

# 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 connec-

tion. 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	<b>PMD 8R G</b> <b>PMD 8R I</b>	<b>PMD 8R GT</b> <b>PMD 8R IT</b>

## Specifications

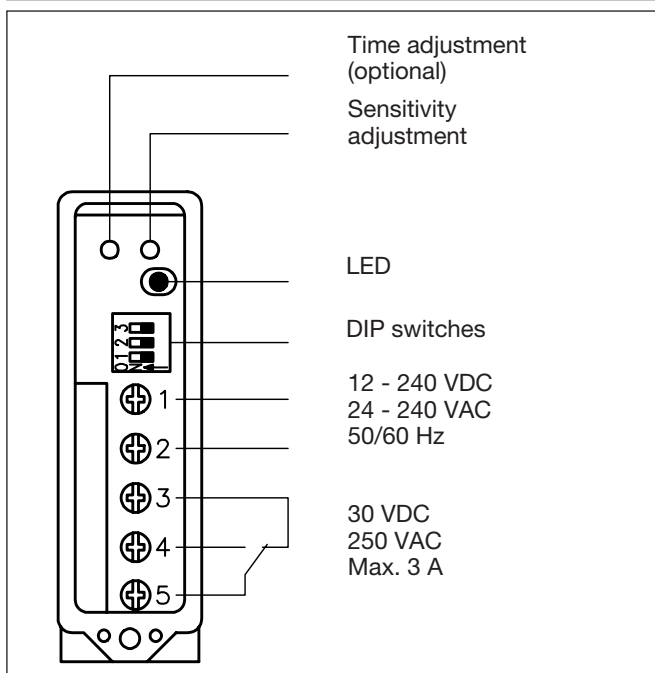
<b>Rated operating dist.</b> ( $S_n$ ) (0 to 5,000 lux)	800 mm Reference target: Kodak test card R27, white, 90% reflectivity, 200 x 200 mm	<b>Optical angle</b> (200 x 200 mm test card)	$\pm 12^\circ$
<b>Rated operational volt.</b> ( $U_b$ ) AC: 45 to 65 Hz	10.8 to 264 VDC 21.6 to 264 VAC	<b>Operating frequency</b>	20 Hz
<b>Rated operational power</b> (relay ON)	$\leq 2$ W (2.5 VA)	<b>Response time</b> OFF-ON ( $t_{ON}$ ) ON-OFF ( $t_{OFF}$ )	$\leq 20$ ms $\leq 30$ ms
<b>Output</b> Contact ratings (AgCdO) Resistive loads AC 1 DC 1 Small inductive loads AC 15 DC 13 Mechanical life (typical) Electrical life (typical)	$\mu$ (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	<b>Power ON delay</b> ( $t_v$ )	$\leq 300$ ms (typ. 100 ms)
<b>Dielectric voltage</b>	2000 VAC (rms) (cont./supply)	<b>Output function</b>	Switch selectable, make or break switching
<b>Sensing range</b> ( $S_d$ )	0.2 - 0.8 m	<b>Indication</b> Target detected	LED, yellow
<b>Light source</b>	GaAlAs, LED, 880 nm	<b>Optional timer</b> Delay on operate Delay on release One shot	0.1 to 7 s $\pm 2$ s 0.1 to 7 s $\pm 2$ s 0.1 to 7 s $\pm 2$ s
<b>Light type</b>	Infrared, modulated	<b>Environment</b> 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)
		<b>Temperature</b> Operating Storage	-25° to +55°C (-13° to +131°F) -30° to +80°C (-22° to +176°F)



## Specifications (cont.)

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

## Connection Diagram



## 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

	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	
<b>Note:</b> Real sensing distance = rated operating distance (S <sub>n</sub> ) 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	
	No	Yes	No	Yes
Object present	No	Yes	No	Yes
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active