

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, 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

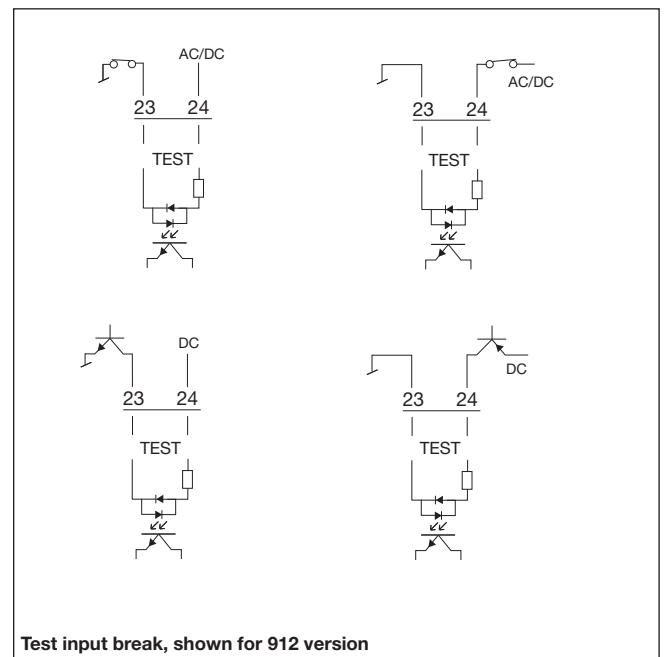
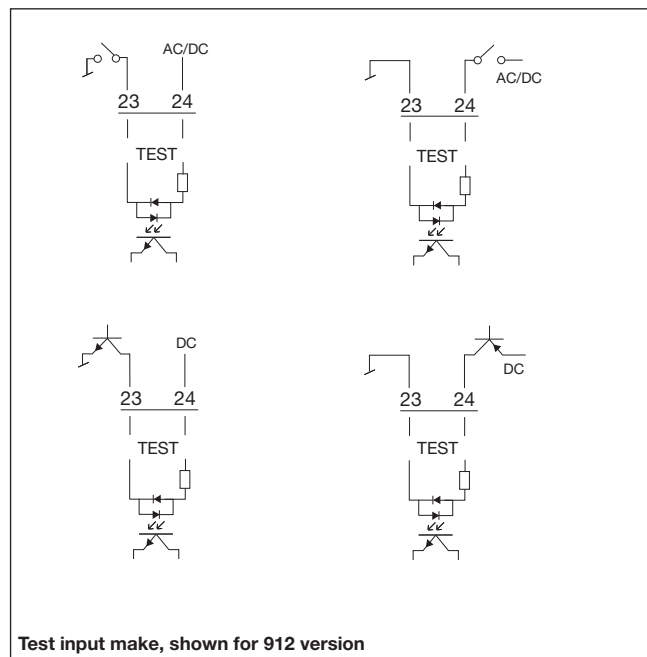
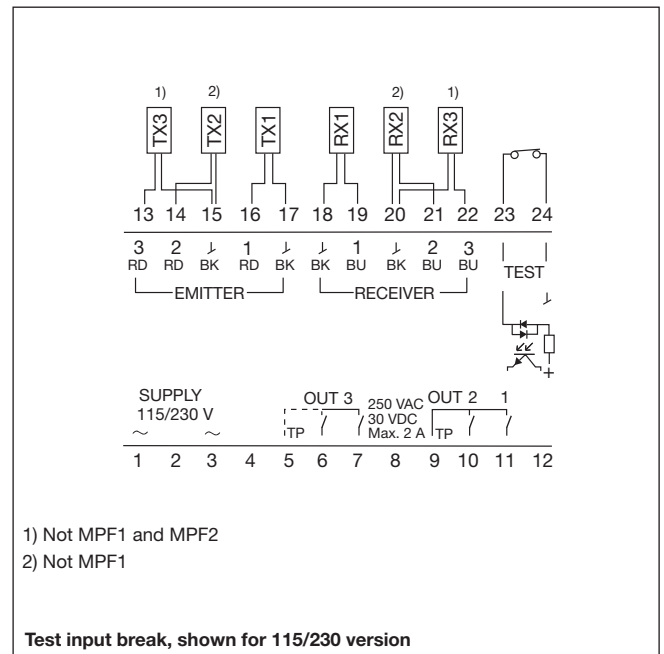
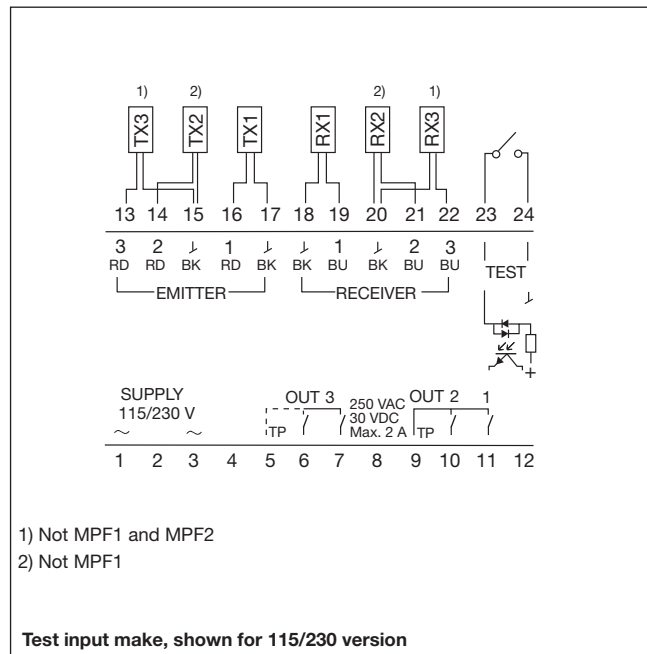
Specifications, Amplifier

