

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
- 4 module M36 DIN rail housing
- Ø12 mm "Snap-ON", Ø18 or M14 photoelectric housing
- 1, 2 or 3 multiplexed channels
- With make or break test input
- UL 325, EN 12453 (TÜV 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 RSAv 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	
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	
D18	15 m	4°	MPFT 15-D18-4C	MPFR-D18-4C	
Fitting for Ø12					AMPF-MB1



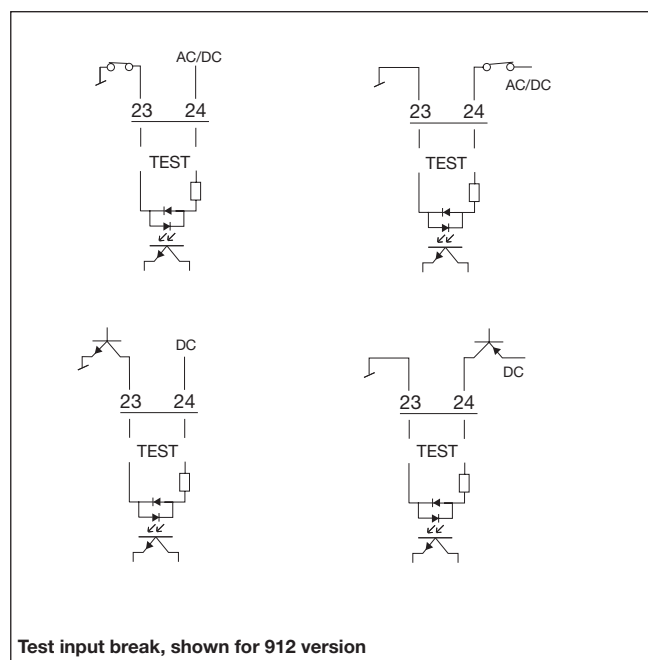
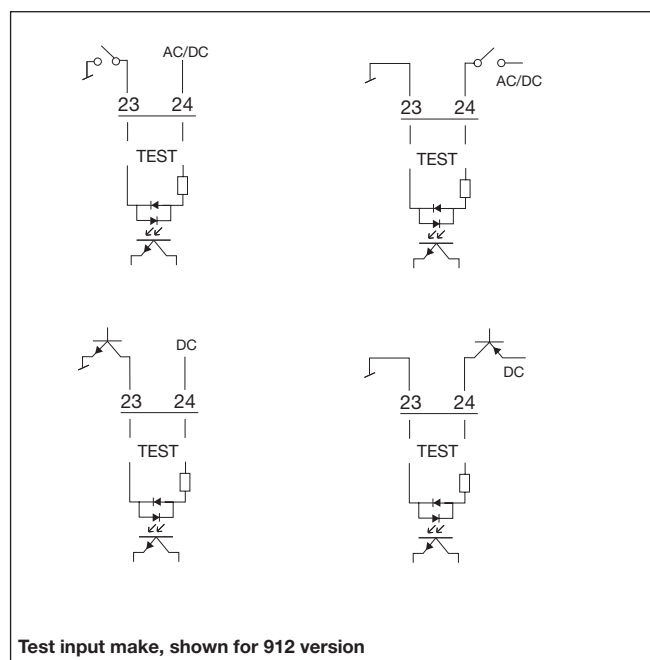
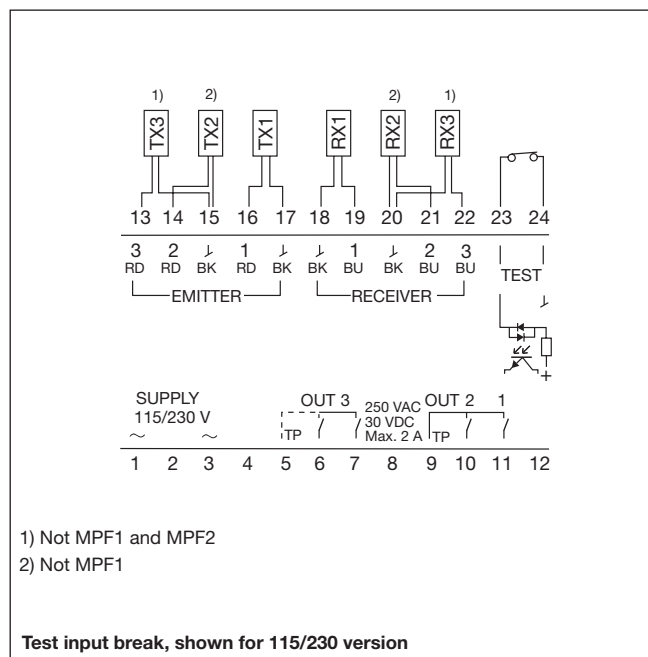
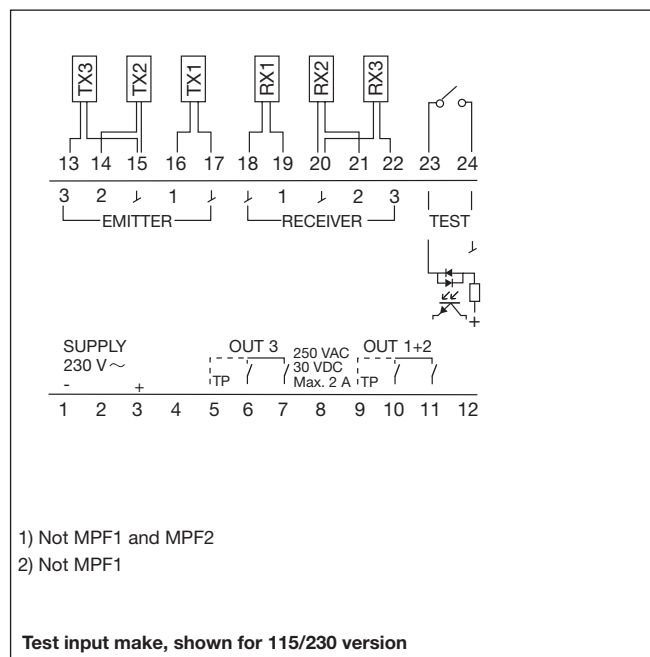
Specifications, Amplifier

