# Photoelectrics
# Retro-reflective
# Type PMR


- **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**

## 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<br>W x H x D | Range<br>$S_n$ | Ordering no.<br>without timer | Ordering no.<br>with timer |
|---|---|---|---|
| 25 x 65 x 81<br>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** |

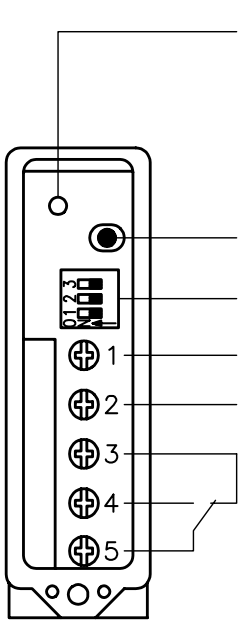
## Specifications

| | | |
|---|---|---|
| **Rated operating dist. ($S_n$)**<br>(0 to 5,000 lux) | | PMR10.. 10 m<br>with reflector type ER 4, ref. target |
| **Rated operational volt. ( $U_B$ )**<br>(AC: 45 to 65 Hz) | | 10.8 to 264 VDC<br>21.6 to 264 VAC |
| **Rated operational power**<br>(Relay ON) | | ≤ 1.5 W (2.0 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** | | 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 (f)** | | 20 Hz |
| **Response time** | | |
| OFF-ON ( $t_{ON}$ ) | | ≤ 20 ms |
| ON-OFF ( $t_{OFF}$ ) | | ≤ 30 ms |
| **Power ON delay ( $t_v$ )** | | ≤ 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) |

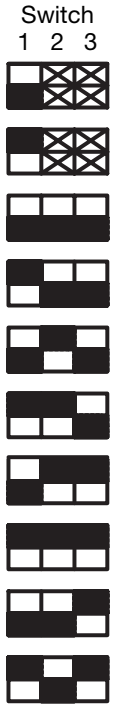
## Specifications (cont.)

| | |
|---|---|
| **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** | 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 |

## 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)

## 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 (longer mounting bracket)

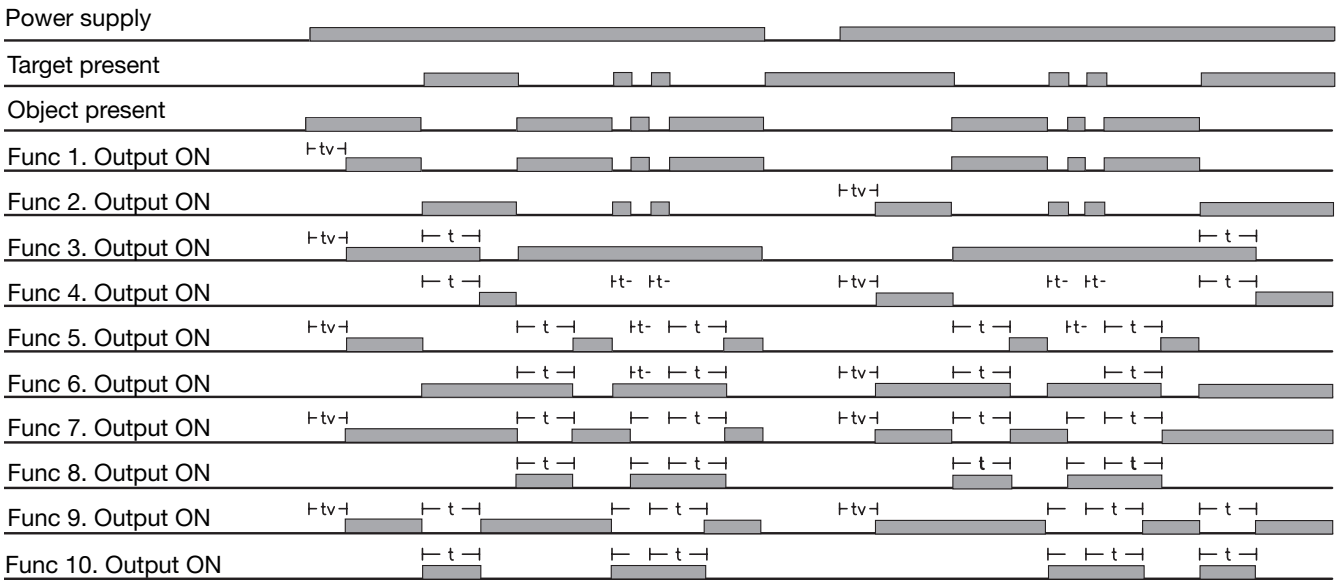
For further information refer to "Accessories"

## Delivery Contents

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

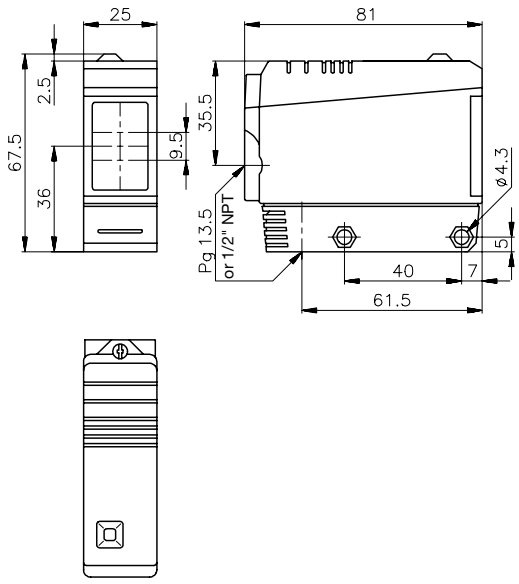
## Operation Diagram

t = Time delay
tv = Power ON delay




## Dimensions

PMR




PMR with angle bracket