

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



- Industrial doors and gates
- Range: 15 m
- Modulated infrared light
- 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
- Positive safety, NF P25-362 standard



## 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**

Type \_\_\_\_\_  
Number of channels \_\_\_\_\_  
Voltage supply \_\_\_\_\_  
Output relay \_\_\_\_\_  
Safety \_\_\_\_\_

### Sensor

**MPF T 15 M14 4**

Type \_\_\_\_\_  
Emitter \_\_\_\_\_  
Range \_\_\_\_\_  
Housing diameter \_\_\_\_\_  
Optical angle \_\_\_\_\_

## 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	MPF1-115 RS MPF2-115 RS MPF3-115 RS	MPF1-230 RS MPF2-230 RS MPF3-230 RS

## Type Selection, Photoelectric Switch

Housing diameter	Rated operational distance (S <sub>n</sub> )	Optical angle	Ordering no. Emitter	Ordering no. Receiver	Ordering no. Fitting
Ø12 mm	15 m	4°	MPFT 15-4	MPFR-4	AMPF-MB1
M14	15 m	4°	MPFT 15-M14-4	MPFR-M14-4	
D18	15 m	4°	MPFT 15-D18-4	MPFR-D18-4	
Fitting for Ø12					

## Specifications, Amplifier

<b>Rated operational volt.</b>				<b>Power ON delay (t<sub>v</sub>)</b>	≤ 300 ms
<b>AC types (U<sub>B</sub>)</b>				<b>Output function</b>	MPF1+2 MPF3 Relay 2 x SPST Relay 2 x SPST + 2 x SPST
Terminals 1 & 3	230	230 VAC ± 15%, 50 to 60 Hz			
	115	115 VAC ± 15%, 50 to 60 Hz			
	912	12-24 VAC/DC ± 15%, 50 to 60 Hz		<b>Indication function</b>	
<b>Dielectric voltage</b>		230	4 kVAC (rms)	Supply ON	LED, green
<b>Rated impulse withstand volt.</b>			4 kV (1.2/50 μs)	Beam ON (no object present)	LED, yellow
<b>Rated operational power</b>		<b>912</b>	<b>115/230</b>	<b>Environment</b>	
AC supply		3 VA	max. 4.5 VA	Overvoltage category	III (IEC 66064)
DC supply		2 W	-	Degree of protection	IP 40 (IEC 60529/60947-5-2)
<b>Output Specifications</b>				Pollution degree	3 (IEC 60664/60664A, 60947-1)
Resistive load 600.000 switching		2 A@250 VAC/30 VDC		<b>Temperature</b>	
AC15		0.75 A@240 VAC		Operating	-20° to +60°C (-4° to +140°F)
AC14		0.60 A@120 VAC		Storage	-30° to +80°C (-22° to +176°F)
DC13		0.22 A@125 VDC		<b>Connection</b>	
<b>Rated insulation volt. (U<sub>i</sub>)</b>					Screw terminals (max. 2.5 mm <sup>2</sup> )
	230	250 VAC (rms)		<b>Protection output</b>	
	115	120 VAC (rms)			Reverse output, transients, short-circuit
	912	50 VAC (rms), 50 VDC		<b>Test input</b>	
<b>Operating frequency (f)</b>				115/230	Potential free contact
Light/dark ratio 1:1				912	Max. 28 V@15 mA AC/DC
Contact output		10 Hz		<b>Housing material</b>	
<b>Response time</b>					PC
OFF-ON (t <sub>ON</sub> )		≤ 50 ms		<b>Weight</b>	
ON-OFF (t <sub>OFF</sub> )		≤ 40 ms		115/230	280 g
				912	126 g
				<b>CE-marking</b>	
					Yes

