

Photoelectrics Through-beam, Transistor Output Type PA12BNT20..

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- Elevators, Escalators and Entrance control
- Range 20 m
- Modulated, infrared light
- Supply voltage: 10 to 30 VDC
- Output: 100 mA, NPN or PNP type
- Make or break switching
- Protection: reverse polarity, short circuit, transients
- Cable versions with or without connector
- Emitter mute and power adjustment



Product Description

The PA12BNT. is a through beam sensor set specially designed for Elevators, Escalators, Entrance control to meet the requirements in the door market. The housing is very robust and is

known for its high long term reliability mute. The emitter has a mute input to turn it off for evaluation of the sensor function. Available in 10-30 VDC version.

Ordering Key

PA12BNT20NO-C2

Type	_____
Housing style	_____
Housing size	_____
Housing material	_____
Neutral	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection type	_____
Cable connector	_____

Type Selection

Housing diameter	Range S _n	Connector	Ordering no. Receiver NPN, NO	Ordering no. Receiver NPN, NC	Ordering no. Receiver PNP, NO	Ordering no. Receiver PNP, NC	Ordering no. Emitter
M12	20 m	NO	PA12BNT20NO	PA12BNT20NC	PA12BNT20PO	PA12BNT20PC	PA12BNT20
M12	20 m	YES	PA12BNT20NO-C2	PA12BNT20NC-C2	PA12BNT20PO-C2	PA12BNT20PC-C2	PA12BNT20-C2

Note: Please order emitter and receiver separately

Specifications Emitter

Rated operational volt. (U_B)	10 to 30 VDC	Light source	LED, 880 nm
Ripple (U_{rip})	≤ 10%	Light type	Infrared, modulated
Supply current	≤ 20 mA	Optical angle	± 5°
Protection	Reverse polarity, transients	Power adjustment	50 - 100%, in 7 steps
Control input		R _x ~ 1.5 kΩ -10 kΩ	
Normal oper.	> 1.5 VDC		
Mute	< 1.2 VDC		

Specifications Receiver

Rated operating dist. (S_n)	20 m	Optical angle	$\pm 5^\circ$
Blind zone	None	OFF-state current (I_r)	$\leq 100 \mu\text{A}$
Temperature drift	$\leq 0.4\%/^\circ\text{C}$	Voltage drop (U_d)	$\leq 1.6 \text{ VDC @ } 100 \text{ mA}$
Hysteresis (H)	3 - 20%	Protection	Short-circuit, reverse polarity, transients
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Operating frequency (f)	100 Hz
Ripple (U_{rip})	$\leq 10\%$	Response time	OFF-ON (t_{ON}) $\approx 3.5 \text{ ms}$ ON-OFF (t_{OFF}) $\approx 6.5 \text{ ms}$
Output current		Power ON delay (t_v)	$\leq 300 \text{ ms}$
Continuous (I_o)	$\leq 100 \text{ mA}$	Output function	Make or break (NO or NC)
Short-time (I)	$\leq 100 \text{ mA}$, (max. load capacity 100 nF)	NPN or PNP	
No load supply current (I_o)	$\leq 13 \text{ mA}$		
Minimum operational current (I_m)	0.5 mA		
Ambient light	$>20.000 \text{ LUX}$		

General Specifications

Environment		Rated insulation voltage	50 VDC
Overvoltage category	II (IEC 60664/60664A, 60947-1)	Housing material	M12-Stainless Steel PC black
Pollution degree	3 (IEC 60664/60664A, 60947-1)	Body	
Degree of protection	IP 67 (IEC 60529, 60947-1)	Front	
Temperature		Connection	PVC, TX: grey / RX: black, 5 m, 3 x 0.14 mm ² , \varnothing 2.9 mm
Operating	-20° to +50°C (-4° to +122°F)	Cable	
Storage	-25° to +80°C (-13° to +176°F)	Weight	
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)	Emitter	90 g
Shock	2 x 1 m & 100 x 0.5 m (IEC 60068-2-32)	Receiver	90 g
		CE-marking	EN12445, EN12453, EN12978
		Approval	UL508 and UL325

