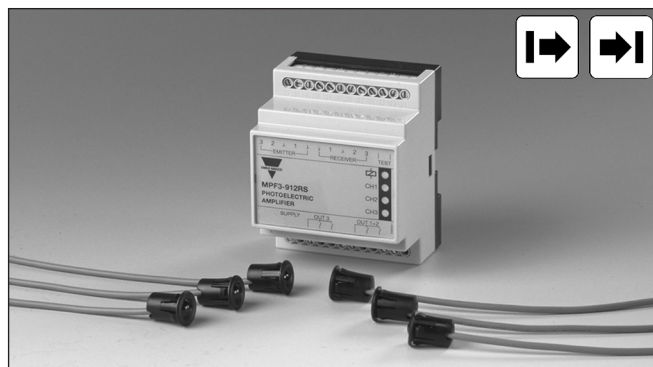


Photoelectrics Through-beam System, Relay Output Type MPF.RS

CARLO GAVAZZI



- Industrial doors and gates
- Range: 15 m
- Modulated infrared light
- Option with individually adjustable channel sensitivity
- Amplifier with "Snap-ON" photoelectric switches
- Supply voltage: 12-24 VAC/DC, 115 VAC or 230 VAC
- Output: SPST relay
- LED indications for light ON and supply ON
- Ø12 mm "Snap-ON", Ø18 or M14 photoelectric housing
- 1, 2 or 3 multiplexed channels
- With make or break test input
- CE, EN12453, EN12978, UL325 (912) and UL508 approved



Product Description

The MPFRS.. is a family of inexpensive general purpose photoelectric sensors in 3 different types of housings with separate amplifier. They are designed to meet the requirements for industrial doors and gates. The "Snap-ON" photo switch can be mounted in material with a thickness from 0.6 mm and up to 2.25 mm. The sensor set is easy to use and no adjustments are necessary. The amplifier has

a test input designed to disable the emitters and therefore evaluate the sensor function. Multiplexed channels prevent cross-talk between each set of photosensors. The amplifiers are available with the following voltages: 12-24 VAC/DC, 115 VAC and 230 VAC. The output is made as positive security e.g. power lost, short-circuit or broken sensor cable makes the relay go to off state.

Ordering Key

Amplifier

MPF 3 230 RS AI

Type _____
 Number of channels _____
 Voltage supply _____
 Output relay _____
 Safety _____
 Adjustable sensitivity _____
 Inverted test input (break) _____

Sensor

MPF T 15 M14 4C

Type _____
 Emitter _____
 Range _____
 Housing diameter _____
 Optical angle _____
 Connectors on cable _____

Type Selection, Amplifier

Housing W x H x D	Ordering no. Supply: 12-24 VAC/DC	Ordering no. Supply: 115 VAC	Ordering no. Supply: 230 VAC
70 x 57 x 86 mm	MPF1-912 RS MPF2-912 RS MPF3-912 RS MPF1-912 RSI *) MPF2-912 RSI *) MPF3-912 RSI *) MPF1-912 RSA *) MPF2-912 RSA *) MPF3-912 RSA *) MPF1-912 RSAI *) MPF2-912 RSAI *) MPF3-912 RSAI *)	MPF1-115 RS MPF2-115 RS MPF3-115 RS MPF1-115 RSI *) MPF2-115 RSI *) MPF3-115 RSI *) MPF1-115 RSA *) MPF2-115 RSA *) MPF3-115 RSA *) MPF1-115 RSAI *) MPF2-115 RSAI *) MPF3-115 RSAI *)	MPF1-230 RS MPF2-230 RS MPF3-230 RS MPF1-230 RSI *) MPF2-230 RSI *) MPF3-230 RSI *) MPF1-230 RSA *) MPF2-230 RSA *) MPF3-230 RSA *) MPF1-230 RSAI *) MPF2-230 RSAI *) MPF3-230 RSAI *)

*) Products available on request

Type Selection, Photoelectric Switch

Housing diameter	Rated operational distance (S _n)	Optical angle	Ordering no. Emitter	Ordering no. Receiver	Ordering no. Fitting
Ø12 mm	15 m	4°	MPFT 15-4	MPFR-4	
M14	15 m	4°	MPFT 15-M14-4	MPFR-M14-4	
D11	15 m	4°	MPF 15-D11-4	MPFR-D11-4	
D18	15 m	4°	MPFT 15-D18-4	MPFR-D18-4	
Ø12 mm	15 m	4°	MPFT 15-4C	MPFR-4C	
M14	15 m	4°	MPFT 15-M14-4C	MPFR-M14-4C	
D11	15 m	4°	MPF 15-D11-4C	MPFR-D11-4C	
D18	15 m	4°	MPFT 15-D18-4C	MPFR-D18-4C	

