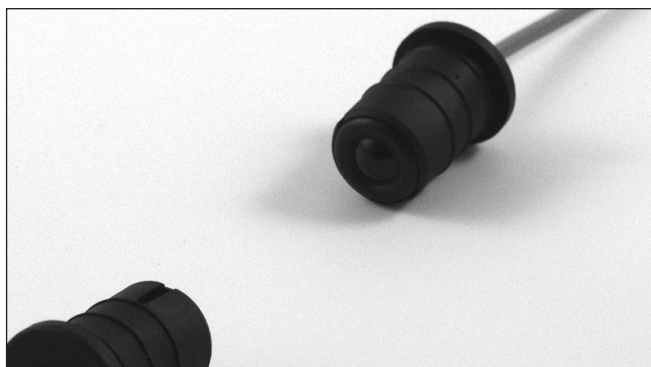


Photoelectrics Through-beam, Transistor Output Type PB18CNT15..

CARLO GAVAZZI



- Safety Edge sensor for doors
- Range 15 m
- ESPE, PSPE type 2, PL C
- 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
- CE, UL325 and UL508 approved



Product Description

The PB18CNT. is a through beam sensor set specific designed for safety edge sensing in industrial automatic doors. The housing is designed to fit a Ø18 mm rubber profile and has integrated sealing

lips to prevent water from entering the profile. The emitter has a mute input to turn it off for evaluation of the sensor function. Available in 10-30 VDC version.

Ordering Key

PB18CNT15NO-C2

Type _____
Housing style _____
Housing size _____
Housing material _____
Sensor code _____
Detection principle _____
Sensing distance _____
Output type _____
Output configuration _____
Cable connector _____

Type Selection

Housing diameter	Range S _n	Con-nec-tor	Ordering no. Receiver NPN, NO	Ordering no. Receiver NPN, NC	Ordering no. Receiver PNP, NO	Ordering no. Receiver PNP, NC	Ordering no. Emitter
Ø 18 mm	15 m	NO	PB18CNT15NO	PB18CNT15NC	PB18CNT15PO	PB18CNT15PC	PB18CNT15
Ø 18 mm	15 m	YES	PB18CNT15NO-C2	PB18CNT15NC-C2	PB18CNT15PO-C2	PB18CNT15PC-C2	PB18CNT15-C2

Note: Please order emitter and receiver separately

Specifications Emitter

Rated operational volt. (U _B)	10 to 30 VDC	Light type	Infrared, modulated
Ripple (U _{rip})	≤ 10%	Light spot	940 mm @ 9 m
Supply current	≤ 20 mA	Emitter angle	± 3° @ 9 m
Protection	Reverse polarity, transients	Power adjustment	3 m ... 18 m in 19 step
Power ON delay (t _v)	≤ 100 ms		
Control input			
Normal operation	> 1.5 VDC		
Mute	< 1.2 VDC		
Light source	LED, 890 nm		

Specifications Receiver

Rated operating dist. (S_n)	15 m	Utility category	DC12	Control of resistive loads and solid state loads with optical isolation
Blind zone	None		DC13	Control of electromagnets
Temperature drift	≤ 0.4 %/°C	Ambient light	3,000 ... 3,200 K	> 80,000 LUX (EN60947-5-2)
Hysteresis (H)	3 - 20 %	Detection angle		± 2.5° @ 9 m
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)	Operating frequency (f)		100 Hz
Ripple (U_{rp})	≤ 10 %	Response time	OFF-ON (t _{ON})	≈ 6.5 ms
No load supply current (I_o)	≤ 16 mA		ON-OFF (t _{OFF})	≈ 3.5 ms
Output current		Power ON delay (t_v)		≤ 100 ms
Continuous (I _e)	≤ 100 mA	Output function	NPN or PNP	Make or break (NO or NC)
Short-time (I)	≤ 100 mA, (max. load capacity 100 nF)			
Minimum operational current (I_m)	0.5 mA			
OFF-state current (I_r)	≤ 100 µA			
Voltage drop (U_d)	≤ 1.6 VDC @ 100 mA			
Protection	Short-circuit, reverse polarity, transients			

