

# Photoelectrics Through-beam Type PA18CST10, DC, PBTP-housing

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- Range: 10 m
- Modulated infrared light
- Supply voltage: 10-40 VDC
- Output: 200 mA NPN or PNP
- Make and break switching functions
- LED-indication for power supply ON (emitter) and target detected (receiver)
- Protection: Reverse polarity, short-circuit, transients
- Cable and plug versions



## Product Description

The PA18CST.. is a family of inexpensive general purpose Through beam sensors in industrial standard 18 mm cylindrical PBTP housing. They are useful for simple applications where a basic sensor provides adequate

sensing performance. The sensors are simple to use and no adjustment are necessary. The output is a 4-wire complementary (NO and NC) output in NPN (current sinking) or PNP (current sourcing).

## Ordering Key

PA18CST10NAM1

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Housing length	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection type	_____

## Type Selection

Hous. diam.	Rated op. dist. (S <sub>n</sub> )	Ordering no. Rec./NPN Cable Make & break	Ordering no. Rec./NPN Plug Make & break	Ordering no. Rec./PNP Cable Make & break	Ordering no. Rec./PNP Plug Make & break	Ordering no. Emitter Cable	Ordering no. Emitter Plug
M18	10 m	PA18CST10NA	PA18CST10NAM1	PA18CST10PA	PA18CST10PAM1	PA18CST10	PA18CST10M1

**Note:** Please order emitter and receiver separately. Plugs to be ordered separately.

## Specifications Emitter

Rated operational volt. (U <sub>B</sub> )	10 to 40 VDC (ripple included)
Ripple (U <sub>ripp</sub> )	≤ 10%
Supply current (I <sub>o</sub> )	≤ 20 mA
Protection	Reverse polarity, short-circuits, transients
Light source	GaAlAs LED, 880 nm
Light type	Infrared, modulated
Optical angle	± 2°
Indication Supply ON	LED, green

## Specifications Receiver

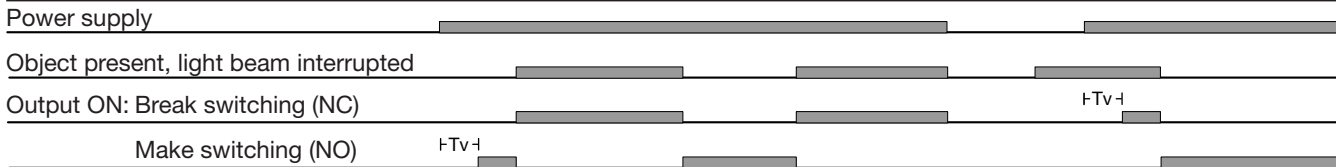
Rated operating dist. (S <sub>n</sub> )	Up to 10 m
Temperature drift	0.6%/°C
Hysteresis (H) (Differential travel)	3 to 20%
Rated operational volt. (U <sub>B</sub> )	10 to 40 VDC (ripple included)
Ripple (U <sub>ripp</sub> )	Max. 10%
No-load supply current (I <sub>o</sub> )	Max. 12 mA (typ. 8 mA)
Min. operational current (I <sub>e</sub> )	0.5 mA
OFF-state current (I <sub>r</sub> )	Max. 100 µA (typ. 0)
Output current Continuous (I <sub>e</sub> ) Short-time (I)	Max. 200 mA 200 mA Max. load capacity 100 nF
Voltage drop (U <sub>d</sub> )	Max. 2.5 VDC
Protection	Reverse polarity, short-circuit, transients
Optical angle	± 2°
Ambient light	Max. 5,000 lux
Operating frequency (f)	Typ. 170 Hz
Response time OFF-ON (t <sub>ON</sub> ) ON-OFF (t <sub>OFF</sub> )	Typ. 1.6 ms Typ. 4.2 ms



