

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

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- 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, UL325 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

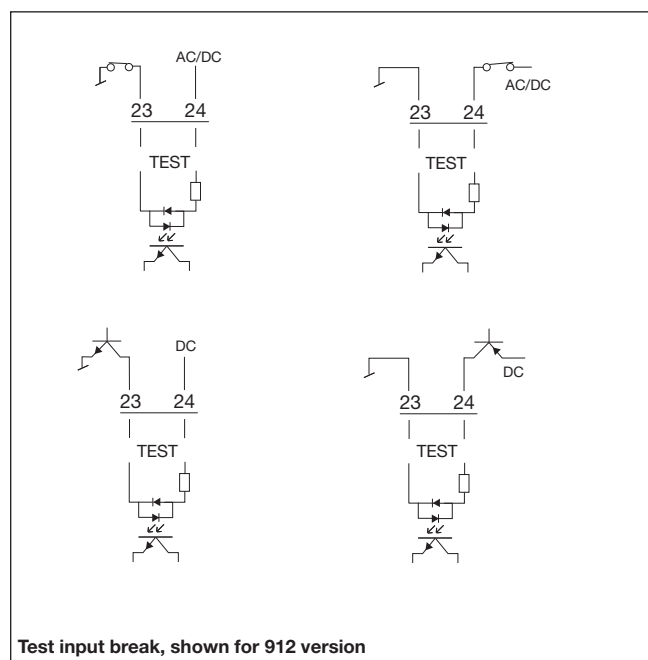
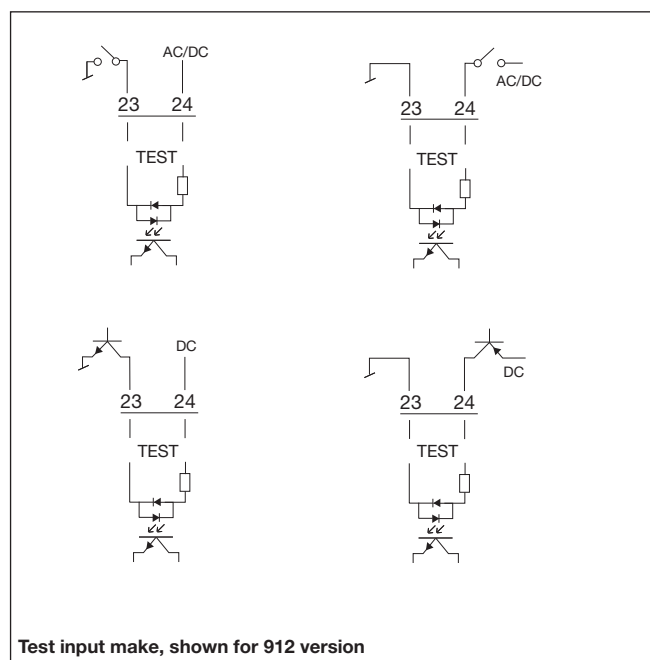
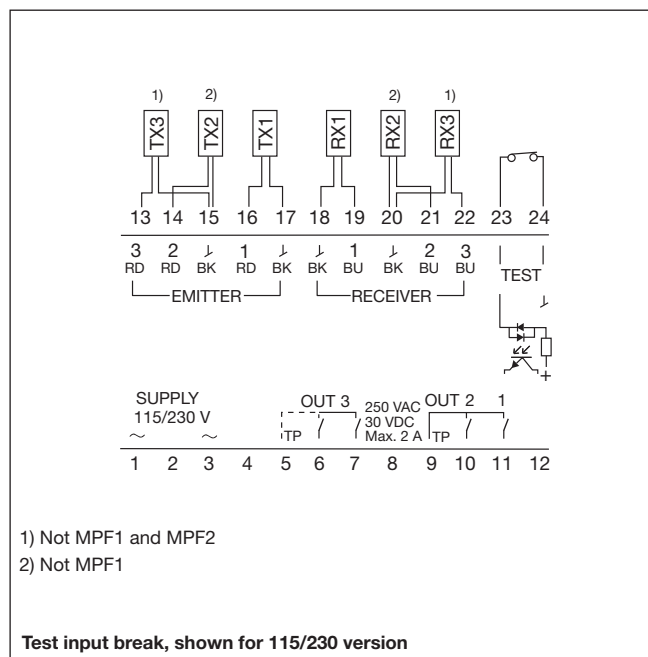
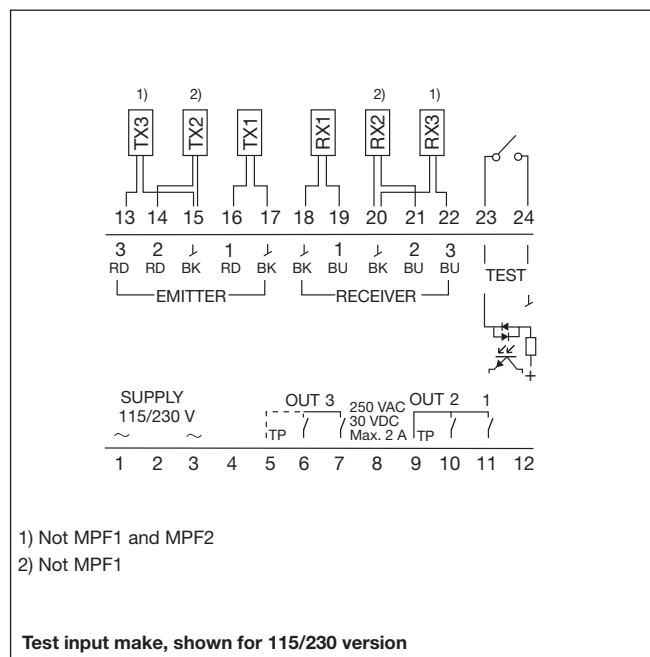
Specifications, Amplifier

