

# Retro-Reflex Sensor for Transparent Objects

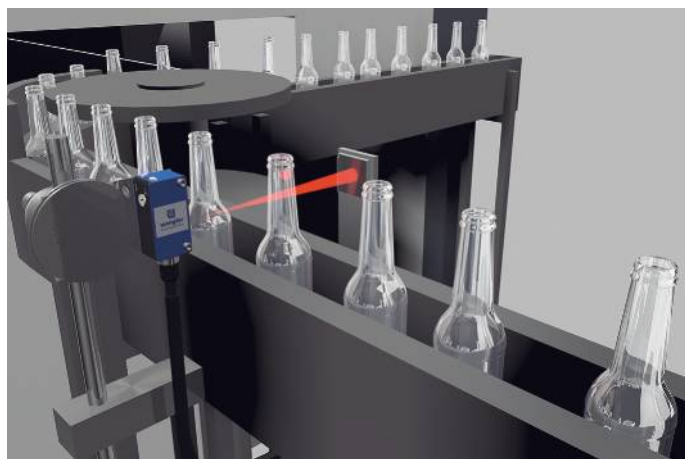
## P1KK009

Part Number



- Condition monitoring
- Dynamic readjustment of the switching threshold
- High-end
- IO-Link 1.1
- Special for glass, PET and films

The retro-reflex sensor for transparent objects works with red light and a reflector. It has a IO-Link interface with a data storage function as well as additional configuration and diagnostic options. The interface can also be used to configure the sensors (PNP/NPN, NC/NO, switching distance, error output), as well as for reading out switching statuses and signal values. The dynamic readjustment of the switching threshold function automatically adjusts this for contamination, aging or temperature deviations, meaning that these factors have almost no effect on functionality.



### Technical Data

Optical Data	
Range	2000 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 <sub>b</sub> = 24 V)	< 20 mA
Switching Frequency	1000 Hz
Switching frequency (speed mode)	2000 Hz
Response Time	0,5 ms
Response time (speed mode)	0,25 ms
Temperature Drift	< 5 %
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 and Overload Protection	yes
Reverse Polarity Protection	yes
Lockable	yes
Teach Mode	NT, MT
Interface	IO-Link V1.1
Data Storage	yes
Protection Class	III

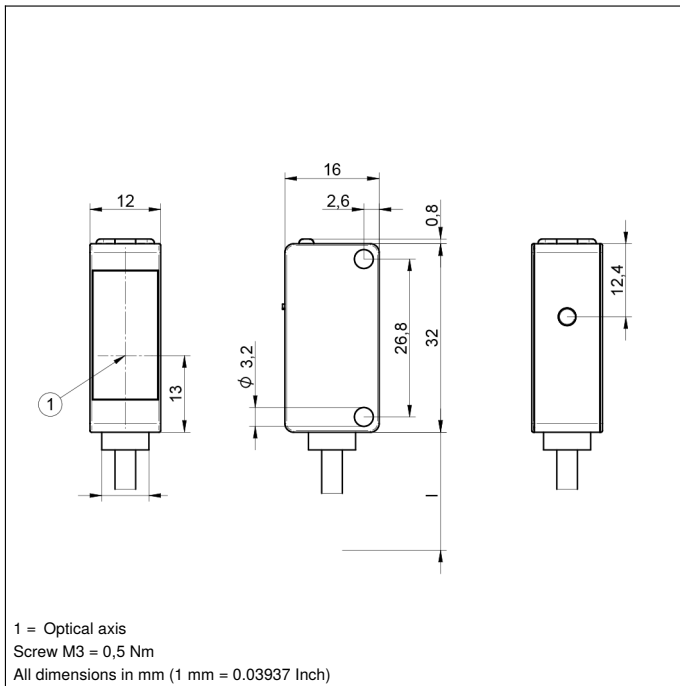
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	Cable, 4-wire, 2 m
Optic Cover	Plastic, PMMA

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2207,95 a

IO-Link	●
NPN NC, NPN NO	●
Connection Diagram No.	<b>867</b>
Control Panel No.	<b>A27</b>
Suitable Mounting Technology No.	<b>400</b>

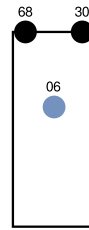
### Complementary Products

IO-Link Master	
Reflector, Reflector Foil	
Software	

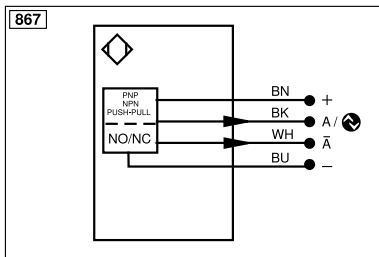


### Ctrl. Panel

A 27



06 = Teach Button  
 30 = Switching Status/Contamination Warning  
 68 = supply voltage indicator



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
ȳ	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	Amv	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link	IO-Link	Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
Bl_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARs422	Encoder A/Ā (TTL)
			Encoder B/Ī (TTL)
			Encoder A
			Encoder B
			Digital output MIN
			Digital output MAX
			Digital output OK
			Synchronization In
			Synchronization OUT
			Brightness output
			Maintenance
			Reserved
			Wire Colors according to DIN IEC 60757
			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 m
Light Spot Diameter	30 mm	100 mm	150 mm

Table 2

Distance, Sensor to Reflector	0,4 m	1 m	2 m
Smallest Recognizable Part	2 mm	5 mm	8 mm

### Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0...2 m	Z90R004	0...0,7 m
RE18040BA	0...1,1 m	Z90R005	0...1 m
RQ84BA	0...1,6 m	Z90R006	0...1 m
RR84BA	0...1,9 m	ZRAE02B01	0...0,7 m
RE9538BA	0...0,7 m	ZRME01B01	0...0,25 m
RE6151BM	0...1,5 m	ZRME03B01	0...0,9 m
RR50_A	0...1,05 m	ZRMR02K01	0...0,35 m
RE6040BA	0...1,2 m	ZRMS02_01	0...0,45 m
RE8222BA	0...0,85 m	RF505	0...0,4 m
RR34_M	0...1 m	RF508	0...0,4 m
RE3220BM	0...0,7 m	RF258	0...0,4 m
RE6210BM	0...0,45 m	ZRAF08K01	0...0,4 m
RR25_M	0...0,55 m	ZRDF03K01	0...1,2 m
RR25KP	0...0,3 m	ZRDF10K01	0...1,3 m
RR21_M	0...0,5 m		