General Specifications

Environment		Surge (EN 61000-4-5)	
Overvoltage category	III (IEC 60664/60664A, 60947-1)	Power-supply	> 1 kV (with 500 Ω)
Pollution degree	3 (IEC 60664/60664A, 60947-1)	Sensor output	> 1 kV (with 500 Ω)
Degree of protection	IP67 (IEC 60529; EN60947-1) 1, 2, 12 (NEMA types)	Wire conducted disturbances (EN 61000-4-6)	> 10 Vrms
Temperature		Power-frequency magnetic fields (EN 61000-4-8)	
Operating	-20° to +50°C (-4° to +122°F)	Continuous	> 30 A/m, 38 µ tesla
Storage	-25° to +80°C (-13° to +176°F)	Short-time	> 300 A/m, 380 µ tesla
Rated insulation voltage	75 VDC	Vibration (IEC 60068-2-6)	10 to 150 Hz, 1 mm / 15 g
Dielectric test voltage	500 Vac rms (EN60947-1)	Shock (IEC 60068-2-27)	30 g / 11 ms, 6 pos, 6 neg per axis
Rated impulse withstand test	800 V (1.2 / 50 µs) (EN60947-1)	Free fall (IEC 60068-2-31)	2 times from 1 m, 100 times from 0.5 m
ESPE, PSPE	Type 2	Pig-tail connector (-C2)	3-pol micro MATE-N-LOK Series, AMP/TE
PFH_d	6 x 10 ⁻⁸ failure per hour (worst case SRP for CS)	Housing material	
Diagnostic coverage	99 % (EN13849-1: 2008)	Body	PTE, black
Performance level	C (EN13849-1: 2008)	Front glass	PC, black
MTTF_d (worst case full sensor)	298 Years (worst case full receiver) EN ISO 13849-1, SN 29500 368 Years (worst case full emitter) EN ISO 13849-1, SN 29500	Connection	
Electrostatic discharge (EN61000-4-2)		Cable	PVC, Emitter: grey / Receiver: black, 5 m, 3 x 0.14 mm ² , Ø 2.9 mm
Contact discharge	> 12 kV	Weight	
Air discharge	> 8 kV	Emitter	80 g
Radiated RF electromagnetic fields (EN 61000-4-3)	> 10 V/m	Receiver	80 g
Electrical fast transients/burst (EN 61000-4-4)	± 4 kV	CE-marking	EN12445, EN12453, EN12978, EN 60947-5-2
		UL-Approval	cURus UL325 cULus UL508, CSA-C22.2 No.247

