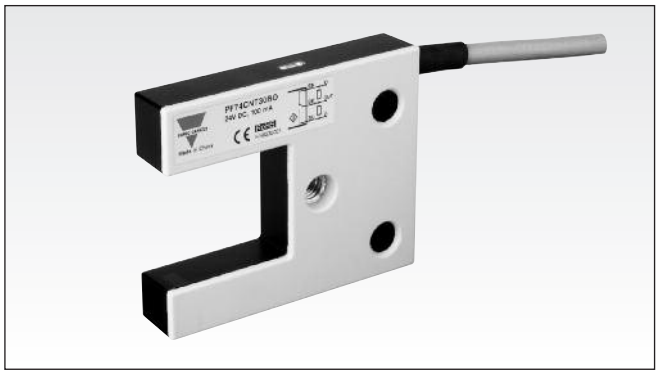
Photoelectrics
Fork Sensor for Lifts
Type PF74CNT30B.



- **Photoelectric Fork Sensor**
- **Gap: 30 mm**
- **Modulated, infrared light 940 nm**
- **Supply voltage: 24 VDC ± 20%**
- **Output: 100 mA, NPN / PNP Push-Pull**
- **Make and break switching function**
- **LED indication for output, stability and power ON**
- **Protection: reverse polarity, short circuit and transients**
- **Cable version**
- **Excellent EMC performance**
- **High immunity against dust**

Product Description

The PF74CNT30.. sensor family comes in a compact 15 x 60 x 74 mm reinforced polycarbonate housing.
The sensor is designed for Elevator applications for lift car leveling, floor count, overshoot and redundancy.
The sensor comes in two versions with push-pull output in either N.O. or N.C. for the NPN or PNP output state. The sensor has a high immunity to environmental conditions such as dust, ambient light and the high switching frequency makes it suitable for high speed Elevators.

Ordering Key

PF 74 CNT 30 BC

- **Type**
- **Housing style**
- **Housing size**
- **Housing material**
- **Sensing principle**
- **Fork opening**
- **Output type**
- **Output function**

Type Selection

Housing W x H x D	Range S_n	Connection	Ordering no. PNP N.O., NPN N.C.	Ordering no. PNP N.C., NPN N.O.
15 x 74 x 60 mm	30 mm	Cable	**PF 74 CNT 30 BC**	**PF 74 CNT 30 BO**

Specifications

Sensing gap (S_n)	≤ 30 mm
Excess gain	≥ 50 (500%)
Blind zone	0 mm
Sensitivity	No sensitivity control
Temperature drift	≤ 0.7%/°C ± 20%
Hysteresis (H)	5 to 20%
Rated operational volt. (U_B)	19.2 to 28.8 VDC (ripple included)
Ripple (U_{rpp})	≤ 10%
Output current	
Continuous (I_e)	≤ 100 mA
Short-time (I)	≤ 100 mA (max. load capacity 100 nF)
No load supply current (I_o)	≤ 30 mA @ U_B max ≥ 25 mA @ U_B min
Minimum operational current (I_m)	0 mA
Voltage drop (U_d)	≤ 1.5 VDC @ I_e max
Protection	Short-circuit, reverse polarity and transients
Light source	InGaAlP, LED, 940 nm
Light type	Infrared, modulated
Minimum object	
Vertical (V) single object	2 mm
Vertical (V) multiple object	See fig. 1
Horisontal (H) single object	3 mm

Aperture emitter or receiver	2.0 x 0.4 mm
Light spot	13 x 6 mm @ 30 mm
Ambient light	≤ 100,000 lux
Operating frequency (f)	≤ 1100 Hz
Response time	
OFF-ON (t_{ON})	≤ 400 µs
ON-OFF (t_{OFF})	≤ 500 µs
Power ON delay (t_v)	≤ 100 ms
Output function	
Open collector	Push-pull by sensor type
Output switching function	
PF74CNT30BO	PNP N.C., NPN N.O.
PF74CNT30BC	PNP N.O., NPN N.C.
Indication	
Light beam uninterrupted	LED, yellow
Signal stability ON and power ON	LED, green, see curve for condition of stability
Environment	
Installation category	III (IEC 60664/60664A; 60947-1)
Pollution degree	3 (IEC 60664/60664A; 60947-1)
Degree of protection	IP 65 (IEC 60529; 60947-1)

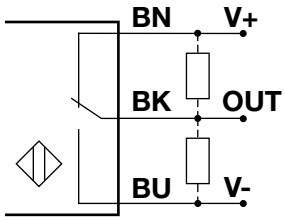
Specifications (cont.)