Rated operational volt.		Output function	
AC types (U _B)		MPF1+2	
Terminals 1 & 3		MPF3	
MPF- 230 RS.		Relay 2 x SPST	
MPF- 115 RS.		Relay 2 x SPST + 2 x SPST	
MPF- 912 RS.		Indication function	
230 VAC ± 15%, 50 to 60 Hz		Supply ON	
115 VAC ± 15%, 50 to 60 Hz		Beam ON (no object present)	
12-24 VAC/DC ± 15%, 50 to 60 Hz		LED, green	
Dielectric voltage		LED, yellow	
MPF- 230 RS.		Environment	
4 kVAC (rms)		Overvoltage category	
Rated impulse withstand volt.		Degree of protection	
4 kV (1.2/50 µs)		Pollution degree	
Rated operational power		III (IEC 66064)	
MPF- 912 RS		IP 40 (IEC 60529/60947-5-2)	
AC supply		3 (IEC 60664/60664A, 60947-1)	
DC supply		Temperature	
3 VA		Operating	
2 W		Storage	
MPF- 115/230 RS		-20° to +60°C (-4° to +140°F)	
AC supply		-30° to +80°C (-22° to +176°F)	
DC supply		Connection	
max. 4.5 VA		Screw terminals	
max. 4.5 VA		(max. 2.5 mm ²)	
Output Specifications		Protection output	
Resistive load		Reverse output, transients, short-circuit	
MPF-xxx RS, RSA, RSI, RSAI		Test input	
600.000 switchings		MPF- 230 RS.	
300.000 switchings		MPF- 115 RS.	
100.000 switchings		MPF- 912 RS.	
AC15		Testfunction activated	
AC14		Testfunction deactivated	
DC13		MPF- 912 RSI.	
1 A@250 VAC/30 VDC		Testfunction deactivated	
2 A@250 VAC/30 VDC		Testfunction activated	
2 A@250 VAC/30 VDC (UL)		Housing material	
0.75 A@240 VAC		PC	
0.60 A@120 VAC		Weight	
0.22 A@125 VDC		MPF- 115/230 RS	
Rated insulation volt. (U _i)		MPF- 912 RS	
MPF- 230 RS.		280 g	
MPF- 115 RS.		126 g	
MPF- 912 RS.		CE-marking	
250 VAC (rms)		Yes	
120 VAC (rms)		UL-marking	
50 VAC (rms), 50 VDC		Yes (UL 508, UL 325)	
Operating frequency (f)		TÜV-marking	
Light/dark ratio 1:1		Yes (EN 12453)	
Contact output			
10 Hz			
Response time			
OFF-ON (t _{ON})			
≤ 50 ms			
ON-OFF (t _{OFF})			
≤ 40 ms			
Power ON delay (t _v)			
≤ 300 ms			

