

Retro-Reflex Sensor for Clear Glass Recognition

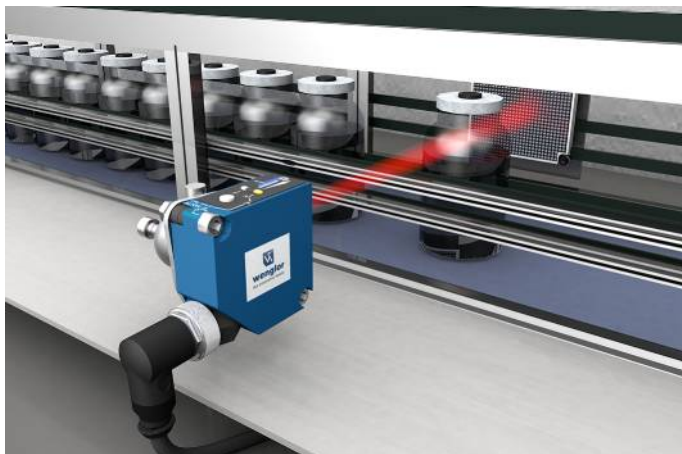
P1PK101

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.

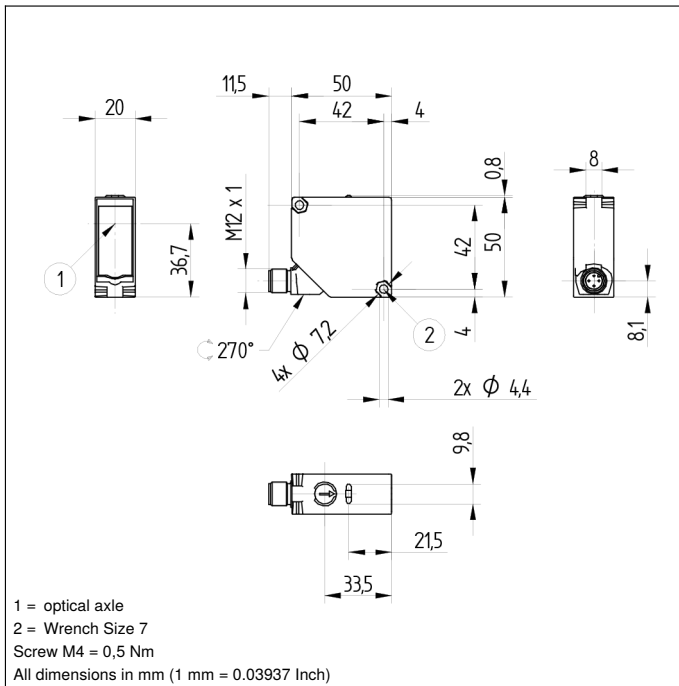


Technical Data

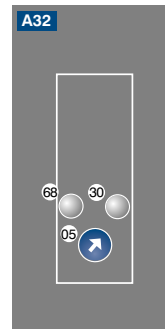
Optical Data	
Range	2600 mm
Reference Reflector/Reflector Foil	RQ100BA
Clear Glass Recognition	yes
Smallest Recognizable Part	see Table 2
Switching Hysteresis	< 5 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 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	●
PNP NO/NC antivalent	●
Connection Diagram No.	215
Control Panel No.	A32
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	380

Complementary Products

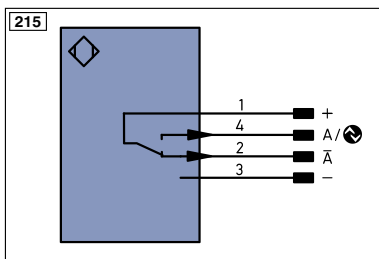
IO-Link Master	
Reflector, Reflector Foil	
Set Protective Housing Z1PS001	
Software	



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-v	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
ENa	Encoder A/A̅ (TTL)	EDM	Contactor Monitoring
ENb	Encoder B/B̅ (TTL)		
ENb	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		
OLT	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		
GNYE	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		