Rated operational volt.		Output function	
AC types (U_B)		MPF1+2 MPF3	
Terminals 1 & 3		Relay 2 x SPST Relay 2 x SPST + 2 x SPST	
MPF.- 230 RS.	230 VAC ± 15%, 50 to 60 Hz	Indication function	
MPF.- 115 RS.	115 VAC ± 15%, 50 to 60 Hz	Supply ON	
MPF.- 912 RS.	12-24 VAC/DC ± 15%, 50 to 60 Hz	Beam ON (no object present)	
Dielectric voltage		LED, green LED, yellow	
MPF.- 230 RS.	4 kVAC (rms)	Environment	
Rated impulse withstand volt.		Overvoltage category	
4 kV (1.2/50 μs)		Degree of protection	
Rated operational power		Pollution degree	
MPF.- 912 RS		III (IEC 66064)	
AC supply	3 VA	IP 40 (IEC 60529/60947-5-2)	
DC supply	2 W	3 (IEC 60664/60664A, 60947-1)	
MPF.- 115/230 RS		Temperature	
AC supply	max. 4.5 VA	Operating	
DC supply	max. 4.5 VA	Storage	
Output Specifications		-20° to +60°C (-4° to +140°F)	
Resistive load		-30° to +80°C (-22° to +176°F)	
MPF.-xxx RS, RSA, RSI, RSAI		Connection	
600.000 switchings	1 A@250 VAC/30 VDC	Screw terminals	
300.000 switchings	2 A@250 VAC/30 VDC	(max. 2.5 mm ²)	
100.000 switchings	2 A@250 VAC/30 VDC (UL)	Protection output	
AC15	0.75 A@240 VAC	Reverse output, transients, short-circuit	
AC14	0.60 A@120 VAC	Test input	
DC13	0.22 A@125 VDC	MPF.- 230 RS.	
Rated insulation volt. (U_i)		MPF.- 115 RS.	
MPF.- 230 RS.	250 VAC (rms)	MPF.- 912 RS.	
MPF.- 115 RS.	120 VAC (rms)	Testfunction activated	
MPF.- 912 RS.	50 VAC (rms), 50 VDC	Testfunction deactivated	
Operating frequency (f)		MPF.- 912 RSI.	
Light/dark ratio 1:1		Testfunction deactivated	
Contact output	10 Hz	Testfunction activated	
Response time		Housing material	
OFF-ON (t _{ON})	≤ 50 ms	PC	
ON-OFF (t _{OFF})	≤ 40 ms	Weight	
Power ON delay (t_v)		MPF.- 115/230 RS	
≤ 300 ms		MPF.- 912 RS	
		280 g	
		126 g	
		CE-marking	
		UL-Approval	
		Yes	
		UL325, CSA-C22.2 No.247	
		UL508	
		TÜV-Approval	
		Yes (EN 12453)	

