

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

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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
- Output: SPST relay (low voltage)
- 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

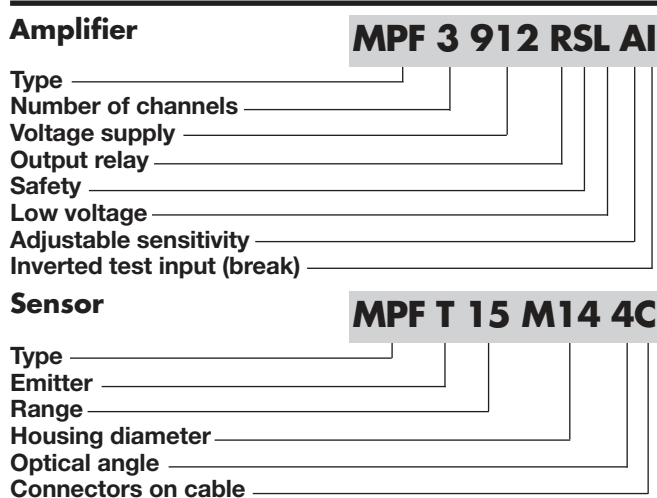


## Product Description

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 amplifier is available with the following voltage: 12-24 VAC/DC. 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



## Type Selection, Amplifier

Housing W x H x D	Ordering no. Supply: 12-24 VAC/DC
70 x 57 x 86 mm	MPF1-912 RSL MPF2-912 RSL MPF3-912 RSL MPF1-912 RSLI *) MPF2-912 RSLI *) MPF3-912 RSLI *) MPF1-912 RSLA *) MPF2-912 RSLA *) MPF3-912 RSLA *) MPF1-912 RSLAI *) MPF2-912 RSLAI *) MPF3-912 RSLAI *)

\*) Products available on request

## 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	
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					

## Specifications, Amplifier

<b>Rated operational volt.</b> <b>AC types</b> ( $U_B$ ) Terminals 1 & 3 MPF.- 912 RSL.	12-24 VAC/DC $\pm$ 15%, 50 to 60 Hz	<b>Environment</b> Overvoltage category Degree of protection Pollution degree	III (IEC 66064) IP 40 (IEC 60529/60947-5-2) 3 (IEC 60664/60664A, 60947-1)
<b>Dielectric voltage</b>	4 kVAC (rms)	<b>Temperature</b> Operating Storage	-20° to +60°C (-4° to +140°F) -30° to +80°C (-22° to +176°F)
<b>Rated impulse withstand volt.</b>	4 kV (1.2/50 $\mu$ s)	<b>Connection</b>	Screw terminals (max. 2.5 mm <sup>2</sup> )
<b>Rated operational power</b> AC supply DC supply	3 VA 2 W	<b>Protection output</b>	Reverse output, transients, short-circuit
<b>Output Specifications</b> Resistive load MPF.-912 RSL, RSLA, RSLI, RSLAI 600.000 switching 100.000 switching	0.5 A@50 VAC/30 VDC 0.5 A@125 VAC/1 A@30 VDC (UL)	<b>Test input</b> MPF.- 912 RSL. Testfunction activated Testfunction deactivated	Max. 28 V@15 mA AC/DC $\geq$ 3.5 V AC/DC $\leq$ 1.0 V AC/DC
<b>Rated insulation volt.</b> ( $U_i$ )	50 VAC (rms), 50 VDC	MPF.- 912 RSLI. Testfunction deactivated Testfunction activated	Max. 28 V@15 mA AC/DC $\geq$ 3.5 V AC/DC $\leq$ 1.0 V AC/DC
<b>Operating frequency</b> (f) Light/dark ratio 1:1 Contact output	10 Hz	<b>Housing material</b>	PC
<b>Response time</b> OFF-ON ( $t_{ON}$ ) ON-OFF ( $t_{OFF}$ )	$\leq$ 50 ms $\leq$ 40 ms	<b>Weight</b> MPF.- 912 RSL.	126 g
<b>Power ON delay</b> ( $t_v$ )	$\leq$ 300 ms	<b>CE-marking</b> <b>UL-Approval</b>	Yes UL325, CSA-C22.2 No.247 UL508 Yes (EN 12453)
<b>Output function</b> MPF1+2 MPF3	Relay 2 x SPST Relay 2 x SPST + 2 x SPST	<b>TÜV-Approval</b>	
<b>Indication function</b> Supply ON Beam ON (no object present)	LED, green LED, yellow		

