Retro-Reflex Sensor

XK89PA7 LASER

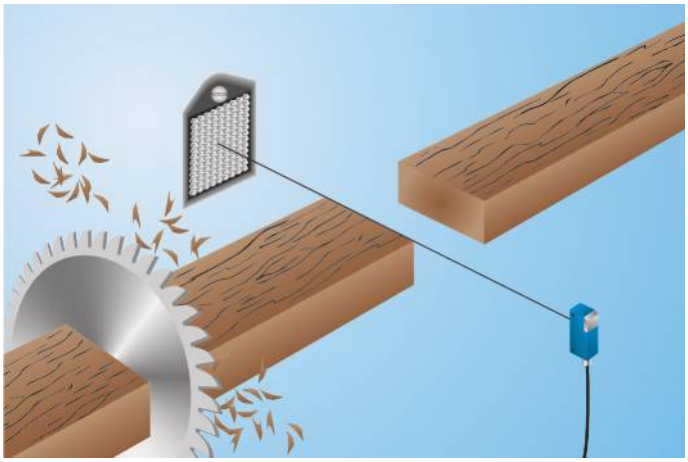
Part Number

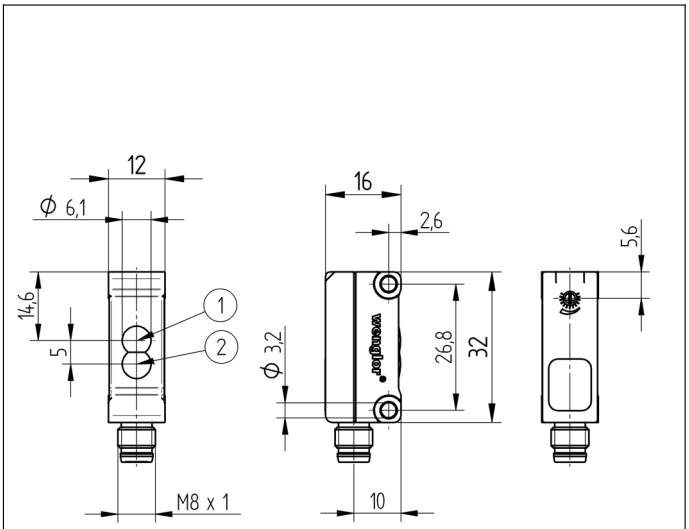
- **Accurate edge detection**
- **Smallest recognizable part: 0,1 mm**
- **Spot diameter: 1 mm**

Technical Data

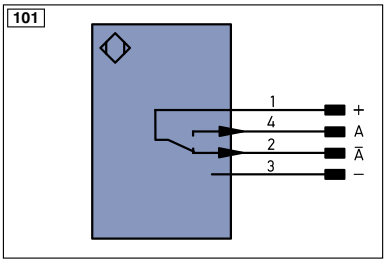
Optical Data	
Range	6000 mm
Reference Reflector/Reflex Foil	RQ100BA
Smallest Recognizable Part	> 100 µm
Switching Hysteresis	< 15 %
Light Source	Laser (red)
Wave Length	655 nm
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	2
Max. Ambient Light	10000 Lux
Opening Angle	2 °
Light Spot Diameter	1 mm
Focus Distance	150...300 mm
Two-Lens Optic	yes
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	3 kHz
Response Time	166 µs
Temperature Drift	< 10 %
Temperature Range	-10...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III
Mechanical Data	
Adjustment	Potentiometer
Housing Material	Plastic
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M8 × 1; 4-pin
PNP NO/NC antivalent	●
Connection Diagram No.	101
Control Panel No.	K4
Suitable Connection Technology No.	7
Suitable Mounting Technology No.	400

A reflector must be used in combination with these sensors. They can be installed in all kinds of industrial environments thanks to ample functional reserve. Even reflective objects can be reliably recognized through the use of polarized light.





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



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)	O	Analog Output
V	Contamination/Error Output (NO)	O–	Ground for the Analog Output
V̄	Contamination/Error Output (NC)	BZ	Block Discharge
E	Input (analog or digital)	AMV	Valve Output
T	Teach Input	a	Valve Control Output +
Z	Time Delay (activation)	b	Valve Control Output 0 V
S	Shielding	SY	Synchronization
RxD	Interface Receive Path	E+	Receiver-Line
TxD	Interface Send Path	S+	Emitter-Line
RDY	Ready	⏚	Grounding
GND	Ground	SnR	Switching Distance Reduction
CL	Clock	Rx+/–	Ethernet Receive Path
E/A	Output/Input programmable	Tx+/–	Ethernet Send Path
	IO-Link	Bus	Interfaces-Bus A(+)/B(–)
PoE	Power over Ethernet	La	Emitted Light disengageable
IN	Safety Input	Mag	Magnet activation
OSSD	Safety Output	RES	Input confirmation
Signal	Signal Output	EDM	Contactor Monitoring

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

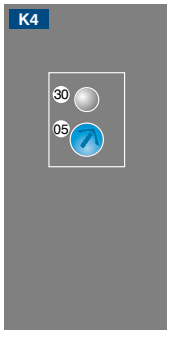
Table 1

Working Distance	0,3 m	2 m	4 m
Light Spot Diameter	< 3 mm	< 30 mm	< 60 mm

Complementary Products

Reflector, Reflex Foil

Ctrl. Panel



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0,4...6 m	**RR25_M**	0,3...2,5 m
RE18040BA	0,4...4 m	**RR25KP**	0,25...1,5 m
RQ84BA	0,5...5 m	**RR21_M**	0,4...2 m
RR84BA	0,4...6 m	**ZRAE02B01**	0,4...3 m
RE9538BA	0,4...3 m	**ZRME01B01**	0,4...1 m
RE6151BM	0,3...5 m	**ZRME03B01**	0,35...3 m
RR50_A	0,4...5 m	**ZRMR02K01**	0,4...1,3 m
RE6040BA	0,4...6 m	**ZRMS02_01**	0,4...1,5 m
RE8222BA	0,4...3 m	**RF505**	0,35...1,1 m
RR34_M	0,4...3 m	**RF508**	0,35...1,1 m
RE3220BM	0,4...2,5 m	**RF258**	0,35...1,1 m
RE6210BM	0,35...2 m	**ZRDF__K01**	0,2...4,5 m