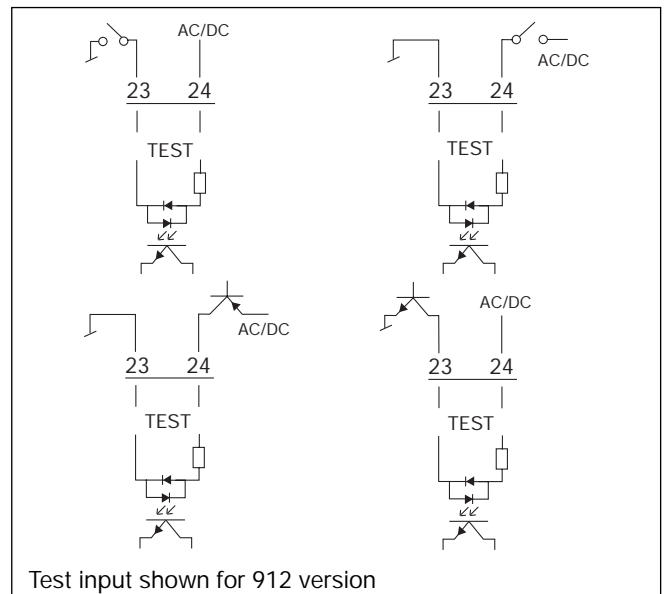
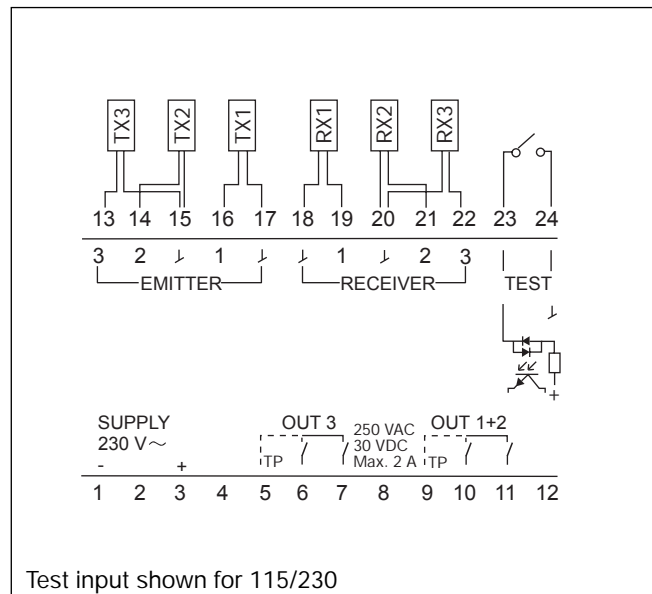
## Specifications, Photoelectric Switches

<b>Rated operation dist. (<math>S_n</math>)</b>		15 m	<b>Connection</b>	
<b>Light source</b>		LED 880 nm	Cable	PVC, grey, 10 m, Ø 2.9 mm <sup>2</sup>
<b>Light type</b>		Infrared modulated	<b>Degree of protection</b>	
<b>Ambient light</b>		> 20.000 lux		IP 67 (IEC 60529/60947-5-2)
<b>Housing material</b>		<b>Ø12/D18 M14</b>	<b>Mounting</b>	
House	PC	Stainless steel/PC	"Snap-ON"	Ø12 mm or fitting
Backpart	ABS	PTE	Rubber profile	D18
			Threaded barrel	M14
			<b>CE-marking</b>	
				Yes

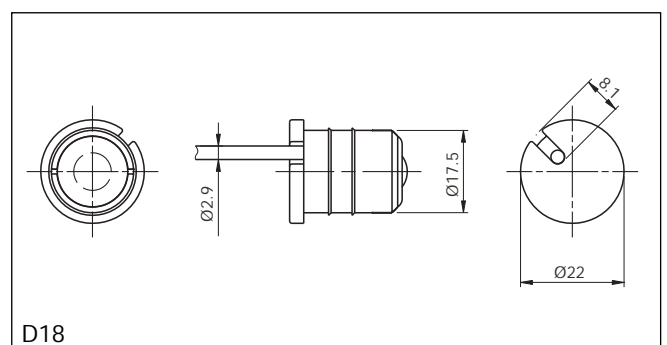
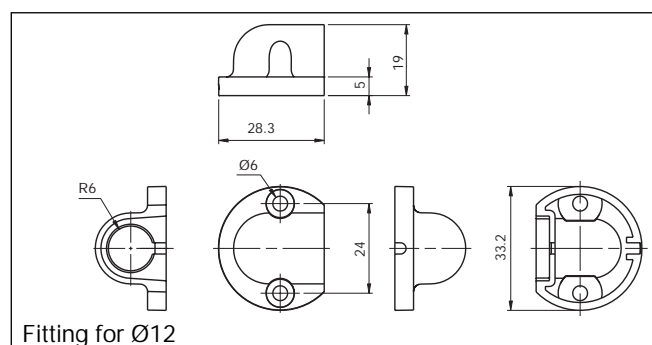
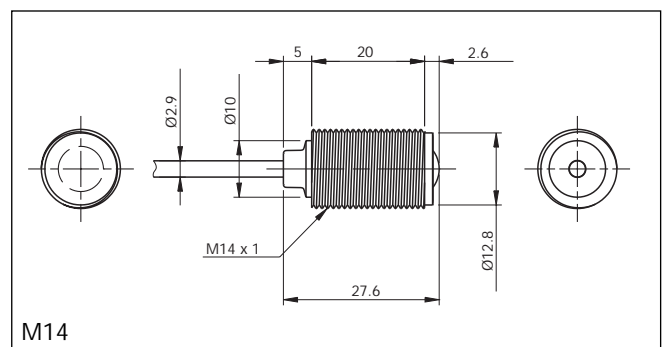
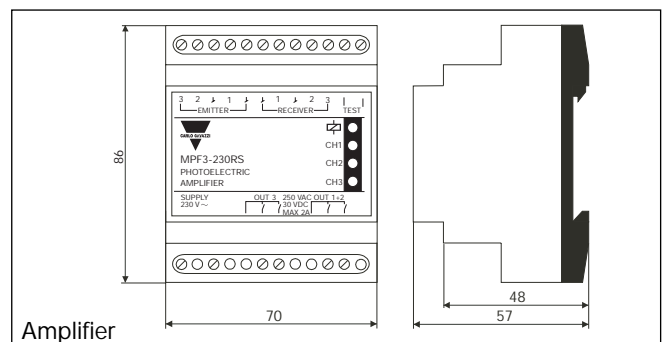
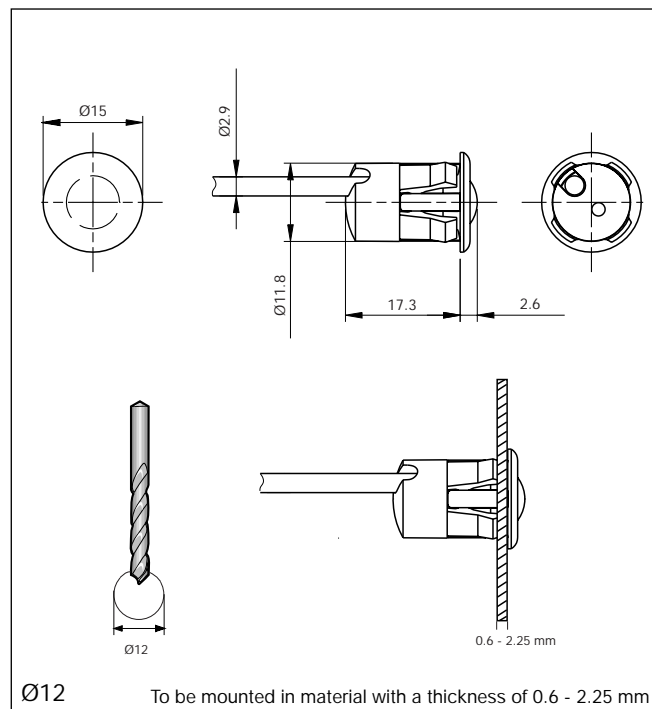
## Operation Diagram