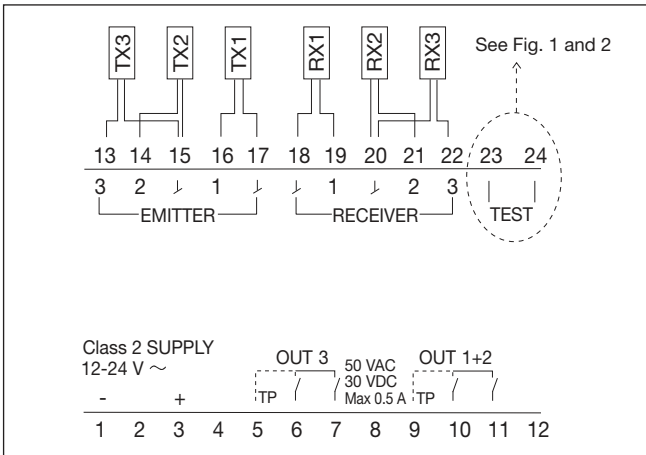
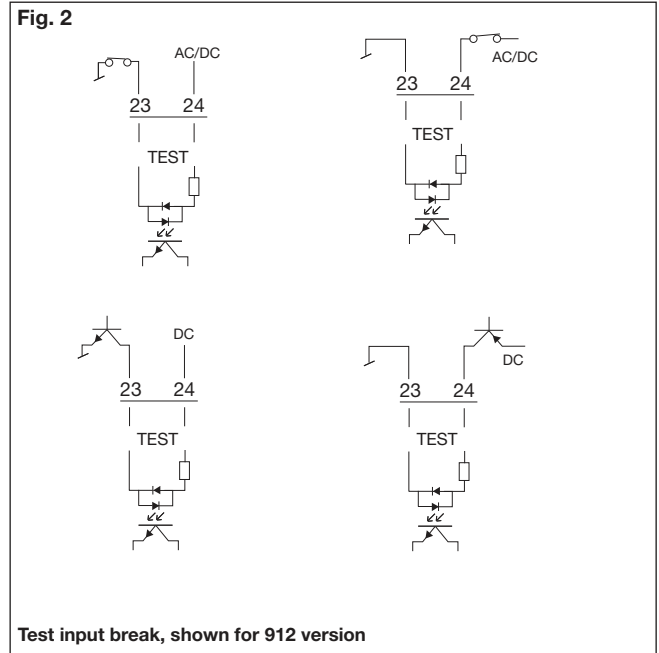
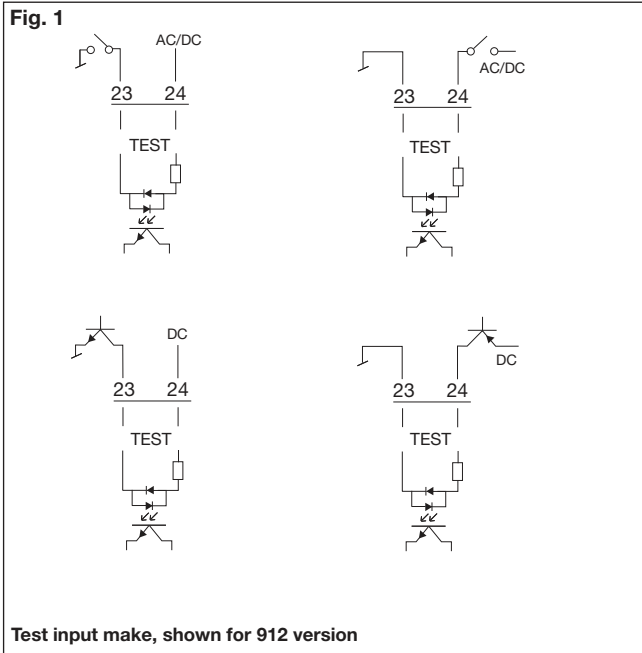
## Specifications, Photoelectric Switches

