentral mounting near dampers
References				
			SH2INDI424	
115...230 VAC	**SH2EM16A230**			
230 VAC		**SHJWEM16A230**		**SBB4I2O230T6**
115 VAC		**SHJWEM16A115**		
24 VDC				**SBB4I2O24T6**
Bus powered				**SBB4I**

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Building automation

	Transparent module	Analogue output modules	Analogue input modules	
Function		0 to 10 V output	Input module	Pulse counter
				
Dimensions (mm)	8.5 x 90 x 67	50 x 30 x 18	50 x 30 x 18	28 x 14 x 10
Functions	Transparent module for simplifying the wiring of the home installation	Output module with 2 analogue outputs	Input module with 2 analogue inputs	Decentral 4 input pulse counter module
Electrical specifications				
Inputs			2 x 0-20 / 4-20 mA inputs	
Outputs		2 x 0-10 VDC		
Power supply	No power supply needed	24 VDC	24 VDC	Powered by bus
General specifications				
Mounting	DIN-rail	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings	Small sized plug-in
Degree of protection	Front: IP40, Screw terminal: IP20	IP20	IP20	IP20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	
Operating temperature	-20°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-30°C to +70°C	-50°C to +85°C	-50°C to +85°C	-50°C to +70°C
Humidity (non condensing)	20 to 80 %	20 to 90 %	20 to 90 %	20 to 90%
References				
	SH1DUPFT	**SHPOUTV224**	**SHPINA224**	
S0 inputs				**SHPINCNTS04**
Contact inputs				**SHPINCNT4**

CARLO GAVAZZI

Building automation

Analogue input modules

Function	Input module	Input module	Input module	Input module
				
Dimensions (mm)	50 x 30 x 18	50 x 30 x 18	50 x 30 x 18	50 x 30 x 18
Functions	Input module with 3 analogue inputs	Input module with 4 analogue inputs	Input module with 2 analogue inputs	Input module with 2 analogue inputs
Electrical specifications				
Inputs	3 x 0-10 VDC	2 x 0-10 VDC, 1 x thermistor 10K3 input 1 x variable resistor 1-11 KΩ	1 x thermistor 10K3 1 x variable resistor 1-11 KΩ	2 Ni1000/Pt1000 inputs
Power supply	24 VDC	24 VDC	Bus	Bus
General specifications				
Mounting	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings
Degree of protection	IP20	IP20	IP20	IP20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 90 %	20 to 90 %	20 to 90 %	20 to 90 %
References				
	SHPINV324	**SHPINV2T1P124**	**SHPINT1P1**	**SHPINNI2**

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Building automation

Light switch interfaces

Function	Input module	Input / output
		
Dimensions (mm)	28 x 28 x 10	28 x 28 x 10
Functions	Input module for voltage free outputs	Input / output module for voltage free outputs and PNP transistor inputs
Electrical specifications		
Inputs	4/8	4
Outputs		4 PNP
Power supply	Powered by bus	Powered by bus
General specifications		
LEDs		
Mounting	In a junction box or behind a switch/pushbutton input	In a junction box or behind a switch/pushbutton input
Degree of protection	IP20	IP20
Operating temperature	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +70°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80 %
References		
4 contacts	**BDB-INCON4-U**	
8 contacts	**BDB-INCON8-U**	
Output voltage 3.3 V		**BDB-IOCP8-U**
Output voltage 8 V		**BDB-IOCP8A-U**

Building automation

Input modules

Function	Digital	Voltage	Wireless
			
Dimensions (mm)	89 x 66 x 29	28 x 28 x 10	40 x 45 x 31
Functions	Input module for voltage free outputs or NPN transistor outputs	Opto-isolated input voltage module, 90-265 VAC	Decentral 4 input and pulse counter module. Operating distance 700 m open space
Electrical specifications			
Inputs	4-contact or NPN transistor inputs	90 - 265 VAC	
Power supply	Powered by bus	Powered by bus	115...240 VAC
General specifications			
LEDs	Green, yellow, red		Green, blue
Degree of protection	IP20	IP20	
Pollution degree		3 (IEC 60664)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50° to +70°C	-50°C to +85°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80 %
References			
	BDD-INCON4-U	**BDA-INVOL-U**	
4 contacts			**SHJWINS04230** **SHJWINS04115**

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Building automation

	Light switches		
Function	**4 pushbutton**	**4 pushbutton**	**4 pushbutton + PIR + Luxmeter**
			
Dimensions (mm)	44 x 44 / 55 x 55	44 x 44 / 55 x 55	44 x 44 / 55 x 55
Functions	Light switch for building automation applications	Wireless light switch for building automation applications	Light switch and PIR sensor for detecting presence and/or movement in indoor installations
Electrical specifications			
Number of switches	4	4	4
Power supply	Powered by bus	Supplied by battery, type Lithium button 2450 3 V	Powered by bus
General specifications			
Colour	Black/white	Black/white	Black/white
LEDs	White/blue	Red/blue	White/blue
Mounting	Compatible with many types of wall boxes see datasheet	Compatible with many types of wall boxes see datasheet	Compatible with many types of wall boxes see datasheet
Degree of protection	IP20	IP20	IP20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-20°C to +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-30°C to +60°C	-30°C to +60°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%
Other functions	Humidity and temperature sensor (…TH)	55x55: Flat design, mountable on any surface, embedded temperature sensor	Operating distance: 8 m Angle:90°
Remarks	Approved according to UL60950	Approved according to UL60950	Approved according to UL60950
References			
44 x 44 Wallbox Btcino, Niko, Fuga	**B4X-LS4-U**	**SHA4XWLS4**	**SHA4XLS4P90L**
55 x 55 Compatible with many types of wall boxes - see datasheet	**B5X-LS4-U**	**SHE5XWLS4WF** **SHE5XWLS4BF**	**SHE5XLS4P90L**
55 x 55 Compatible with many types of wall boxes - see datasheet Temperature		**SHE5XWLS4WFT** **SHE5XWLS4BFT**	
44 x 44 Wallbox Btcino, Niko, Fuga Temperature and humidity	**SHA4XLS4TH**		
55 x 55 Compatible with many types of wall boxes - see datasheet Temperature and humidity	**SHE5XLS4TH**		

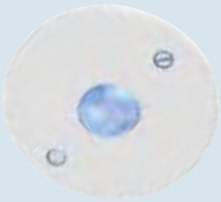
Building automation

Function	Temperature display	Movement / Presence sensors	
		150° PIR/ Luxmeter	90° PIR/ Luxmeter
			
Dimensions (mm)	44 x 44 / 55 x 55	44 x 44 / 55 x 55	44 x 44 / 55 x 55
Functions	Temperature controller with display	PIR sensor for detecting presence and/or movement in indoor installations	PIR sensor for detecting presence and/or movement in indoor installations
Electrical specifications			
Number of switches	4		
Power supply	Powered by bus	Powered by bus	Powered by bus
General specifications			
Colour	White/black	White/black	White/black
LEDs	White/blue	White/blue	White/blue
Mounting	Wallbox Btcino, Niko, Fuga / Elko, Gira, Jung	Wallbox Btcino, Niko, Fuga / Elko, Gira, Jung	Wallbox Btcino, Niko, Fuga / Elko, Gira, Jung
Degree of protection	IP20	IP20	IP20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-10°C to +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +70°C	-30°C to +70°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%
Remarks	Approved according to UL60950	Operating distance: 8 m Angle: 150°	Operating distance: 8 m Angle: 90°
References			
44 x 44 Wallbox Btcino, Niko, Fuga	**SHA4XTEMDIS** **SHA4XLS2TEMDIS**	**SHA4XP150/SHA4XP150L**	**B4X-PIR90-U**
55 x 55 Compatible with many types of wall boxes - see datasheet	**SHE5XTEMDIS** **SHE5XLS2TEMDIS**	**SHE5XP150/SHE5XP150L**	**B5X-PIR90-U**
44 x 44 Wallbox Btcino, Niko, Fuga + luxmeter			**SHA4XP90L**
55 x 55 Compatible with many types of wall boxes - see datasheet + luxmeter			**SHE5XP90L**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Building automation