Ambient temperature	
Operating	-25° to +60°C (-13° to +140°F)
Storage	-40° to +70°C (-40° to +158°F)
Vibration	10 to 150 Hz, 1.0 mm/15 G (IEC 60068-2-6)
Shock	30 g / 11ms, 3 pos, 3 neg per axis (IEC 60068-2-6, 60068-2-32)
Rated insulation voltage	≤ 50 VDC

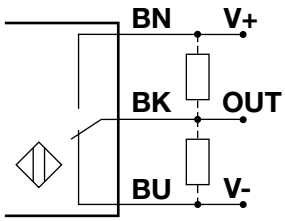
Housing material	
Body	Polycarbonate (PC), black
Cover	Polycarbonate (PC), grey
LED window	Polycarbonate (PC), transparent
Cable outlet	TPE, black
Connection	
Cable	PVC, grey, 5 m 3 x 0.5 mm², Ø = 5.6 mm
Weight	≤ 225 g
CE-marking	Yes

Wiring Diagrams

PF74CNT30BO (PNP N.C., NPN N.O.)



PF74CNT30BC (PNP N.O., NPN N.C.)



Contacts shown when light beam is interrupted

Operation Diagram

t = Power ON delay

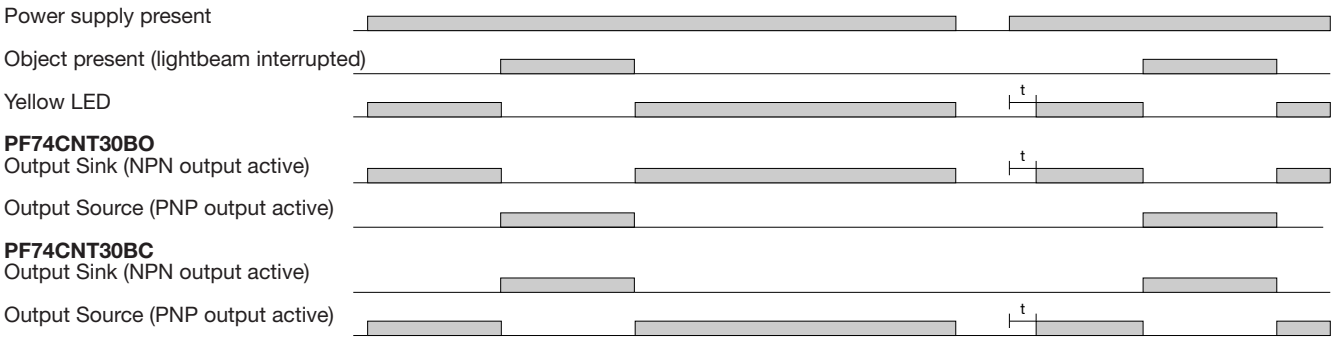
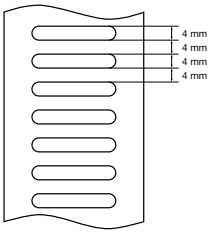
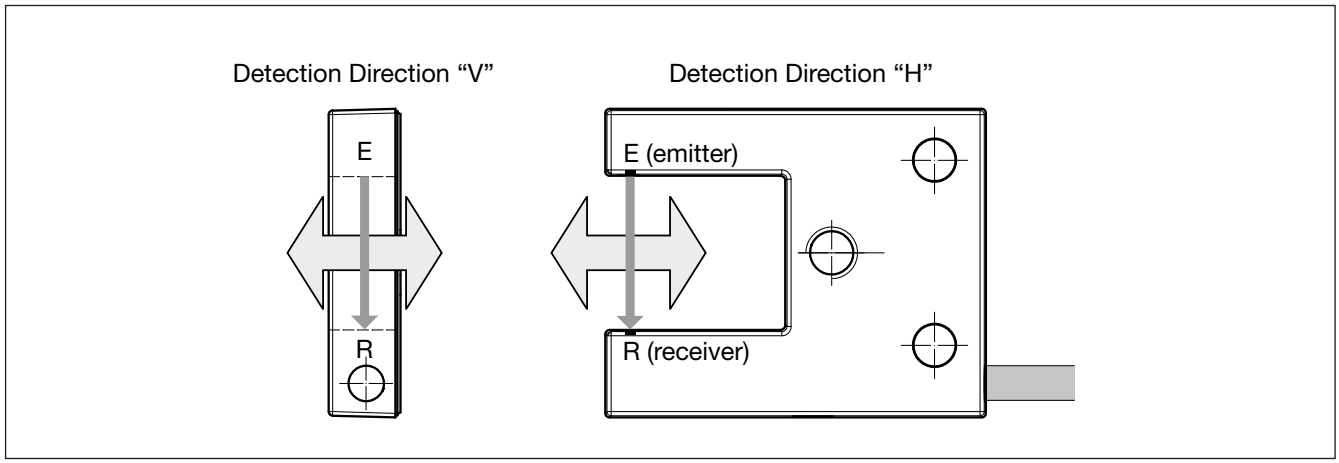