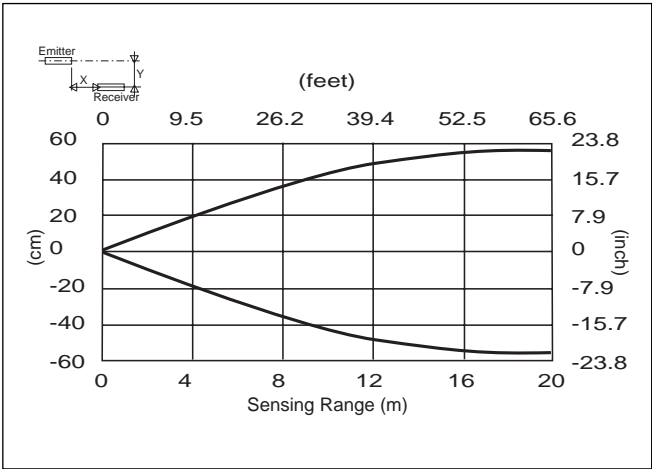
## Wiring Diagrams



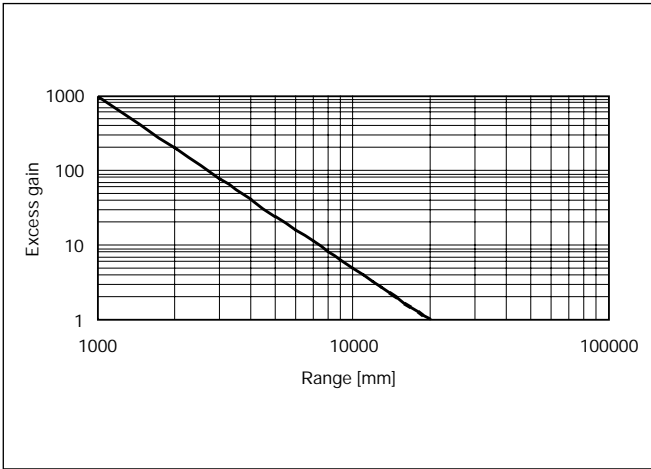
## Dimensions



Detection Diagram



Excess Gain



Installation Hints

<p>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</p>	<p>Relief of cable strain</p> <p>Incorrect</p> <p>Correct</p> <p>The cable should not be pulled</p>	<p>Protection of the sensing face</p> <p>A proximity switch should not serve as mechanical stop</p>	<p>Switch mounted on mobile carrier</p> <p>Any repetitive flexing of the cable should be avoided</p>
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Delivery Contents

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