Operation Diagram

t_v = Power ON delay

Power supply

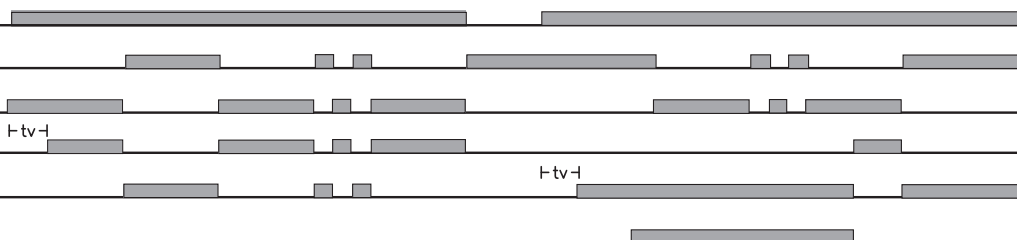
Target emitter present

Object present

Break (NC) Output ON

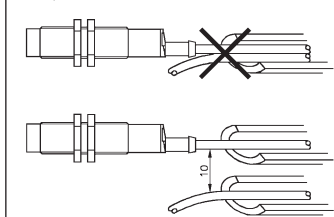
Make (NO) Output ON

Mute active $\leq 1.2 \text{ VDC}$

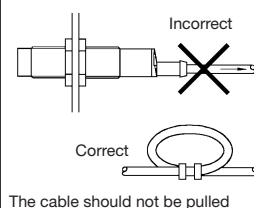


Installation Hints

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

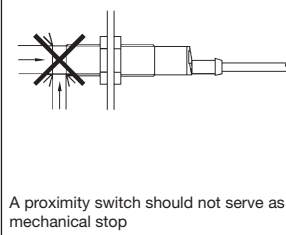


Relief of cable strain



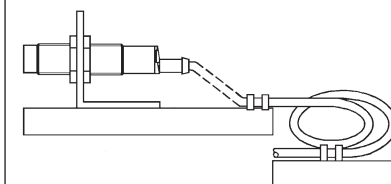
The cable should not be pulled

Protection of the sensing face



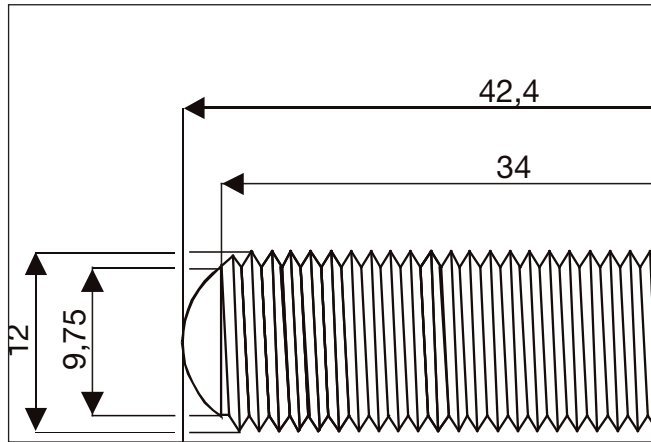
A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier

