



S142 - Photoelectric amplifiers

Sensors

S142 Series

Photoelectric amplifiers

Our 3rd generation of the S142 photoelectric solutions is designed for harsh environments such as car washes, cement works, woodworking machinery, doors to cold stores and any other application that requires a robust sensing system which is easy to install and service. The system offers attractive features such as easy alignment, diagnostics, high neighbour immunity as well as automatic distance control.



A powerful solution for harsh environments

Easy alignment

Integrated alignment control allows optimized adjustment of the sensors by means of various help features, such as the built-in yellow flashing LEDs or remote connected sensor tester for audio or visual alignment help.

Distance setup

Our systems offer two distance setup modes: automatic adjustment or manual adjustment by means of the potentiometer.

Excess gain and maximum distance is selectable via the DIPswitches.

Built-in diagnostics

The sensor's advanced diagnostic functions by means of LED indication make fault finding easy and quick reducing costly downtime on a machine.

High neighbour immunity

Highest neighbour immunity is achieved by using the S142C version with multiplex (Master/Slave) function. For faster reaction time the S142A or B versions offer an emitter coded solution reducing crosstalk from two neighbouring systems.

Sensor test function

A mute input on S142A or B allows the sensor system to be remote tested in order to comply with the European and North American standards for Industrial Automatic Doors.

Backward compatibility

Due to its backward compatibility, S142A, B or C can easily replace systems in existing applications which are using our MOF-series sensors.

Approvals

European Door Standards: EN12445, EN12453, EN12978
UL325, UL508, CSA-C22.2 No.247



Easy setup

Distance setup

- Automatic mode by turning the potentiometer fully counterclockwise
- Manual mode by turning the potentiometer clockwise away from Automatic mode

Easy alignment

In Alignment mode the yellow quality LED flashes slowly for weak alignment and shines constantly for accurately aligned sensors.

Dirt reserve

For optimal detection, excess gain settings can be selected using the Level Low/High DIP switch:

- High: Allows high dirt accumulation
- Low: Allows detection of semitransparent objects



Diagnostics

In case of a defective sensor the diagnostic LED flashes:

- Slow flashing green: Short-circuit, emitter
- Fast flashing green: Broken cable, emitter
- Slow flashing yellow: Short-circuit, receiver
- Fast flashing yellow: Broken cable, receiver

Neighbour immunity

To increase neighbour immunity between close sensors, the emitter code "A" or "B" can be selected.

Power settings

To prevent the emitter from becoming too strong, power can be reduced to 50% by reducing the max. distance to 25%.

Description

S142A.... Standard



S142A.. is an amplifier with sensor diagnostics and adjustable sensing distance.

- 8 A SPDT relay output, NPN / PNP transistor output or alarm output.
- Diagnostics for sensor test during operation.
- Alignment help via LED or alternation of alarm output.
- Level indication for dirt accumulation.
- Manual or automatic emitter power regulation.
- Two emitter codes available for high neighbour immunity.

S142B.... Time delay



S142B.. is an amplifier with sensor diagnostics and adjustable sensing distance.

- 8 A SPDT relay output, NPN / PNP transistor output or alarm output.
- Diagnostics for sensor test during operation.
- Alignment help via LED or alternation of alarm output.
- Level indication for dirt accumulation.
- Manual or automatic emitter power regulation.
- Two emitter codes available for high neighbour immunity.
- ON- or OFF delay adjustable up to 10 sec.

S142C.... Master/slave



S142C.. is an amplifier with sensor diagnostics and adjustable sensing distance.

- 8 A SPDT relay output.
- Diagnostics for sensor test during operation.
- Alignment help via LED.
- Level indication for dirt accumulation.
- Manual or automatic emitter power regulation.
- Master/ Slave system fully multiplexed for high neighbour immunity.
- Two emitter codes available for high neighbour immunity between two separate master/slave networks.

Through-beam sensors for S142 amplifiers

MOFT emitter



MOFT20
 Housing diameter Ø10
 Rated operating distance 20 m
 Optical angle 2°

MOFT50
 Housing diameter Ø10
 Rated operating distance 50 m
 Optical angle 2°

MOFT20-5
 Housing diameter Ø10
 Rated operating distance 20 m
 Optical angle 5°



MOFT20-8
 Housing diameter Ø10
 Rated operating distance 20 m
 Optical angle 8°



MOFT20-M12-2
 Housing diameter M12
 Rated operating distance 20 m
 Optical angle 2°

MOFT50-M12-2
 Housing diameter M12
 Rated operating distance 50 m
 Optical angle 2°

MOFT20-M12-5
 Housing diameter M12
 Rated operating distance 20 m
 Optical angle 5°



MOFT20-M12-8
 Housing diameter M12
 Rated operating distance 20 m
 Optical angle 8°



MOFT20-M14-8
 Housing diameter M14
 Rated operating distance 20 m
 Optical angle 8°

