Photoelectrics
Retro-reflective, Relay Output
Type PMR

CARLO GAVAZZI



- **Range: 10 m**
- **Modulated, infrared light**
- **Make or break switching function (switch selectable)**
- **LED-indication for target detected**
- **Multi supply voltage:**
  12 to 240 VDC and
  24 to 240 VAC, 50/60 Hz
- **25 x 65 x 81 mm reinforced PC housing, IP 67**
- **Timer options (adjustable)**
- **NO and NC output**

Product Description

Retro-reflective photoelectric switch. Range up to 10 m. Fixed sensitivity. Immune to ambient light. Output function switch selectable. Protection degree IP 67. Screw terminal connection. 25 x 65 x 81 mm plastic housing. PG 13.5 or 1/2" NPT cable gland. Timer options: Delay on operate, delay on release, one shot (triggered on leading or trailing edge).

Ordering Key

PMR10R G T

Type
PG 13.5 cable gland
Option: Timer function

Type Selection

Housing W x H x D	Range S_n	Ordering no. without timer	Ordering no. with timer
25 x 65 x 81 PG 13.5 cable gland	10 m	**PMR 10R G**	**PMR 10R GT**
1/2" NPT cable gland	10 m	**PMR 10R I**	**PMR 10R IT**

Specifications

Rated operating dist. (S_n) (0 to 5,000 lux)		PMR10.. 10 m with reflector type ER 4, ref. target
Rated operational volt. (U_B) (AC: 45 to 65 Hz)		10.8 to 264 VDC 21.6 to 264 VAC
Rated operational power (Relay ON)		≤ 1.5 W (2.0 VA)
Output		
Contact ratings (AgCdO)		µ (micro gap)
Resistive loads	AC 1	3 A/250 VAC
	DC 1	3 A/30 VDC
Small inductive loads	AC 15	2 A/250 VAC
	DC 13	3 A/30 VDC
Mechanical life		≥ 40 x 10^6 operations
Electrical life		≥ 5 x 10^5 operations at 220 VAC - 3 A resistive load: 360 impulses/h
Dielectric voltage		2000 VAC rms (cont./supply)
Sensitivity		Fixed
Light source		GaAlAs, LED, 880 nm
Light type		Infrared, modulated
Optical angle		±2°

Light spot size	280 mm at 4 m
Operating frequency (f)	20 Hz
Response time	
OFF-ON (t_{ON})	≤ 20 ms
ON-OFF (t_{OFF})	≤ 30 ms
Power ON delay (t_v)	≤ 300 ms (typ. 100 ms)
Output function	Switch selectable, make or break switching
Indication	
Target detected	LED, yellow
Optional timer	
Delay on operate	0.1 to 7 s ± 2 s
Delay on release	0.1 to 7 s ± 2 s
One shot	0.1 to 7 s ± 2 s
Environment	
Overvoltage category	III (IEC 60664/60664A; 60947-1)
Pollution degree	3 (IEC 60664/60664A; 60947-1)
Degree of protection	IP 67 (IEC 60529; 60947-1)
Temperature	
Operating	-25° to +55°C (-13° to +131°F)
Storage	-30° to +80°C (-22° to +176°F)

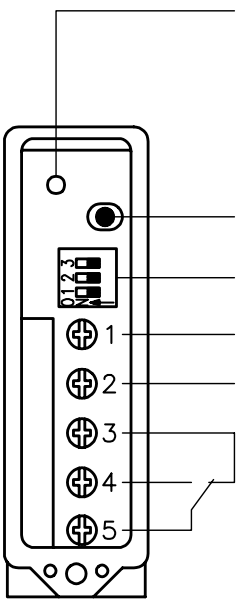
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Specifications (cont.)

Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
Rated insulation voltage	250 VAC (rms)
Housing material	
Body	PC, grey
Front	PC, black
Cover	PC, black
Cable gland	PA, black, reinforced
Mounting bracket	Steel, black
Connection	
Screw terminal	5 x 2 x 1 mm^2
Cable gland	PG 13.5 or 1/2" NPT for cable 6 to 10 mm
Weight	110 g
Approvals	UL, CSA
CE-marking	Yes

Connection Diagram



Time adjustment (optional)

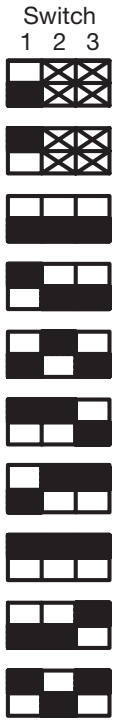
LED

DIP switches

12 - 240 VDC
24 - 240 VAC
50/60 Hz

30 VDC
250 VAC
Max. 3 A

Selection of Function



1 Break switching

2 Make switching

3 Delay on operate - Break switching

4 Delay on operate - Make switching

5 Delay on release - Break switching

6 Delay on release - Make switching

7 One shot, trailing edge - Break switching

8 One shot, trailing edge - Make switching

9 One shot, leading edge - Break switching

10 One shot, leading edge - Make switching

⊠ Don't care

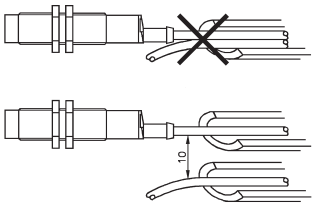
Upper postion ON (Mode 1)
Lower position OFF (Mode 0)

Truth Table

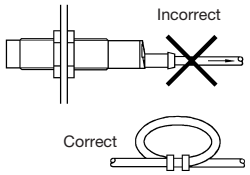
	Make switching		Break switching	
Object present	Yes	No	Yes	No
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active

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

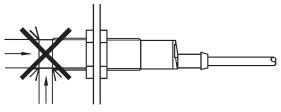


Relief of cable strain



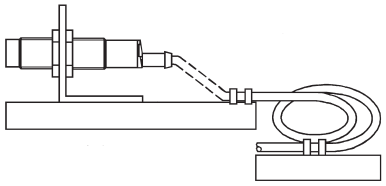
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier



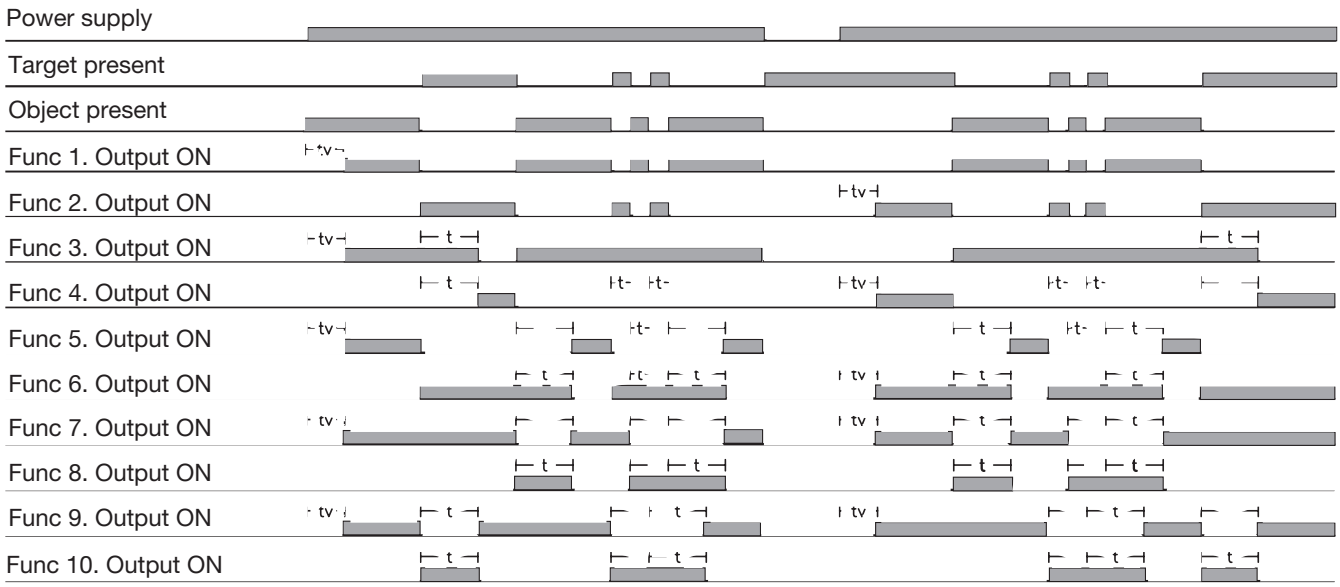
Any repetitive flexing of the cable should be avoided

