

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).

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 1/2" NPT cable gland	PMT 20R G PMT 20R I	PMT 20R GT PMT 20R IT	PMT 20 G 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

Ordering Key

PMT20 R G T

Type _____
Receiver _____
Cable gland _____
Option: Timer function _____

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

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

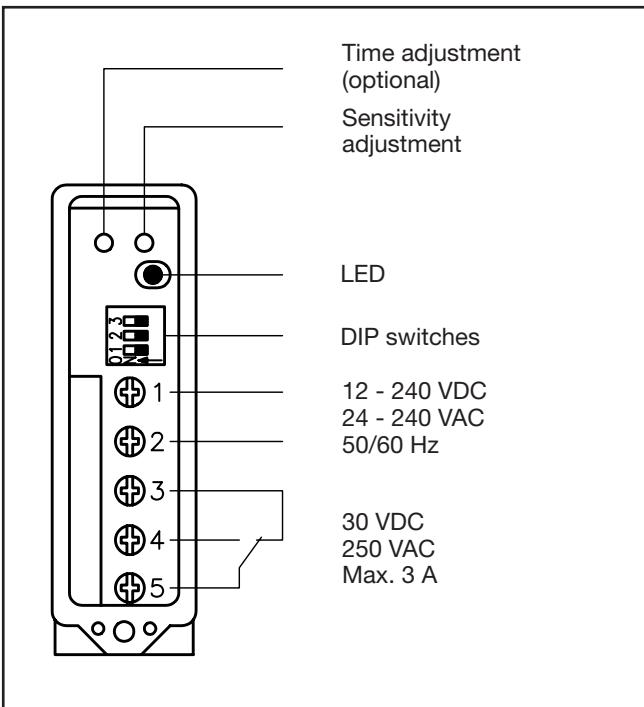
General Specifications

Environment	
Overtoltage 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

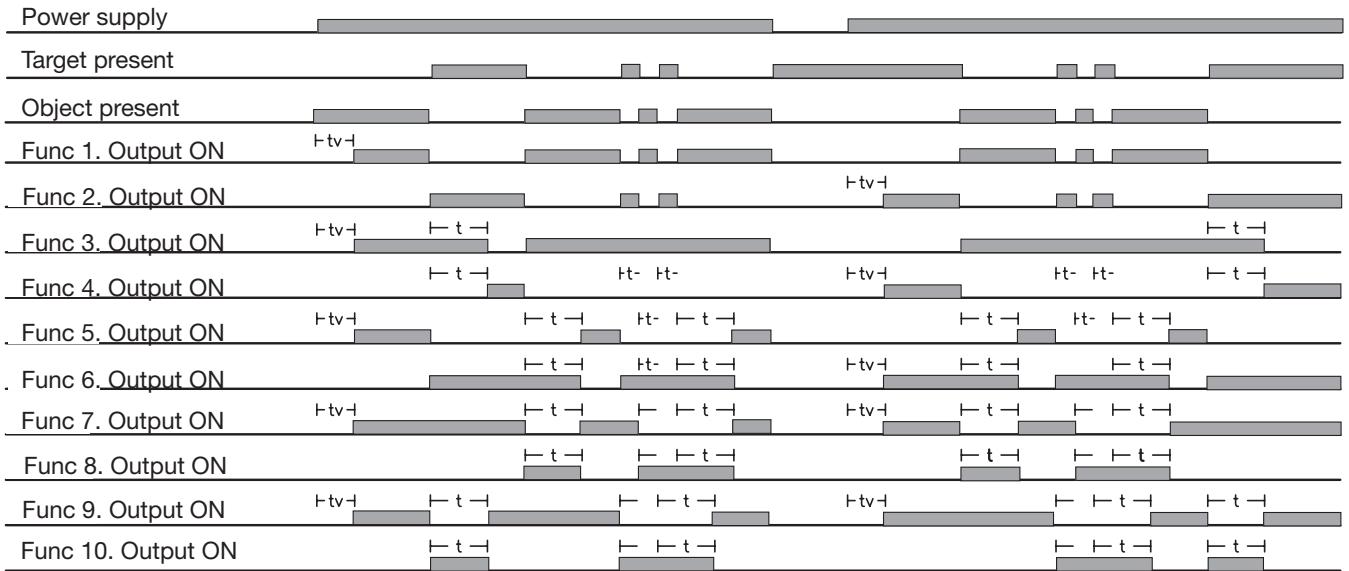
Switch	1 2 3	1 Break switching
PMT 20R .		2 Make switching
PMT 20R .T		3 Delay on operate - Break switching
		4 Delay on operate - Make switching
		5 Delay on release - Break switching
		6 Delay on release - Make switching
		7 One shot, trailing edge - Break switching
		8 One shot, trailing edge - Make switching
		9 One shot, leading edge - Break switching
		10 One shot, leading edge - Make switching

