

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)
- NO and NC output

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 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 |

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 |

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 |

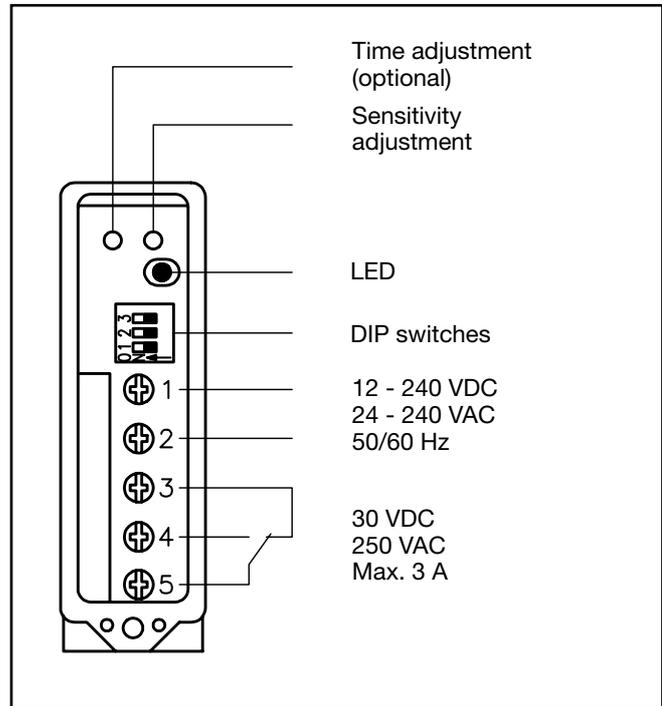
General Specifications

| | |
|---------------------------------|--|
| 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 |