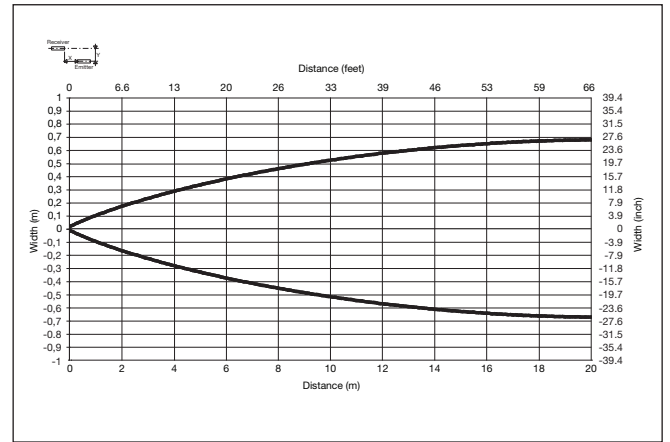


Any repetitive flexing of the cable should be avoided

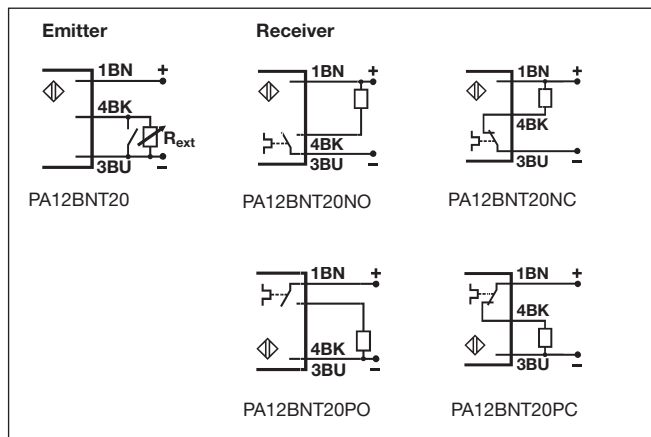
Dimensions



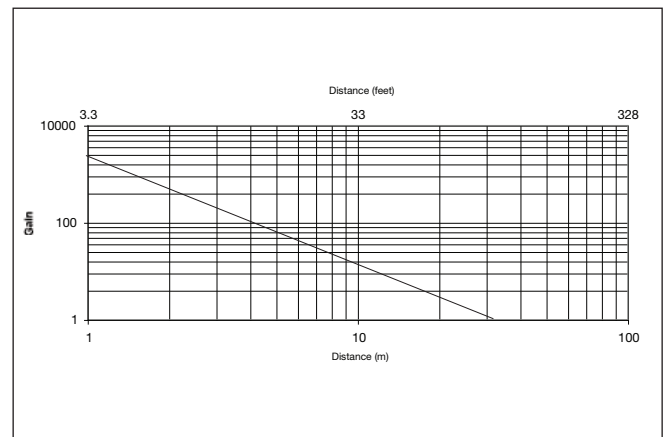
Detection Diagram



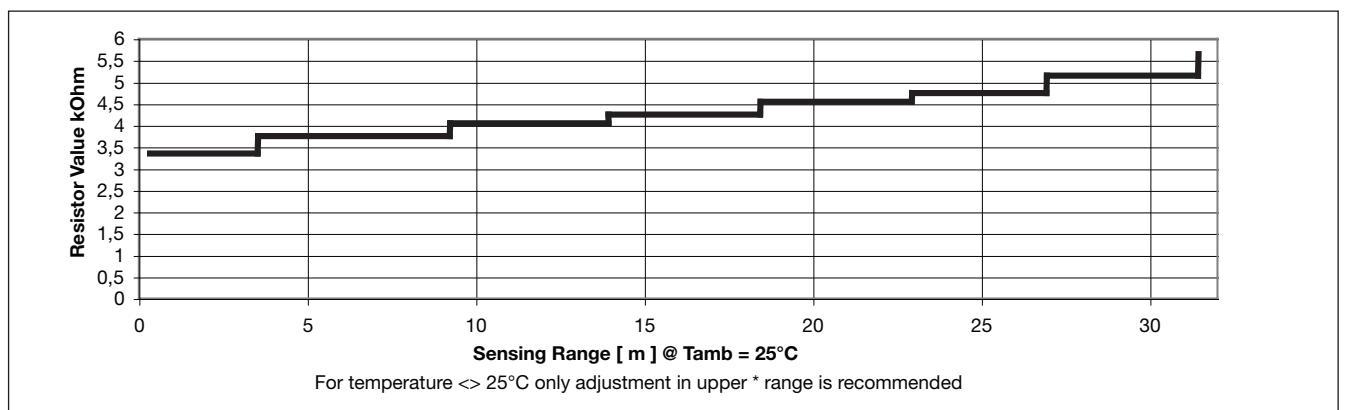
Wiring Diagram



Excess Gain



Mute Function



Delivery Contents

- PA12
- Installation instruction
- **Packaging:** plastic bag