Specifications, Photoelectric Switches

Rated operation dist. (S_n)		MPFR15-XXX-4C	
15 m - 8 m (UL 325)		White connector pair	
Light source		Connector is placed 15 cm from sensorhead	
Light type		Cable	
LED 880 nm		PVC, grey, 10 m, Ø 2.9 mm ²	
Ambient light		Degree of protection	
> 20.000 lux		IP 67 (IEC 60529/60947-5-2)	
Housing material		Mounting	
MPFT15-4/C		"Snap-ON"	
MPFT15-D18-4/C		MPFT15-4/C	
MPFR-4/C		MPFR-4/C	
MPFR-D11-4/C		Rubber profile	
MPFR-D18-4/C		MPFT15-D11-4/C	
Housing	PA6 Glass filled	MPFR-D11-4/C	
Backpart	PC	Rubber profile	
	ABS	MPFT15-D18-4/C	
MPFT15-M14-4/C		MPFR-D18-4/C	
MPFR15-M14-4/C		Threaded barrel	
Housing	Stainless steel/PC	MPFT15-M14-4/C	
Backpart	PTE	MPFR-M14-4/C	
Connection		CE-marking	
MPFT15-XXX-4		UL-Approval	
MPFR15-XXX-4		Yes	
Cable	PVC, grey, 10 m, Ø 2.9 mm ²	UL325, CSA-C22.2 No.247	
MPFT15-XXX-4C		UL508	
Red connector pair		TÜV-Approval	
		Yes (EN 12453)	

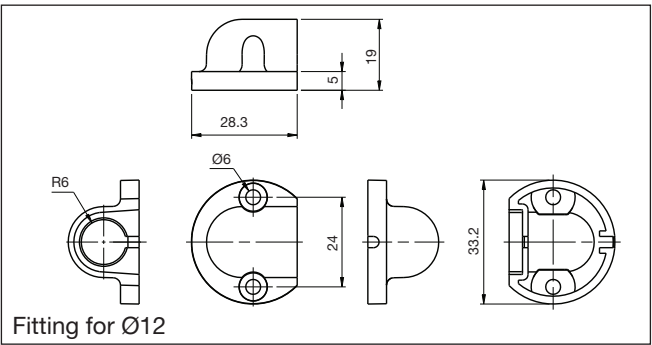
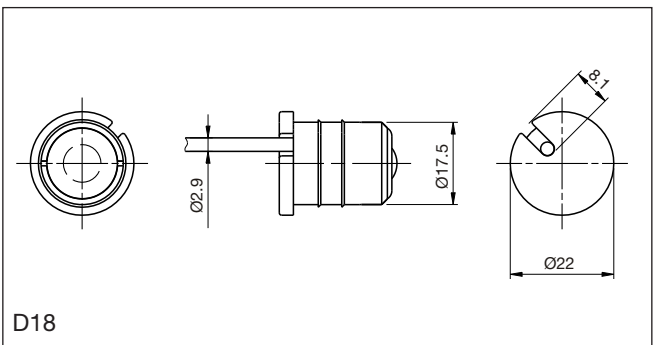
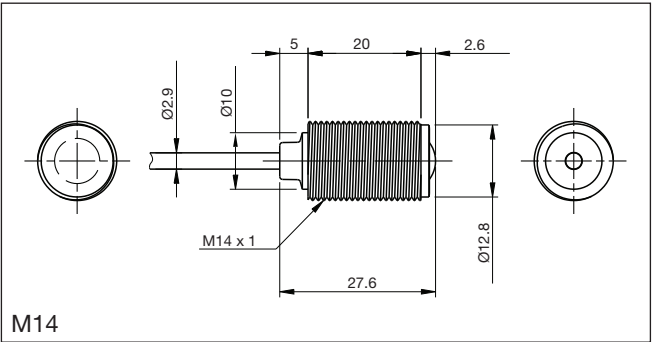
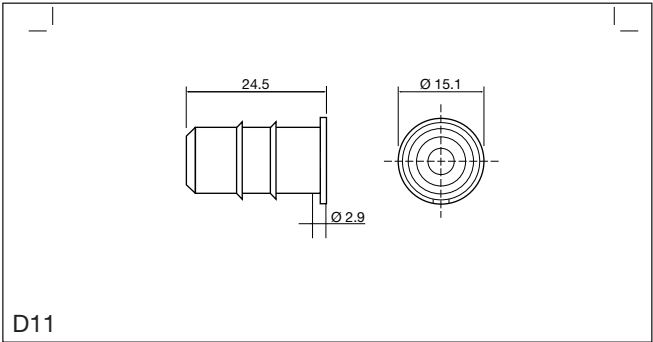
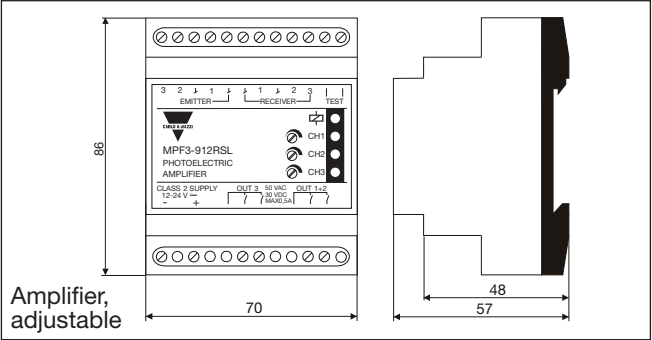
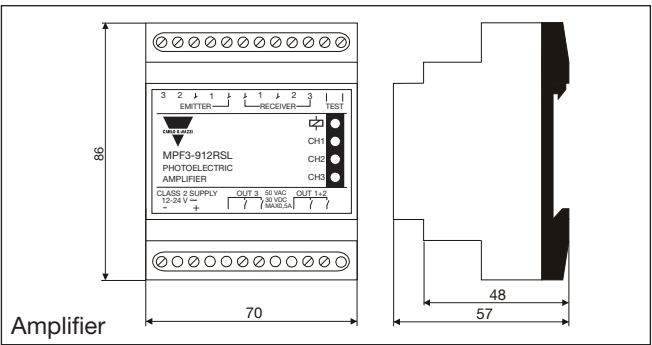
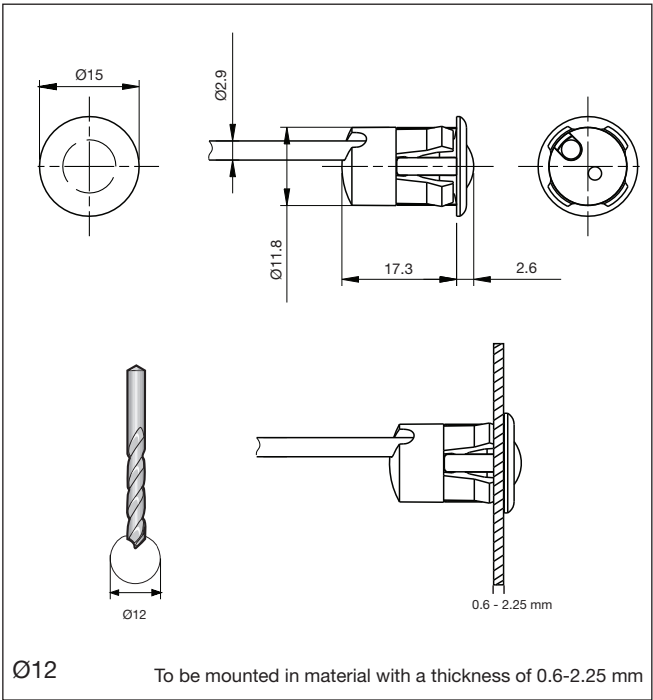
Wiring Diagrams