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		Connection	
Resistive load		Screw terminals	
MPF.-xxx RS, RSA, RSI, RSAI		(max. 2.5 mm ²)	
600.000 switchings		Protection output	
300.000 switchings		Reverse output, transients, short-circuit	
100.000 switchings		Test input	
AC15		MPF.- 230 RS.	
AC14		MPF.- 115 RS.	
DC13		MPF.- 912 RS.	
Rated insulation volt. (U_i)		Testfunction activated	
MPF.- 230 RS.		Testfunction deactivated	
MPF.- 115 RS.		MPF.- 912 RSI.	
MPF.- 912 RS.		Testfunction deactivated	
Operating frequency (f)		Testfunction activated	
Light/dark ratio 1:1		Housing material	
Contact output		PC	
Response time		Weight	
OFF-ON (t _{ON})		MPF.- 115/230 RS	
ON-OFF (t _{OFF})		MPF.- 912 RS	
Power ON delay (t_v)		CE-marking	
≤ 300 ms		UL-Approval	
		TÜV-Approval	

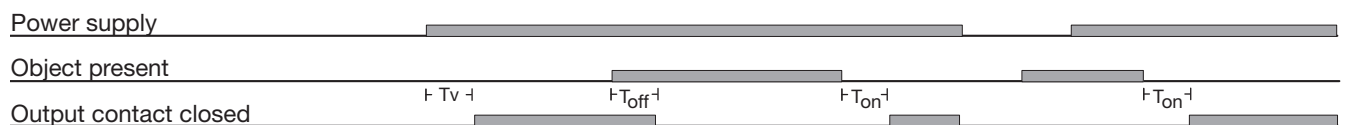
Specifications, Photoelectric Switches

Rated operation dist. (S_n)		MPFR15-XXX-4C	
Light source		Connector is placed 15 cm from sensorhead	
Light type		Cable	
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		TÜV-Approval	
Cable	PVC, grey, 10 m, Ø 2.9 mm ²	Yes	
MPFT15-XXX-4C	Red connector pair	UL325, CSA-C22.2 No.247	
		UL508	
		Yes (EN 12453)	

