Photoelectrics
Diffuse-reflective, Relay Output
Type PMD

CARLO GAVAZZI



- **Range: 800 mm**
- **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

Diffuse-reflective photoelectric switch. Range up to 0.8 m. Adjustable sensitivity. Im-mune to ambient light. Output function switch selectable. Protection degree IP 67. Screw terminal connection. 25 x 65 x 81 mm plastic housing. PG 13 or 1/2" NPT cable gland. Timer options: Delay on operate, delay on release, one shot (triggered on lead-ing or trailing edge).

Ordering Key

PMD8R G T

Type
Cable gland
Option: Timer function

Type Selection

Housing W x H x D	Ordering no. without timer	Ordering no. with timer
25 x 65 x 81 PG 13.5 cable gland 1/2" NPT cable gland	**PMD 8R G** **PMD 8R I**	**PMD 8R GT** **PMD 8R IT**

Specifications

Rated operating dist. (S_n) (0 to 5,000 lux)	800 mm Reference target: Kodak test card R27, white, 90% reflectivity, 200 x 200 mm
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)	≤ 2 W (2.5 VA)
Output Contact ratings (AgCdO) Resistive loads AC 1 DC 1 Small inductive loads AC 15 DC 13 Mechanical life (typical) Electrical life (typical)	 µ (micro gap) 3 A/250 VAC 3 A/30 VDC 2 A/250 VAC 3 A/30 VDC ≥ 40 x 10^6 operations ≥ 5 x 10^5 operations at 220 VAC - 3 A resistive load: 360 impulses/h
Dielectric voltage	2000 VAC (rms) (cont./supply)
Sensing range (S_d)	0.2 - 0.8 m
Light source	GaAlAs, LED, 880 nm
Light type	Infrared, modulated

Optical angle (200 x 200 mm test card)	 ± 12°
Operating frequency	20 Hz
Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	 ≤ 20 ms ≤ 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 Delay on release One shot	 0.1 to 7 s ± 2 s 0.1 to 7 s ± 2 s 0.1 to 7 s ± 2 s
Environment Overvoltage category Pollution degree Degree of protection	 III (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 67 (IEC 60529; 60947-1)
Temperature Operating Storage	 -25° to +55°C (-13° to +131°F) -30°to +80°C (-22° to +176°F)

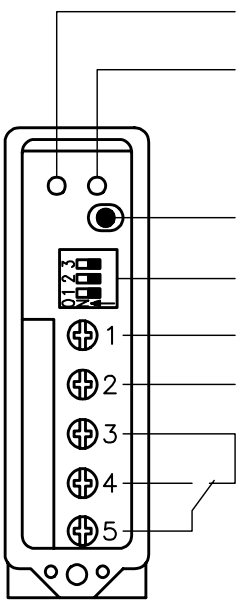
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Specifications (cont.)

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/ABS, grey, reinforced
Front	PC, black
Cover	PC, black
Cable gland	PA, black, reinforced
Mounting bracket	Steel, galvanized
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)

Sensitivity adjustment

LED

DIP switches

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

30 VDC
250 VAC
Max. 3 A

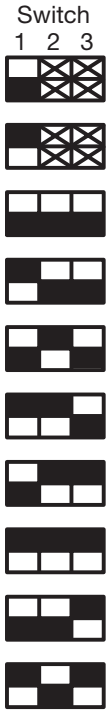
Delivery Contents

- Photoelectric switch: PMD 8R
- Cable gland
- Installation instruction
- Mounting bracket
- **Packaging:** Corrugated cardboard (environmentally friendly recycling material)

Accessories

- MB02 (longer mounting bracket), please refer to "Accessories"

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)

Reduction Factors

Reduction factors photoelectric switches	
Note: Real sensing distance = rated operating distance (S_n) x reduction factor	
Kodak test card, white, type R 27, 90% reflectivity	1.0
Dead black cardboard	0.1 - 0.4
Kodak test card, grey, type R 27	0.41 - 0.45
White Styropack	1.0 - 1.2
Bright metal	1.2 - 2.0
White cotton	0.5 - 0.8
Grey PVC	0.4 - 0.8
Raw wood	0.4 - 0.8
ER 1, reflector	0.3