Movement / Presence sensors

Function	90° PIR/ Luxmeter	90° PIR/ Luxmeter	360° PIR/ Luxmeter
			
Dimensions (mm)	104 x 55 x 57	Ø 76 x 25	Ø 96.5 x 70.6
Functions	PIR sensor for detecting presence and/or movement in indoor installations	PIR sensor for detecting presence and/or movement in indoor installations	PIR sensor for detecting presence and/or movement in indoor and outdoor installations with a built-in luxmeter
Electrical specifications			
Power supply	Powered by bus	Powered by bus	Powered by bus
General specifications			
Colour	White	White	White
LEDs	Red	Blue	Blue
Mounting	Wall mounting	LK ceiling box PL52 or PL55	Ceiling mounting
Degree of protection	IP40	IP20	IP20, IP55
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%
Main features	Operating distance: 12 m Angle: 90°	Detection range: ≤ Ø 8 m Angle: 90°	Detection range: Ø 14 m and Ø 24 m Angle: 360° Detection Area: programmable
References			
	BSD-PIR90-U	**BSB-PIR90-U**	
Luxmeter	**SHSDP90L**	**SHSBP90L**	
24 m, built-in			**SBQP360L24M**
14 m, built-in			**SHQP360L7M**
24 m, surface			**SBQP360L24MF**
24 m, surface, IP55			**SBQP360L24MFO**
14 m, surface			**SHQP360L7MF**
14 m, surface, IP55			**SHQP360L7MFO**

CARLO GAVAZZI

Building automation

Environmental sensors

Function	Display	RGB LED	Blind	Weather station
				
Dimensions (mm)	80 x 90 x 26	80 x 90 x 26	80 x 90 x 26	96 x 77 x 118
Functions	Room sensors for CO_2, temperature and %RH measurement - with display	Room sensors for CO_2, temperature and %RH measurement - with LED indication	Room sensors for CO_2, temperature and %RH measurement	Weather station for measurement of temperature, wind speed, brightness and precipitation
Electrical specifications				
Power supply	Bus	Bus	Bus	12 to 40 VDC / 12 to 28 VAC
General specifications				
Mounting	Wall mounting	Wall mounting	Wall mounting	Wall mounting
Indication	Display	Red, green, blue	None	
Degree of protection	IP20	IP20	IP20	IP44
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-30°C to +50°
Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-30°C to +70°C
Humidity (non condensing)	0 to 90%	0 to 90%	0 to 90%	5 to 95%
Main features	CO_2 measuring range: 0 to 2000 ppm CO_2 measurement: Dual source infrared NDIR technology Temperature measuring range: -20°C to +50°C (-4°F to 122°F) Humidity measuring range: 0 to 100 %RH	CO_2 measuring range: 0 to 2000 ppm CO_2 measurement: Dual source infrared NDIR technology Temperature measuring range: -20°C to +50°C (-4°F to 122°F) Humidity measuring range: 0 to 100 %RH	CO_2 measuring range: 0 to 2000 ppm CO_2 measurement: Dual source infrared NDIR technology Temperature measuring range: -20°C to +50°C (-4°F to 122°F) Humidity measuring range: 0 to 100 %RH	GPS receiver Temperature measuring range: -40 to +80°C (-40 to 176°F) Wind speed measuring range: 0 to 35 m/s Brightness measuring range: 0 to 99 000 lux
References				
Display, CO_2 + temperature	**SHSUCOTD**			
Display, CO_2 + temperature + humidity	**SHSUCOTHD**			
Display, temperature + humidity	**SHSUTHD**			
Display, temperature	**SHSUTD**			
RGB Led, CO_2 + temperature		**SHSUCOTL**		
RGB Led, temperature + humidity		**SHSUCOTHL**		
CO_2 + temperature			**SHSUCOT**	
CO_2 + temperature + humidity			**SHSUCOTH**	
Temperature + humidity			**SHSUTH**	
Temperature			**SHSUT**	
				SHOWEAGPS

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Building automation

	Water	Window	Alarm
Function	**Water sensor**	**Wireless sensor**	**Keypad**
			
Dimensions (mm)	70 x 39 x 15.5	Sensor: 60 x 30 x 15.5 Magnet: 32 x 10.2 x 11.5	130 x 50 x 8
Functions	Water detection sensor for home/building applications	Wireless, battery powered reed sensor with additional input	Programmable keypad for building access control and alarm control in indoor and outdoor applications
Electrical specifications			
Inputs		Reed, voltage free	12 push buttons
Power supply	Powered by bus	Battery	9-17 VDC
General specifications			
Colour	White	White	Black / white
LEDs		Red / blue	Yellow, red, green, programmable
Mounting	Wall mounting	Wall mounting, screw and double side tape	Wall box mounting
Degree of protection	IP67	IP20	IP67
Pollution degree		2 (IEC 60664-1, par. 4.6.2)	
Operating temperature	-20°C to +50°C	-20°C to +50°C	-15°C to +60°C
Storage temperature	-50°C to +85°C	-30°C to +85°C	-30° to 80°C
Humidity (non condensing)	20 to 80%	20 to 80%	100,00%
Main features	Input for Felson probe		28 user-programmable codes, Buzzer output
References			
	BSF-WAT-U		**BACC-KEYPAD-DC-U**
Battery backup			
No battery backup			
Reed contact		**SHDWWISEN**	
Reed contact + voltage free		**SHDWWISENIN1**	

Building automation

	Light	Temperature	HMI colour	
Function	**Luxmeter**	**Outdoor**	**Touch displays**	
				
Dimensions (mm)	55 x 53 x 36	67 x 35 x 15	187 x 147 / 282 x 197	422 x 267
Functions	Luxmeter for indoor / outdoor installations	Temperature sensor for indoor and outdoor applications	High definition 7" and 10" resistive colour touchscreens, BACnet, Modbus gateway	High definition 15.6" capacitive colour touchscreen, BACnet, Modbus and KNX gateway
Electrical specifications				
Power supply	Powered by bus	Powered by bus	24 VDC ± 20%	24 VDC ± 20%
General specifications				
Colour	White	Light grey	Wall/panel mounting	Wall/panel mounting
Mounting	Wall mounting	Direct wall mounting	Display	Display
Connection		Cable / plug		
Degree of protection	IP44	IP67	Front: IP66 Rear: IP20	Front: IP66 Rear: IP20
Operating temperature	-30°C to +60°C	-40°C to +60°C	0°C to +50°C	-20°C to +60°C
Storage temperature		-55°C to +85°C	-20°C to +70°C	-20°C to +70°C
Humidity (non condensing)		20 to 80%	5 to 85% RH	5 to 85% RH
Main features	Measuring range: 0 to 20 kLux		7", 800 x 480 pixel / 10", 1024 x 600 pixel resistive touchscreen, fully programmable by the dedicated BTM-PC- IDE software, IIoT data distribution via MQTT and OPC UA, BACnet, Modbus, data logging, Ethernet, serial and USB ports	15.6", 1366 x 768 pixel, multi-touch capacitive touchscreen, fully programmable by the dedicated BTM-PC-IDE software, IIoT data distribution via MQTT and OPC UA, BACnet, Modbus, KNX, data logging, Ethernet, serial and USB ports
Remarks		Approved according to UL60950		
References				
	BSH-LUX-U			
Cable, 2 m		**BSI-TEMANAB-U**		
Plug, M12		**BSI-TEMANA-U**		
7" - 800 x 480 pixel			**BTM-T7-RSE**	
10" - 1024 x 600 pixel			**BTM-T10-RSE**	
15.6" - 1366 x 768 pixel				**BTM-T15-PLUS**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

DuplineSafe

	Input module	Output module
Types	**GS7510 2101**	**GS3830 0143**
		
Dimensions (mm)	57.5 x 36.0 x 16.4	144 x 77 x 70
Functions	Bus-powered safety input module	DuplineSafe relay output module. Monitors up to 63 DuplineSafe inputs
Housing type		DIN-rail mounting H8
Electrical specifications		
Number of channels	2	2
Features/Signal types	1 x NC contact	2 x NO Relays Force Guided contact
Power supply	Powered through the Dupline® network	230 VAC ± 15%
General specifications		
Degree of protection	IP67	IP20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-40°C to +50°C	-25°C to +50°C
Storage temperature	-40°C to +70°C	-30°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%
Remarks	Approved by TÜV Rheinland according to IEC/EN 61508, EN 62061 and ISO/EN 13849-1 PL e	Approved by TÜV Rheinland according to IEC/EN 61508, EN 62061 and ISO/EN 13849-1 PL e
References		
Cable connection	**GS7510 2101**	
Cable connection cULus approved	**GS7510 2192**	
Plug connector	**GS7510 2101-1**	
Plug connector cULus approved	**GS7510 2192-1**	
Output relay		**GS3830 0143**