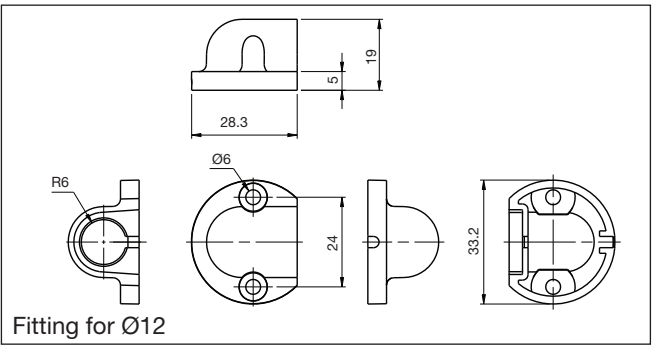
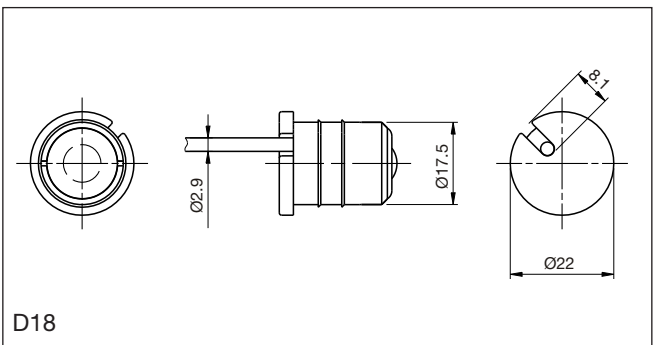
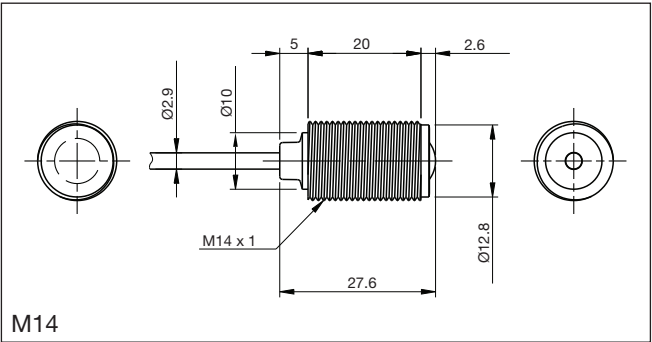
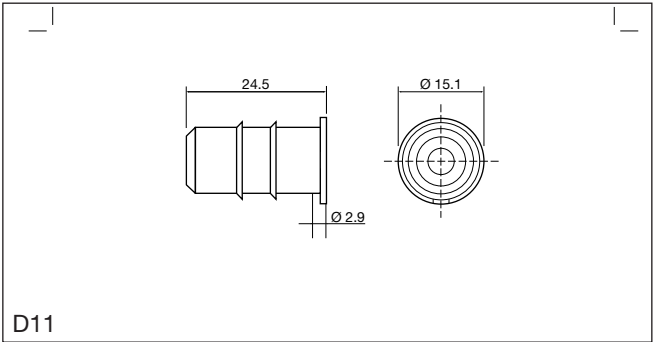
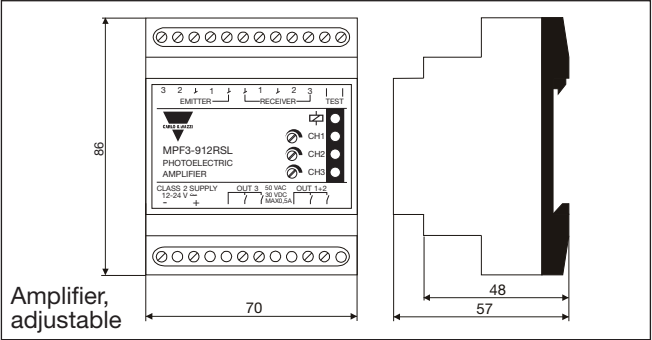
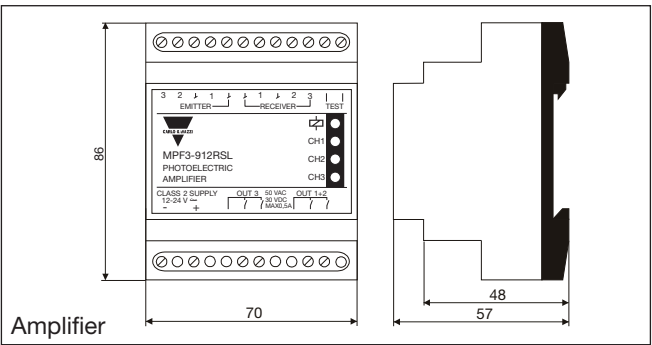
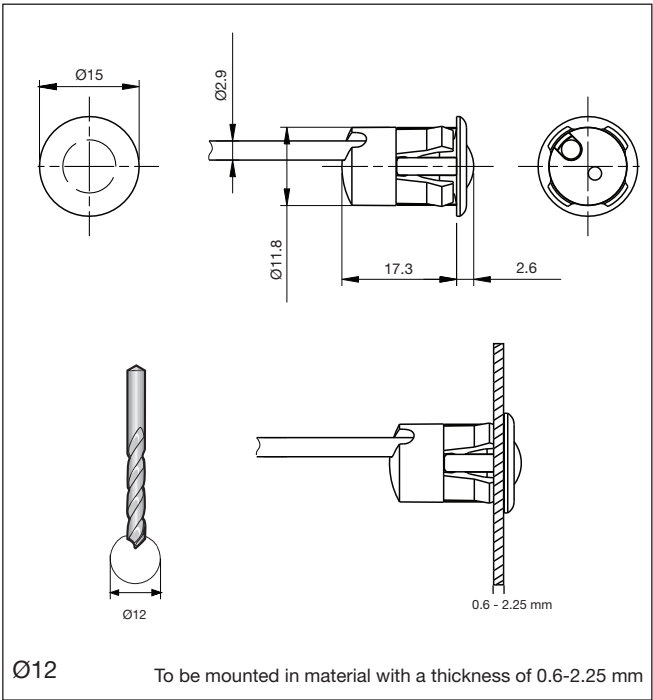
Wiring Diagrams



