

# Retro-Reflex Sensor

## Universal

# LK89PD8

Part Number



- Metal plug
- Miniature design
- Red light

## Technical Data

Optical Data	
Range	4500 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 °
Light Spot Diameter	see Table
Two-Lens Optic	yes

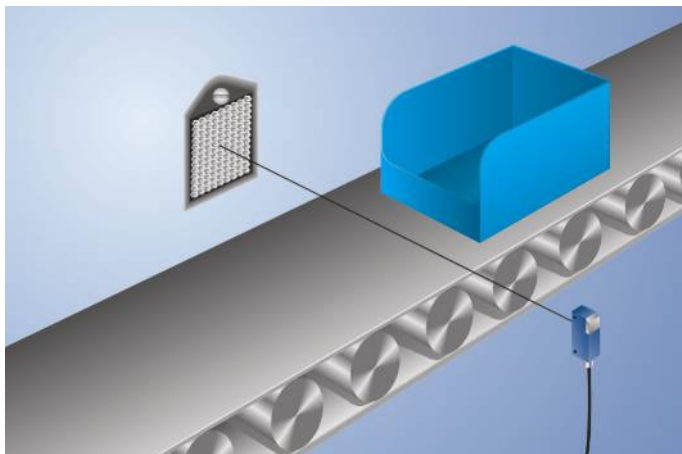
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 30 mA
Switching Frequency	1 kHz
Response Time	500 μs
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 μA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III

Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M8 × 1; 3-pin

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2428,17 a

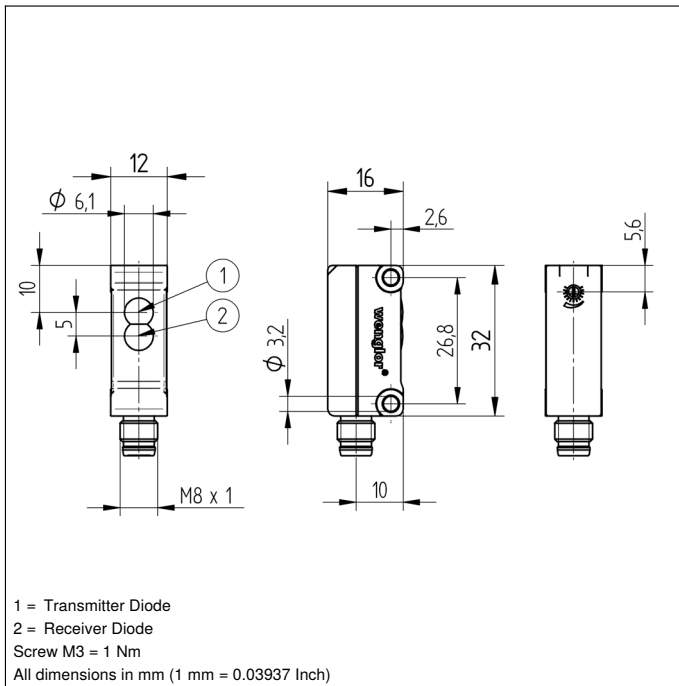
PNP NC	●
Connection Diagram No.	<b>109</b>
Control Panel No.	<b>K4</b>
Suitable Connection Equipment No.	<b>8</b>
Suitable Mounting Technology No.	<b>400</b>

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.



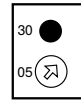
## Complementary Products

PNP-NPN Converter BG8V1P-N-2M  
Reflector, Reflector Foil

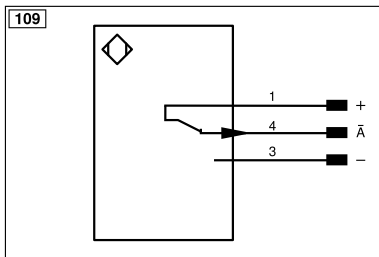


### Ctrl. Panel

**K4**



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



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	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
BI_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)
			ENBrs422 Encoder B/Ī (TTL)
			ENA Encoder A
			ENB Encoder B
			AMIN Digital output MIN
			AMAX Digital output MAX
			Ack Digital output OK
			SY In Synchronization In
			SY OUT Synchronization OUT
			OLT Brightness output
			M Maintenance
			rsv 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	0,2 m	0,5 m	4 m
Light Spot Diameter	14 mm	40 mm	250 mm

### Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0,02...4,5 m	RR25_M	0,015...1,1 m
RE18040BA	0,04...3,5 m	RR25KP	0,04...0,8 m
RQ84BA	0,02...4 m	RR21_M	0,02...1,1 m
RR84BA	0,03...4 m	ZRAE02B01	0,03...1,6 m
RE9538BA	0,03...2 m	ZRME01B01	0,04...0,5 m
RE6151BM	0,01...4 m	ZRME03B01	0,03...1,6 m
RE6151BH	0,025...1,9 m	ZRMR02K01	0,03...0,6 m
RR50_A	0,02...2,8 m	ZRMS02_01	0,03...0,7 m
RE6040BA	0,015...3,2 m	RF505	0,06...1,1 m
RE8222BA	0,01...2,1 m	RF255	0,06...0,9 m
RR34_M	0,02...1,6 m	RF508	0,06...1,3 m
RE3220BM	0,015...1,5 m	RF258	0,06...1,1 m
RE6210BM	0,01...1 m	ZRDF_K01	0,06...2,5 m

