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**

CE (UL) (CSA)

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

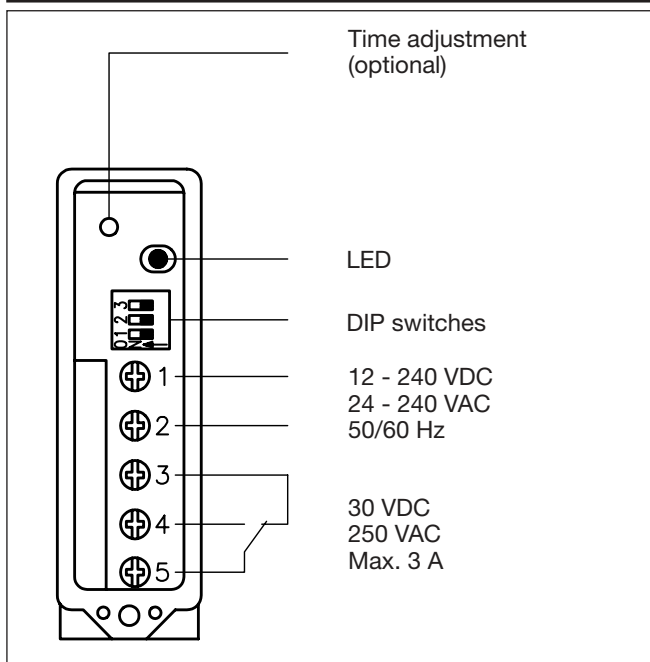| Housing W x H x D	Range S_n	Ordering no. without timer	Ordering no. with timer
25 x 65 x 81 PG 13.5 cable gland	10 m	**PMR 10R G**	**PMR 10R GT**
1/2" NPT cable gland	10 m	**PMR 10R I**	**PMR 10R IT**

Specifications

Rated operating dist. (S_n) (0 to 5,000 lux)	PMR10.. 10 m with reflector type ER 4, ref. target	**Operating frequency** (f)	20 Hz
		Response time	
Rated operational volt. (U_B) (AC: 45 to 65 Hz)	10.8 to 264 VDC 21.6 to 264 VAC	OFF-ON (t_{ON}) ON-OFF (t_{OFF})	≤ 20 ms ≤ 30 ms
Rated operational power (Relay ON)	≤ 1.5 W (2.0 VA)	**Power ON delay** (t_v)	≤ 300 ms (typ. 100 ms)
		Output function	Switch selectable, make or break switching
Output			
Contact ratings (AgCdO)	μ (micro gap)	**Indication**	
Resistive loads AC 1	3 A/250 VAC	Target detected	LED, yellow
DC 1	3 A/30 VDC	**Optional timer**	
Small inductive loads AC 15	2 A/250 VAC	Delay on operate	0.1 to 7 s ± 2 s
DC 13	3 A/30 VDC	Delay on release	0.1 to 7 s ± 2 s
Mechanical life	≥ 40 x 10⁶ operations	One shot	0.1 to 7 s ± 2 s
Electrical life	≥ 5 x 10⁵ operations at 220 VAC - 3 A resistive load: 360 impulses/h	**Environment**	
		Overvoltage category	III (IEC 60664/60664A; 60947-1)
Dielectric voltage	2000 VAC rms (cont./supply)	Pollution degree	3 (IEC 60664/60664A; 60947-1)
Sensitivity	Fixed	Degree of protection	IP 67 (IEC 60529; 60947-1)
Light source	GaAlAs, LED, 880 nm	**Temperature**	
Light type	Infrared, modulated	Operating	-25° to +55°C (-13° to +131°F)
Optical angle	±2°	Storage	-30° to +80°C (-22° to +176°F)
Light spot size	280 mm at 4 m		

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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

1 — 12 - 240 VDC
2 — 24 - 240 VAC 50/60 Hz

3
4 — 30 VDC
5 — 250 VAC Max. 3 A

Selection of Function

Switch
1 2 3

PMR 10R .