<b>Rated operation dist.</b> ( $S_n$ )	15 m - 8 m (UL 325)	MPFT15-XXX-4C MPFR15-XXX-4C <i>Connector is placed 15 cm from sensorhead</i>	Red connector pair White connector pair
<b>Light source</b>	LED 880 nm	<b>Cable</b>	PVC, grey, 10 m, $\varnothing$ 2.9 mm <sup>2</sup>
<b>Light type</b>	Infrared modulated	<b>Degree of protection</b>	IP 67 (IEC 60529/60947-5-2)
<b>Ambient light</b>	> 20.000 lux	<b>Mounting</b> "Snap-ON" MPFT15-4/C MPFR-4/C Rubber profile MPFT15-D11-4/C MPFR-D11-4/C Rubber profile MPFT15-D18-4/C MPFR-D18-4/C Threaded barrel MPFT15-M14-4/C MPFR-M14-4/C	$\varnothing$ 12 mm or fitting D11 D18 M14
<b>Housing material</b> MPFT15-4/C MPFT15-D18-4/C MPFR-4/C MPFR-D11-4/C MPFR-D18-4/C Housing Backpart	PA6 Glass filled  PC ABS	<b>CE-marking</b> <b>UL-Approval</b>	Yes UL325, CSA-C22.2 No.247 UL508 Yes (EN 12453)
MPFT15-M14-4/C MPFR15-M14-4/C House Backpart	Stainless steel/PC PTE	<b>TÜV-Approval</b>	
<b>Connection</b> MPFT15-XXX-4 MPFR15-XXX-4 Cable	Max. 10 m cable length Max. 25 m cable length PVC, grey, 10 m, $\varnothing$ 2.9 mm <sup>2</sup>		