Fitting for Ø12

AMPF-MB1

Specifications, Amplifier

Rated operational volt. AC types (U_B) Terminals 1 & 3 MPF.- 230 RS. MPF.- 115 RS. MPF.- 912 RS.		Indication function Supply ON Beam ON (no object present)	
Dielectric voltage MPF.- 230 RS.		Environment Overvoltage category Degree of protection Pollution degree	
Rated impulse withstand volt.		Temperature Operating Storage	
Rated operational power MPF.- 912 RS AC supply DC supply		Connection	
MPF.- 115/230 RS AC supply DC supply		Protection output	
Output Specifications Resistive load MPF.-xxx RS, RSA, RSI, RSAI 600.000 switchings 300.000 switchings 100.000 switchings AC15 AC14 DC13		Test input MPF.- 230 RS. MPF.- 115 RS. MPF.- 912 RS. Testfunction activated Testfunction deactivated MPF.- 912 RSI. Testfunction deactivated Testfunction activated	
Rated insulation volt. (U_i) MPF.- 230 RS. MPF.- 115 RS. MPF.- 912 RS.		Housing material	
Operating frequency (f) Light/dark ratio 1:1 Contact output		Weight MPF.- 115/230 RS MPF.- 912 RS	
Response time OFF-ON (t _{ON}) ON-OFF (t _{OFF})		CE-marking	
Power ON delay (t_v)		ESPE category	
Output function MPF1+2 MPF3		Performance level (PL)	
		PFHd	
		Mission Time	
		UL-Approval 912 115/230/912	
			
		LED, green LED, yellow III (IEC 66064) IP 40 (IEC 60529/60947-5-2) 3 (IEC 60664/60664A, 60947-1) -20° to +60°C (-4° to +140°F) -30° to +80°C (-22° to +176°F) Screw terminals (max. 2.5 mm ²) Reverse output, transients, short-circuit Potential-free contact Potential-free contact Max. 28 V@15 mA AC/DC ≥ 3.5 V AC/DC ≤ 1.0 V AC/DC Max. 28 V@15 mA AC/DC ≥ 3.5 V AC/DC ≤ 1.0 V AC/DC PC 280 g 126 g Yes 2 (EN61496-2) d (EN12453) 9.67 x 10 ⁻⁷ Errors per hour (EN ISO 13849-1) 20 years (EN ISO 13849-1) UL325, CSA-C22.2 No.247 UL508	

Specifications, Photoelectric Switches

Rated operation dist. (S_n)	15 m - 8 m (UL 325)	MPFR15-XXX-4C	White connector pair
Light source	LED 880 nm	<i>Connector is placed 15 cm from</i>	<i>sensorhead</i>
Light type	Infrared modulated	Cable	PVC, grey, 10 m, Ø 2.9 mm ²
Ambient light	> 20.000 lux	Degree of protection	IP 67 (IEC 60529/60947-5-2)
Housing material		Mounting	
MPFT15-4/C	PA6 Glass filled	"Snap-ON"	Ø12 mm or fitting
MPFT15-D18-4/C		MPFT15-4/C	
MPFR-4/C		MPFR-4/C	
MPFR-D11-4/C		Rubber profile	D11
MPFR-D18-4/C	PC	MPFT15-D11-4/C	
Housing		MPFR-D11-4/C	
Backpart	ABS	Rubber profile	D18
		MPFT15-D18-4/C	
MPFT15-M14-4/C	Stainless steel/PC	MPFR-D18-4/C	
MPFR15-M14-4/C		Threaded barrel	M14
Housing		MPFT15-M14-4/C	
Backpart		MPFR-M14-4/C	
Connection		CE-marking	Yes
MPFT15-XXX-4	PVC, grey, 10 m, Ø 2.9 mm ²	UL-Approval	
MPFR15-XXX-4		912	UL325, CSA-C22.2 No.247
Cable		115/230/912	UL508
MPFT15-XXX-4C	Red connector pair		