Fig. 1

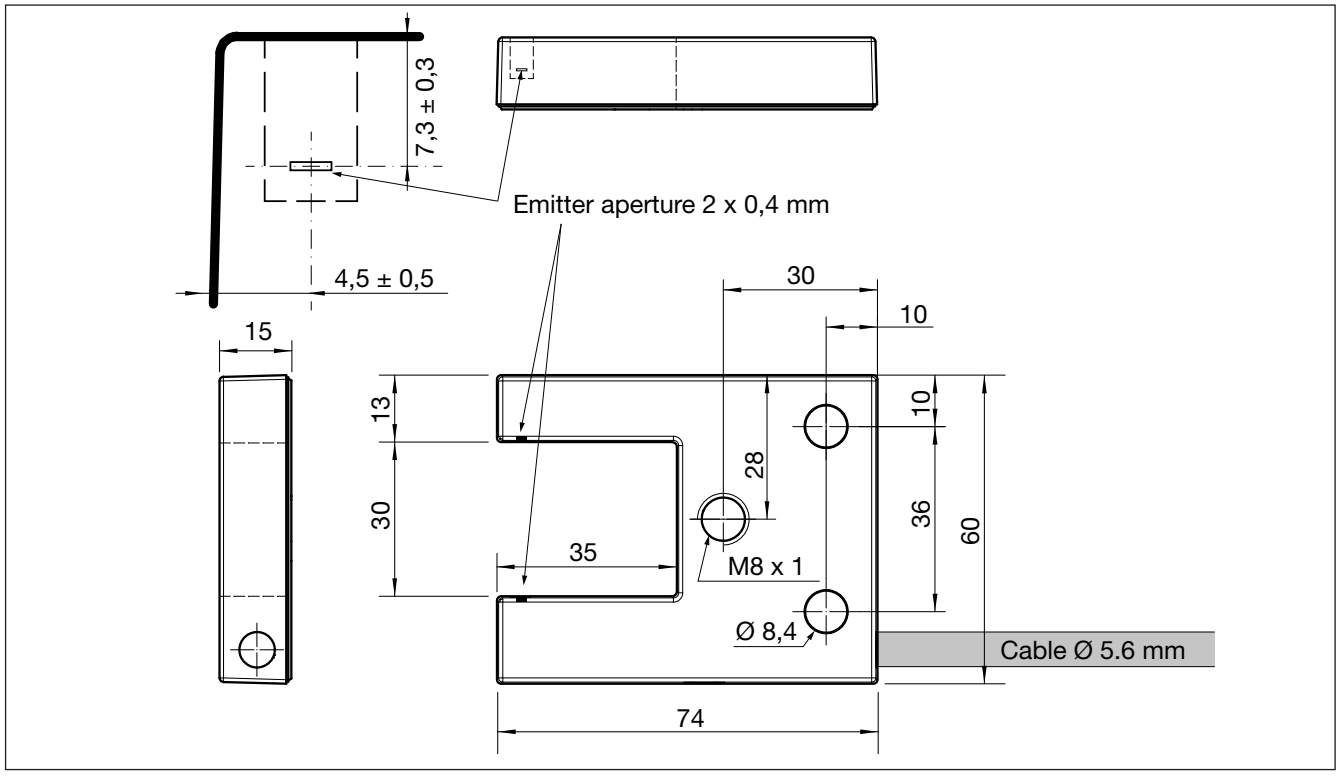


Vertical direction.
Minimum distance for multible objects.
1 mm steel plate

Detection Direction

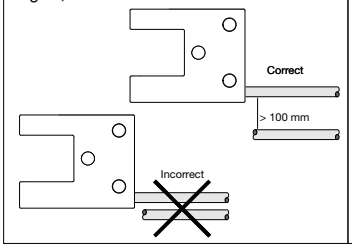


Dimensions

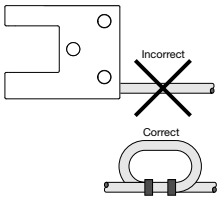


Installation Hints

To avoid interference from inductive voltage / current peaks, separate the proximity switch cables from any other power cables. E.g. Engine, contactor or solenoid cables

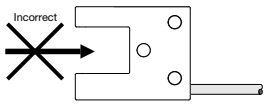


Relief of the cable strain



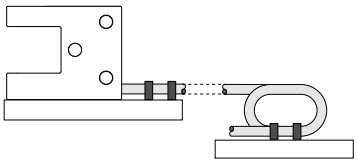
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Sensor mounted on a mobile carrier



Any repetitive flexing of the cable should be avoided

Delivery Contents

- Photoelectric switch: PF74CNT30B.
- Installation instruction: Print on plastic bag
- **Packaging:** Plastic bag