**Diffuse reflective with fixed background suppression**

Cable with M8 Connector	Logic	Range	Output Function
F16RS-LP-1F	PNP n.o.	30 mm	Light on
F16RS-LN-1F	NPN n.o.	30 mm	Light on

Safety Notes

These photoelectric sensors may not be used in applications where personal safety depends on proper function of the devices (not safety designed per EU machine guideline). Read these operating instructions carefully before putting the device into service.



Caution! Red light beam!
Glare and irritation of the eyes.
DO NOT LOOK INTO THE LIGHT BEAM!
Exempt Group according to EN 62471.



The CE Marking confirms that our products conform to the EU Directives and the EMC Law.

Application

Only for NFPA 79 applications (machines with a supply voltage of max. 600 volts). Device shall be connected only by using any R/C (CYJV2) cord, having suitable ratings.

Display Elements**Yellow LED light reception / stability indicator**

LED on: Light at the receiver

LED flashes: Unreliable range

Installation

Caution! Red light beam!
Do not look into the light beam.

The sensor must be installed as to prevent a direct line of eyesight to the light source, even during operation.

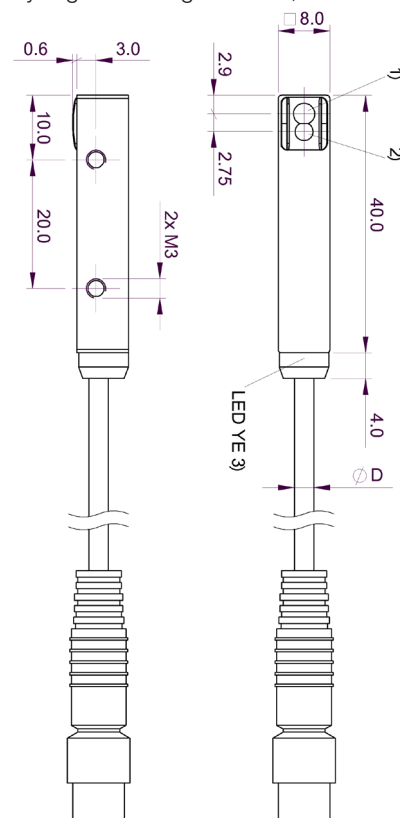


Fig. 1: Dimensions

F16RS-Lx-1F

Photoelectric Sensors

Red light diffuse reflective with fixed background suppression

Wiring diagrams

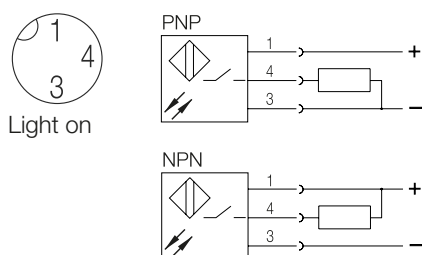


Fig. 2: Pinouts; connection diagram

Measuring accuracy

The sensor attain its full accuracy under constant ambient conditions at min. 20 minutes after power-on.
The duration of this warm-up phase depends on ambient conditions.

Light spot diameter

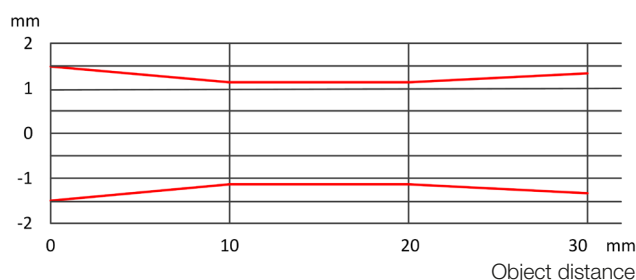


Fig. 3: Light spot diameter depending on distance to the object

Technical Data

Optical

Range s_r	30 mm
Light type	red light
Wave length λ	650 nm
Light spot diameter, typical	Ø 3 mm at 0 mm
Beam shape	divergent
Grey-value shift (90%/20% grey card)	≤ 5%

Electrical

Supply voltage U_B	10...30 V DC
Rated operating voltage U_e	24 V
Ripple (% from U_e)	10%
No-load current I_O	≤ 15 mA
Effective operating current I_e	100 mA
Rated insulation voltage	75 V DC
Permissible capacitance	≤ 0.1 µF
Voltage drop U_d at I_e	≤ 0.8 V
Turn-on delay	≤ 1 ms
Turn-off delay	≤ 1 ms
Switching frequency f	500 Hz
Output depending on version	PNP or NPN
Short circuit protected	yes
Reverse polarity protected	yes
Switching function	n.o.
Output function	light-on

Mechanical

Connection type	Cable with M8-connector, 3-pin, 0.2 m
Housing material	GD-Zn nickel plated
Active surface material	PMMA
Housing dimensions	8 × 8 × 44 mm
Weight	15.2 g

Displays

Light reception indicator	yellow LED
Stability indicator	yellow LED (flashing)

Ambient

Ambient temperature T_a	-5...+55 °C
Enclosure rating per IEC 60529	IP67
Ambient light rejection	< 5000 Lux



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