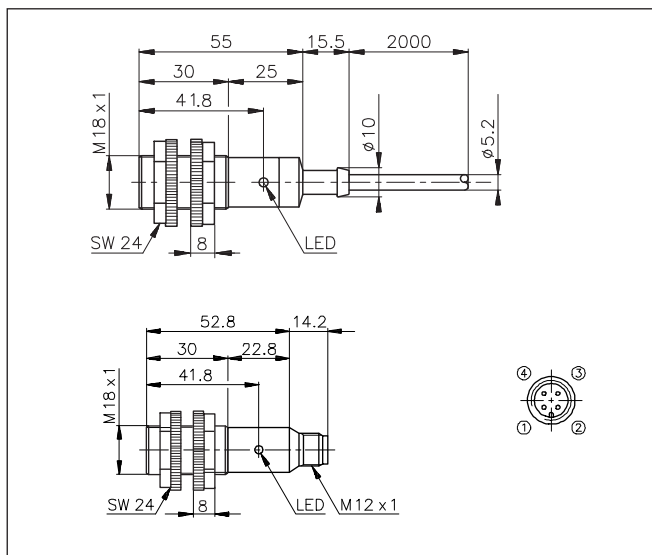
## General Specifications

<b>Power ON delay (t<sub>v</sub>)</b>	70 ms	<b>Housing material</b>	
<b>Indication</b>	Light and dark (Complementary switch) LED, yellow	<b>Body</b>	PBTP grey thermoplastic polyester housing
<b>Environment</b>		<b>Front</b>	PC®, black
Overvoltage category	III (IEC 60664/664A; 60947-1)	<b>Cable end</b>	Polyester, black
Pollution degree	3 (IEC 60664/664A; 60947-1)	<b>Nuts</b>	Reinforced nylon
Degree of protection	IP 67 (IEC 60529; 60947-1)	<b>Connection</b>	
<b>Temperature</b>		<b>Cable</b>	Grey, 2 m oilproof, PVC, 4 x 0.34 mm <sup>2</sup> , ø 5.2 mm
Operating	-20° to +60°C (-4° to +140°F)	<b>Receiver</b>	4 x 0.34 mm <sup>2</sup> , ø 5.2 mm
Storage	-30° to +70°C (-22° to +158°F)	<b>Ermittler</b>	2 x 0.5 mm <sup>2</sup> , ø 5.2 mm
<b>Vibration</b>	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	<b>Plug</b>	M 12 x 1
<b>Shock</b>	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)	<b>Cables for plug (M1)</b>	CON.1A-..series
<b>Dielectric voltage</b>	600 VAC (IEC 60364-4-41)	<b>Weight</b>	
		<b>Cable version</b>	100 g
		<b>Plug version</b>	17 g
		<b>Approvals</b>	UL, CSA
		<b>CE-marking</b>	Yes

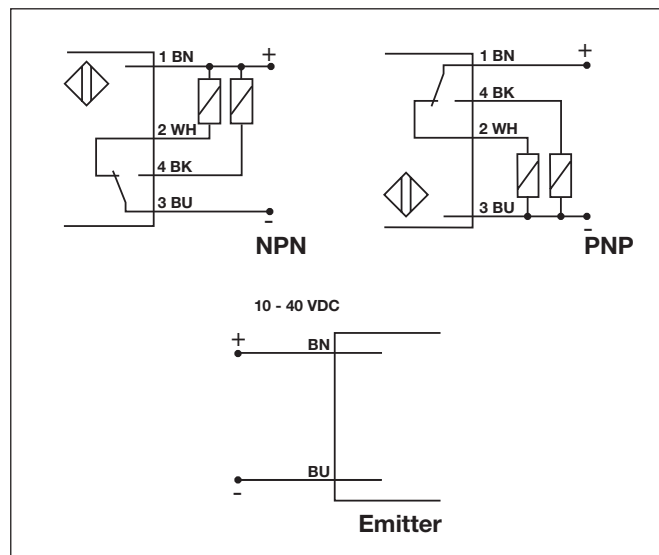
## Operation Diagram



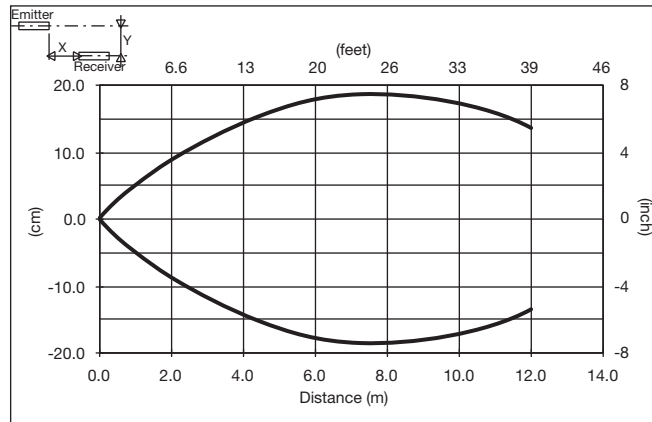
## Dimensions



## Wiring Diagrams



## Detection Diagram



## Delivery Contents

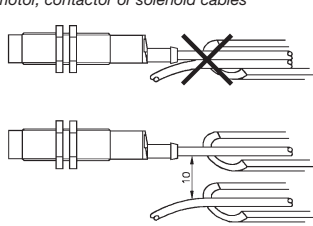
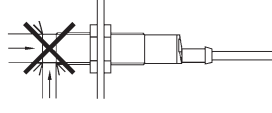
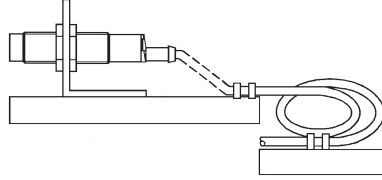
- Photoelectric switch: PA18CST10...
- 2 nuts
- **Packaging:** Plastic bag

## Accessories

- MB18A
- Connector type CON.1A-...series
- APA18-RAR
- APA18-AR

For further information refer to "Accessories".

## Installation Hints

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