MOFR receiver



MOFR
 Housing diameter Ø10
 Optical angle 2°

MOFR
 Housing diameter Ø10
 Optical angle 2°

MOFR-5
 Housing diameter Ø10
 Optical angle 5°



MOFR-8
 Housing diameter Ø10
 Optical angle 8°



MOFR-M12-2
 Housing diameter M12
 Optical angle 2°

MOFR-M12-2
 Housing diameter M12
 Optical angle 2°

MOFR-M12-5
 Housing diameter M12
 Optical angle 5°



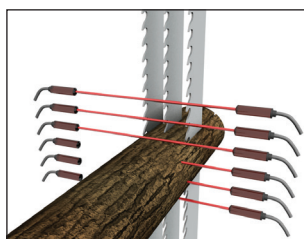
MOFR-M12-8
 Housing diameter M12
 Optical angle 8°



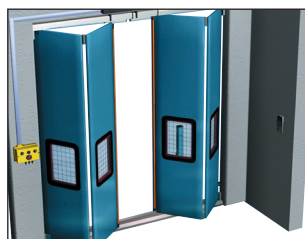
MOFR-M14-8
 Housing diameter M14
 Optical angle 8°

All sensors are also available as ATEX versions.

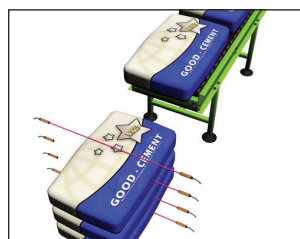
Applications



Wood industry



Industrial automatic doors



Packaging



Car washes

Specifications

	S142A	S142B	S142C
1 x SPDT relay 1 x NPN output 1 x NPN alarm output	S142ARNN924	S142BRNN924	-
	S142ARNN024	S142BRNN024	-
	S142ARNN115	S142BRNN115	-
	S142ARNN230	S142BRNN230	-
1 x SPDT relay 1 x NPN Output or alarm output 1 x Emitter mute input	S142ARNT924	S142BRNT924	-
	S142ARNT024	S142BRNT024	-
	S142ARNT115	S142BRNT115	-
	S142ARNT230	S142BRNT230	-
1 x SPDT relay 1 x NPN alarm output 1 x Emitter mute input	S142APPT924	S142BPPT924	-
	S142APPT115	S142BPPT115	-
	S142APPT230	S142BPPT230	-
1 x SPDT relay Auto distance adjustment	-	-	S142CRXA924
	-	-	S142CRXA115
	-	-	S142CRXA230
1 x SPDT relay Manual distance adjustment	-	-	S142CRXM924
	-	-	S142CRXM115
	-	-	S142CRXM230
Rated operational voltage	..924: 24 VAC/DC; ..024: 24 VAC; ..115: 115 VAC; ..230: 230 VAC		
Relay load current resistive load	10 A @ 250 VAC / 25 VDC SPD		
Transistor load current	100 mA 40 VDC		-
Operating frequency	20 Hz	20 Hz, no timer	15 Hz @ 2 systems 4 Hz @ 6 systems
Sensor protection	Short circuit, reverse polarity and transients		Short circuit
Led indications	Yellow LED: Signal, code B, output; Green LED: Code A, auto; Red LED: Alarm		
Degree of protection	IP20 (IEC 60529; 60947-1)		
Ambient temperature	Operating: -20 to +50 °C (-4 to +122 °F), Storage: -50 to +85 °C (-58 to +185 °F)		
Installation category	III (IEC60664)		
Pollution degree	3(IEC60664/60664A; 60947-1)		
Housing material	NORYL SE1, light grey		
Connection	11-pole plug		
Dimension	35 x 80 x 81.5 mm		
Weight	AC supply: 200 g, AC/DC supply: 125 g		
CE marking	According to EN12445, EN12453, EN12978		
Approvals	cURus (IL508, UL325), CSA		

OUR SALES NETWORK IN EUROPE

AUSTRIA

Carlo Gavazzi GmbH
Ketzerergasse 374,
A-1230 Wien
Tel: +43 1 888 4112
Fax: +43 1 889 1053
office@carlogavazzi.at

BELGIUM

Carlo Gavazzi NV/SA
Mechelsesteenweg 311,
B-1800 Vilvoorde
Tel: +32 2 257 41 20
sales@carlogavazzi.be

DENMARK

Carlo Gavazzi Handel A/S
Over Hadstensevej 40,
DK-8370 Hadsten
Tel: +45 89 60 61 00
Fax: +45 86 98 15 30
handel@gavazzi.dk

FINLAND

Carlo Gavazzi OY AB
Ahventie, 4 B
FI-02170 Espoo
Tel: +358 9 756 2000
myynti@gavazzi.fi

FRANCE

Carlo Gavazzi Sarl
Zac de Paris Nord II, 69, rue de la Belle Etoile,
F-95956 Roissy CDG Cedex
Tel: +33 1 49 38 98 60
Fax: +33 1 48 63 27 43
french.team@carlogavazzi.fr

GERMANY

Carlo Gavazzi GmbH
Pfnorstr. 10-14
D-64293 Darmstadt
Tel: +49 6151 81 00 0
Fax: +49 6151 81 00 40
info@gavazzi.de

