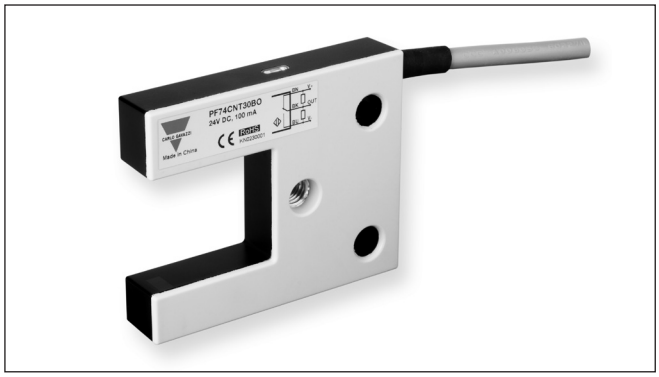
# Photoelectrics
# Fork Sensor for Lifts
# Type PF74CNT30B.



- **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**

CE

## 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<br>≥ 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** | InGaAIP, 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) |

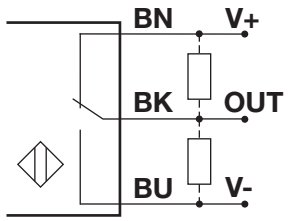
## Specifications (cont.)

| | |
|---|---|
| **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 |

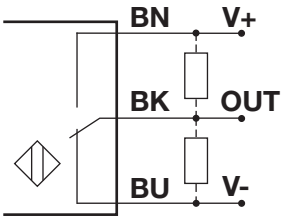
| | |
|---|---|
| **Housing material** | |
| Body | Polycarbonate (PC), black |
| Cover | Polycarbonate (PC), grey |
| LED window | Polycarbonate (PC), transparent |
| Cable outlet | TPE, black |
| **Connection** | |
| Cable | PVC, grey, 5 m 3 x 0.5 mm², Ø = 5.6 mm |
| **Weight** | ≤ 225 g |
| **CE-marking**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

## Wiring Diagrams

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




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

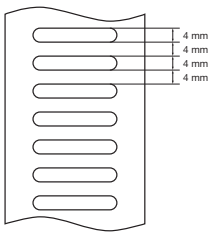



Contacts shown when light beam is interrupted

## Operation Diagram

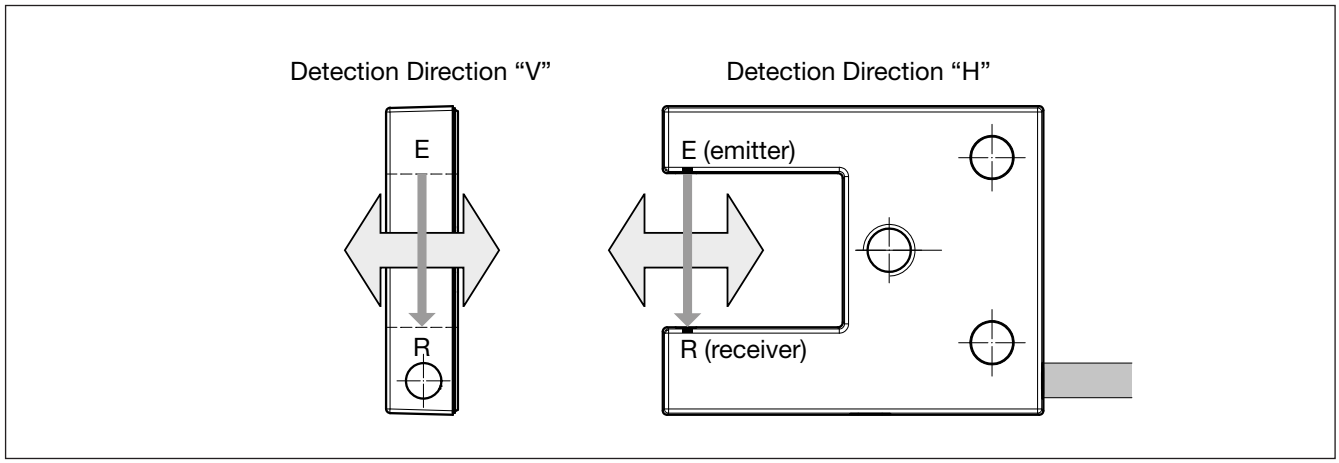
t = Power ON delay


## Fig. 1




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

## Detection Direction




## Dimensions