Retro-Reflex Sensor
Universal

P18L004
Part Number

- **Adjustable switching distance**
- **Condition monitoring**
- **IO-Link 1.1**
- **Red light**
- **Stainless steel housing**

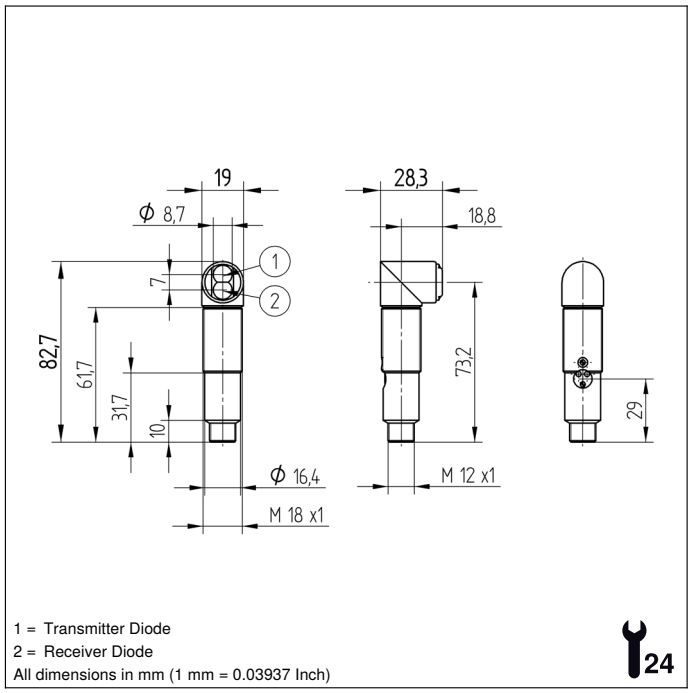
The retro-reflex sensor works with red light and a reflector. It also reliably detects objects with reflective or glossy surfaces at high speeds. Thanks to its great range, the sensor can, for example, be used to manage feed and presence controls as well as to detect objects on wide feed belts. The IO-Link interface can be used to configure retro-reflective barriers (PNP/NPN, NC/NO, switching distance), as well as for reading out switching statuses and signal values.

Technical Data

Optical Data	
Range	6000 mm
Reference Reflector/Reflector Foil	RQ100BA
Switching Hysteresis	< 15 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Opening Angle	5 °
Two-Lens Optic	yes
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	1000 Hz
Switching frequency (speed mode)	1500 Hz
Response Time	0,5 ms
Response time (speed mode)	0,35 ms
Temperature Drift	< 10 %
Temperature Range	-10...60 °C
Switching Output Voltage Drop	< 2 V
PNP 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, PBT
Housing Material	Stainless steel, V2A (1.4305 / 303)
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M12 × 1; 4-pin
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	3126,88 a
IO-Link	●
Contamination Output	●
PNP NC	●
Connection Diagram No.	1039
Control Panel No.	D18
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	150

Complementary Products

IO-Link Master
Reflector, Reflector Foil
Software

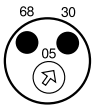


1 = Transmitter Diode
2 = Receiver Diode
All dimensions in mm (1 mm = 0.03937 Inch)

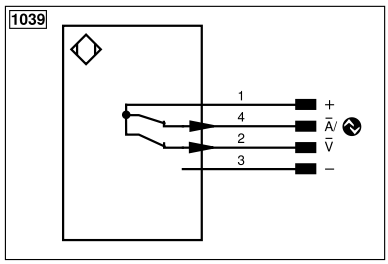
24

Ctrl. Panel

D18



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = supply voltage indicator



Legend					
+	Supply Voltage +	nc	Not connected	ENBRS422	Encoder B/B̄ (TTL)
–	Supply Voltage 0 V	U	Test Input	ENA	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	ENB	Encoder B
A	Switching Output (NO)	W	Trigger Input	AMIN	Digital output MIN
Ā	Switching Output (NC)	W–	Ground for the Trigger Input	AMAX	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	AOK	Digital output OK
V̄	Contamination/Error Output (NC)	O–	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	AMV	Valve Output	OLT	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY–	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⏚	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
	IO-Link	Rx+/–	Ethernet Receive Path	GN	Green
PoE	ower over Ethernet	Tx+/–	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(–)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/–	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
EN0 RS422	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	ENARS422	Encoder A/Ā (TTL)		

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0,02...6 m	**RR25_M**	0,02...1,6 m
RE18040BA	0,02...3,3 m	**RR25KP**	0,02...1,4 m
RQ84BA	0,01...4,5 m	**RR21_M**	0,01...1,6 m
RR84BA	0,02...4,5 m	**ZRAE02B01**	0,02...3 m
RE9538BA	0,02...1,5 m	**ZRME01B01**	0,02...1 m
RE6151BM	0,01...4,5 m	**ZRME03B01**	0,02...2,8 m
RE6151BA	0,02...2,3 m	**ZRMR02K01**	0,02...1,1 m
RR50_A	0,02...4 m	**ZRMS02_01**	0,01...1,5 m
RE6040BA	0,02...4 m	**RF505**	0,06...1,6 m
RE8222BA	0,01...2 m	**RF255**	0,06...1,2 m
RR34_M	0,01...2,4 m	**RF508**	0,06...1,6 m
RE3220BM	0,01...1,6 m	**RF258**	0,06...1,2 m
RE6210BM	0,01...1,6 m	**ZRDF__K01**	0,06...4 m