wenglor
the innovative family

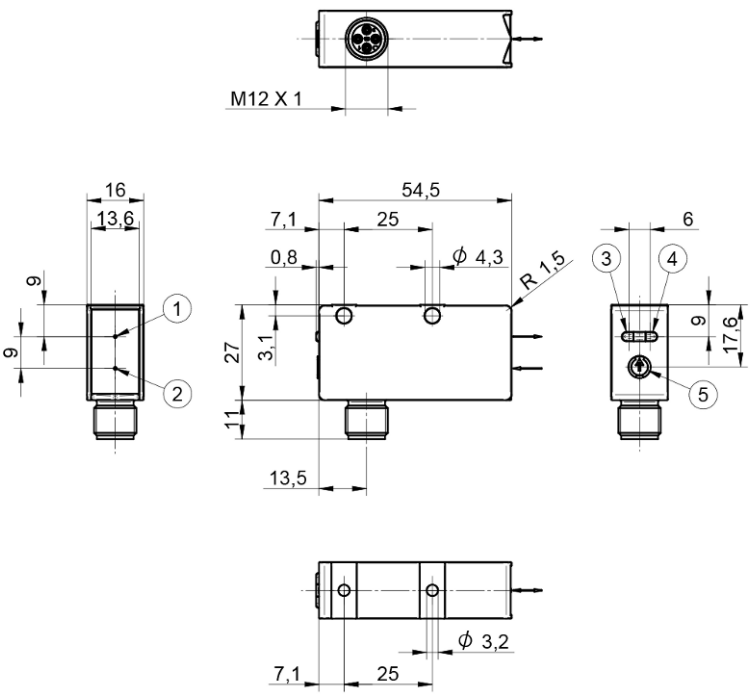
Technical Data

P1ML104

Retro-Reflex Sensor

Universal





Symbol	Key
1	Emitter diode
2	Receiver diode
3	Power LED
4	Switching status indicator/contamination warning
5	Switching distance adjuster

EN

Dimensions in mm
Subject to change without notice
Version 0
www.wenglor.com

Technical data

Optical Data	
Range	6500 mm
Reference Reflector/Reflector Foil	RQ100BA
Smallest Recognizable Part	see table 2
Switching Hysteresis	< 10 %
Light Source	LED, red
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see table 1
Optics	Two-Lens Optic
Optical axis	Aligned
Switching point	Calibrated

Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	< 20 mA
Switching Frequency	2000 Hz
Switching frequency (speed mode)	3500 Hz
Response Time	0.25 ms
Response time (speed mode)	0.14 ms
Temperature Drift	< 10 %
Temperature Range	-40...60 °C
Switching Output Voltage Drop	< 2 V
Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 µA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Interface	IO-Link V1.1
Protection Class	III

Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic, ABS-GF
Degree of Protection	IP67 IP68
Connection Type	Plug variant
Connection	M12 × 1; 4-pin
Optic Cover	Plastic, PMMA

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2260.5 a

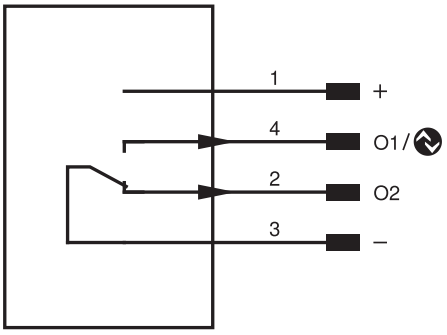
General Data	
Scope of delivery	1 × initial start-up instructions 1 × sensor

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

All other parameters can be found in the product documentation.

BMECat data	
eCl@ss 5.1.4	27-27-09-02 Reflection light barrier
eCl@ss 6.x	27-27-09-02 Reflection light barrier
eCl@ss 7.0	27-27-09-02 Reflection light barrier
eCl@ss 7.1	27-27-09-02 Reflection light barrier
eCl@ss 8.x	27-27-09-02 Reflection light barrier
eCl@ss 10.0.1	27-27-09-02 Reflection light barrier

Technical illustrations



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

Table 1			
Working Distance	1 m	3 m	6,5 m
Light Spot Diameter	80 mm	200 mm	310 mm

Table 2			
Distance, Sensor to Reflector	1 m	3 m	6,5 m
Smallest Recognizable Part	5 mm	5 mm	40 mm

Reflector data	
RQ100BA	0.1...6.5 m
RE18040BA	0.15...3 m
RQ84BA	0.1...5 m
RR84BA	0.1...4.5 m
RE9538BA	0.15...1.5 m
RE6151BM	0.15...4 m
RR50_A	0.1...3.3 m
RE6040BA	0.1...4 m
RE8222BA	0.1...2 m
RR34_M	0.2...2.2 m
RE3220BM	0.2...1.5 m
RE6210BM	0.2...1.7 m
RR25_M	0.2...1.8 m
RR25KP	0.15...1 m
RR21_M	0.15...1.9 m
ZRAE02B01	0.15...2.5 m
ZRME01B01	0.15...1.5 m
ZRME03B01	0.15...2.5 m
ZRMR02K01	0.2...1 m
ZRMS02_01	0.2...1 m
RF505	0.2...1.5 m
RF508	0.25...1.4 m
RF258	0.35...1.4 m
ZRAF08K01	0.2...1.5 m
ZRDF03K01	0.2...3.7 m

Reflector type, mounting distance