## Operation Diagram



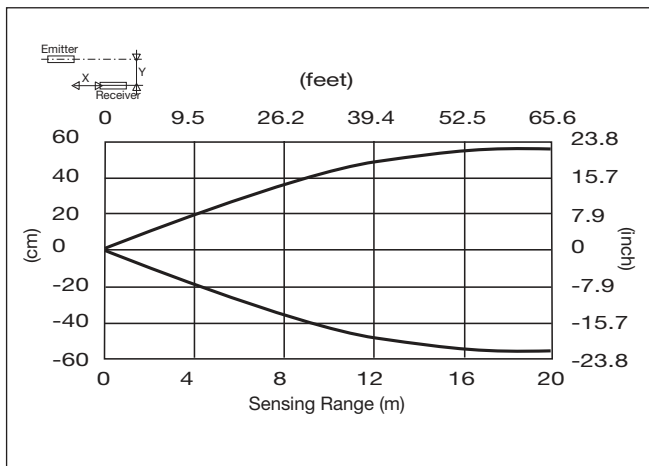
# Wiring Diagrams



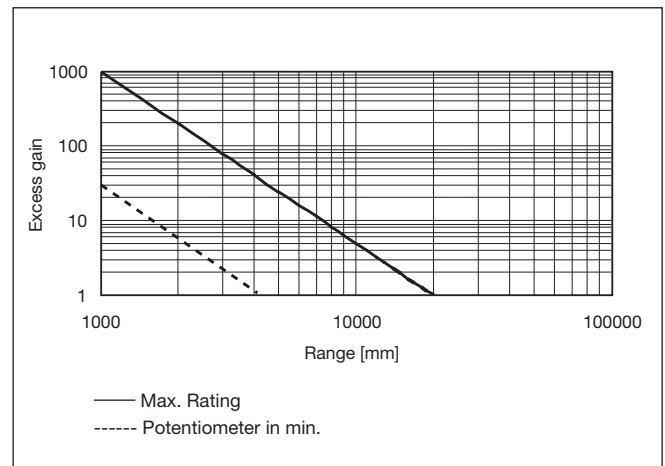
## Delivery Contents

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

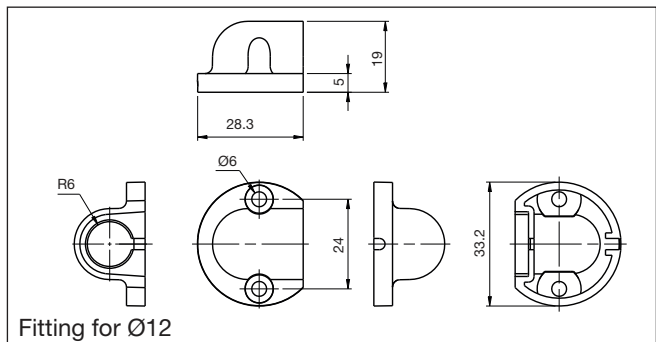
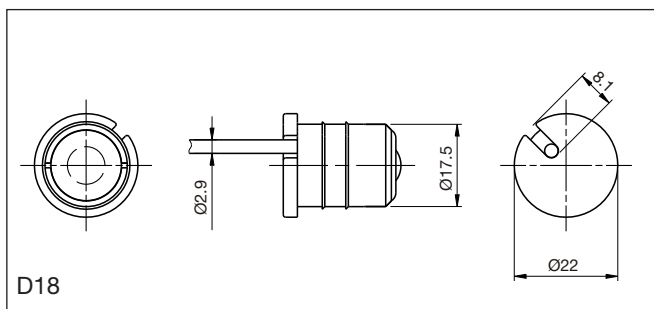
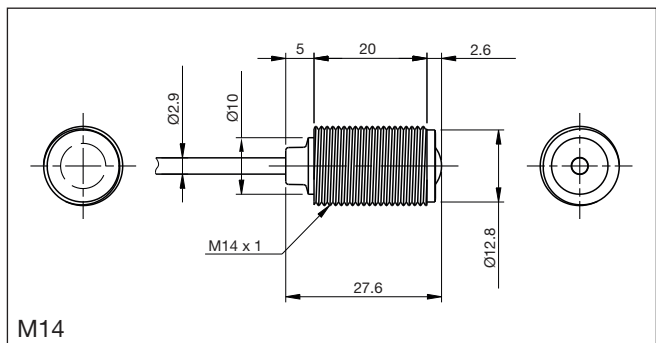
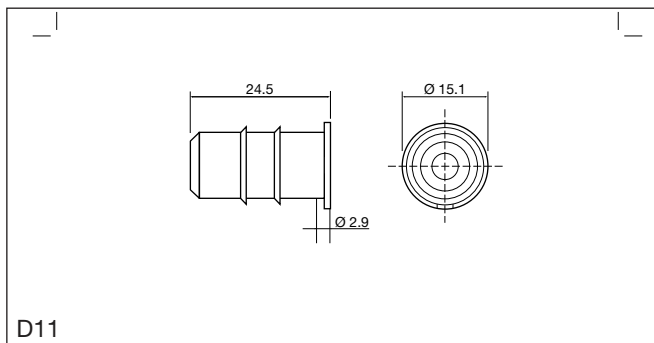
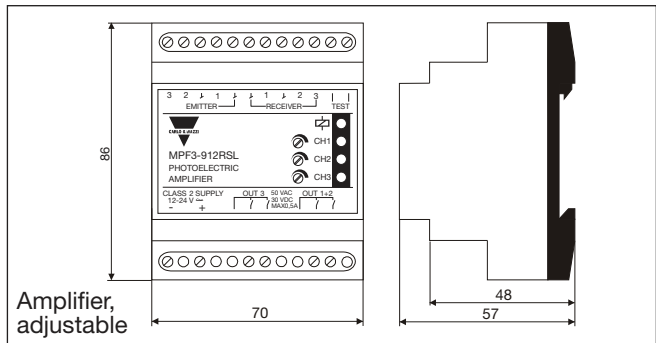