 1 Break switching

 2 Make switching

PMR 10R .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 postion ON (Mode 1)
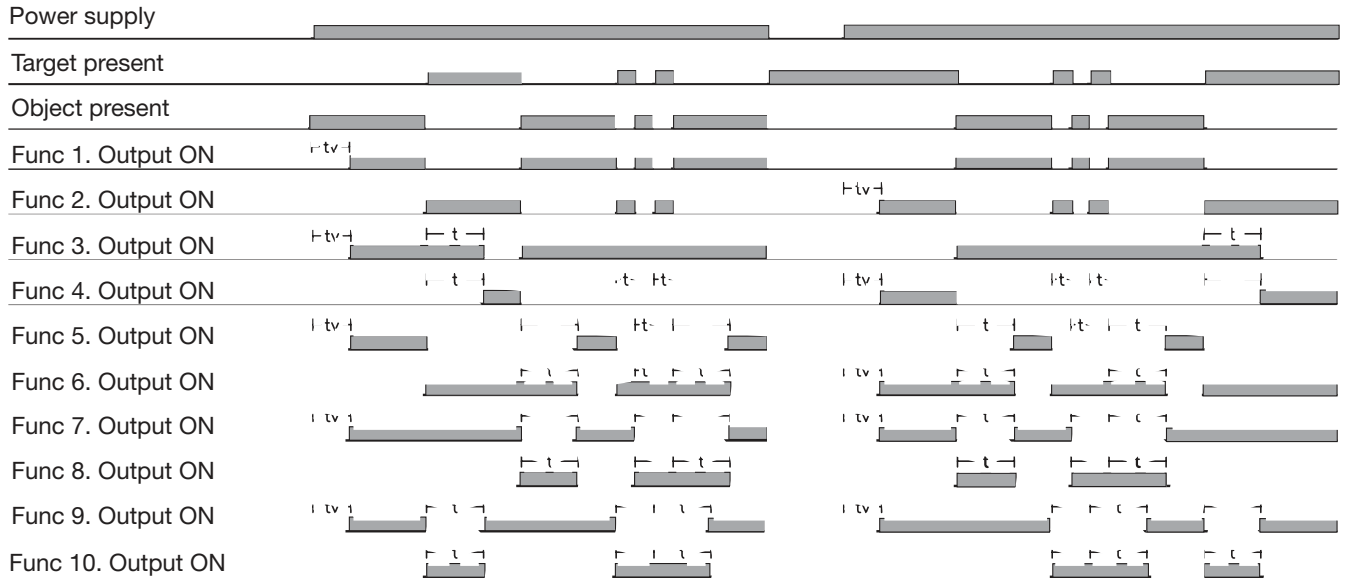Lower position OFF (Mode 0)

Truth Table

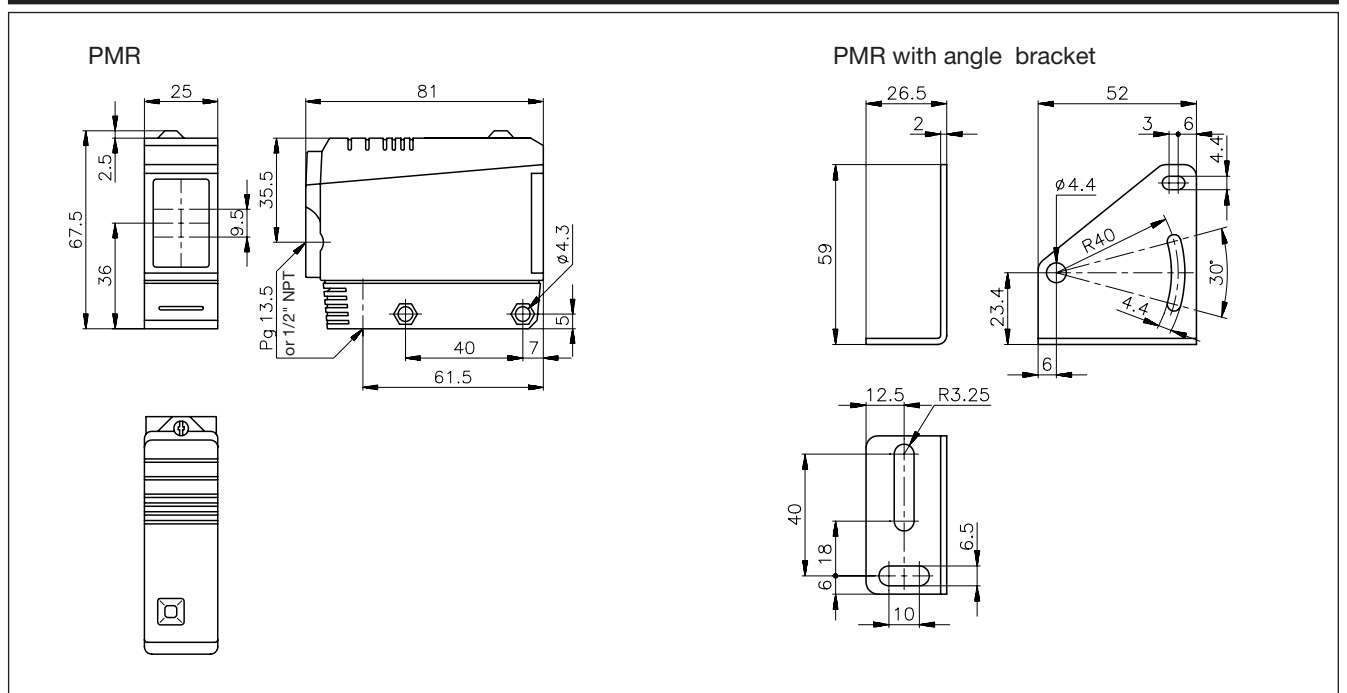|	Make switching		Break switching	
Object present	Yes	No	Yes	No
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active

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*	*Protection of the sensing face*	*Switch mounted on mobile carrier*
	Incorrect Correct The cable should not be pulled	 A proximity switch should not serve as mechanical stop	 Any repetitive flexing of the cable should be avoided

Specifications are subject to change without notice (02.03.2006)

Operation Diagram

t = Time delay
tv = Power ON delay

Power supply

Target present

Object 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

PMR

25
81
2.5
67.5
35.5
9.5
36
Pg 13.5 or 1/2" NPT
ø 4.3
40
7
5
61.5

PMR with angle bracket

26.5
52
2
3
6
4.4
ø 4.4
59
R40
23.4
30°
4.4
6

12.5
R3.25
40
18
6
6.5
6
10

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)