Specifications, Photoelectric Switches

Rated operation dist. (S _n)		MPFT15-XXX-4C	
15 m - 8 m (UL 325)		MPFR15-XXX-4C	
Light source		Red connector pair	
LED 880 nm		White connector pair	
Light type		<i>Connector is placed 15 cm from sensorhead</i>	
Infrared modulated		Cable	
Ambient light		PVC, grey, 10 m, Ø 2.9 mm ²	
> 20.000 lux		Degree of protection	
Housing material		IP 67 (IEC 60529/60947-5-2)	
MPFT15-4/C		Mounting	
MPFT15-D18-4/C		"Snap-ON"	
MPFR-4/C		MPFT15-4/C	
MPFR-D18-4/C		MPFR-4/C	
Housing		Rubber profile	
Backpart		MPFT15-D18-4/C	
PC		MPFR-D18-4/C	
ABS		Threaded barrel	
MPFT15-M14-4/C		MPFT15-M14-4/C	
MPFR15-M14-4/C		MPFR-M14-4/C	
Housing		CE-marking	
Backpart		Yes	
Stainless steel/PC		UL-marking	
PTE		Yes (UL 508, UL 325)	
Connection		TÜV-marking	
MPFT15-XXX-4		Yes (EN 12453)	
MPFR15-XXX-4			
Cable			
PVC, grey, 10 m, Ø 2.9 mm ²			