DuplineSafe

	Gateway / interface		
Types	**GS33910060800**	**GS3891 0125**	**GSTI 50**
			
Dimensions (mm)	90 x 35 x 58.5	144 x 77 x 70	55 x 70 x 15
Functions	Profinet gateway with function as slave. Up to 7 master generators can be connected via the HS RS485 bus. All Dupline® signals from master generators are available on Profinet	Profibus-DP passive Gateway with Safety mapping	Dupline® Modbus interface module with Safety mapping
Housing type	DIN-rail mounting H2	DIN-rail mounting H8	Compact plastic housing
Electrical specifications			
Features/Signal types	Reads/controls up to 7 Dupline networks through Profinet. Miniwebserver for diagnostics of Profinet and Dupline® networks available	Reads/controls up to 128 inputs/outputs through Profibus-DP, Communication speed up to 12 MBaud	
Power supply	24 VDC	115-230 VAC	Powered by the RS485 com port
General specifications			
Degree of protection	IP20	IP20	IP20
Operating temperature	-20°C to +50°C	0°C to +50°C	-20°C to +60°C
Storage temperature	-30°C to +85°C	-20°C to +85°C	-30°C to +85°C
Humidity (non condensing)	20 to 80%	20 to 80%	
Remarks	Certified by PNO	Certified by PNO	Supports Modbus RTU function code 3 and code 16
References			
	GS33910060800	**GS38910125230**	**GSTI 50**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

DuplineSafe

	Optical fibre converter	Repeater	Configuration tool	
Types	**GS3492/GS3493**	**GS3892 0000**	**GS7380 0080**	**GS7380 0081**
				
Dimensions (mm)	77 x 72 x 70	77 x 144 x 70	28 x 90 x 145	25 x 50 x 100
Functions	Optical repeater for converting DuplineSafe from electrical to optical transmission media	DuplineSafe signal repeater for extension of transmission distance	Configuration and test unit for DuplineSafe	USB Configuration unit for DuplineSafe
Housing type	DIN-rail, H4	DIN-rail H8	Handheld	Handheld
Electrical specifications				
Number of channels	Adjusts automatically	Adjusts automatically		
Features/Signal types	All Dupline® signal types	Regenerates the Dupline® signal carrier through channel generator output		Windows based programming tool for safety output relay module and safety input modules
Power supply	230 = 115/230 VAC	024 = 024 VAC 115 = 115 VAC 230 = 230 VAC	9 V battery 6LR61	Supplied by the USB port
General specifications				
Degree of protection	IP20	IP40	IP40	IP40
Pollution degree				3 (IEC 60664)
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-20°C to +70°C	-20°C to +60°C
Remarks	Operates pair-wise. Runs on 50/125, 62.5/125 or 100/140 micro m with STN connectors		Adapt 7380 is included	
References				
		GS3892 0000	**GS7380 0080**	**GS7380 0081**
Optical/electrical converter	**GS3492 0000**			
Electrical/optical converter	**GS3493 0000**			

DuplineSafe

Types	Master generator GS33900000800A
	
Dimensions (mm)	90 x 35 x 58.5
Functions	Master channel generator which provides the Dupline® bus carrier with power and communication for the connected Dupline® units
Housing type	DIN-rail mounting H2
Electrical specifications	
Number of channels	128
Features/Signal types	The unit supports Digital in/out, Analink in/out, Mux BCD in/out, 8 bit in/out and DuplineSafe in High Dupline® current output (450 mA)
Power supply	24 VDC
General specifications	
Degree of protection	IP20
Operating temperature	-20°C to +50°C
Storage temperature	-50°C to +85°C
Humidity (non condensing)	20 to 80%
References	
Dupline® Master Channel Generator	**GS33900000800A**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Fieldbuses - Industrial

Channel generators/interfaces

Types	SD2DUG24	G3496	G3800
			
Dimensions (mm)	35 x 90 x 58,5	77 x 72 x 70	77 x 144 x 70
Functions	Standard channel generator	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus	Controller and Modbus Interface with built-in GSM Modem (option) or external Radio Modem Logger (option)
Housing type	DIN-rail, H2	DIN-rail, H4	DIN-rail, H8
Electrical specifications			
Number of channels	Selectable	Selectable	Selectable
Features/Signal types	2 and 3-wire operation with DC-power on the 3rd wire. The unit supports Digital in/out, Analink in/out, Mux BCD in/out, 8 bit in/out and Dupline	Possibility of 3-wire operation with DC-power on the 3rd wire	4 x Contact/PNP input +4 x PNP 10-30 VDC output 2 x RS232+1 x RS485. Possibility for alarms, monitoring and control via SMS messages
Power supply	24 VDC	700 = 20-30 VDC	800 = 10-30 VDC 230 = 115-230 VAC
General specifications			
Degree of protection	IP20	IP20	IP20
Operating temperature	-20°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks	Modbus gateway, RS485	Built-in protocol for specific PLC brands for easy interfacing	Up to 32 controllers can be networked together via RS485 or Ethernet via converter module
References			
Channel Generator	**SD2DUG24**		
Omron		**G3496 0004**	
Allen-Bradley		**G3496 0006**	
Matsushita		**G3496 0009**	
-GSM Modem, -RS485			**G3800 0015**
-GSM Modem, +RS485			**G3800 0016**

Fieldbuses - Industrial

	Channel generators/interfaces		Digital input modules	
Types	**G3891**	**GTI50**	**G3410 5501**	**G3420**
				
Dimensions (mm)	77 x 144 x 70	55 x 70 x 15 mm	77 x 72 x 70	77 x 72 x 70
Functions	Gateways to Fieldbus systems (Profibus-DP, DeviceNet etc.)	Dupline® Modbus RTU Interface module for Text Displays and Touch screens	Dupline® powered transmitter with 8 monostable voltage free contacts	Input module for external supply with optoisolated inputs
Housing type	DIN-rail, H8	Closed plastic housing with 25p male sub-D	DIN-rail, H4	DIN-rail, H4
Electrical specifications				
Number of channels	Selectable		8	8
Features/Signal types		Supports Modbus RTU function code 3 and code 16	Voltage free input contacts	Contact/NPN Voltage (6-265 VAC/DC)
Power supply	230 = 115/230 VAC	Powered by RS485 port	Powered by Dupline®	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC
General specifications				
Degree of protection	IP20	IP20	IP20	IP20
Operating temperature	0°C to +50°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks			Low power consumption	
References				
		GTI50		
Profibus-DP with C. G.	**G3891 0020**			
Profibus-DP analogue output multiplex	**G3891 0021**			
DeviceNet	**G3891 0050**			
Modbus/TCP	**G3891 0052**			
Profibus-DP passive	**G3891 0120**			
8 channel			**G3410 5501**	
Contact/NPN				**G3420 5501**
Voltage				**G3420 5502**

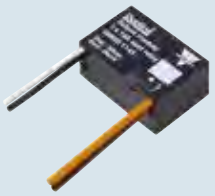
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Fieldbuses - Industrial

	Digital input modules		Digital I/O modules
Types	**G5010**	**G8810 2201**	**G3440 4443**
			
Dimensions (mm)	49 x 22.5 x 56	28 x 14 x 10	77 x 72 x 70
Functions	Dupline® powered single input Module	Small-sized 2-channel monostable transmitter	Combined I/O module for external supply with optoisolated inputs and relay outputs
Housing type	DIN-rail, Mini-E	Plug-in	DIN-rail, H4
Electrical specifications			
Number of channels	1	2	4
Features/Signal types	Contact input	2 contact inputs for push buttons cULus approved	2 x 6-265 VAC/DC inputs +2 x SPST relay outputs
Power supply	Powered through the Dupline® network	Supplied by Dupline®	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 824 = 15-30 VDC
General specifications			
Degree of protection	IP20	IP65	IP20
Operating temperature	-20°C to +50°C	-40°C to +70°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-40°C to +70°C	-50°C to +85°C
Remarks		Address coding by GAP 1605	
References			
1 channel	**G5010 1106**		
2 channels	**G5010 2206**	**G8810 2201**	
2 input + 2 output SPST			**G3440 4443**

Fieldbuses - Industrial

Digital output modules

Types	G3430 / G3830	G34305545	G8830 1143
			
Dimensions (mm)	77 x 72 x 70 77 x 144 x 70 (H8)	77 x 72 x 70	26 x 39 x 17
Functions	Output modules for external supply with isolated outputs	Central relay module with 8 x SPST relays for resistive loads	Decentral relay module with 1 x SPST relay for control of lights
Housing type	DIN-rail, H4 DIN-rail, H8 (G3830 5543)	DIN-rail, H4	Compact regular, with solid cables. For decentral installation
Electrical specifications			
Number of channels	1, 2, 4, 8	8	1
Features/Signal types	10 A SPDT relay 10 A SPST relay 0.7 A NPN transistor 0.7 A PNP transistor	8 x 16 A/250 VAC relays Inrush current: <130 A	1 x 13 A/250 VAC relay Inrush current: <130 A
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC 824 = 15-30 VDC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	Powered through the Dupline® network
General specifications			
Degree of protection	IP20	IP20	IP20
Operating temperature	-20°C to +50°C	-5°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks		Total module load max. 32 A	Recommended minimum load 100 mA / 12 V
References			
2 x 10 A SPDT	**G3430 2249**		
4 x 5 A SPST	**G3430 4443**		
4 x 16 A SPST	**G3430 4445**		
8 x 5 A SPST	**G3830 5543**		
8 x 0.7 A NPN	**G3430 5511**		
8 x 0.7 A PNP	**G3430 5521**		
8 x 16 A SPST (Max. 32 A)		**G3430 5545**	
1 x 13 A SPST			**G8830 1143**