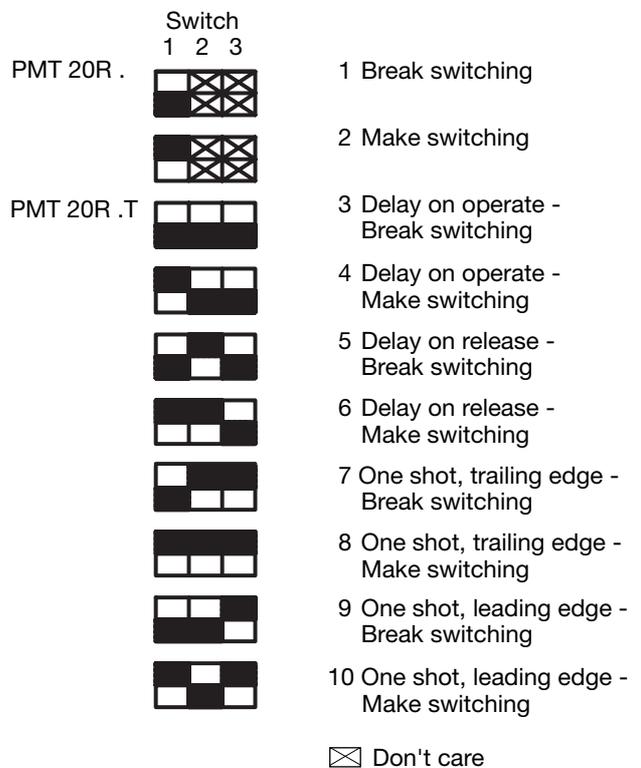
Truth Table

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

Connection Diagram



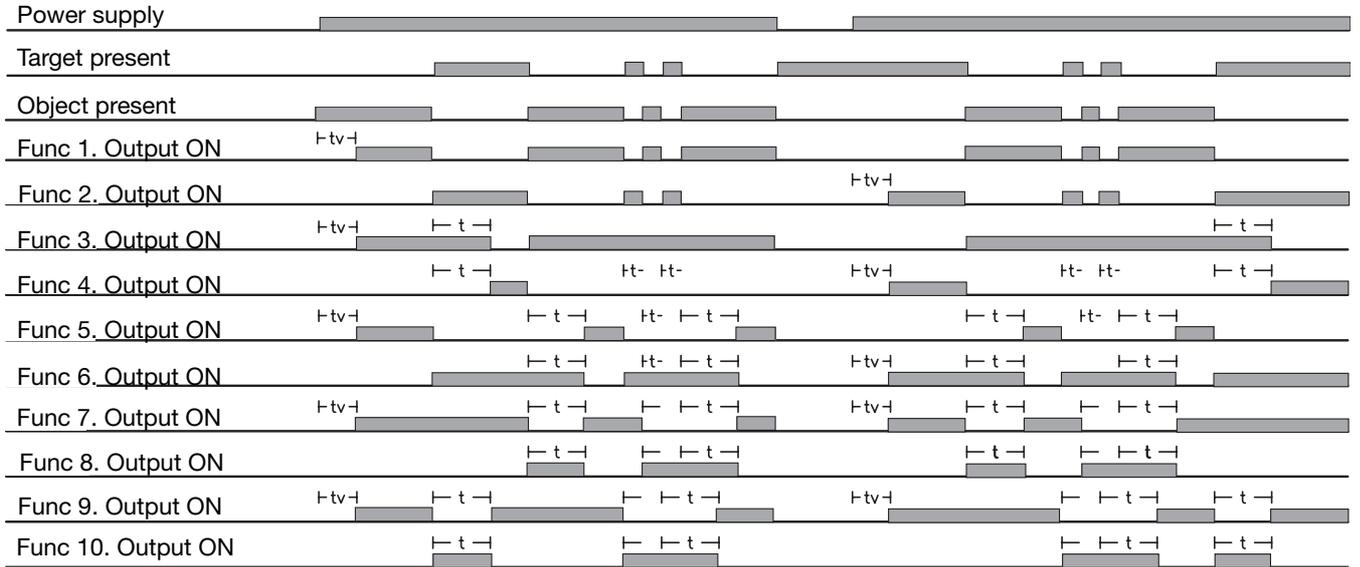
Selection of Function



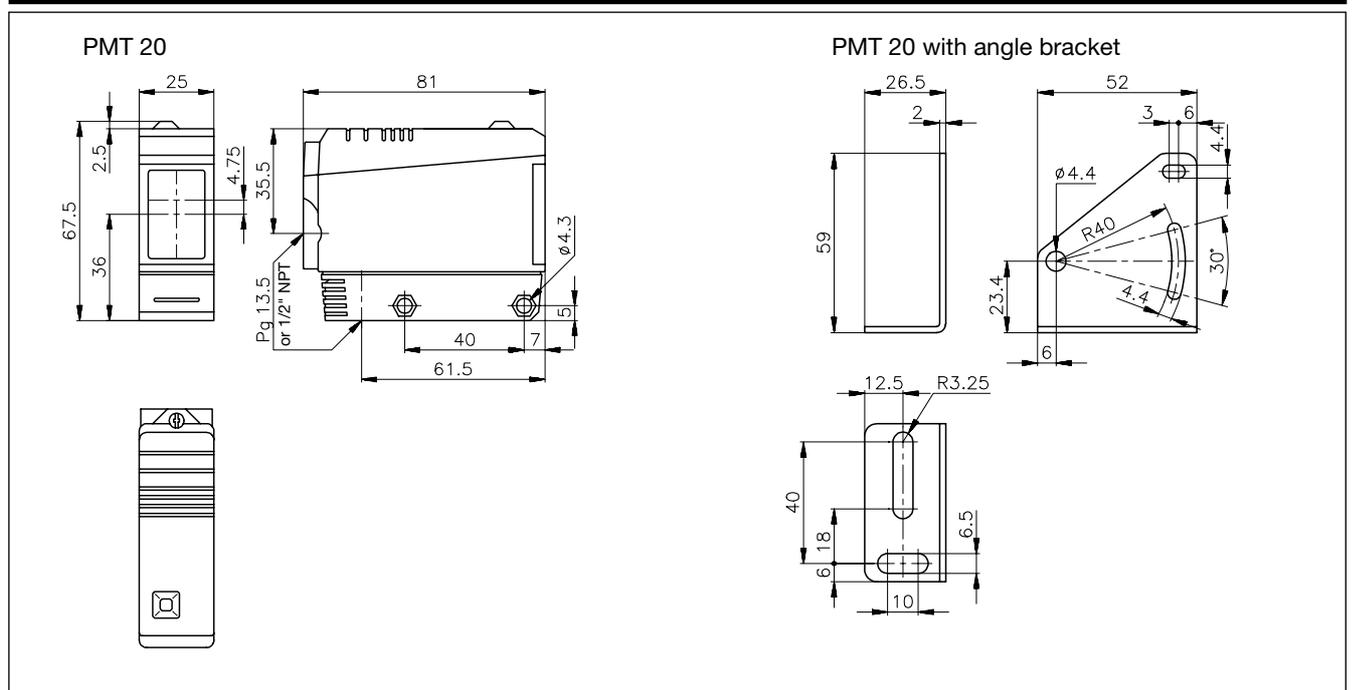
Upper position ON (Mode 1)
Lower position OFF (Mode 0)

Operation Diagram

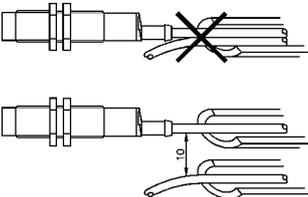
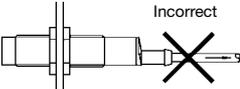
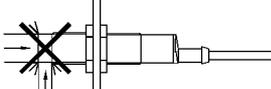
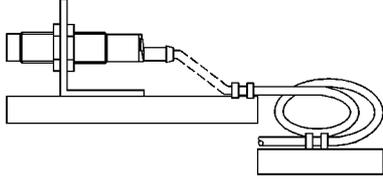
t = Time delay
tv = Power ON delay



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>Incorrect</p>  <p>Correct</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> |
|---|---|---|--|

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"