Photoelectrics
Through-beam
Type PMT

CARLO GAVAZZI



- **Range: 20 m**
- **Adjustable sensitivity**
- **Modulated, infrared light**
- **Make or break switching function (switch selectable)**
- **LED-indication for power supply ON (emitter) and target detected (receiver)**
- **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)**

Product Description

Through-beam photoelectric switch. Range up to 20 m. Adjustable sensitivity. Immune to ambient light. Precise detection through narrow beam. LED-indication. Output function switch selectable. Relay output (NO/NC). 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

PMT20 R G T

Type
Receiver
Cable gland
Option: Timer function

Type Selection

Housing W x H x D	Ordering no. Receiver without timer	Ordering no. Receiver with timer	Ordering no. Emitter
25 x 65 x 81			
PG 13.5 cable gland	**PMT 20R G**	**PMT 20R GT**	**PMT 20 G**
1/2" NPT cable gland	**PMT 20R I**	**PMT 20R IT**	**PMT 20 I**

Specifications Emitter

Rated operational volt. (U_B) AC: 45 to 65 Hz	10.8 to 264 VDC 21.6 to 264 VAC
Rated operational power	≤ 2 W (2.5 VA)
Light source	GaAlAs LED, 880 nm
Light type	Infrared, modulated
Optical angle	± 2°
Indication Power supply ON	 LED, green

Specifications Receiver

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)		µ (micro gap)
Resistive loads	AC 1	3 A/250 VAC
	DC 1	3 A/30 VDC
Small inductive loads	AC 15	2 A/250 VAC
	DC 13	3 A/30 VDC
Mechanical life		≥ 40 x 10^6 operations
Electrical life		≥ 5 x 10^5 operations at 220 VAC - 3 A resistive load: 360 impulses/h
Dielectric voltage		2 kVAC (rms) (cont./supply)
Sensitivity		Adjustable, single turn pot.
Optical angle		± 2°
Rated operating dist. (S_n) (0 to 5,000 lux)		 20 m
Operating frequency (f)		20 Hz
Response time	OFF-ON (t_{ON})	≤ 20 ms
	ON-OFF (t_{OFF})	≤ 20 ms

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Specifications Receiver (cont.)

Power ON delay (t_v)	≤ 300 ms (typ. 100 ms)
Output function	Switch selectable, make or break switching
Indication	
Target detected (make swit.)	LED, yellow
Target not detected (break swit.)	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

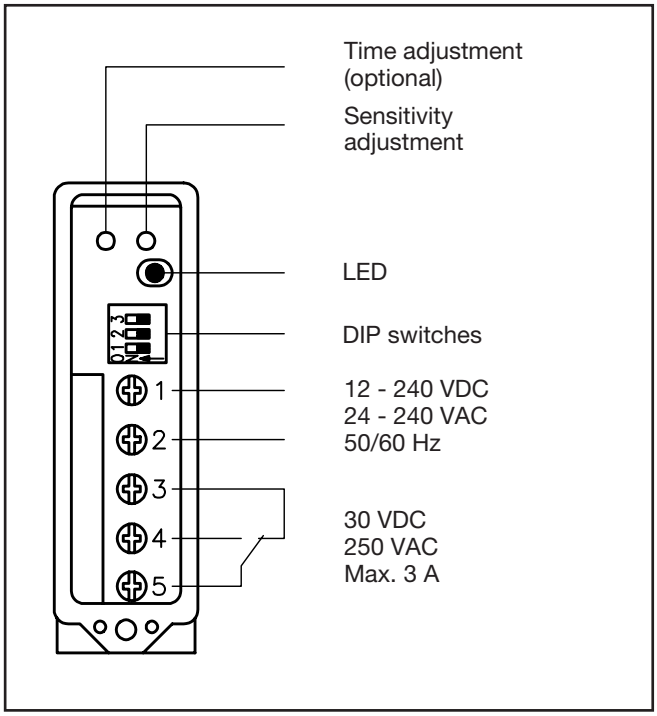
General Specifications

Environment	
Overvoltage category	III (IEC 60664/60664A, 60947-1)
Pollution degree	3 (IEC 60664/60664A, 60947-1)
Degree of protection	IP 67 (IEC 60529, 60947-1)
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 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, reinforced
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	
Emitter	110 g
Receiver	115 g
Approvals	UL, CSA
CE-marking	Yes

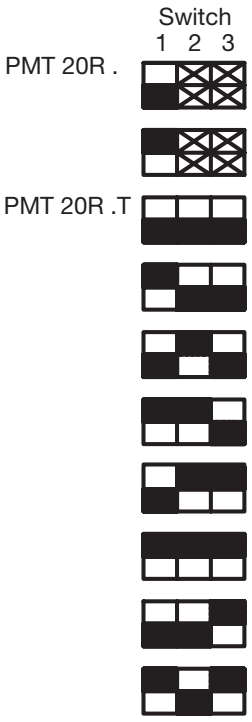
Truth Table

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

Connection Diagram



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)