GREAT BRITAIN

Carlo Gavazzi UK Ltd
4.4 Frimley Business Park,
Frimley, Camberley, Surrey GU16 7SG
Tel: +44 1 276 854110
Fax: +44 1 276 682140
sales@carlogavazzi.co.uk

ITALY

Carlo Gavazzi SpA
Via Milano, 13,
I-20045 Lainate
Tel: +39 02 931 76 1
Fax: +39 02 931 76 301
info@gavazziacbu.it

NETHERLANDS

Carlo Gavazzi BV
Wijkermeerweg 23,
NL-1948 NT Beverwijk
Tel: +31 251 22 93 45
Fax: +31 251 22 60 55
info@carlogavazzi.nl

NORWAY

Carlo Gavazzi AS
Melkeveien 13,
N-3919 Porsgrunn
Tel: +47 35 93 08 00
Fax: +47 35 93 08 01
post@gavazzi.no

PORTUGAL

Carlo Gavazzi Lda
Rua dos Jerónimos 38-B,
P-1400-212 Lisboa
Tel: +351 21 361 70 60
Fax: +351 21 362 13 73
carlogavazzi@carlogavazzi.pt

SPAIN

Carlo Gavazzi SA
Avda. Iparraguirre, 80-82,
E-48940 Leioa (Bizkaia)
Tel: +34 94 480 40 37
Fax: +34 94 431 60 81
gavazzi@gavazzi.es

SWEDEN

Carlo Gavazzi AB
V:a Kyrkogatan 1,
S-652 24 Karlstad
Tel: +46 54 85 11 25
Fax: +46 54 85 11 77
info@carlogavazzi.se

SWITZERLAND

Carlo Gavazzi AG
Verkauf Schweiz/Vente Suisse
Sumpfstrasse 3,
CH-6312 Steinhausen
Tel: +41 41 747 45 35
Fax: +41 41 740 45 40
info@carlogavazzi.ch

OUR SALES NETWORK IN THE AMERICAS

USA

Carlo Gavazzi Inc.
750 Hastings Lane,
Buffalo Grove, IL 60089-6904, USA
Tel: +1 847 465 61 00
Fax: +1 847 465 73 73
sales@carlogavazzi.com

CANADA

Carlo Gavazzi Inc.
2660 Meadowvale Boulevard,
Mississauga, ON L5N 6M6, Canada
Tel: +1 905 542 0979
Fax: +1 905 542 2248
gavazzi@carlogavazzi.com

MEXICO

Carlo Gavazzi Mexico S.A. de C.V.
Circuito Puericultores 22, Ciudad Satelite
Naucalpan de Juárez, Edo Mex. CP 53100
Mexico
T +52 55 5373 7042
F +52 55 5373 7042
mexicosales@carlogavazzi.com

BRAZIL

Carlo Gavazzi Automação Ltda.
Av. Francisco Matarazzo, 1752
Conj 2108 05001-200 - São Paulo - SP
Tel: +55 11 3052 0832
Fax: +55 11 3057 1753
info@carlogavazzi.com.br

OUR SALES NETWORK IN ASIA AND PACIFIC

SINGAPORE

Carlo Gavazzi Automation Singapore Pte. Ltd.
61 Tai Seng Avenue #05-06
Print Media Hub @ Paya Lebar iPark
Singapore 534167
Tel: +65 67 466 990
Fax: +65 67 461 980
info@carlogavazzi.com.sg

MALAYSIA

Carlo Gavazzi Automation (M) SDN. BHD.
D12-06-G, Block D12,
Pusat Perdagangan Dana 1,
Jalan PJU 1A/46, 47301 - Petaling Jaya,
Selangor, Malaysia
Tel: +60 3 7842 7299
Fax: +60 3 7842 7399
info@gavazzi-asia.com

CHINA

Carlo Gavazzi Automation
(China) Co. Ltd.
Unit 2308, 23/F.,
News Building, Block 1, 1002
Middle Shennan Zhong Road, Futian District,
Shenzhen, China
Tel: +86 755 8369 9500
Fax: +86 755 8369 9300
sales@carlogavazzi.cn

HONG KONG

Carlo Gavazzi Automation
Hong Kong Ltd.
Unit No. 16 on 25th Floor, One Midtown,
No. 11 Hoi Shing Road, Tsuen Wan,
New Territories, Hong Kong
Tel: +852 26261332 / 26261333
Fax: +852 26261316

TAIWAN

Branch of Carlo Gavazzi Automation
Singapore Pte. Ltd.
22F-1, No.500 Shizheng Rd, Xitun Dist,
Taichung City 407,
Taiwan, China
Tel: +886 4 2258 4001
Fax: +886 4 2258 4002

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DENMARK

Carlo Gavazzi Industri A/S
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Kaunas

CHINA

Carlo Gavazzi Automation (Kunshan) Co., Ltd.
Kunshan

HEADQUARTERS

Carlo Gavazzi Automation SpA
Via Milano, 13
I-20045 - Lainate (MI) - ITALY
Tel: +39 02 931 76 1
info@gavazziautomation.com

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