

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. 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 or 1/2" NPT cable gland. Timer options: Delay on operate, delay on release, one shot (triggered on leading 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

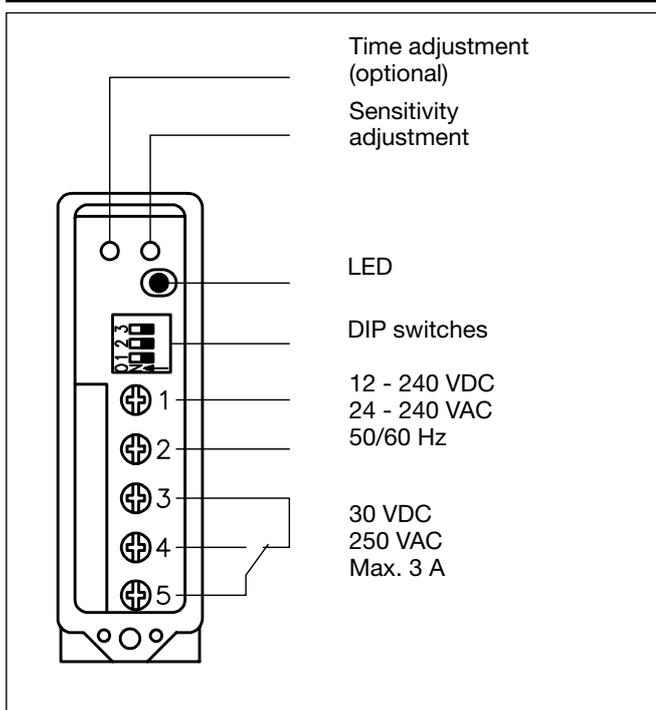
Rated operating dist. (S_n) (0 to 5,000 lux)	800 mm Reference target: Kodak test card R27, white, 90% reflectivity, 200 x 200 mm	Optical angle (200 x 200 mm test card)	$\pm 12^\circ$
Rated operational volt. (U_B) AC: 45 to 65 Hz	10.8 to 264 VDC 21.6 to 264 VAC	Operating frequency	20 Hz
Rated operational power (relay ON)	≤ 2 W (2.5 VA)	Response time OFF-ON (t_{ON}) ON-OFF (t_{OFF})	≤ 20 ms ≤ 30 ms
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 $\geq 40 \times 10^6$ operations $\geq 5 \times 10^5$ operations at 220 VAC - 3 A resistive load: 360 impulses/h	Power ON delay (t_v)	≤ 300 ms (typ. 100 ms)
Dielectric voltage	2000 VAC (rms) (cont./supply)	Output function	Switch selectable, make or break switching
Sensing range (S_d)	0.2 - 0.8 m	Indication Target detected	LED, yellow
Light source Light type	GaAlAs, LED, 880 nm Infrared, modulated	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)



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



Selection of Function

	Switch 1 2 3	
PMD 8R .		1 Break switching
		2 Make switching
PMD 8R .T		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 position 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

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"

Truth Table

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

Operation Diagram

t = Time delay

tv = Power ON delay

Power supply

Object/target present

Func 1. Output ON

Func 2. Output ON

Func 3. Output ON

Func 4. Output ON

Func 5. Output ON

Func 6. Output ON

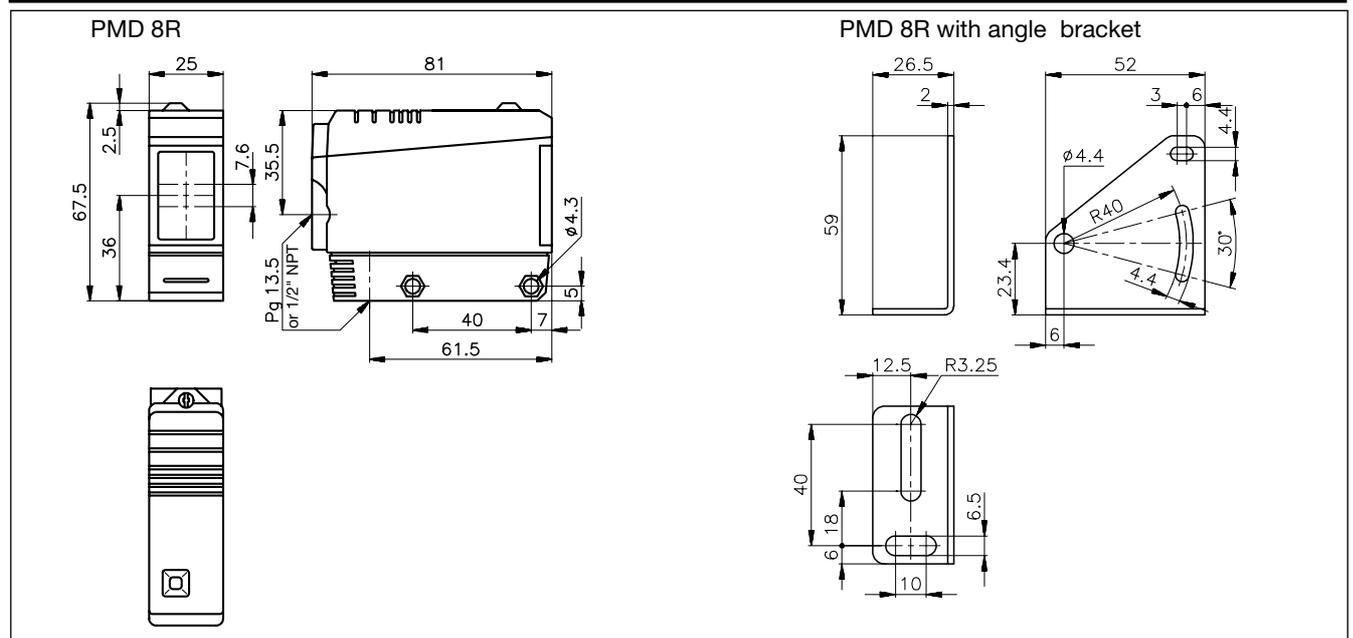
Func 7. Output ON

Func 8. Output ON

Func 9. Output ON

Func 10. Output ON

Dimensions



Installation Hints

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