

Retro-Reflex Sensor with light band

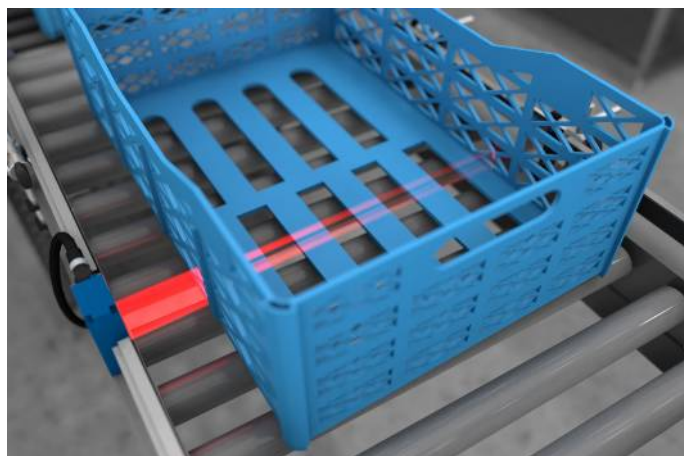
P1EL201 LASER

Part Number



- Compensation of uneven conveyor belt areas with dynamic teach-in
- Dynamic readjustment of the switching threshold
- Flexible mounting options thanks to 180° rotatable plug
- Precise front edge detection with non-uniform objects

The Retro-Reflex Sensor with Light Band scans a significantly larger range than a retro-reflex sensor with a dot-shaped light spot. This makes it ideally suitable for reliably detecting the front edges of objects with irregular shapes or variable sizes. The sensor's collimated laser light band is absolutely homogeneous and can thus be precisely aligned to the conveyor belt's level. The sensor detects objects as small as just four millimeters. The compact format can be integrated into the smallest of spaces, for example in the side panels of conveyor systems.

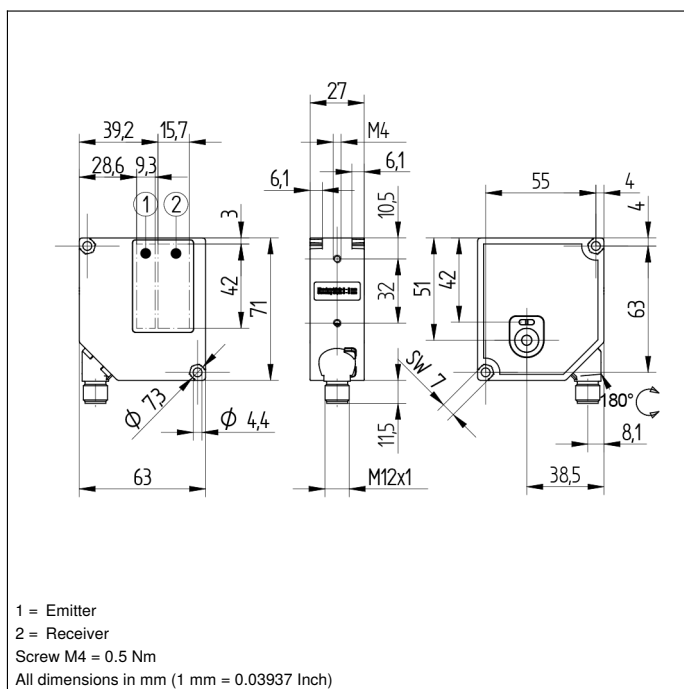


Technical Data

Optical Data	
Range	2500 mm
Reference Reflector/Reflector Foil	Z90R008
Smallest Recognizable Part	see Table 1
Light Source	Laser (red)
Wavelength	650 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Strip Height	42 mm
Electrical Data	
Supply Voltage	12...30 V DC
Current Consumption (U _b = 24 V)	< 30 mA
Switching Frequency	175 Hz
Response Time	2,9 ms
Temperature Range	-30...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
FDA Accession Number	2310248-000
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4-pin
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1754,51 a
PNP NC	●
Connection Diagram No.	151
Control Panel No.	1E1
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	111

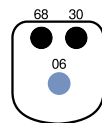
Complementary Products

PNP-NPN Converter BG2V1P-N-2M

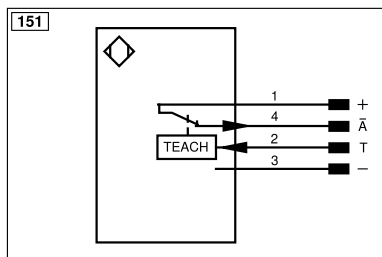


Ctrl. Panel

1E1



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)	Ů	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		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	ENARIS422	Encoder A/A (TTL)
		ENBRS422	Encoder B/B (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

Distance, Sensor to Reflector	0,35 ... 1,60 m	1,60 ... 2,50 m
Smallest Recognizable Part	4 mm	10 mm

Feasible reflector distance

Reflector type, mounting distance

Z90R005	0,4...1,6 m	ZRDF03K01	0,4...1,6 m
Z90R008	0,35...2,5 m	ZRDF10K01	0,4...1,6 m
Z90R009	0,35...2,5 m		