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Fieldbuses - Industrial

Analogue input modules

Types	G3429 6470	G3210 1161	G3210 1111
			
Dimensions (mm)	77 x 72 x 70	77 x 36 x 70	77 x 36 x 70
Functions	Universal analogue input module for external supply	Analogue input module powered from Dupline® and input signal	Dupline®- powered Analogue input module for Pt100 temperature sensor
Housing type	DIN-rail, H4	DIN-rail, H2	DIN-rail, H2
Electrical specifications			
Number of channels	Selectable	1	1
Features/Signal types	4 x isolated analogue input. Input type individually configurable (0-20 mA, 4-20 mA, 0-10 VDC)	1 x 4-20 mA input	1 x Pt100 3-wire input ranges: (-50°C to +40°C) (+30°C to +120°C) (-10°C to +100°C)
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered through the Dupline® network and 4-20 mA input signal	Powered through the Dupline® network
General specifications			
Degree of protection	IP20	IP20	IP20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks	Freely selectable protocol (Analink, Multiplexed BCD or 8-bit)	Uses Analink 8-bit protocol	Uses Analink 8-bit protocol. Built-in cable compensation
References			
Universal analogue output	**G3429 6470**		
Dupline® powered analogue input		**G3210 1161**	
+30°C to +120°C			**G3210 1112**

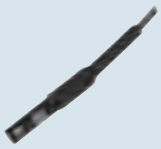
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Fieldbuses - Industrial

	Analogue output modules	Decentral analogue input modules		
Types	**G3439 6470**	**G8810 6265**	**G8810 6311**	**G8810 6312**
				
Dimensions (mm)	77 x 72 x 70	50 x 30 x 18	50 x 30 x 18	50 x 30 x 18
Functions	Universal analogue output module for external supply	Decentral analogue module with 3 x 0-10 VDC inputs designed for HVAC systems	Decentral analogue module with 2 x 0-10 VDC, 1 x thermistor and 1 x variable resistor inputs designed for HVAC systems	Decentral analogue module with 1 x thermistor and 1 x variable resistor inputs designed for HVAC systems
Housing type	DIN-rail, H4	Compact housing for decentral installation	Compact housing for decentral installation	Compact housing for decentral installation
Electrical specifications				
Number of channels	Selectable	3	4	2
Features/Signal types	4 x analogue outputs. Output type configurable for 0-20 mA, 4-20 mA or 0-10 VDC	3 x 0-10 VDC input	2 x 0-10 VDC input 1 x thermistor 10k3 input 1 x variable resistor 1-11 KΩ input	1 x thermistor 10k3 input 1 x variable resistor 1-11 KΩ input
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered from external 15-30 VDC	Powered from external 15-30 VDC	Dupline® powered
General specifications				
Degree of protection	IP20	IP20	IP20	IP20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C
Remarks	Freely selectable protocol (Analink, Multiplexed BCD or 8-bit)	Analink protocol 8 bit resolution	Analink protocol 8 bit resolution	Analink protocol 8 bit resolution
References				
Universal analogue output	**G3439 6470**			
Decentral 3 x input		**G8810 6265**		
Decentral 4 x input			**G8810 6311**	
Decentral 2 x input Bus powered				**G8810 6312**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Fieldbuses - Industrial

	Digital sensors	Temperature sensor	Repeater	Converters
Types	**G8910 1101**	**G8911 1010**	**D3892 0000**	**G3492 / G3493**
				
Dimensions (mm)	Ø11 x 68	67 x 35 x 15	77 x 144 x 70	77 x 72 x 70
Functions	Dupline® powered magnet proximity switch	Temperature sensor for outdoor use. With built-in PT1000 transducer	Dupline® signal Repeater for extension of transmission distance	Optical repeater for converting Dupline® from electrical to optical transmission media
Housing type	Cylindrical	Flat pack sensor housing	DIN-rail, H8	DIN-rail, H4
Electrical specifications				
Number of channels	1	1	Adjusts automatically	Adjusts automatically
Features/Signal types	Detects proximity of magnet	1 x Analink Range: -30°C to +60°C	All Dupline® signal types. Regenerates the Dupline® signal carrier through channel-generator output	All Dupline® signal types
Power supply	Powered through the Dupline® network	Powered through the Dupline® network	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	230 = 115/230 VAC
General specifications				
Degree of protection	IP67	IP67	IP20	IP20
Operating temperature	-20°C to +50°C	-25°C to +70°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +70°C	-55°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks	Available in Ø 11 plastic housing or with M14 metal thread	8-bit resolution		Operates pair-wise. Runs on 0/125, 62.5/125 or 100/140 micro m with STN connectors
References				
Ø11	**G8910 1101**			
M14	**G8910 1101 G**			
M12 plug		**G8911 1010**		
Repeater (Booster)			**D3892 0000**	
Optical/electrical converter				**G3492 0000**
Electrical/optical converter				**G3493 0000**

Fieldbuses - Industrial

Accessories

Types	GAP1605	GTU8	G3282 2002 230
			
Dimensions (mm)	120 x 65 x 22	145 x 90 x 28	77 x 36 x 70
Functions	Dupline® coding device for assigning addresses to Dupline® I/O modules and sensors	Dupline® test unit for monitoring and control of Dupline® channels	Dupline® bus separator
Housing type	Handheld	Handheld	H2 Housing
Electrical specifications			
Number of channels	NA	Adjusts automatically	2
Features/Signal types		Digital, multiplexed BCD, 8-bit analogue signals and split I/O. Also prepared to calibrate sensors in Carpark system	Disconnect the secondary side of the Dupline® bus when a short-circuit is detected
Power supply	9 V battery	Powered through the Dupline® network	230 V
General specifications			
Degree of protection	IP40	IP40	IP20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +85°C	-20°C to +85°C
Remarks		Options for latching digital signals and for reading multiplexed BCD values	
References			
Programmer	**GAP1605**		
Monitoring and control unit		**GTU8**	
Bus separator			**G3282 2002 230**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Fieldbuses - Industrial

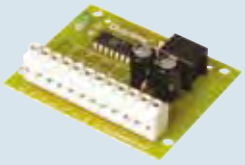
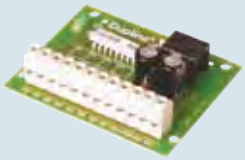
	Accessories		
Types	**ADAPT 1605**	**ANT2**	**DT01/DT02**
			
Dimensions (mm)	25 x 50 x 100	15 x 35 x 120	17.5 x 70 x 77
Functions	Codings adaptor between GAP1605 and Dupline® modules without standard connection plug	Active antenna used for radio controlled clock	Cable termination unit
Housing type	Handheld box	Glued plastic casing	H1 housing
Electrical specifications			
Features/Signal types	4 clip-on terminals for Dupline® modules. Includes a M12 plug for modules like G8911 1010	Input signal is 77.5 kHz	Removes distortion caused by reflection
Power supply		Powered by G3800 XXXX	No power needed
General specifications			
Degree of protection	IP20	IP40	IP20
Operating temperature	0°C to +50°C	0°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-50°C to +85°C
References			
Adaptor	**ADAPT 1605**		
Antenna		**ANT2**	
Standard Dupline®			**DT01**
Hi-line Dupline®			**DT02**

Fieldbuses - Agriculture

	Digital I/O modules		Converter	Tools
Types	**GH3440 4412**	**GH6440 4412**	**GH3485 0000**	**GHTU8**
				
Dimensions (mm)	77 x 72 x 70	80 x 77 x 50	77 x 72 x 70	145 x 90 x 28
Functions	I/O module for irrigation valve control	I/O module for irrigation valve control	Dupline® to Hi-Line converter	Dupline® test unit for monitoring and control of Dupline® channels. Used for Hi-line modules
Housing type	DIN-rail, H4	Fully molded housing for under ground installation	DIN-rail, H4	Handheld
Electrical specifications				
Number of channels	4	4	Adjusts automatically	Adjusts automatically
Features/Signal types	2 outputs for control of 3-wire 12 VDC latching valve, and 2 contact inputs	2 outputs for control of 3-wire 12 VDC latching valve, and 2 contact inputs	Converts the Dupline® signal to Hi-Line 28 VDC level for control of irrigation valves (see GH3440 4412 and GH6440 4412)	Digital, multiplexed BCD and 8-bit analogue signals
Power supply	Powered through Hi-Line signal (see GH34850000)	Powered through Hi-Line signal (see GH34850000)	724 = 20-30 VDC	Powered through the Dupline® network
General specifications				
Degree of protection	IP20	IP67	IP20	IP40
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks				Options for latching digital signals and for reading multiplexed BCD values
References				
2 outputs and 2 inputs	**GH3440 4412**	**GH6440 4412**		
Converter			**GH3485 0000**	
Monitoring and control unit				**GHTU8**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Fieldbuses - Elevator

