

Retro-Reflex Sensor for Clear Glass Recognition

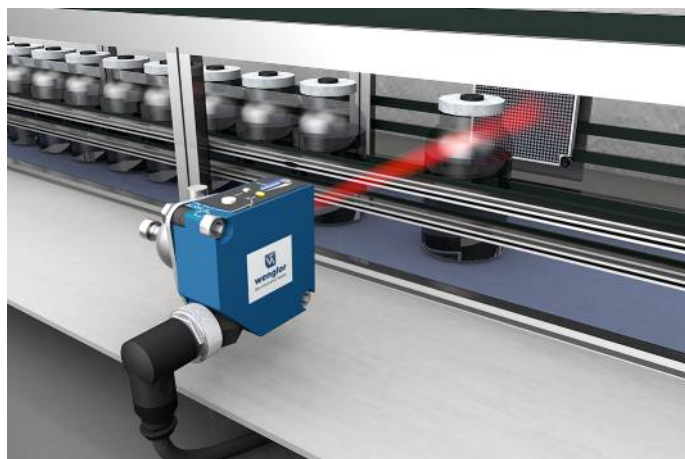
P1PK103

Part Number



- Condition monitoring
- IO-Link 1.1
- No blind spot from single-lens optics
- Special for glass, PET and films

The retro-reflex sensor for clear glass recognition works with red light and a reflector. Where conventional retro-reflex light barriers reach their limits, this retro-reflective barrier for clear glass recognition ensures that extremely shiny objects like glass, PET bottles, trays or film can be detected. Via the single-lens optic without blind spots, the sensor can detect objects even through small holes and gaps. 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.

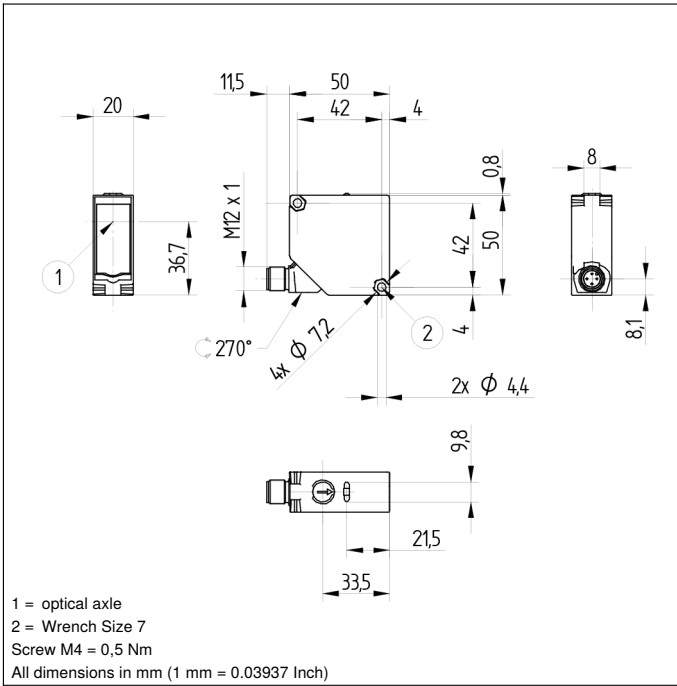


Technical Data

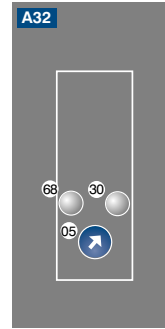
Optical Data	
Range	2600 mm
Reference Reflector/Reflector Foil	RQ100BA
Clear Glass Recognition	yes
Smallest Recognizable Part	see Table 2
Switching Hysteresis	< 5 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Single-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U _b = 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	< 3 %
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
Interface	IO-Link V1.1
Protection Class	III
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4-pin
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2394,2 a
IO-Link	●
NPN NO/NC antivalent	●
Connection Diagram No.	213
Control Panel No.	A32
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	380

Complementary Products

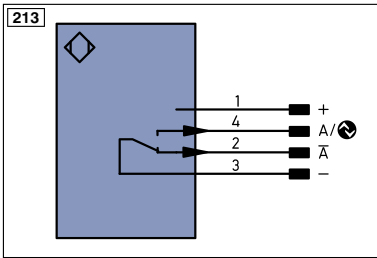
IO-Link Master	
Reflector, Reflector Foil	
Set Protective Housing Z1PS001	
Software	



Ctrl. Panel



05 = Switching Distance Adjuster
 30 = Switching Status/Contamination Warning
 68 = Supply Voltage Indicator



Legend			
+	Supply Voltage +	PT	Platinum measuring resistor
-	Supply Voltage 0 V	nc	not connected
~	Supply Voltage (AC Voltage)	U	Test Input
A	Switching Output (NO)	U	Test Input inverted
A̅	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
V̅	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
Z	Time Delay (activation)	AWV	Valve Output
S	Shielding	a	Valve Control Output +
RxD	Interface Receive Path	b	Valve Control Output 0 V
TxD	Interface Send Path	SY	Synchronization
RDY	Ready	SY-	Ground for the Synchronization
GND	Ground	E+	Receiver-Line
CL	Clock	S+	Emitter-Line
E/A	Output/Input programmable	±	Grounding
	IO-Link	SrR	Switching Distance Reduction
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path
IN	Safety Input	Tx+/-	Ethernet Send Path
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)
Signal	Signal Output	La	Emitted Light disengageable
BL-D +/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0.5A2Z	Encoder 0-pulse 0-0̅ (TTL)	RES	Input confirmation
		EDM	Contactor Monitoring
		EN ^A 0.5A2Z	Encoder A/Ā (TTL)
		EN ^B 0.5A2Z	Encoder B/B̅ (TTL)
		EN ^A	Encoder A
		EN ^B	Encoder B
		A _{MIN}	Digital output MIN
		A _{MAX}	Digital output MAX
		A _{OK}	Digital output OK
		SY _{in}	Synchronization In
		SY _{OUT}	Synchronization OUT
		OL _T	Brightness output
		M	Maintenance
		rsv	reserved
			Wire Colors according to DIN IEC 757
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNVE	Green/Yellow

Table 1

Working Distance	0,5 m	1,3 m	2,6 m
Light Spot Diameter	30 mm	45 mm	80 mm

Table 2

Distance, Sensor to Reflector	0,5 m	1,3 m	2,6 m
Smallest Recognizable Part	1,5 mm	4 mm	15 mm

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0...2,6 m	RR21_M	0...0,65 m
RE18040BA	0...1,5 m	ZRAE02B01	0...0,9 m
RQ84BA	0...1,8 m	ZRME01B01	0...0,25 m
RR84BA	0...2,2 m	ZRME03B01	0...1,1 m
RE9538BA	0...0,85 m	ZRMR02K01	0...0,3 m
RE6151BM	0...2 m	ZRMS02_01	0...0,5 m
RR50_A	0...1,55 m	RF505	0...0,4 m
RE6040BA	0...1,8 m	RF508	0...0,4 m
RE8222BA	0...1,1 m	RF258	0...0,4 m
RR34_M	0...1,2 m	ZRAF07K01	0...0,4 m
RE3220BM	0...0,9 m	ZRAF08K01	0...0,4 m
RE6210BM	0...0,5 m	ZRDF03K01	0...1,3 m
RR25_M	0...0,65 m	ZRDF10K01	0...1,4 m
RR25KP	0...0,35 m		

