wenglor
the innovative family

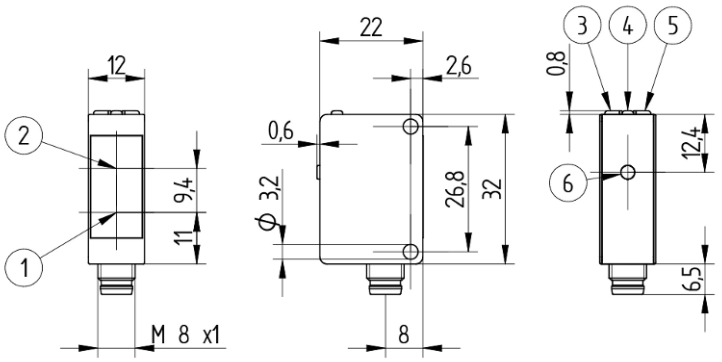
Technical Data

P1KY012

Laser Distance Sensor

Time of Flight





Symbol	Key
1	Emitter diode
2	Receiver diode
3	Switching status indicator O1
4	Power LED
5	Switching status indicator O2
6	Teach-in button

EN

Dimensions in mm
Subject to change without notice
Version 2
www.wenglor.com

Technical data

Optical Data	
Working Range	0...1000 mm
Setting Range	100...1000 mm
Switching Hysteresis	< 20 mm
Light Source	Laser, red
Wavelength	680 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Beam Divergence	< 16 mrad
Max. Ambient Light	10000 Lux
Light Spot Diameter	see table 1
Triple Dot Laser	yes
Reflector required	no

Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	500 Hz
Response Time	1 ms
Temperature Drift (-10 °C < Tu ≤ 50 °C)	< 2 %
Temperature Drift (-40 °C < Tu ≤ 50 °C)	< 3 %
Temperature Range	-40...50 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2.5 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Interface	IO-Link V1.1
Protection Class	III
FDA Accession Number	1620293-001

Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic, ABS/PC Plastic, PC
Optic Cover	Plastic, PMMA
Degree of Protection	IP67
Connection Type	Plug variant
Connection	M8 × 1; 4-pin

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1021.76 a

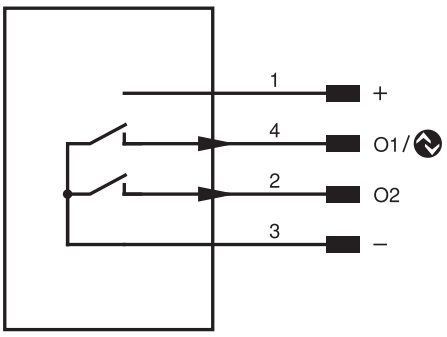
General Data	
Scope of delivery	1 × initial start-up instructions 1 × sensor

Adjustable parameters	
Output	Push-pull NPN PNP
Circuit	NC NO inactive Error output NC+NO
Other parameters	Off-delay On-delay Hysteresis Emitted light Teach mode Switching point

All other parameters can be found in the product documentation.

BMECat data	
eCl@ss 5.1.4	27-27-08-01 Optical distance sensor
eCl@ss 6.x	27-27-08-01 Optical distance sensor
eCl@ss 7.0	27-27-08-01 Optical distance sensor
eCl@ss 7.1	27-27-08-01 Optical distance sensor
eCl@ss 8.x	27-27-08-01 Optical distance sensor
eCl@ss 10.0.1	27-27-08-01 Optical distance sensor

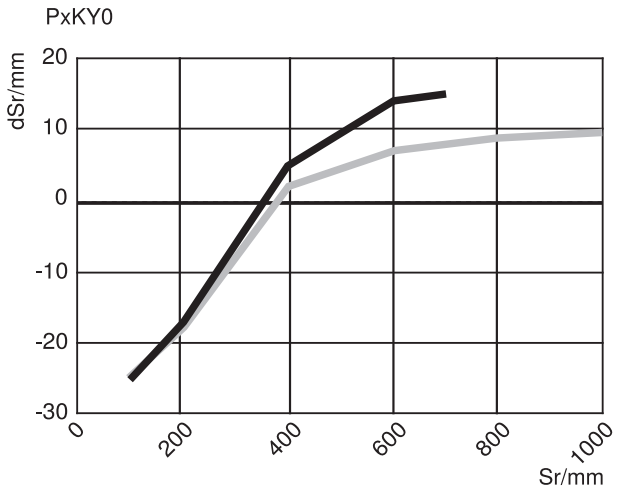
Technical illustrations



Pin	Pin function	Polarity	Circuit
1	Supply Voltage +		
2	Switching Output 2	NPN	NO
3	Supply voltage 0 V		
4	Switching Output 1 IO-Link	NPN	NO

Table 1			
Working Distance	100 mm	500 mm	1000 mm
Light Spot Diameter	4 mm	7 mm	15 mm

Illustration 1: Switching Distance Deviation



Typical characteristic curve based on white, 90 % remission

Sr = Switching Distance
dSr = Switching Distance Change

black 6 % remission
grey 18 % remission