	Input module	Output module	Input/output module
Types	**G2120**	**G2130**	**G2140 4421**
			
Dimensions (mm)	Open PCB 72.3 x 59	Open PCB 74 x 59	Open PCB 54 x 40
Functions	8 contact inputs for push buttons or transistors. LED indications for supply and carrier	8 outputs for control of floor indicators and lamps. LED indications for supply and carrier	2 push button inputs. 2 PNP-transistor outputs. LED indications for supply and carrier
Housing type	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)
Electrical specifications			
Number of channels	8	8	4
Features/Signal types	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3
Power supply	700 = 10 - 30 VDC	700 = 10 - 30 VDC	700 = 10 - 30 VDC
General specifications			
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
References			
NPN	**G2120 5501 700**	**G2130 5511 700**	
PNP	**G2120 5502 700**	**G2130 5521 700**	**G2140 4421 700**

Fieldbuses - Elevator

	Input/output module	Master modules	
Types	**G2140 55.0**	**G2196**	**G3496**
			
Dimensions (mm)	Open PCB 74 x 59	Open PCB 86 x 54	77 x 72 x 70
Functions	4 push-button inputs 4 transistor outputs LED indications for supply and carrier	128 signals RS 485/RS 232 interface to control system LED indications for supply, carrier and RS485Tx	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus
Housing type	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)	DIN-rail, H4
Electrical specifications			
Number of channels	8	128 inputs and 128 outputs	Selectable
Features/Signal types	3-wire operation with DC-power on 3 wires	3-wire operation with DC-power on 3 wires	Possibility for 3-wire operation with DC-power on 3 wires
Power supply	700 = 10 - 30 VDC	700 = 20 - 30 VDC	700 = 20 - 30 VDC
General specifications			
Degree of protection			IP20
Operating temperature	-20°C to +50°C	-20°C to +60°C	0°C to +50°C
Storage temperature			-50°C to +85°C
Remarks			Built-in protocol for specific PLC brands for easy interfacing
References			
NPN	**G2140 5510 700**		
PNP	**G2140 5520 700**		
Omron			**G3496 0004 700**
Modbus RTU Slave		**G2196 0005 700**	
Allen-Bradley			**G3496 0006 700**
Matsushita			**G3496 0009 700**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Monitoring relays

	Earth Leakage			
Types	**DEA71**		**DEB71**	
				
Dimensions HxWxD (mm) DIN-rail housing	81 x 35.5 x 67.2 [Mini-D]		81 x 35.5 x 67.2 [Mini-D]	
Function	Modular residual current relay, fixed IΔn setting, warning output @60% IΔn, Alarm @80% IΔn, no delay. Operates with CTG series core balance transformers		Modular residual current relay, adjustable IΔn setting, warning output @60% IΔn, Alarm @80% IΔn, leakage level LED bar, adjustable delay. Operates with CTG series core balance transformers	
Input specifications				
Measuring range IΔn	30 mA	300 mA	30 mA to 5 A	300 mA to 30 A
Output specifications				
Type	2 x SPDT relay		2 x SPDT relay	
Max. load AC1	5 A / 250 VAC		5 A / 250 VAC	
Max. load DC12	5 A / 24 VDC		5 A / 24 VDC	
Electrical life	>1 x 10^5 operations		>1 x 10^5 operations	
General specifications				
Power supply	24 VAC to 240 VAC		24 VAC to 240 VAC	
Approvals/Marks	CE - cULus		CE - cULus	
References				
	DEA71DM24A003		**DEB71DM24A5**	
		DEA71DM24A030		**DEB71DM24A30**

CARLO GAVAZZI

Monitoring relays

Current relays

Types	DIA 01 PIA 01	DIA 02	EIS H	DIA 53
				
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 22.5 x 99.5	56 x 22.5 x 49	81 x 17.5 x 67.2 [Mini-D]
Function	Over current relay. 1-phase AC / DC. Direct input or on CT 5 A. Setpoint adjustable. Hysteresis adjustable.	Load ON/OFF relay. 1-phase AC / DC. Direct input or on CT 5 A. Setpoint adjustable.	Load ON/OFF sensor. 1-phase AC Direct input and solid state output.	Over current relay. 1-phase AC. Setpoint adjustable. 2-wire connection. Reaction time < 50 ms for F versions. 12 mm hole for insulated current carrying wire.
Input specifications				
Measuring range	0.5 - 5 AAC/DC	2 mA - 5 AAC/DC	200 mA - 60 AAC [024] 400 mA - 60 AAC [230]	2 - 20 AAC [20 A] 5 - 50 AAC [50 A] 10 - 100 AAC [100 A]
Output specifications				
Type	1 x SPDT relay	1 x SPDT relay	Static output	Static output
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	1 A [024] 0.5 A [230]	
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	1 A [024] 0.5 A [230]	100 mA
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations		
General specifications				
Power supply	24-48 VAC/DC [D48] 115 / 230 VAC [B23]	24-48 VAC/DC [D48] 115 / 230 VAC [B23]	Powered by the measured current	Powered by the measured current
Approvals/Marks	CE - UL - CSA	CE - cULus	CE - cURus - CSA	CE - UL - CSA
References				
	DIA01C D48 5A	**DIA02C D48 5A**	**EISH 200MA 024**	**DIA53S 724 20A**
	PIA01C D48 5A	**DIA02C B23 5A**	**EISH 400MA 230**	**DIA53S 724 50A**
	DIA01C B23 5A			**DIA53S 724 100A**
	PIA01C B23 5A			**DIA53S 724 20A F**
				DIA53S 724 50A F
				DIA53S 724 100A F

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Monitoring relays

Current relays

Types	DIB 01 PIB 01	DIB 71	DIB 02 PIB 02	DIC 01 PIC 01
				
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over or under current relay. 1-phase AC / DC TRMS. Direct input or on CT 5 A. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable. 12 mm hole for insulated current carrying wire [100 A].	Over or under current relay. 1-phase AC/DC TRMS. Direct input or on CT 5 A. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Over or under current relay. 1-phase AC/DC TRMS. Input on shunt or CT MI / MP. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Process signal relay. 1-phase AC/DC TRMS. Direct input, CT A82 or CT MI / MP. 2 setpoints separately adjustable. Hysteresis adjustable. 2 delay times separately adjustable.
Input specifications				
Measuring range	0.1 - 5 mAAC/DC [5 MA] 1 - 50 mAAC/DC [50 MA] 10-500 mAAC/DC [500 MA] 0.1-5 AAC/DC [5 A] 1-10 AAC/DC [10 A] 2-100 AAC [100 A]	0.1 - 5 mAAC/DC [5 MA] 1 - 50 mAAC/DC [50 MA] 10 - 500 mAAC/DC [500 MA] 0.1 - 5 AAC/DC [5 A]	6 - 150 mVAC/DC 0.4 - 4 V_P	0.5 - 20 mAAC/DC 0.1 - 10 VAC/DC 0.4 - 4 V_P
Output specifications				
Type	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay [P] 2 x SPDT relays [D]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24-48 VAC/DC [D48] 115 / 230 VAC [B23] 24 VDC / 24-240 VAC [M24]	24 / 48 VAC [B48] 115 / 230 VAC [B23]	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]
Approvals/Marks	CE - cULus - CCC	CE - UL - CSA	CE - cULus	CE - UL - CSA
References				
	DIB01C . . . 5MA	**DIB71C B48 5MA**	**DIB02C D48 150MV**	**DIC01D D48 AV0**
	DIB01C . . . 50MA	**DIB71C B48 50MA**	**PIB02C D48 150MV**	**PIC01C D48 AV0**
	DIB01C . . . 500MA	**DIB71C B48 500MA**	**DIB02C B23 150MV**	**DIC01D B23 AV0**
	DIB01C . . . 5A	**DIB71C B48 5A**	**PIB02C B23 150MV**	**PIC01C B23 AV0**
	DIB01C . . . 10A	**DIB71C B23 5MA**		
	DIB01C M24 100A	**DIB71C B23 50MA**		
	PIB01C . . . 5MA	**DIB71C B23 500MA**		
	PIB01C . . . 50MA	**DIB71C B23 5A**		
	PIB01C . . . 500MA			
	PIB01C . . . 5A			
	PIB01C . . . 10A			
	. . . = insert code for Power Supply			