Wiring Diagrams

1) Not MPF1 and MPF2
2) Not MPF1

Test input make, shown for 115/230 version

1) Not MPF1 and MPF2
2) Not MPF1

Test input break, shown for 115/230 version

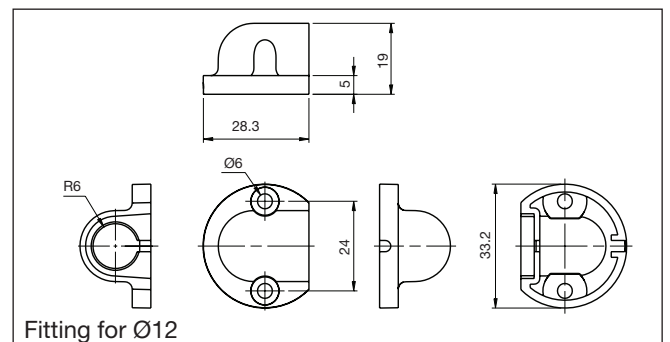
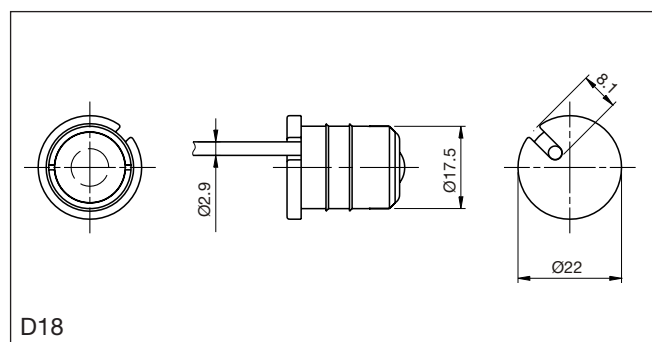
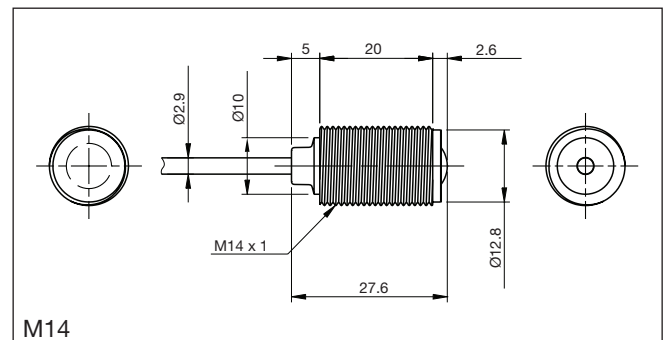
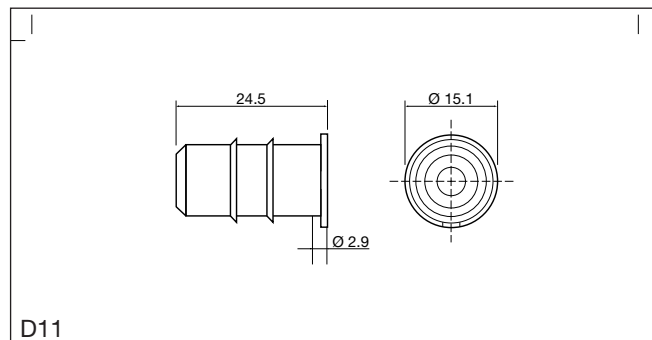
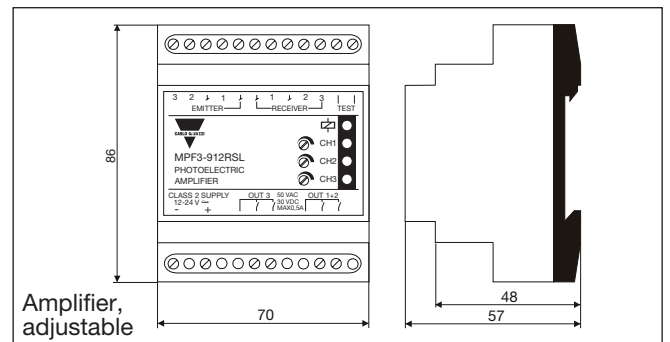
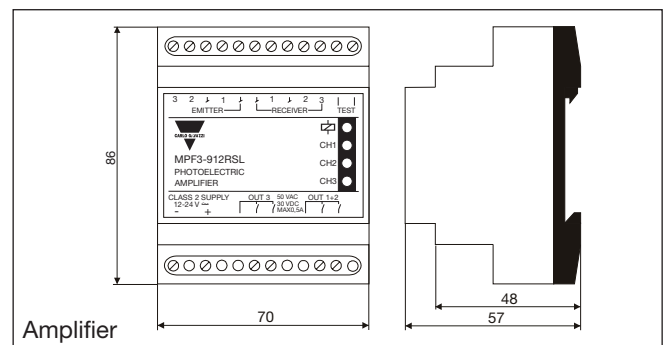
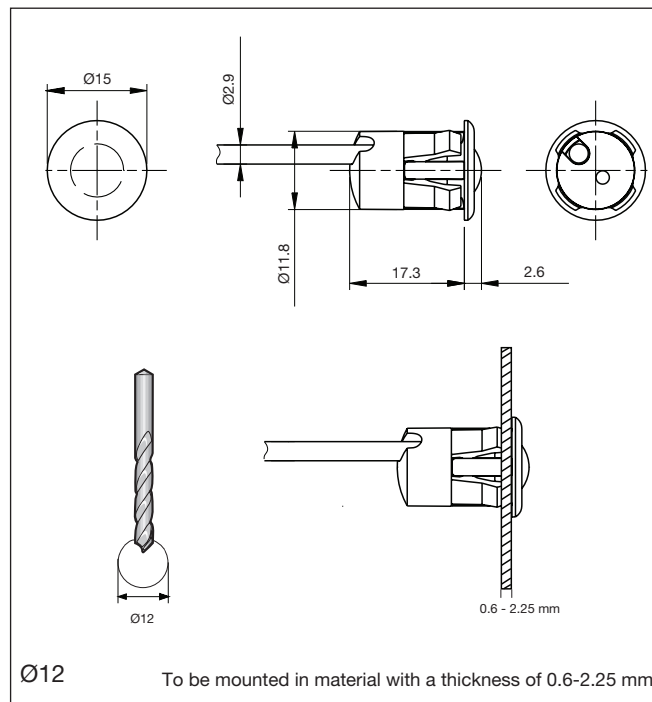
Test input make, shown for 912 version