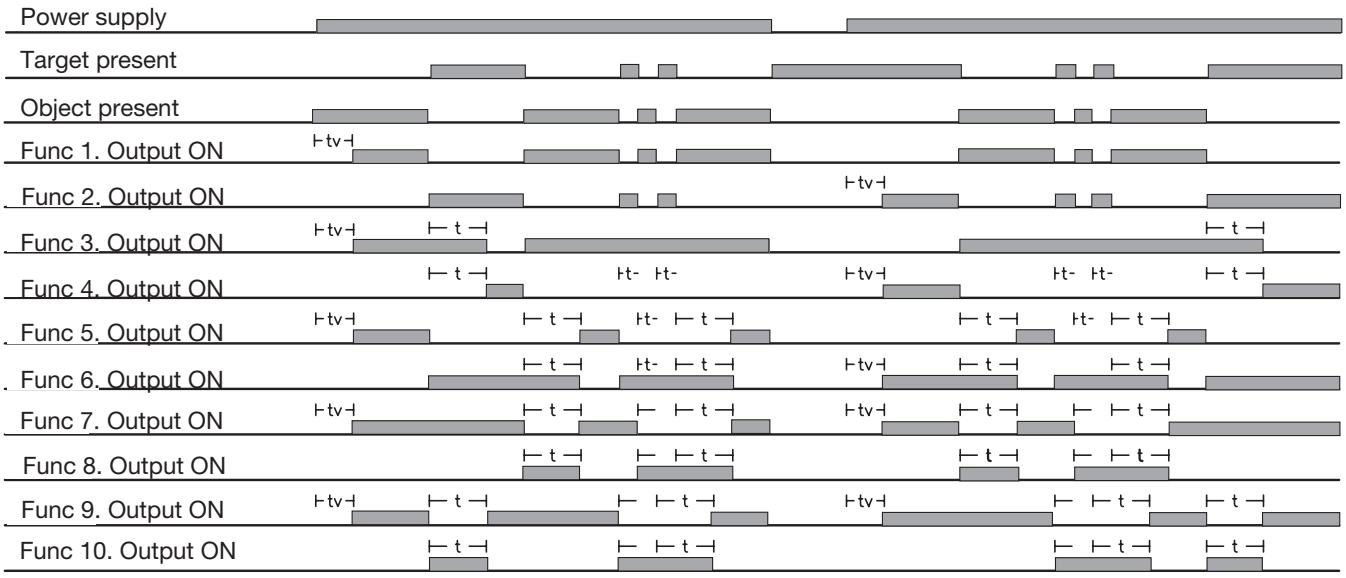
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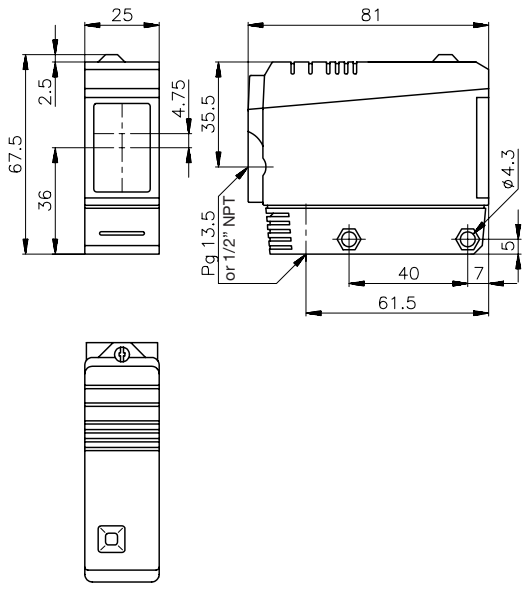
Operation Diagram

t = Time delay
tv = Power ON delay

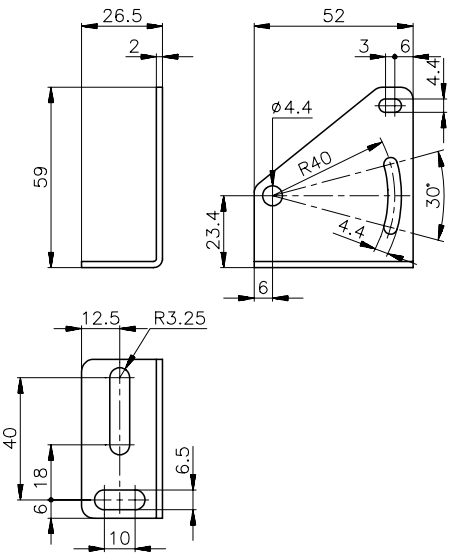


Dimensions

PMT 20

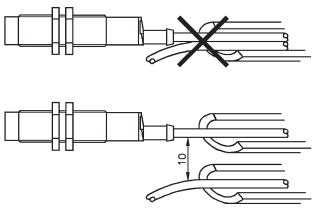
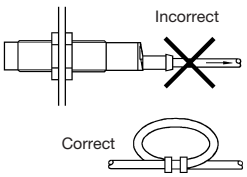
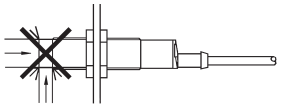
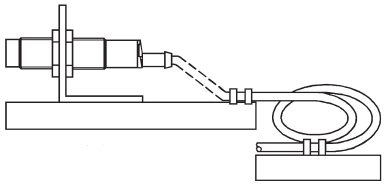


PMT 20 with angle bracket



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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*
	 The cable should not be pulled	 A proximity switch should not serve as mechanical stop	 Any repetitive flexing of the cable should be avoided

Delivery Contents

- Photoelectric switch: PMT 20
- Cable gland
- Installation instruction
- Mounting bracket
- **Packaging:** Corrugated cardboard (environmentally friendly recycling material)

Accessories

- MB02 (longer mounting bracket)

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