Monitoring relays

Voltage relays

Types	DUA 01 PUA 01	DUA 52	DUA 55
			
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]
Function	Over current and voltage relay. 1-phase AC/DC or CT MI / MP. Setpoint adjustable. Hysteresis adjustable.	Under voltage relay for DC battery. Setpoint adjustable. Hysteresis adjustable. Measures its own power supply.	Over and under voltage relay. 1-phase (measures its own power supply) AC TRMS.
Input specifications			
Measuring range	2 - 500 VAC/DC 0.4 - 4 V_P	8 - 28 VDC [724] 38 - 58 VDC [748]	208 / 220 / 230 / 240 VAC
Output specifications			
Type	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]	8 - 28 VDC [724] 38 - 58 VDC [748]	208 - 480 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA - CCC
References			
	DUA01C D48 500V	**DUA52 C724**	**DUA55 CM44**
	PUA01C D48 500V	**DUA52 C748**	
	DUA01C B23 500V		
	PUA01C B23 500V		

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Monitoring relays

	Voltage relays		
Types	**DUB 01 PUB 01**	**DUB 71**	**DUB 72**
			
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 35.5 x 67.2 [Mini-D]	90 x 35 .8 x 63.2 [Mini-D]
Function	Over or under voltage relay. 1-phase AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Over or under voltage relay. 1-phase AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Double under voltage relay. 24 VDC. 2 adjustable setpoints + hysteresis. 2 independent relay outputs.
Input specifications			
Measuring range	0.1 - 10 VAC/DC [10 V] 2-500 VAC/DC [500 V]	0.1 - 10 VAC/DC [10 V] 2-500 VAC/DC [500 V]	16 - 30 VDC
Output specifications			
Type	1 x SPDT relay	1 x SPDT relay	1 x SPST 3 A 1 x SPST 20 A
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24-48 VAC/DC [D48] 115 / 230 VAC [B23]	24/48 VAC [B48] 115 / 230 VAC [B23]	24 VDC
Approvals/Marks	CE - cULus - CCC	CE - UL - CSA	CE- cULus - ISA Class I Div 2
References			
	DUB01C D48 10V	**DUB71C B48 10V**	**DUB72D724EX**
	DUB01C D48 500V	**DUB71C B48 500V**	
	PUB01C D48 10V	**DUB71C B23 10V**	
	PUB01C D48 500V	**DUB71C B23 500V**	
	DUB01C B23 10V		
	DUB01C B23 500V		
	PUB01C B23 10V		
	PUB01C B23 500V		

CARLO GAVAZZI

Monitoring relays

Voltage relays

Types	DUB 02 PUB 02	DUB 03 PUB 03	DUC 01 PUC 01
			
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	 80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	 80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over and under voltage relay. 1-phase (measures its own power supply) AC TRMS. Over and under voltage setpoints separately adjustable. Hysteresis adjustable. Delay time adjustable (ON/OFF).	Over or under voltage relay. 1-phase (measures its own power supply) AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Over and under voltage relay. 1-phase AC/DC TRMS. 2 setpoints separately adjustable. Hysteresis adjustable. 2 delay functions separately adjustable.
Input specifications			
Measuring range	24/115/230 VAC	24/48/115/240 VAC/DC	2 - 500 VAC/DC
Output specifications			
Type	1 x SPDT relay	1 x SPDT relay [P]	1 x SPDT relay [C] 2 x SPDT relay [D]
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24/115/230 VAC	12 - 240 VAC/DC	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]
Approvals/Marks	CE - cULus	CE - cULus	CE - UL - CSA
References			
	DUB02C T23	**DUB03C W24**	**DUC01D D48 500V**
	PUB02C T23	**PUB03C W24**	**PUC01C D48 500V**
			DUC01D B23 500V
			PUC01C B23 500V

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Monitoring relays

3-phase voltage relays

Types	DPA 01 PPA 01	DPA 51 DPA 71	DPA52	DPA 03 PPA 03
				
Dimensions HxWxD (mm) DIN-rail housing	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D]
Plug-in housing	80 x 36 x 94 [P]			80 x 36 x 94 [P]
Function	Phase sequence, total and partial phase loss relay. 3-phase AC (measures its own power supply). Regenerated voltage detection.	Phase sequence, total and partial phase loss relay. 3-phase AC (measures its own power supply). Regenerated voltage detection.	Phase sequence, total and partial phase loss relay. 3-phase AC TRMS (measures its own power supply), switching power supply. Regenerated voltage detection.	Under voltage, phase sequence, total and partial phase loss relay. 3-phase AC TRMS (measures its own power supply). Regenerated voltage detection.
Input specifications				
Measuring range	208 - 240 VAC [M23] 208 - 415 VAC [P] [M44] 208 - 480 VAC [D] [M44] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 380 - 600 VAC [M60] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 208 - 480 VAC [M44] 380 - 480 VAC [M48]	208 - 480 VAC	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]
Output specifications				
Type	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	208 - 240 VAC [M23] 208 - 415 VAC [P] [M44] 208 - 480 VAC [D] [M44] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 380 - 600 VAC [M60] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 208 - 480 VAC [M44] 380 - 480 VAC [M48]	208 - 480 VAC	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - cULus - CCC	CE - UL - CSA
References				
	DPA01D M23	**DPA51C M44**	**DPA52CM44**	**DPA03C M23**
	PPA01D M23	**DPA71D M23**		**PPA03C M23**
	DPA01C M44	**DPA71D M48**		**DPA03C M48**
	PPA01C M44			**PPA03C M48**
	DPA01D M48			**DPA03C M69**
	PPA01D M48			
	DPA01C M60			
	DPA01C M69			

CARLO GAVAZZI

Monitoring relays

3-phase voltage relays

Types	DPA 53	DPA 55	DPB 51	DPB52
				
Dimensions HxWxD (mm) DIN-rail housing	81 x 17.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]	90 x 17.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]
Function	Under voltage, phase sequence, total and partial phase loss relay. 3-phase AC TRMS (measures its own power supply). Regenerated voltage detection.	Over and under voltage, phase sequence, total and partial phase loss relay. 3-phase (measures its own power supply) AC TRMS. Two tolerance voltage windows. Regenerated voltage detection.	Over and under voltage, phase sequence, phase loss, neutral loss relay. 3-phase+N AC TRMS (measures its own power supply). Regenerated voltage detection 2 setpoints separately adjustable. Delay time adjustable.	Over and under voltage, phase sequence, phase loss 3-phase (measures its own power supply), switching power supply. Regenerated voltage detection. 2 setpoints separately adjustable. Delay time adjustable.
Input specifications				
Measuring range	208 - 240 VAC [M23] 380 - 480 VAC [M48]	208 - 480 VAC	208 - 480 VAC	208 - 480 VAC
Output specifications				
Type	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay
Max. load AC1	5 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	208 - 240 VAC [M23] 380 - 480 VAC [M48]	208 - 480 VAC	208 - 480 VAC	208 - 480 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA - CCC	CE - UL - CSA	CE - cULus - CCC
References				
	DPA53C M23	**DPA55C M44**	**DPB51C M44**	**DPB52CM44**
	DPA53C M48			

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Monitoring relays

3-phase voltage relays

Types	DPB 01 PPB 01	DPB 02 PPB 02	DPC 01 PPC 01	DPC 71
				
Dimensions (mm) HxWxD DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	81 x 35.5 x 67.2 [D]
Function	Over and under voltage, phase sequence, phase loss relay. 3-phase+N AC TRMS (measures its own power supply). N versions without phase sequence detection. 50 Hz - 400 Hz [M44] 2 setpoints separately adjustable. Delay time adjustable.	Asymmetry, phase sequence, phase loss relay. 3-phase +N AC TRMS (measures its own power supply). Wide input voltage range, 50 Hz - 400 Hz [M44] Adjustable asymmetry. Delay time adjustable.	Over and under voltage, asymmetry and tolerance, phase sequence, phase loss relay. 3-phase+N AC TRMS (measures its own power supply) 50 Hz - 400 Hz [M44]. Setpoint separately adjustable by function.	Over and under voltage, asymmetry and tolerance, phase sequence, total and partial phase loss relay. 3-phase+N AC TRMS (measures its own power supply). Setpoints separately adjustable by function.
Input specifications				
Measuring range	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 208 - 480 VAC [M44]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 208 - 480 VAC [M44]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69] 750 - 1000 VAC [M1K] Frequency 50 - 60 Hz 100 - 115 VAC [M11 400Hz] 208 - 240 VAC [M23 400Hz] 380 - 415 VAC [M48 400Hz] 440 - 480 VAC [M49 400Hz] 600 - 690 VAC [M69 400Hz] 208 - 690 VAC [M44] Frequency 50 - 400 Hz	208 - 240 VAC [M23] 380 - 480 VAC [M48]
Output specifications				
Type	1 x SPDT relay	1 x SPDT relay	2 x SPDT relays	2 x SPDT relays
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] [W] 208 - 480 VAC [M44]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] [W] 208 - 480 VAC [M44]	100 - 115 VAC [M11] 208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 440 - 480 VAC [M49] 600 - 690 VAC [M69] 208 - 690 VAC [M44] 750 - 1000 VAC [M1K]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]
Approvals/Marks	CE - cULus - CCC	CE - cULus - CCC	CE - cULus - CCC - RINA	CE - UL - CSA
References				
	DPB01C M23	**DPB02C M23**	**DPC01D M23**	**DPC71D M23**
	PPB01C M23	**PPB02C M23**	**PPC01D M23**	**DPC71D M48**
	DPB01C M23 N	**DPB02C M44**	**DPC01D M44**	
	PPB01C M23 N	**PPB02C M44**	**DPC01D M48**	
	DPB01C M44	**DPB02C M48**	**PPC01D M48**	
	PPB01C M44	**PPB02C M48**	**DPC01D M69**	
	DPB01C M48		**DPC01D M11 400HZ**	
	PPB01C M48		**DPC01D M23 400HZ**	
	DPB01C M48 W4		**DPC01D M48 400HZ**	
	PPB01C M48 W4		**DPC01D M49 400HZ**	
	DPB01C M48 N		**DPC01D M69 400HZ**	
	PPB01C M48 N		**DPC01D M1K**	
	DPB01C M48 N W4			
	PPB01C M48 N W4			

