

**Diffuse reflective with fixed background suppression**

M8 Connector	Logic	Range	Output Function
F8RS-LP-1F	PNP n.o.	20 mm	Light on
F8RS-LN-1F	NPN n.o.	20 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.

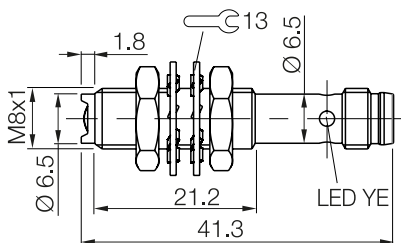


Fig. 1: Dimensions

**Wiring diagrams**

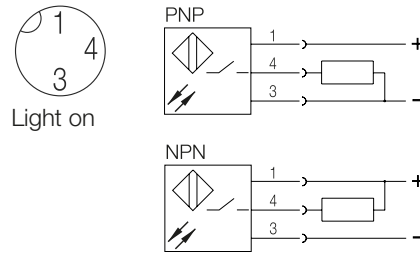


Fig. 2: Pinouts; connection diagram

**Light spot diameter**

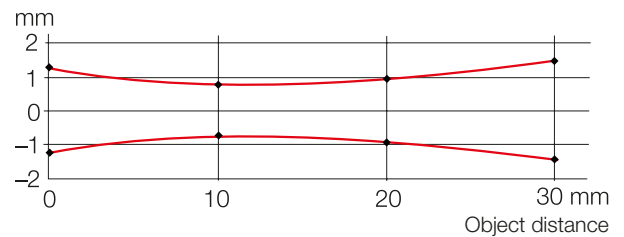


Fig. 3: Light spot diameter depending on distance to the object

**Measuring accuracy**

The sensor attains 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.

# F8RS-Lx-1F

## Photoelectric Sensors

### Red light diffuse reflective with fixed background suppression

#### Technical Data

##### Optical

Range $s_r$	20 mm
Light type	red light
Wave length $\lambda$	670 nm
Light spot diameter, typical	Ø 2.5 mm at 0 mm
Beam shape	divergent
Grey-value shift (90%/18% grey card)	≤ 10%

##### Electrical

Supply voltage $U_B$	10...30 V DC
Rated operating voltage $U_e$	24 V
Ripple (% from $U_e$ )	5%
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 $I_e$	≤ 0.7 V
Turn-on delay	≤ 1.11 ms
Turn-off delay	≤ 1.11 ms
Switching frequency $f$	450 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	M8-connector, 3-pin
Housing material	Stainless steel
Active surface material	PMMA
Housing dimensions	Ø 8 mm x 41,3 mm
Weight	5.1 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



**IND. CONT. EQ**  
**81U2**  
 for use in the secondary of  
 a class 2 source of supply  
 Environmental - Type 1 Enclosure

Automation Direct  
 3410 Hutchinson Road  
 Cumming, GA 30040  
 USA  
 Phone (800) 633-0405  
 770-889-2858  
 Fax (770) 889-7876  
 orders@automationdirect.com  
 www.automationdirect.com