Test input break, shown for 912 version

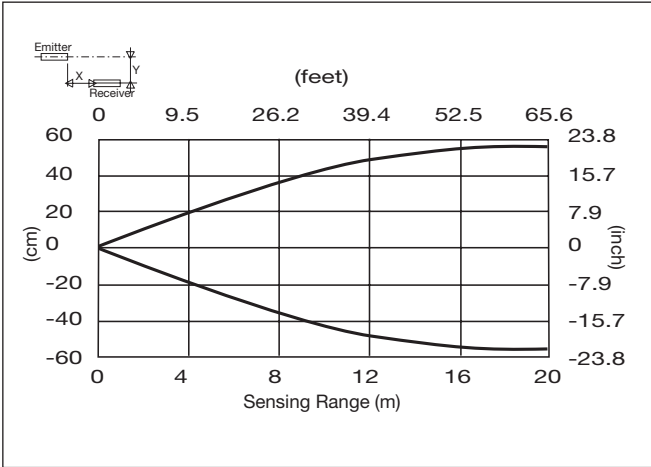
Operation Diagram



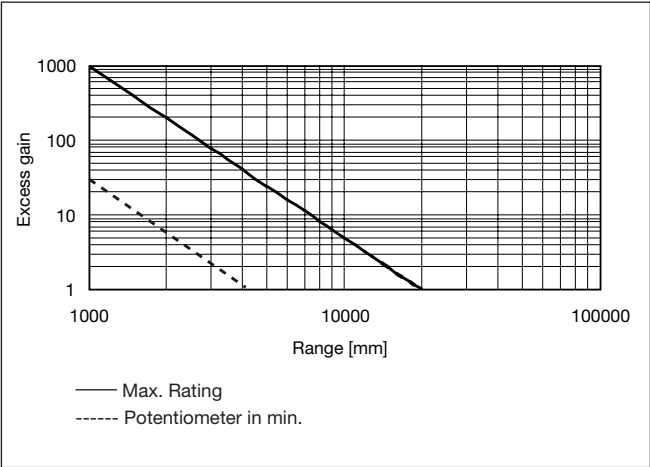
Dimensions



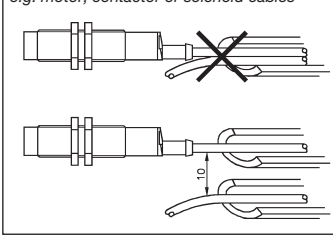
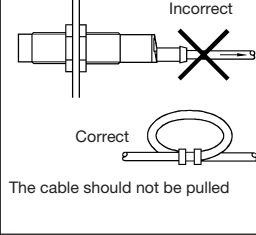
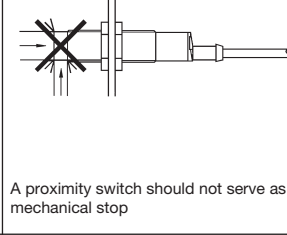
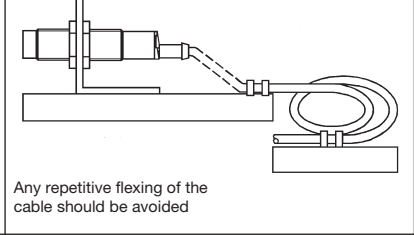
Detection Diagram



Excess Gain



Installation Hints

To avoid interference from inductive voltage/ current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables 	Relief of cable strain  The cable should not be pulled	Protection of the sensing face  A proximity switch should not serve as mechanical stop	Switch mounted on mobile carrier  Any repetitive flexing of the cable should be avoided
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Delivery Contents

- Amplifier, MPF..
- Installation instruction
- **Packaging:** cardboard box