

# Photoelectrics Through-beam Type PMT

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- 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 1/2" NPT cable gland	<b>PMT 20R G</b> <b>PMT 20R I</b>	<b>PMT 20R GT</b> <b>PMT 20R IT</b>	<b>PMT 20 G</b> <b>PMT 20 I</b>

## Specifications Emitter

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

## Specifications Receiver

<b>Rated operational volt. (U<sub>B</sub>)</b> AC: 45 to 65 Hz	10.8 to 264 VDC 21.6 to 264 VAC
<b>Rated operational power</b> (Relay ON)	≤ 2 W (2.5 VA)
<b>Output</b>	μ (micro gap)
Contact ratings (AgCdO)	3 A/250 VAC
Resistive loads AC 1	3 A/30 VDC
DC 1	2 A/250 VAC
Small inductive loads AC 15	3 A/30 VDC
DC 13	≥ 40 x 10 <sup>6</sup> operations
Mechanical life	≥ 5 x 10 <sup>5</sup> operations
Electrical life	at 220 VAC - 3 A resistive load: 360 impulses/h
<b>Dielectric voltage</b>	2 kVAC (rms) (cont./supply)
<b>Sensitivity</b>	Adjustable, single turn pot.
<b>Optical angle</b>	± 2°
<b>Rated operating dist. (S<sub>n</sub>)</b> (0 to 5,000 lux)	20 m
<b>Operating frequency (f)</b>	20 Hz
<b>Response time</b> OFF-ON (t <sub>ON</sub> )	≤ 20 ms
ON-OFF (t <sub>OFF</sub> )	≤ 20 ms

## Specifications Receiver (cont.)

<b>Power ON delay ( t<sub>v</sub> )</b>	≤ 300 ms (typ. 100 ms)
<b>Output function</b>	Switch selectable, make or break switching
<b>Indication</b>	
Target detected (make swit.)	LED, yellow
Target not detected (break swit.)	LED, yellow
<b>Optional timer</b>	
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

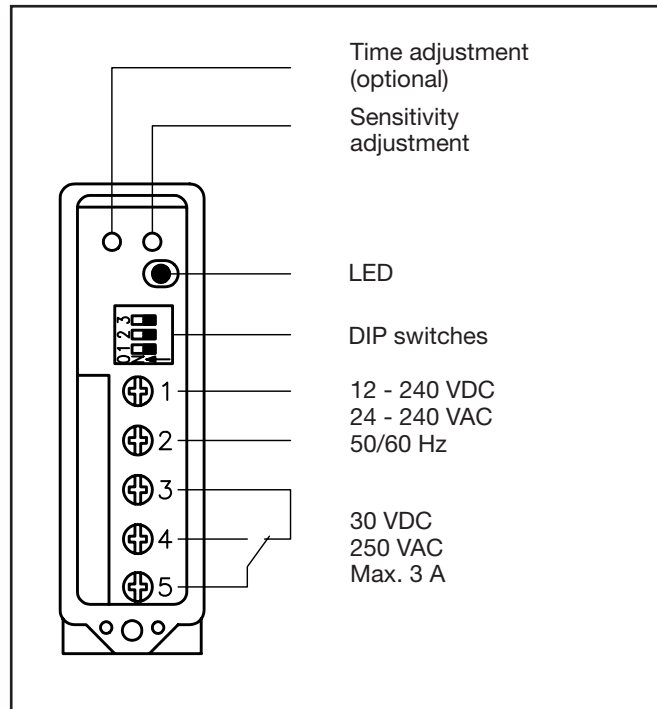
## General Specifications

<b>Environment</b>	
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)
<b>Temperature</b>	
Operating	-25° to +55°C (-13° to +131°F)
Storage	-30° to +80°C (-22° to +176°F)
<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)
<b>Rated insulation voltage</b>	250 VAC (rms)
<b>Housing material</b>	
Body	PC, grey, reinforced
Front	PC, black
Cover	PC, black
Cable gland	PA, black, reinforced
Mounting bracket	Steel, black
<b>Connection</b>	
Screw terminal	5 x 2 x 1 mm <sup>2</sup>
Cable gland	PG 13.5 or 1/2" NPT for cable 6 to 10 mm
<b>Weight</b>	
Emitter	110 g
Receiver	115 g
<b>Approvals</b>	UL, CSA
<b>CE-marking</b>	Yes