CARLO GAVAZZI

Monitoring relays

	3-phase multifunction voltage relays		Interface protection relays
Types	**DPC 02**	**DPD 02**	**PI-DIN**
			
Dimensions HxWxD (mm)	80 x 45 x 99.5 [D]	80 x 22.5 x 99.5	90 x 71.6 x 66.3
Description	Over and under voltage, over and under frequency, phase sequence, phase loss relay. 3-phase+N AC TRMS (measures its own power supply). Setpoints separately adjustable. Separately adjustable delay times. Adjustable frequency range.	Over and under voltage,over and under frequency, asymmetry detection, phase loss and phase sequence relay. NFC communication. 3-phase / 3-phase+N AC TRMS (measures its own power supply). Digital settings, setpoints separately adjustable. Separately adjustable delay times. Adjustable frequency range.	1- or 3-phase systems relay interface protection.
Measuring input			
Voltage range	208 - 240 VAC [M23] 380 - 415 VAC [M48] 440 - 480 VAC [M49] 600 - 690 VAC [M69] 208 - 690 VAC [M44]	208 VAC - 480 VAC	230 V_{LN}, 400 V_{LL}
Frequency range	50 / 60 Hz	50 - 400 Hz	47.5 to 51.5 Hz
Display			LCD, 2 lines 4 dgt, 1 line 8 dgt
Signal inputs			
VDE-AR-N-4105			2 digitals
CEI 0-21			4 digitals
Output specifications			
Type	2 x SPDT relays	2 x SPDT relays	2 x SPDT relays
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A @ 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
Serial communication protocol			RS485
Protocol			Modbus RTU
General specifications			
Power supply	208 - 240 VAC [M23] 308 - 415 VAC [M48] 440 - 480 VAC [M49] 600 - 690 VAC [M69] 208 - 690 VAC [M44]	208 VAC - 480 VAC	115..230 VCA -20% +15% (48..62 Hz) Option 24 VDC -20% +10%
Approvals/Marks	CE - cULus - CCC - RINA	CE - cULus - CCC - RINA	CE - VDE-AR-N4105:2018 - CEI-0-21 - ER-G98-Issue-1-Am-1 - ER-G99-Issue-1-Am-3 - Dansk Energi
References			
	DPC02D M23	**DPD02D M44**	
	DPC02D M48	**DPD02D M44B**	
	DPC02D M44		
	DPC02D M49		
	DPC02D M69		
CEI 0-21 (AC aux power)			**PIDIN0021HI4R2S1XX**
CEI 0-21 (DC aux power)			**PIDIN0021LI4R2S1XX**
VDE-AR-N 4105:2018; CEI 0 - 21; ER G98 Issue 1 Am 1; ER G99 Issue 1 Am 3; Dansk Energi (AC aux power)			**PIDIN0126HI2R2S1XX**
VDE-AR-N 4105:2018; CEI 0 - 21; ER G98 Issue 1 Am 1; ER G99 Issue 1 Am 3; Dansk Energi (DC aux power)			**PIDIN0126LI2R2S1XX**

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Monitoring relays

	Frequency relays		Cosφ relays
Types	**DFB 01 PFB 01**	**DFC 01**	**DWA 01 PWA 01**
			
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over and under frequency relay. 1-phase AC (measures its own power supply). 2 setpoints separately adjustable. Delay time adjustable.	Over and under frequency relay. 1-phase AC (measures its own power supply). 2 setpoints separately adjustable. 2 separately adjustable delay times. 2 separate relay outputs.	Cosφ relay. 1- or 3-phase AC (measures its own power supply). Direct input or through external CT. Power ON delay adjustable.
Input specifications			
Measuring range	50 / 60 Hz	50 / 60 Hz	cosφ: 0.1-0.99
Output specifications			
Type	1 x SPDT relay	2 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24 - 240 VAC	24 - 48 VAC [B48] 115 - 230 VAC [B23]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DFB01C M24	**DFC01D B48**	**DWA01C M23 5A**
	PFB01C M24	**DFC01D B23**	**PWA01C M23 5A**
			DWA01C M48 5A
			PWA01C M48 5A

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Monitoring relays

Power and power factor relays

Types	DWB 01 PWB 01	DWB 02 PWB 02	DWB 03 PWB 03
			
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Function	Power factor relay. 1- or 3-phase (measures its own power supply) AC TRMS. Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable.	Active power relay. 1- or 3-phase (measures its own power supply) AC TRMS. Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable.	Active power, with power direction, relay. 1- or 3-phase AC TRMS (measures its own power supply). Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable.
Input specifications			
Measuring range	Power factor: 0.1 - 0.99	208 - 690 VAC 0.5 - 5 AAC 1 - 10 AAC 0.4 - 4 V_P	208 - 690 VAC 0.5 - 5 AAC 1 - 10 AAC 0.4 - 4 V_P
Output specifications			
Type	1 x SPDT relays	1 x SPDT relays	1 x SPDT relays
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DWB01C M23 10A	**DWB02C M23 10A**	**DWB03C M23 10A**
	PWB01C M23 10A	**PWB02C M23 10A**	**PWB03C M23 10A**
	DWB01C M48 10A	**DWB02C M48 10A**	**DWB03C M48 10A**
	PWB01C M48 10A	**PWB02C M48 10A**	**PWB03C M48 10A**
	DWB01C M69 10A	**DWB02C M69 10A**	**DWB03C M69 10A**

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Monitoring relays

		Motor thermistor relays		Pump alternating relays
Types	**DTA 01 / PTA 01 DTA 02 / PTA 02**	**DTA 71 DTA 72**	**DTA 04**	**DLA 71 DLA 73**
				
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 80 x 36 x 94	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5	81 x 35.5 x 67.2 [Mini-D]
Function	Motor Thermistor relays. PTC insulated input. Automatic set-point. Short circuit detection. Latch, test and reset function [DTA02, PTA02].	Motor Thermistor relays. PTC insulated input. Automatic set-point. Short circuit and Open Circuit detection. Automatic Reset [DTA71] Auto or Manual reset, local or remote, test and ready for reset functions [DTA72].	Motor Thermistor relays. PTC insulated input. Automatic set-point. Short circuit and Open Circuit detection. Automatic or manual Reset, test, ready for reset functions.	Pump alternating relay. For 2 or 3 pumps. Differential or sequential mode. Automatic rotation of the pumps. Output relay managed by one independent input contact [DLA73].
Output specifications				
Type	1 x SPDT relay or 1 x SPST relay	1 x SPDT relay [DTA71] 2 x SPDT relay [DTA72]	2 x SPST relays	2 x SPST relay [DLA71] [2P] 3 x SPST relay [DLA71] [3P] 3 x SPST relay [DLA73]
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24 - 48 VAC/DC [D48] 115 VAC [115] 230 VAC [230]	24 - 240 VAC/DC	24 - 240 VAC/DC	24 / 48 VAC [B48] 115 / 230 VAC [B23]
Approvals/Marks	CE - UL - CSA	CE - cULus	CE - cULus	CE - UL - CSA
References				
	DTA01C D48	**DTA71CM24**	**DTA04DM24**	**DLA71D B48 2P**
	DTA01C 115	**DTA72DM24**		**DLA71T B48 3P**
	DTA01C 230			**DLA71D B23 2P**
	DTA02C D48			**DLA71T B23 3P**
	DTA02C 115			**DLA73T B23 2P**
	DTA02C 230			**DLA73T B48 2P**
	PTA01C D48			
	PTA01C 115			
	PTA01C 230			
	PTA02C D48			
	PTA02C 115			
	PTA02C 230			