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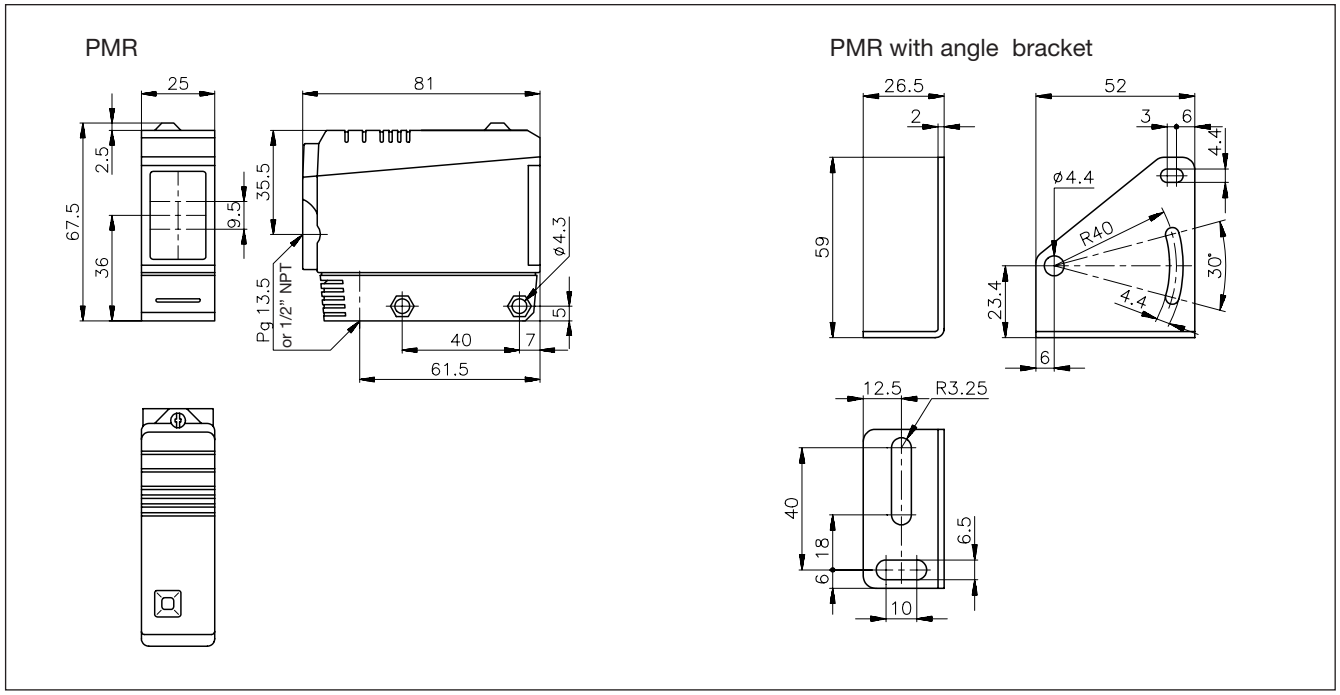
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Operation Diagram

t = Time delay
tv = Power ON delay



Dimensions



Accessories

- Reflectors: ER series
- MB02 (longer mounting bracket)

For further information refer to “Accessories”

Delivery Contents

- Photoelectric switch: PMR
- Cable gland
- Installation instruction
- Mounting bracket
- **Packaging:** Corrugated cardboard (environmentally friendly recycling material)

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