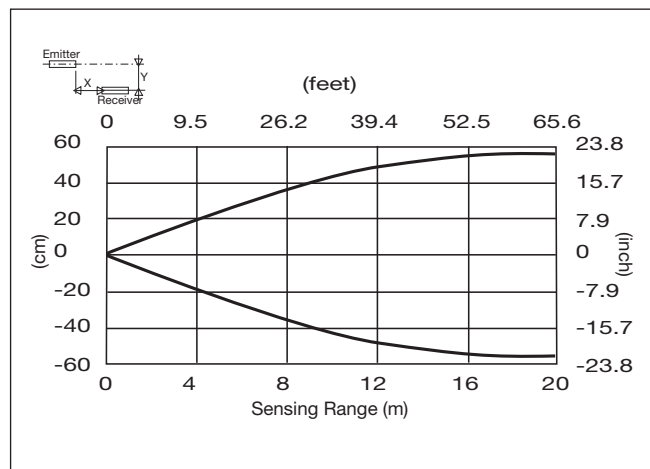
Operation Diagram



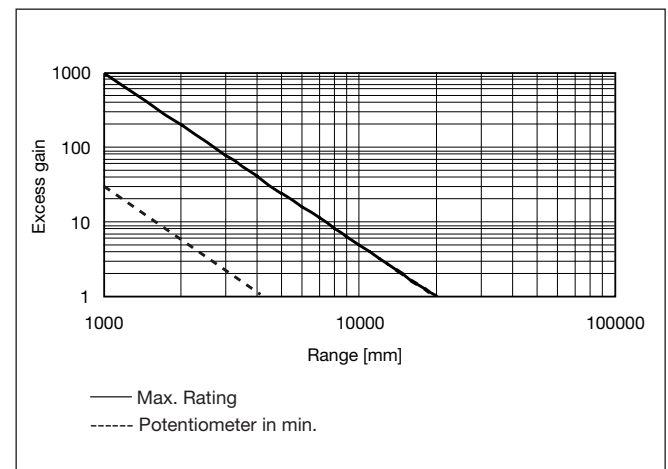
Dimensions



Detection Diagram

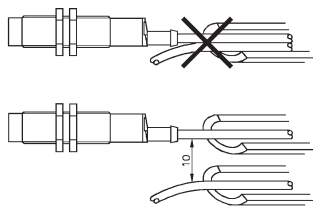


Excess Gain

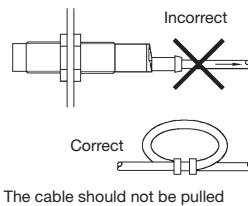


Installation Hints

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

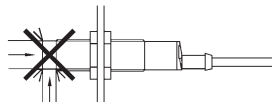


Relief of cable strain



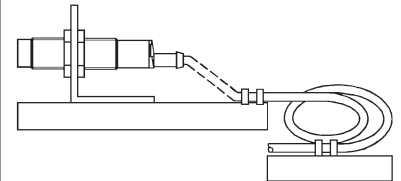
The cable should not be pulled

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

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[MPF2-912RS](#) [MPF2-230RS](#) [MPF3-115RS](#) [MPF1-912RS](#) [MPF1-115RS](#) [MPF2-115RS](#) [MPF1-230RS](#) [MPF3-230RS](#)
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