CARLO GAVAZZI

Timers

Delay on operate

Types	DAA 01 PAA 01	DAA 51 DAA 71	FAA 01 FAA 08	
				
Dimensions HxWxD (mm) DIN-rail housing	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]		
Plug-in housing	80 x 36 x 94 [P]		48 x 48 x 83.4	
Function	Delay on operate (manual start).	Delay on operate (automatic start).	Delay on operate. Symmetrical recycler. Interval. One shot.	
Input specifications				
Time range	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	Full scale 12 0.02 - 1.2 s 0.2 - 12 s 2 - 120 s 0.2 - 12 m 2 - 120 m 0.2 - 12 h 2 - 120 h	Full scale 30 0.05 - 3 s 0.5 - 30 s 5 - 300 s 0.5 - 30 m 5 - 300 m 0.5 - 30 h 5 - 300 h
Output specifications				
	1 x SPDT relay [C] 2 x SPDT relays [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x DPDT relay 11-pin [01] 8-pin [08]	
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	
General specifications				
Power supply	24 VDC / 24 - 240 VAC [C] 24 - 240 VAC/DC [D]	24 VDC / 24-240 VAC [CM24] 24-240 VAC/DC [DM24] 12-240 VAC/DC [DW24]	12-240 VAC/DC	
Approvals/Marks	CE - cULus	CE - UL - CSA - RINA [DAA51] - CCC [DAA51]	CE - UL - CSA	
References				
	DAA01C M24	**DAA51C M24**	**FAA01D W24**	
	PAA01C M24	**DAA71D M24**	**FAA08D W24**	
	DAA01D M24	**DAA71D W24**		
	PAA01D M24			

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Timers

	Delay on operate	Delay on release	
Types	**HAA 08 HAA 14**	**DBA 02 PBA 02**	**DBA 52**
			
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	28 x 21.5 x 64	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]
Function	Delay on operate. Symmetrical recycler with ON or OFF first. Interval.	Delay on release.	Delay on release.
Input specifications			
Time range	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h
Output specifications			
	1 x 4PDT relay [Q] 1 x DPDT relay [D] 14-pin [14] 8-pin [08]	1 x SPDT relay	1 x SPDT relay
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24-240 VAC/DC	24 VDC / 24-240 VAC	24 VDC / 24-240 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA - CCC
References			
	HAA14Q M24	**DBA02C M24**	**DBA52C M24**
	HAA08D M24	**PBA02C M24**	

Timers

	True delay on release		Recycler	
Types	**D/PBB 01 D/PBB 02**	**DBB 51**	**DCB 01 PCB 01**	**DCB 51**
				
Dimensions HxWxD (mm) DIN-rail housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]
Function	True delay on release.	True delay on release.	Asymmetrical recycler with ON and OFF time first. One shot. Two state delay on operate.	Asymmetrical recycler with ON or OFF first.
Input specifications				
Time range	D/PBB01: 0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s D/PBB02: 60 s - 600 s / 0.1 h - 1 h 1 h - 10 h	1 s - 10 s [10S] 6 s - 60 s [1M] 60 s - 600 s [10M]	0.1 - 1 s / 1 - 10 s 6 - 60 s / 60 s - 600 s 0.1 h 1 h / 1 h - 10 h 10 h - 100 h	0.1 - 1 s / 1 - 10 s 6 - 60 s / 60 s - 600 s 0.1 h 1 h / 1 h - 10 h 10 h - 100 h
Output specifications				
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay	1 x SPDT relay [C] 2 x SPDT relays [D]	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24-240 VAC/DC [M24] 12-24 VDC [724]	24 VDC / 24-240 VAC	24 VDC / 24-240 VAC [C] 24-240 VAC/DC [D]	24 VDC / 24-240 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - cULus	CE - cULus
References				
	DBB01C M24	**DBB51C M24 10S**	**DCB01C M24**	**DCB51C M24**
	PBB01C M24	**DBB51C M24 1M**	**PCB01C M24**	
	DBB01D M24	**DBB51C M24 10M**	**DCB01D M24**	
	PBB01D M24		**PCB01D M24**	
	DBB01C 724			
	PBB01C 724			
	DBB01D 724			
	PBB01D 724			
	DBB02C M24			
	PBB02C M24			
	DBB02D M24			
	PBB02D M24			

Timers

Multifunction

Types	DMB 01 PMB 01	DMB 51 DMB 71	FMB 01	DMC 01 PMC 01
				
Dimensions HxWxD (mm) DIN-rail housing	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]		80 x 22.5 x 99.5 [D] 80 x 45 x 99.5 [D]
Plug-in housing	80 x 36 x 94 [P]		48 x 48 x 83.4	80 x 36 x 94 [P]
Function	• Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	• Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • tInterval on trigger open	• (Trigger, Gate and Reset inputs) • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	• Delay on operate - manual start • Delay on operate - automatic and manual start • Delay on release • Interval - manual start • Interval - automatic and manual start • Interval - manual start with no time reset • Interval - automatic and manual start with no time reset
Input specifications				
Time range	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	Full scale: 12 0.02 - 1.2 s / 0.2 - 12 s 2 - 120 s / 0.2 - 12 m 2 - 120 m / 0.2 - 12 h 2 - 120 h Full scale: 30 0.05 - 3 s / 0.5 - 30 s 5 - 300 s / 0.5 - 30 m 5 - 300 m / 0.5 - 30 h 5 - 300 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h
Output specifications				
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x DPDT relay	1 x SPDT relay [C] 2 x SPDT relay [D]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations	>1 x 10^5 operations
General specifications				
Power supply	24 VDC & 24-240 VAC [C] 24-240 VAC/DC [D]	24 VDC & 24-240 VAC [M24] 12-240 VAC/DC [W24]	12-240 VAC/DC	24 VDC [724] 24 / 48 VAC [B48] 115 / 230 VAC [B23] 24 VAC [024] 115 VAC [115] 230 VAC [230]
Approvals/Marks	CE - UL - CSA - RINA [DMB01]	CE - UL - CSA - RINA [DMB51] - CCC [DMB51]	CE - UL - CSA	CE - UL - CSA
References				
	DMB01C M24	**DMB51C M24**	**FMB01D W24**	**DMC01C xxx**
	PMB01C M24	**DMB51C W24**		**PMC01C yyy**
	DMB01D M24	**DMB71D M24**		**DMC01D xxx**
	PMB01D M24	**DMB71D W24**		**PMC01D yyy**
				xxx= 724, B23, B48 yyy= 724, 024, 115, 230

Timers

	Mini-E timers	Star delta	
Types	**EAS EBS ECS**	**DAC 01/PAC 01**	**DAC 51**
			
Dimensions HxWxD (mm) DIN-rail housing	56 x 22.5 x 49 [Mini-E] 56 x 22.5 x 44 [Mini-E] [F]	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]
Plug-in housing		80 x 36 x 94 [P]	
Function	EAS - Delay on operate (automatic start). EBS - Interval (automatic start). ECS - Symmetrical recycler (ON/OFF automatic start) thyristor output. Screw or fast-ON connection. DIN-rail or chassis mounting	Star delta	Star delta
Input specifications			
Time range	[10S]: 0.5 s - 10 s [1M]: 0.1 m - 1 m [10M]: 1 m - 10 m	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s
Star to delta relay (neutral centre position)		50 - 130 ms between star to delta position	50 - 130 ms between star to delta position
Output specifications			
	Static output 500 mA, 700 mA [F]	1 x SPDT relay (with neutral centre position)	1 x SPDT relay (with neutral centre position)
Max. load AC1		8 A / 250 VAC	5 A / 250 VAC
Max. load DC12		5 A / 24 VDC	5 A / 24 VDC
Electrical life		>1 x 10^5 operations	>1 x 10^5 operations
General specifications			
Power supply	24-230 VAC/DC [EAS] 24-230 VAC [EBS], [ECS]	24-240 VAC/DC [M24] 380-415 VAC [M40]	24-240 VAC/DC
Approvals/Marks	CE - UL - CSA	CE - cULus	CE - cULus
References			
	EAS S M23 . . .	**DAC01C M24**	**DAC51C M24**
	EAS S M23 . . . F	**PAC01C M24**	
	EBS S M23 . . .	**DAC01C M40**	
	EBS S M23 . . . F	**PAC01C M40**	
	ECS S M23 A . . .		
	ECS S M23 B . . .		
	ECS S M23 A . . . F		
	ECS S M23 B . . . F		
	. . . = insert code for Time Range		

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