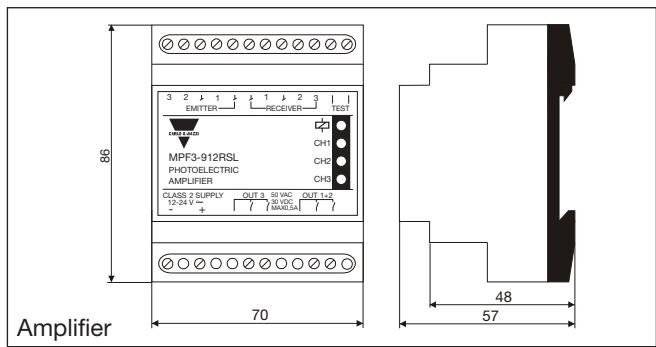
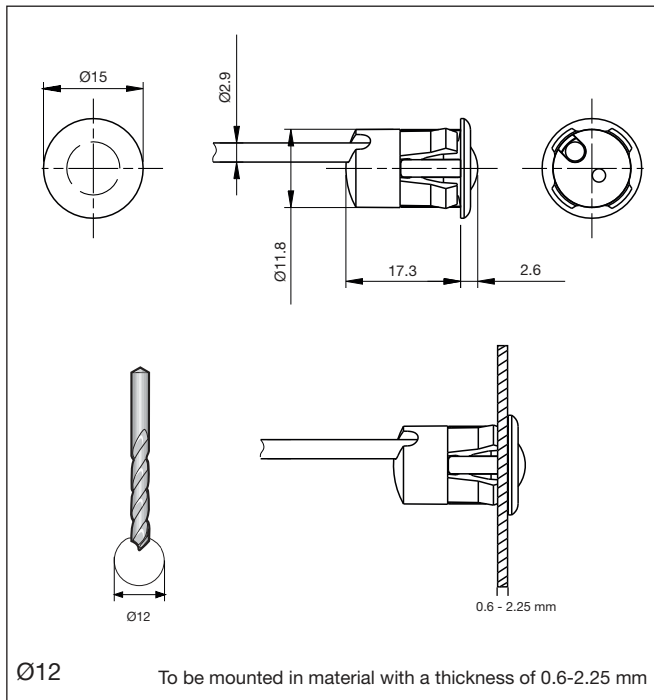
## Detection Diagram



## Excess Gain

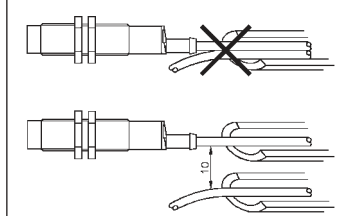


## Dimensions

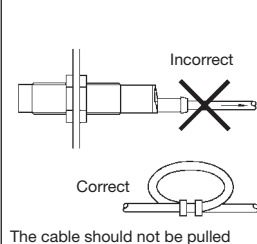


## Installation Hints

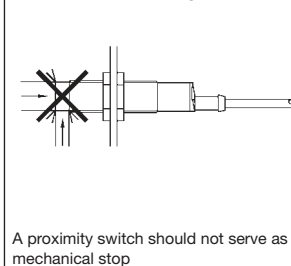
To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables



Relief of cable strain



Protection of the sensing face



Switch mounted on mobile carrier