Wiring Diagrams

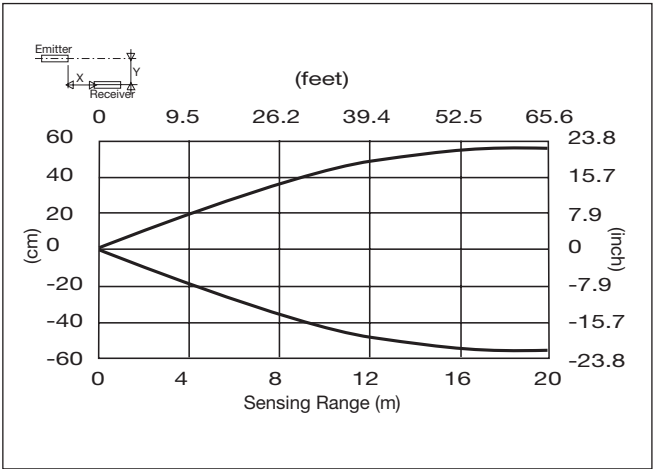


Operation Diagram

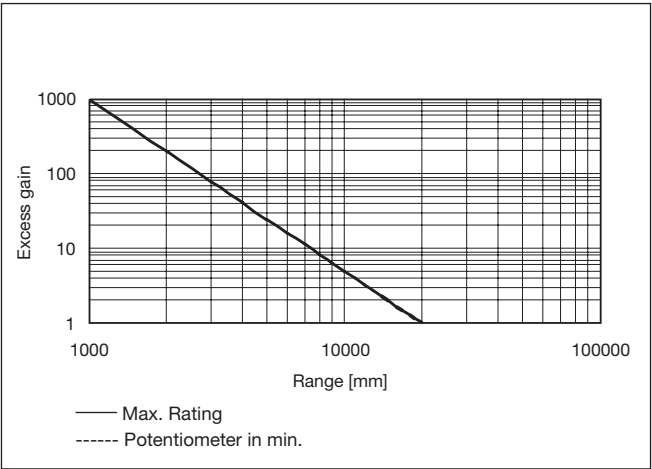




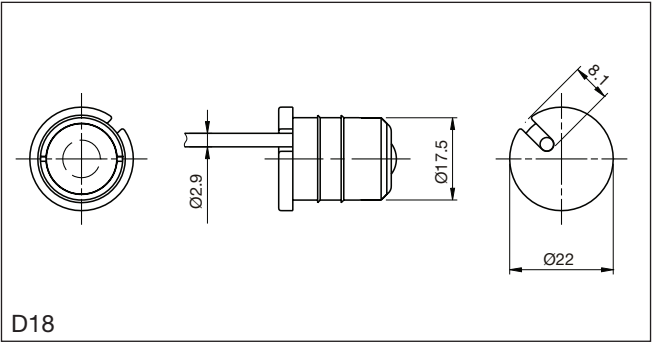
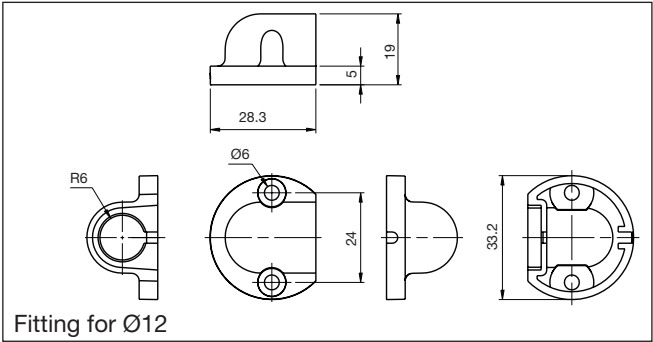
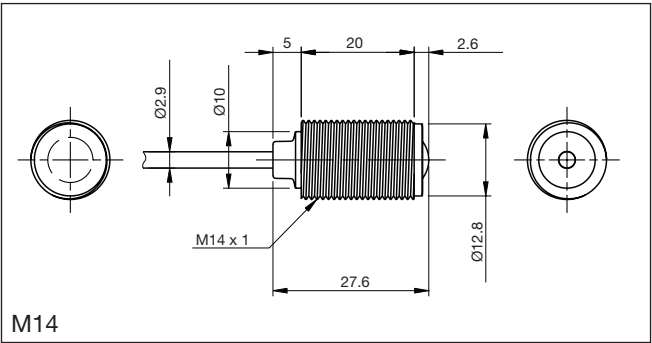
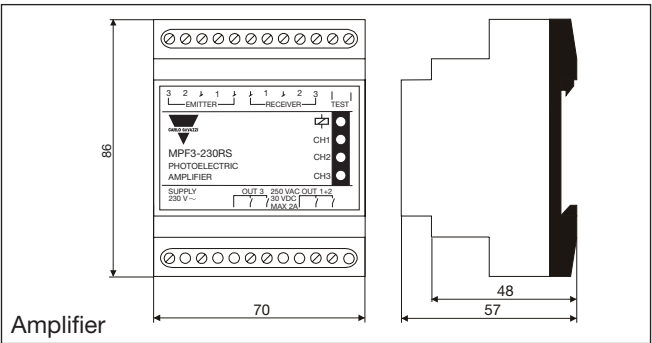
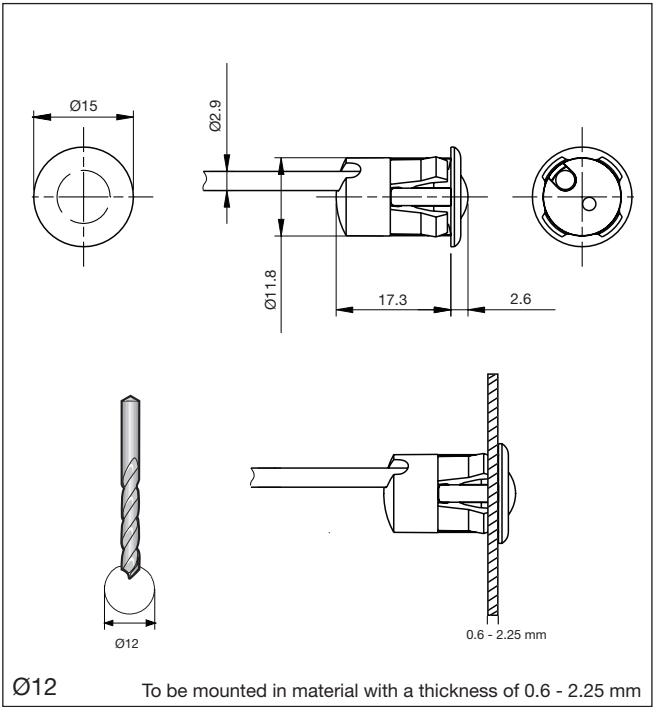
Detection Diagram



Excess Gain

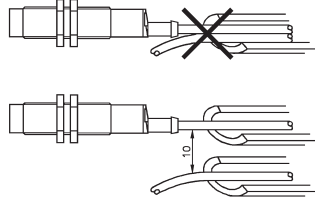


Dimensions

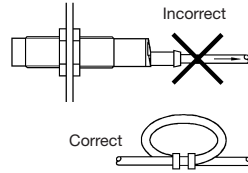


Installation Hints

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

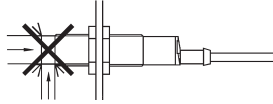


Relief of cable strain



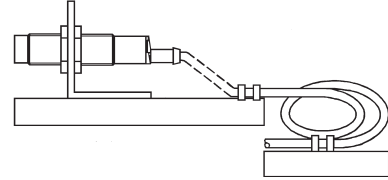
The cable should not be pulled

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

Delivery Contents

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