Truth Table

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

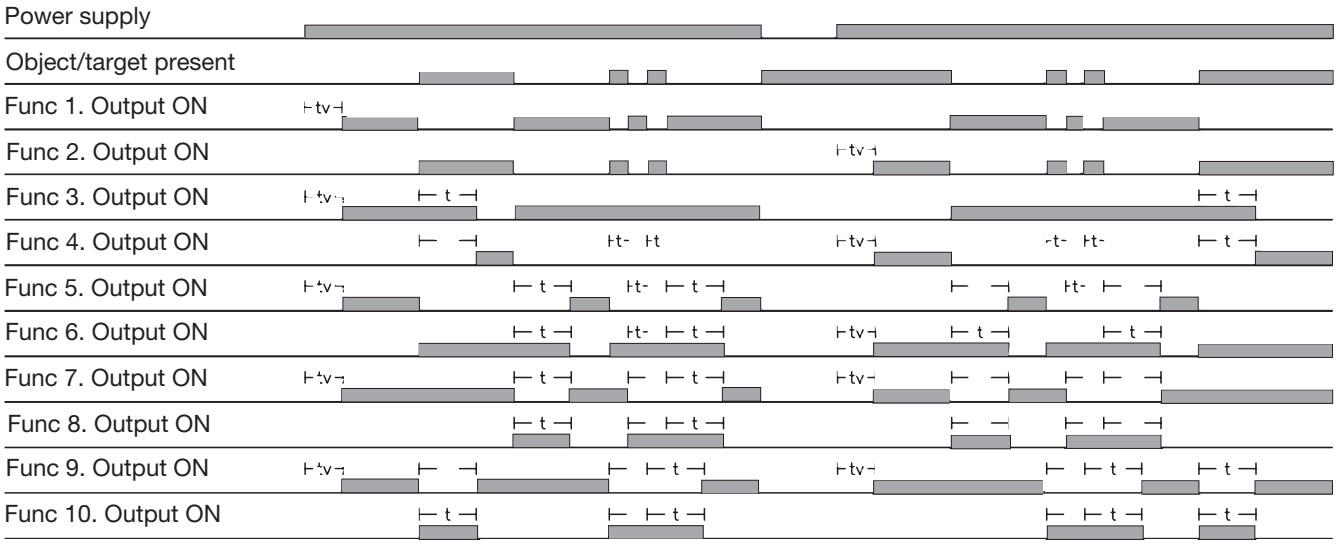
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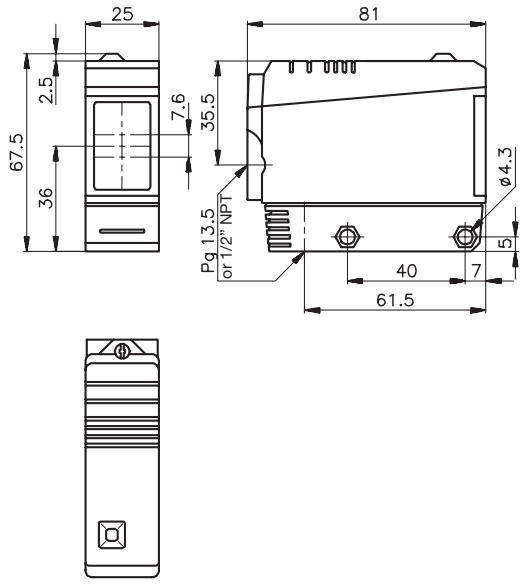
Operation Diagram

t = Time delay
tv = Power ON delay

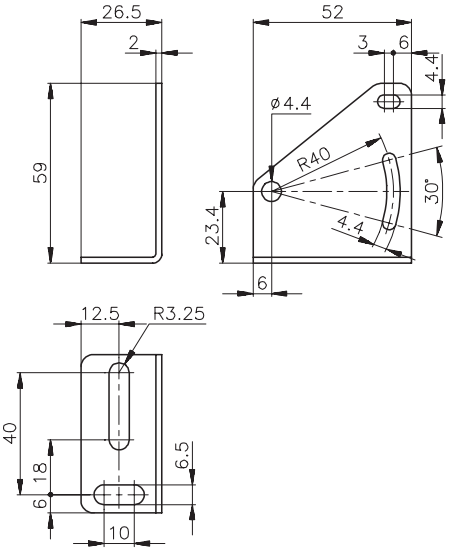


Dimensions

PMD 8R

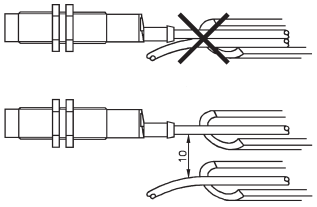


PMD 8R with angle bracket

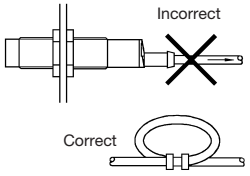


Installation Hints

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

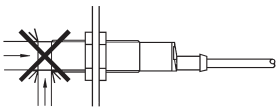


Relief of cable strain



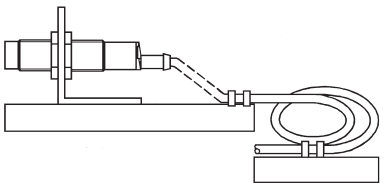
The cable should not be pulled

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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