Photoelectrics
Retro-reflective, Transistor Output
Type PMR

CARLO GAVAZZI

- Range: 10 m
- Modulated, infrared light
- Rated operational voltage: 10 to 40 VDC
- Output: 200 mA, NPN or PNP
- Make or break switching function (switch selectable)
- Fully protected
- LED-indication for target detected
- High immunity to ambient light
- 25 x 65 x 81 mm reinforced PC housing, IP 67
- Timer options (adjustable)

Product Description

Retro-reflective photoelectric switch. Range up to 10 m. Fixed sensitivity. High immunity to ambient light. Output function switch selectable. Protection degree IP 67. Screw terminal connection.

25 x 65 x 81 mm polycarbonate 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

PMR 10 P G T

Type
Range
Output
Cable gland type
Timing function
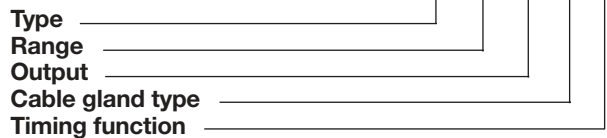
Type Selection

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

Specifications

Rated operating distance (S_n) (0 to 5,000 lux)	10 m With reflector type ER 4, ref. target
Rated operational volt. (U_B)	10 to 40 VDC
Ripple (U_{rpp})	10%
Output current	
Continuous (I_e)	≤ 200 mA
Short-time (I)	200 mA,
max. load capacity	100 nF
No load supply current	≤ 40 mA
OFF-state current (I_r)	Max. 100 µA
Voltage drop (U_d)	≤ 2.5 VDC
Transient voltage	IEC 947-5-2, level 3, 2.5 kV
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	100 Hz
Response time	
OFF-ON (t_{ON})	≤ 4 ms
ON-OFF (t_{OFF})	≤ 6 ms

Time delay before avail. (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 664/664A; 947-1)
Pollution degree	3 (IEC 664/664A; 947-1)
Degree of protection	IP 67 (IEC 529; 947-1)
Temperature	
Operating	-25° to +55°C (-13° to +131°F)
Storage	-30° to +80°C (-22° to +176°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 68-2-6)
Shock	2 x 1 m & 100 x 0.5 m (IEC 68-2-32)
Rated insulation voltage	50 VAC (rms)
Electrical protection	Short-circuit, reverse polarity, overvoltage, transients

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Specifications (cont.)

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	90 g

Connection Diagram

Timer adjustment (optional)

LED

DIP switches

1 No connection

2 NC

3 NO

4 +

5 -
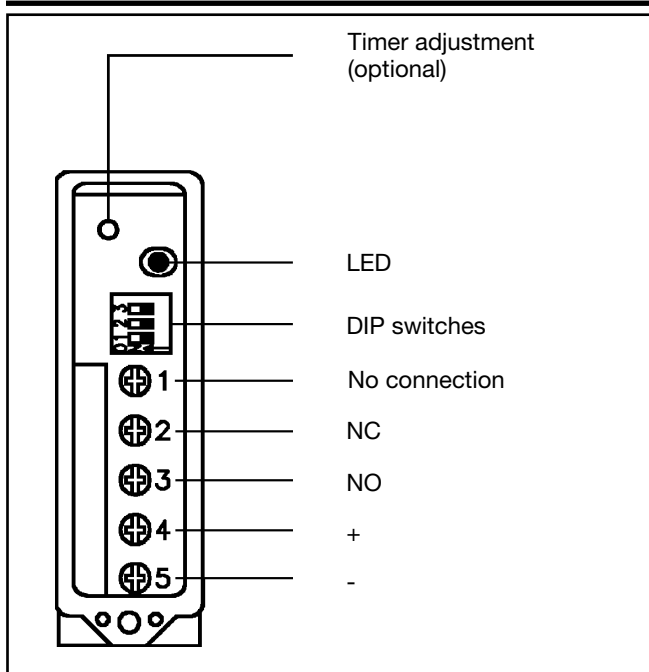
Selection of Function

Switch
1 2 3

PMR ... .

1 Break switching

2 Make switching

PMR ... .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

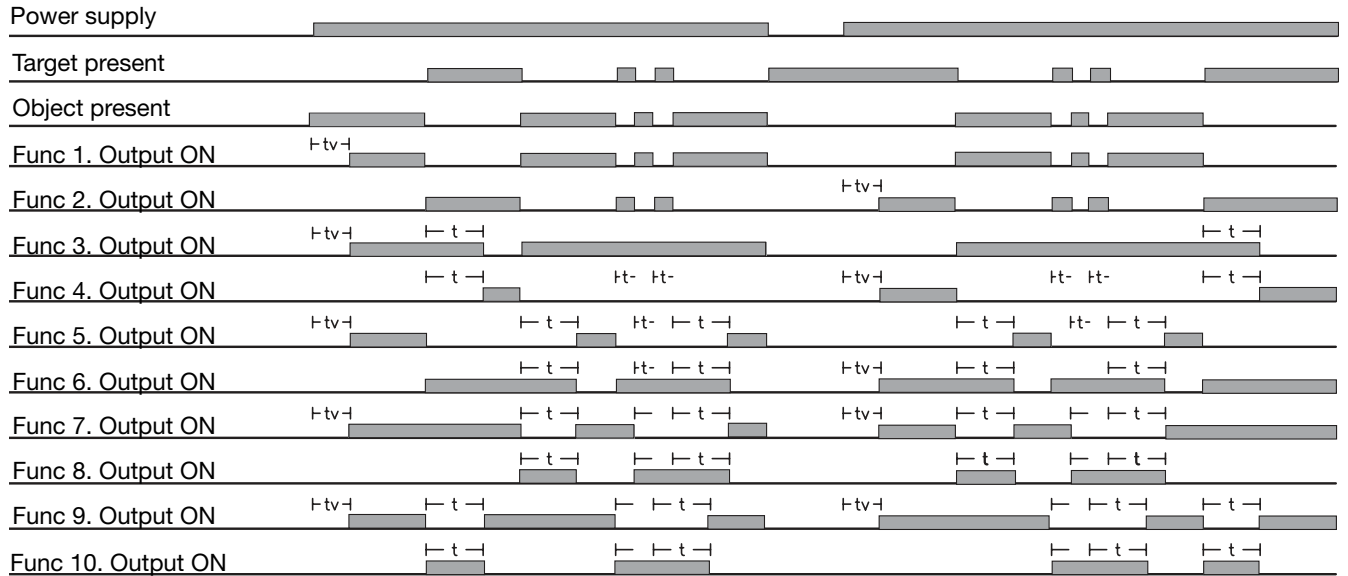|	Make switching		Break switching	
Object present	Yes	No	Yes	No
LED	OFF	ON	OFF	ON
Load	Non-active	Active	Active	Non-active

Accessories

• Reflectors: ER series
• MB02 mounting bracket 90 mm long for mounting PMR from behind

Delivery Contents

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

Specifications are subject to change without notice

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

LED indication

PMR with angle bracket