

# Retro-Reflex Sensor

## LK89NA7

Part Number

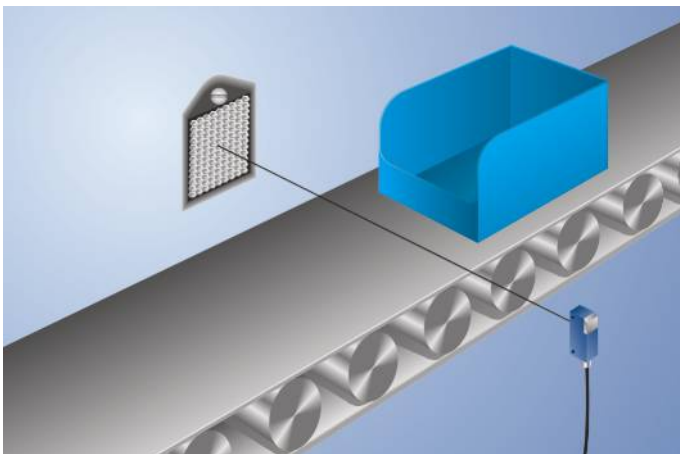


- Metal plug
- Miniature design
- Red light

### Technical Data

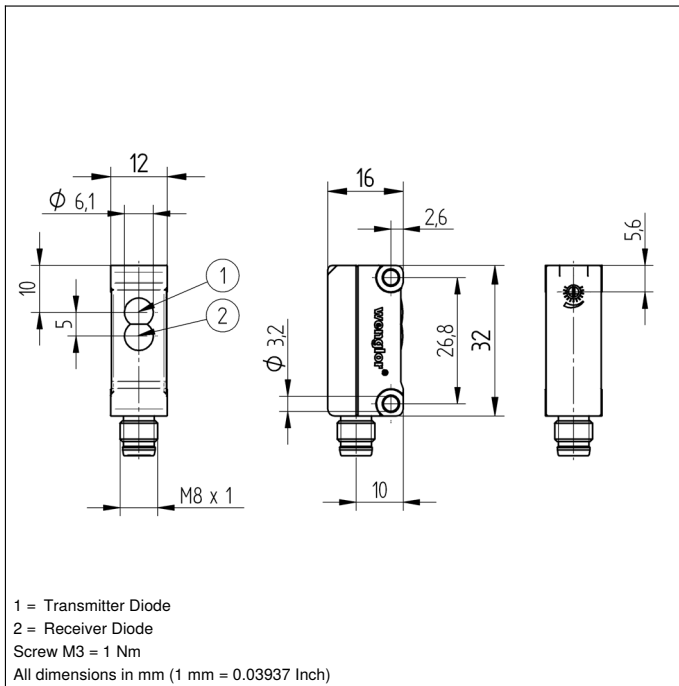
Optical Data	
Range	4500 mm
Reference Reflector/Reflex Foil	RQ100BA
Switching Hysteresis	< 15 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Opening Angle	5 °
Spot Diameter	see Table 1
Two-Lens Optic	yes
Electrical Data	
Supply Voltage	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
NPN 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; 4-pin
NPN NO/NC antivalent	●
Connection Diagram No.	<b>301</b>
Control Panel No.	<b>K4</b>
Suitable Connection Technology No.	<b>7</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.

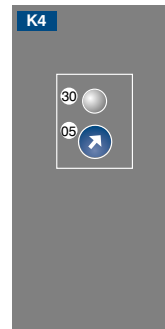


### Complementary Products

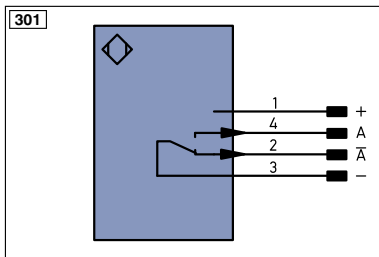
Reflector, Reflex Foil



### Ctrl. Panel



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



### Legend

<b>+</b> Supply Voltage +	<b>nc</b> not connected	<b>ENa</b> Encoder A
<b>-</b> Supply Voltage 0 V	<b>U</b> Test Input	<b>ENb</b> Encoder B
<b>~</b> Supply Voltage (AC Voltage)	<b>Ü</b> Test Input inverted	<b>AMIN</b> Digital output MIN
<b>A</b> Switching Output (NO)	<b>W</b> Trigger Input	<b>AMAX</b> Digital output MAX
<b>A̅</b> Switching Output (NC)	<b>O</b> Analog Output	<b>ACK</b> Digital output OK
<b>V</b> Contamination/Error Output (NO)	<b>O-</b> Ground for the Analog Output	<b>SY In</b> Synchronization In
<b>V̅</b> Contamination/Error Output (NC)	<b>BZ</b> Block Discharge	<b>SY OUT</b> Synchronization OUT
<b>E</b> Input (analog or digital)	<b>AWV</b> Valve Output	<b>Out</b> Brightness output
<b>T</b> Teach Input	<b>a</b> Valve Control Output +	<b>M</b> Maintenance
<b>Z</b> Time Delay (activation)	<b>b</b> Valve Control Output 0 V	
<b>S</b> Shielding	<b>SY</b> Synchronization	
<b>RxD</b> Interface Receive Path	<b>E+</b> Receiver-Line	
<b>TxD</b> Interface Send Path	<b>S+</b> Emitter-Line	
<b>RDY</b> Ready	<b>⊕</b> Grounding	
<b>GND</b> Ground	<b>SnR</b> Switching Distance Reduction	
<b>CL</b> Clock	<b>Rx+/-</b> Ethernet Receive Path	
<b>E/A</b> Output/Input programmable	<b>Tx+/-</b> Ethernet Send Path	
<b>IO-Link</b>	<b>Bus</b> Interfaces-Bus A(+)/B(-)	
<b>PoE</b> Power over Ethernet	<b>La</b> Emitted Light disengageable	
<b>IN</b> Safety Input	<b>Mag</b> Magnet activation	
<b>OSSD</b> Safety Output	<b>RES</b> Input confirmation	
<b>Signal</b> Signal Output	<b>EDM</b> Contactor Monitoring	
<b>BI-D+/-</b> Ethernet Gigabit bidirect. data line (A-D)	<b>ENAR542</b> Encoder A/Ä (TTL)	
<b>EN0R542Z</b> Encoder 0-pulse 0-0 (TTL)	<b>ENBR542Z</b> Encoder B/B̅ (TTL)	

### Wire Colors according to DIN IEC 757

<b>BK</b> Black
<b>BN</b> Brown
<b>RD</b> Red
<b>OG</b> Orange
<b>YE</b> Yellow
<b>GN</b> Green
<b>BU</b> Blue
<b>VT</b> Violet
<b>GY</b> Grey
<b>WH</b> White
<b>PK</b> Pink
<b>GNVE</b> Green/Yellow

Table 1

Working Distance	0,2 m	0,5 m	4 m
Spot Diameter	14 mm	40 mm	250 mm

### Feasible reflector distance

Reflector type, mounting distance

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