Operation Diagram

t_v = Power ON delay

Power supply

Target emitter present

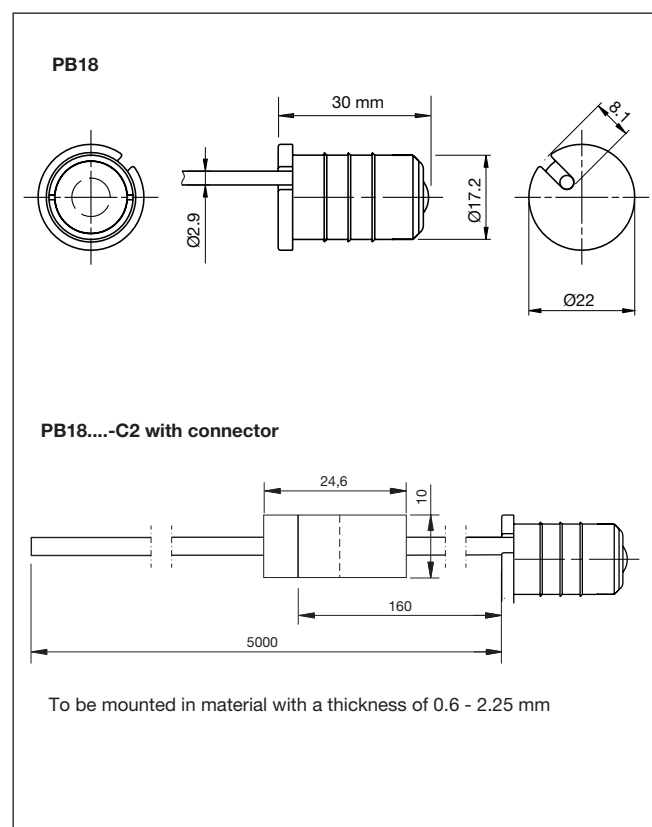
Object present

Break (NC) Output ON

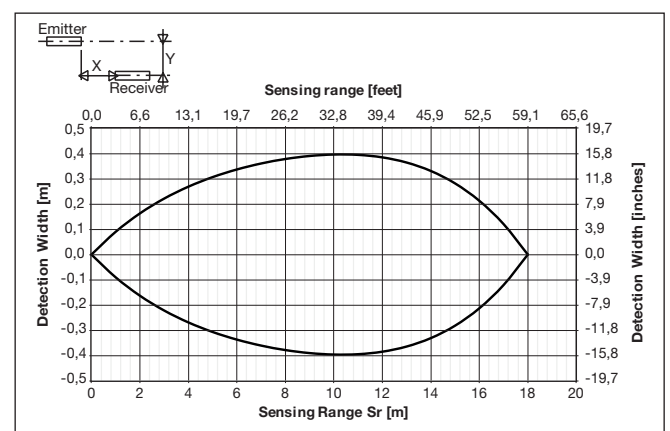
Make (NO) Output ON

Mute active ≤ 1.2 VDC

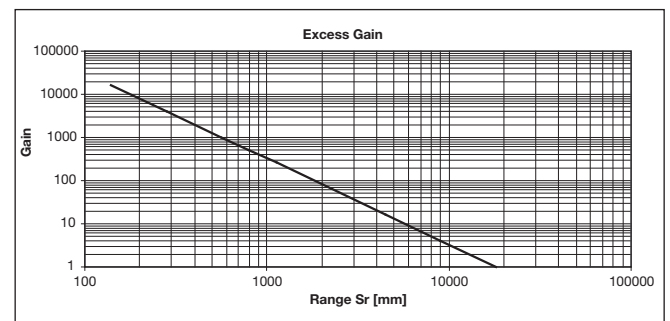
Dimensions



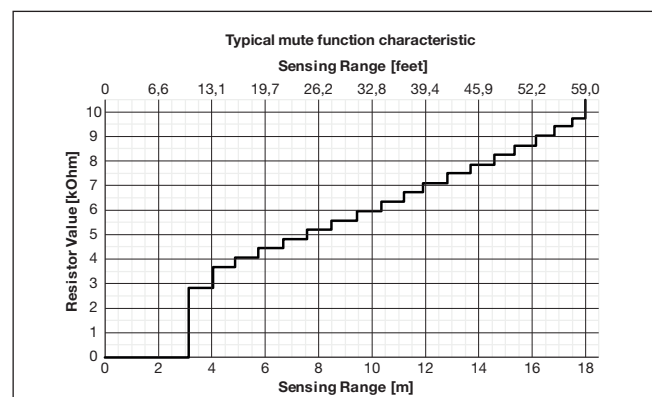
Detection Diagram



Excess Gain

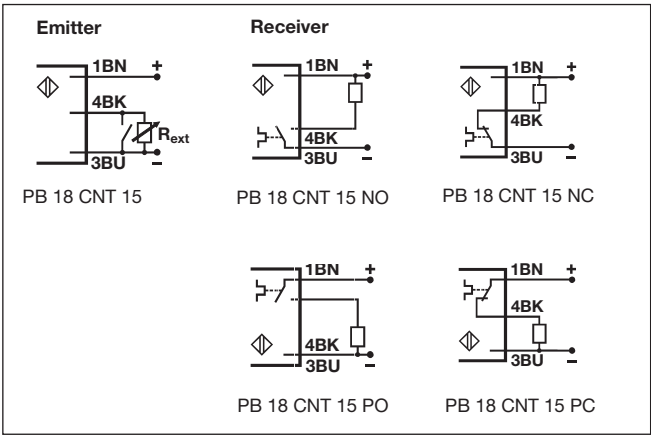


Power adjustment curve





Wiring Diagram



- PB18
- Packaging: plastic bag

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 Incorrect Correct 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
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Mouser Electronics

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