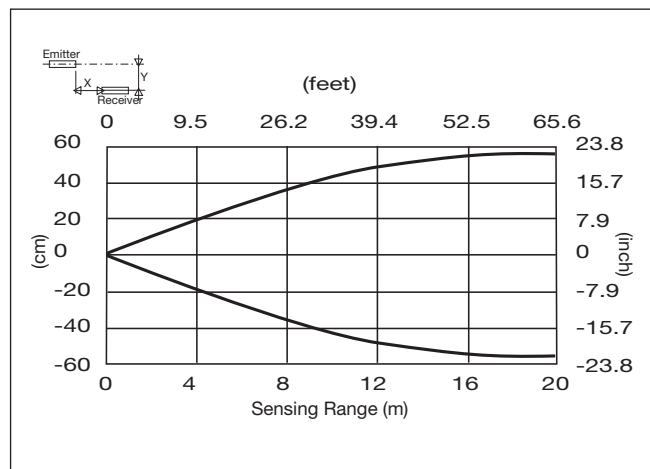
Operation Diagram



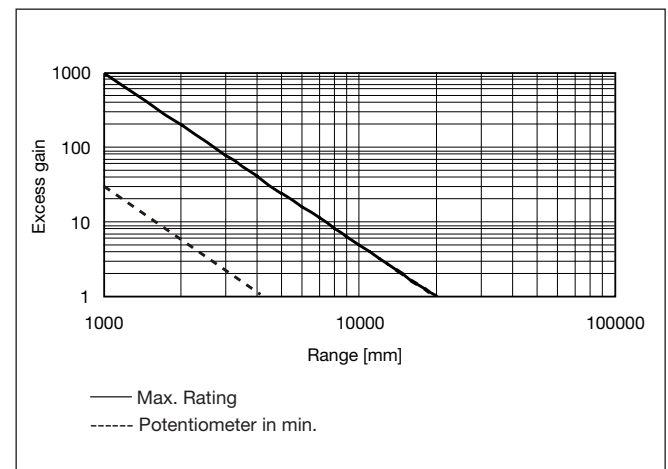
Dimensions



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 Correct 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