Don't care

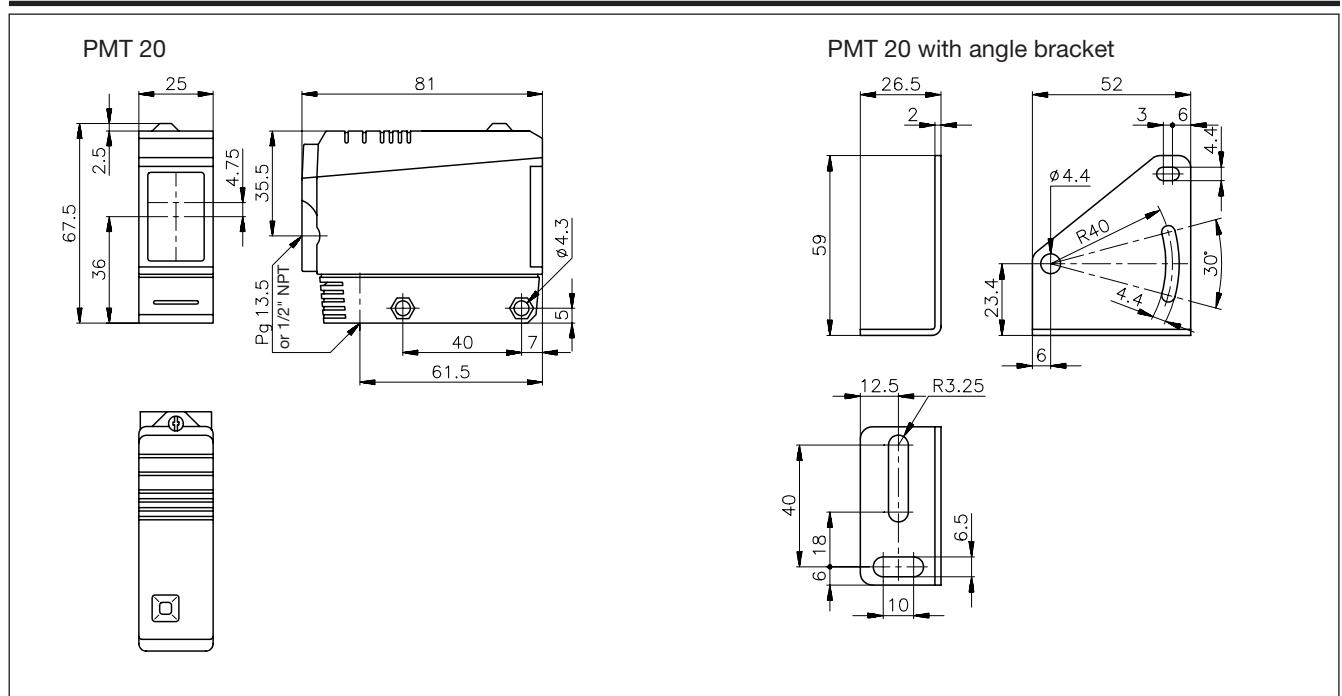
Upper position ON (Mode 1)
Lower position OFF (Mode 0)

Operation Diagram

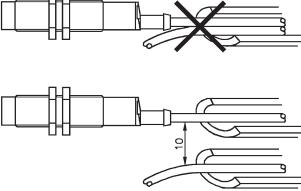
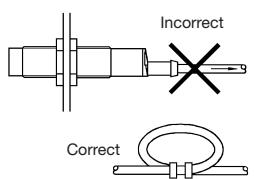
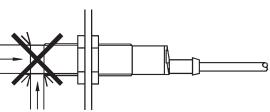
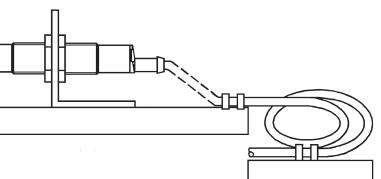
t = Time delay
tv = Power ON delay



Dimensions



Installation Hints

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

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

Accessories

- MB02 (longer mounting bracket), please refer to "Accessories"