Photoelectrics
Fork Sensor
Type PF80 FNT .. BP .. T

CARLO GAVAZZI

- **Slot width of 3 mm**
- **Settings: Standard and fine mode**
- **Teach-In: Push button or by wire**
- **Universal output: NPN, PNP, NO or NC**
- **Teach-In lock**
- **High speed of detection**
- **Detection of transparent material**

CE

Product Description

Detection of labels, marks and double sheets, as well as holes and edges are typical applications for the PF80 fork sensor.

The sensor is made in a strong aluminium housing with 8 mm plug for fast disconnection.

Ordering Key

PF80FNT03BPM5T

- **Type**
- **Housing style**
- **Housing size**
- **Housing material**
- **Housing length**
- **Detection principle**
- **Slot width (mm)**
- **Output type**
- **Output configuration**
- **Connection type**
- **Teach-In mode**

Type Selection

Housing W x H x D	Slot width	Ordering no. NPN, PNP, make or break switching
12 x 37.5 x 80 mm	3 mm	**PF 80 FNT 03 BPM5T**

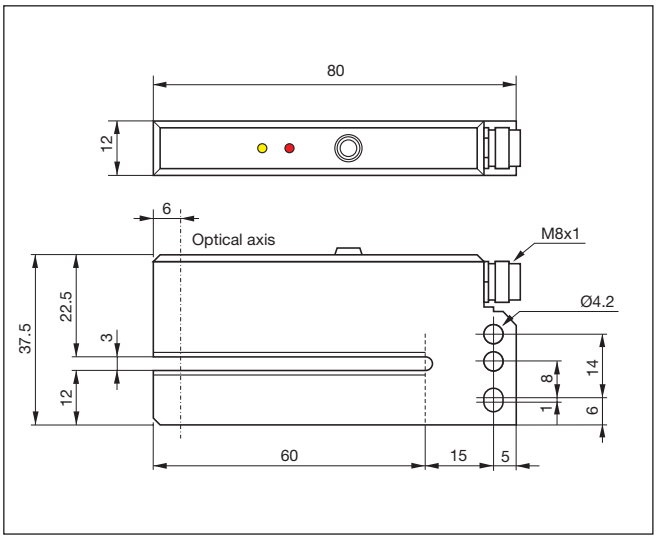
Specifications

Fork width	3 mm
Sensitivity Teach-In through switch or wire Standard setting Fine setting	 ET to V+ 1 pulse 0.3 ... 4 s 1 pulse 0.3 ... 4 s + 1 pause 0.3 ... 1.3 s + 1 pulse 0.3 ... 4 s
Temperature drift	≤ 0.4%/°C
Rated operational volt. (U_B)	10 to 30 VDC (ripple included)
Ripple (U_{rpp})	≤ 10%
Output current Continuous (I_e) Short-time (I)	 ≤ 100 mA ≤ 100 mA
No load supply current (I_o)	≤ 40 mA
Voltage drop (U_d)	≤ 2 VDC @ 100 mA ≤ 1 VDC @ 10 mA
Protection	Short-circuit, transients
Light type **Ambient light**	Infrared, incandescent light ≤ 3,000 lux
Operating frequency	10 kHz
Response times OFF-ON (t_{ON}) ON-OFF (t_{OFF})	 ≤ 50 µs ≤ 50 µs
Power ON delay (t_v)	≤ 300 ms
Output function NPN and PNP Make or break (light or dark)	 Available (push-pull output) Programmed by reversing power supply
Indication (function) Uninterrupted light path Free light path	 LED, red LED, yellow
Environment Installation category Pollution degree Degree of protection	 I (IEC 60664/60664A; 60947-1) 3 (IEC 60664/60664A; 60947-1) IP 65 (IEC 60529; 60947-1)
Ambient temperature Operating Storage	 -20° to +60°C (-4° to +140°F) -20° to +80°C (-4° to +176°F)
Vibration	10 to 150 Hz, 0.5 mm/7.5 g (IEC 60068-2-6)
Shock	2 x 1 m and 100 x 0.5 m (IEC 60068-2-6, 60068-2-32)

Specifications (cont.)

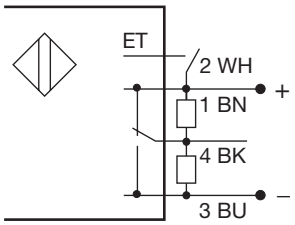
Rated insulation voltage	50 VAC (rms)
Housing material	
Body	Aluminium, black
Connection	
Plug	M8 x 1, 4-pin, NPB
Weight	Approx. 60 g
CE-marking	Yes

Dimensions

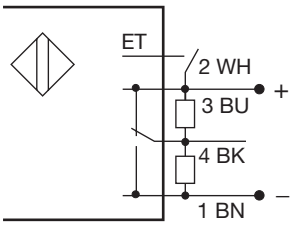


Wiring Diagrams

Light Switching

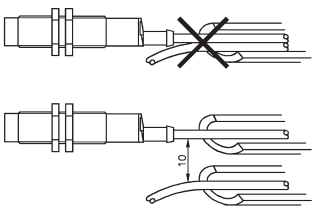


Dark Switching

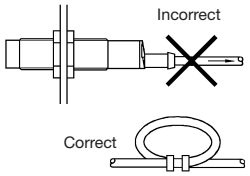


Installation Hints

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

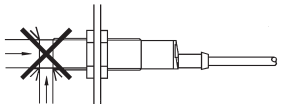


Relief of cable strain



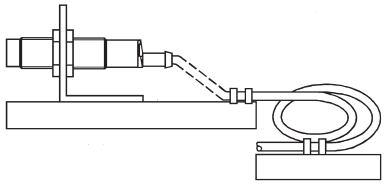
The cable should not be pulled

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

Delivery Contents

- Photoelectric switch: PF 80 FNT 03 BPM5T
- **Packaging:** Cardboard box

Accessories

- Connector type CONG5A-.. series

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Teach-In Procedure

Teach-in
The switching threshold is set as described in the following **Teach-in Procedure**. This can be done via the ET wire (External Teach) or by using the Teach-in button on the sensor.

Teach-in Procedure
1) Place the object in the fork opening covering the light beam.

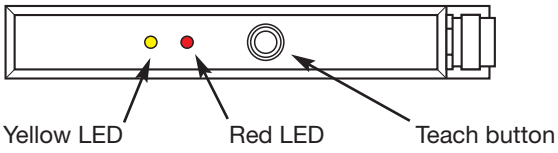
2) Activate Teach-in using the teach button or via the ET wire:

Standard setting:
Press once and the red LED flashes (standard hysteresis).

Fine setting:
Press twice and the yellow LED flashes.

NB! The last taught settings are always stored in the sensor.

Lock and unlock Teach-in
Lock Teach-in function: Press the teach button for approximately 6 s until the red LED lights continuously.
Unlock Teach-in function: Press teach button for approximately 6 s until the red LED goes off.



Red LED:	Teach-in lock
Red LED, flashing (2 s):	Standard Teach-in
Yellow LED:	ON
Yellow LED, flashing (2 s):	Fine Teach-in
Red + Yellow, flashing:	Short-circuit or object too opaque