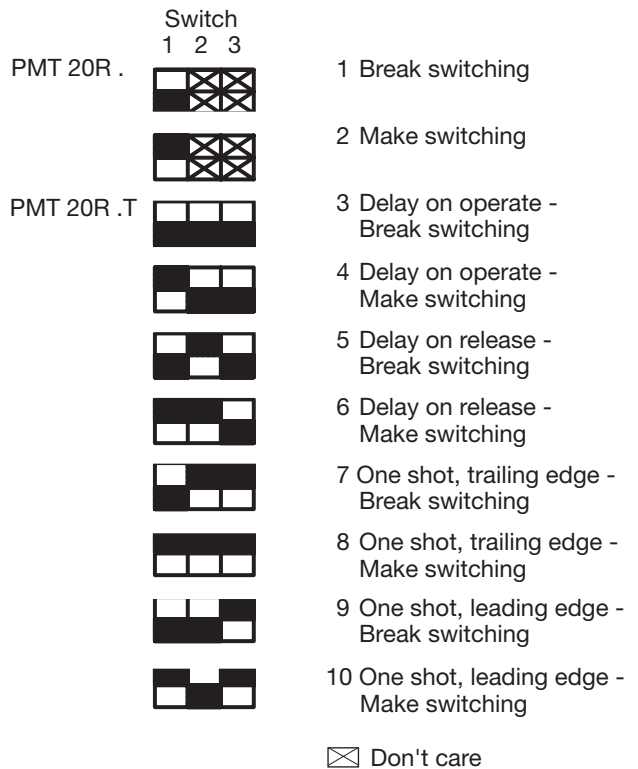
## Truth Table

	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



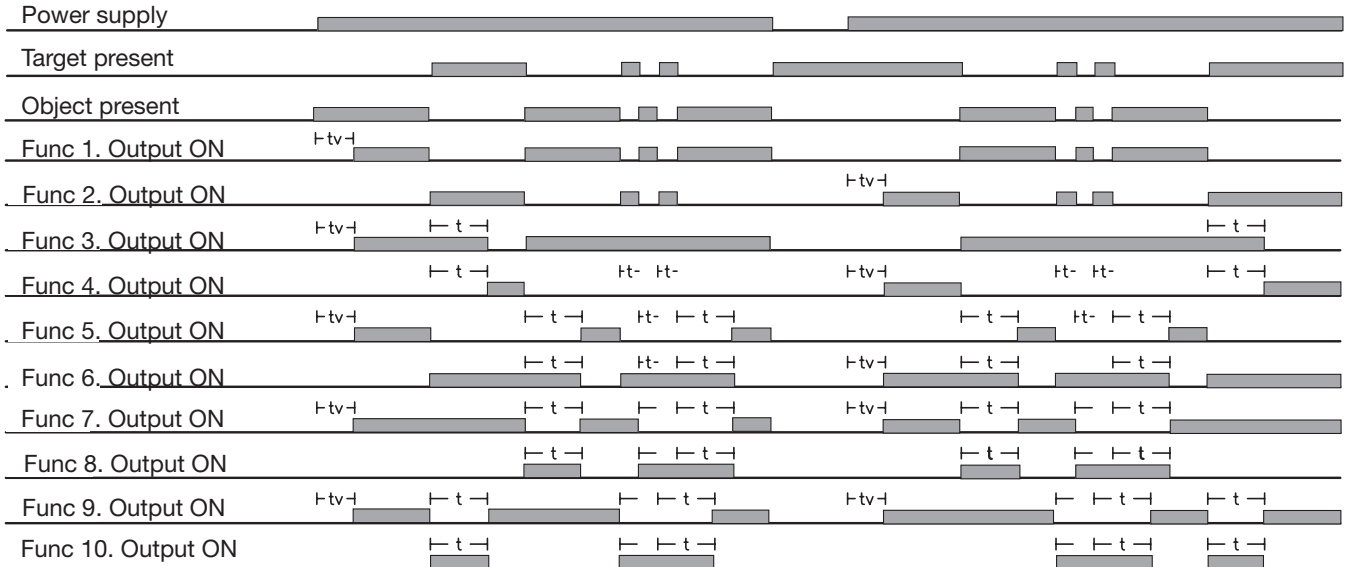
## Selection of Function



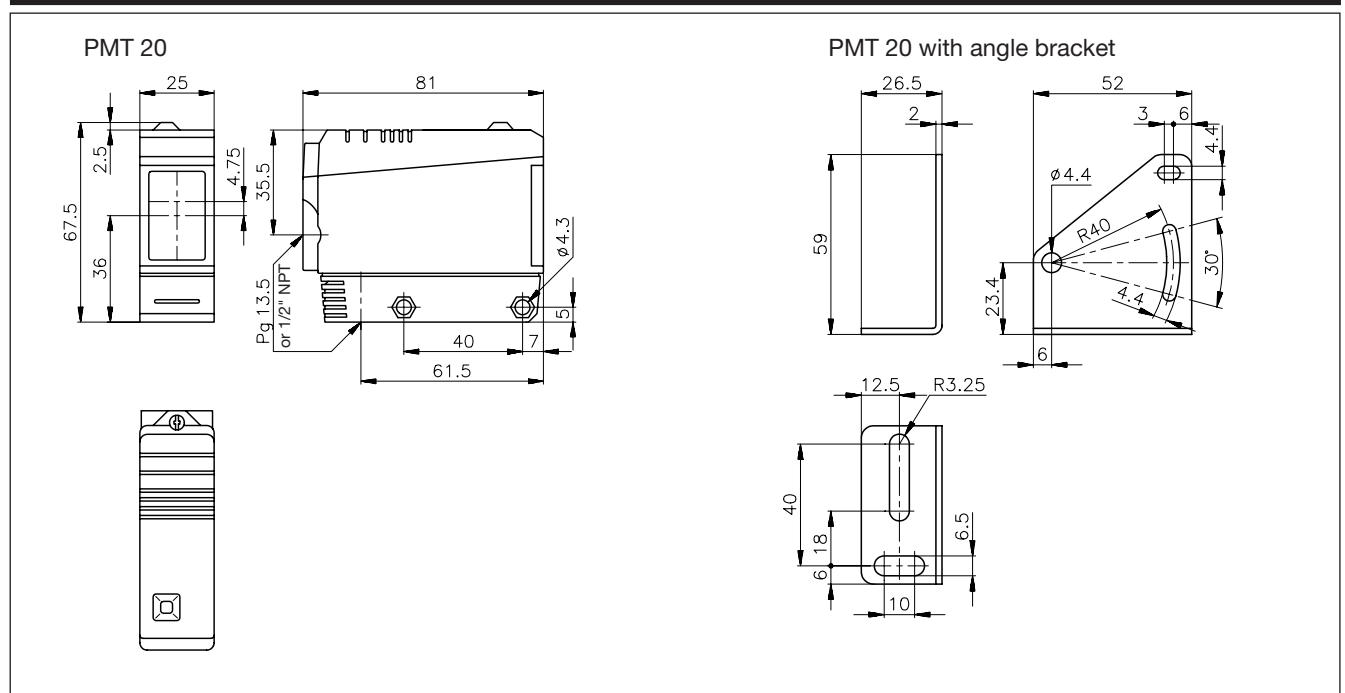
Upper position ON (Mode 1)  
Lower position OFF (Mode 0)

## Operation Diagram

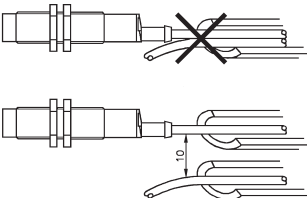
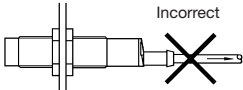

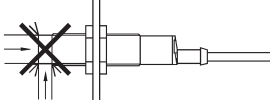
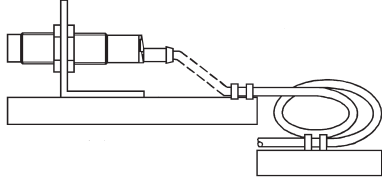
t = Time delay  
tv = Power ON delay



## 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>
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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"