

Reflex Sensor with Background Suppression

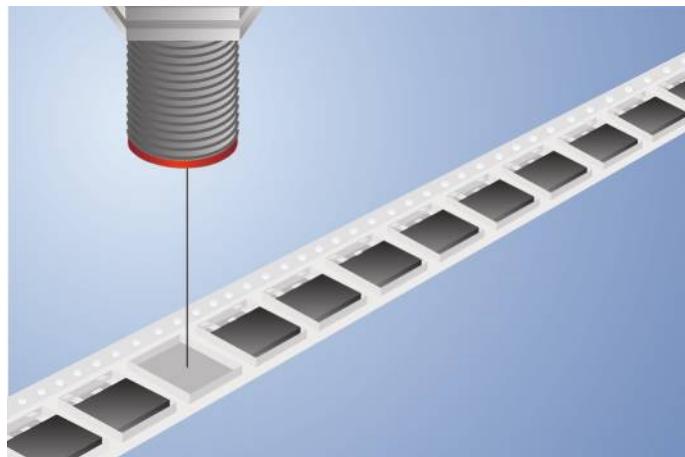
YO11PA3

Part Number



- Minimal height differences can be detected
- Spot diameter: 1 mm
- Switching frequency: 1,5 kHz

These sensors detect distance by measuring angles. They are particularly good at recognizing objects in front of any background. The color, shape and surface characteristics of the object have practically no influence on sensor switching performance.



Technical Data

Optical Data

Range	100 mm
Setting Range	30...100 mm
Switching Hysteresis	< 5 %
Light Source	Laser (red)
Wavelength	655 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1

Electrical Data

Supply Voltage	10...30 V DC
Current Consumption (U _b = 24 V)	< 25 mA
Switching Frequency	1500 Hz
Response Time	333 μs
Temperature Drift	< 5 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III
FDA Accession Number	0820416-000

Mechanical Data

Setting Method	Potentiometer
Housing Material	Brass, nickel-plated
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M12 × 1; 4-pin

PNP NC, PNP NO



Connection Diagram No.

101

Control Panel No.

O3

Suitable Connection Equipment No.

2

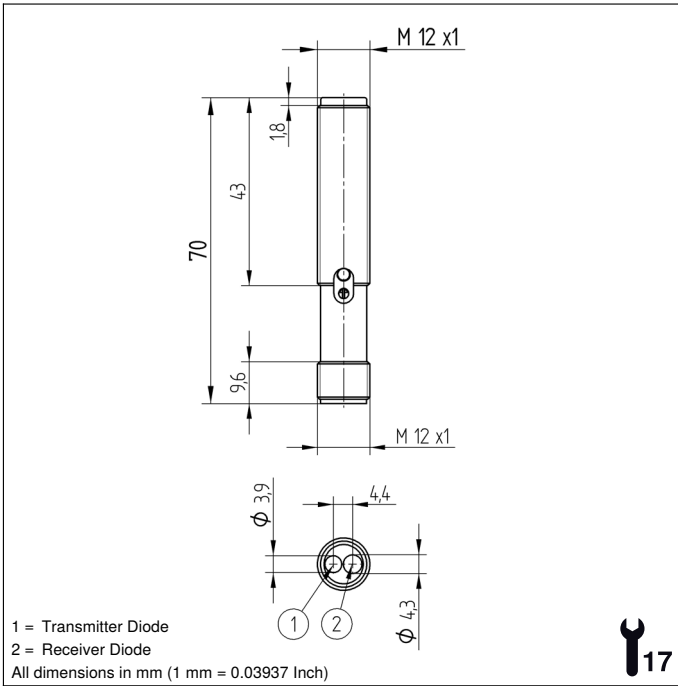
Suitable Mounting Technology No.

170

* Laser class 1 is valid for all sensors from revision I. The revision can be found in the production order number "xxxxx/l/xxxxx", which is indicated on the product label.

Complementary Products

PNP-NPN Converter BG2V1P-N-2M

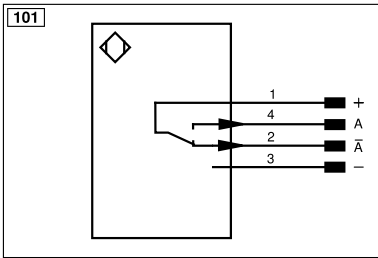


Ctrl. Panel

O3



05 = Switching Distance Adjuster
 31 = Switching Status/Contamination-/Short Circuit Warning



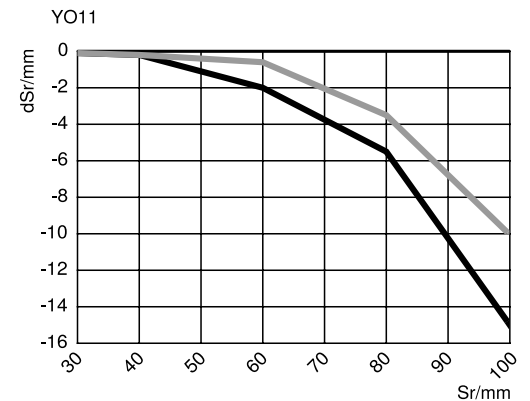
Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
ȳ	Contamination/Error Output (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	ENAR5422	Encoder A/Ā (TTL)
			Encoder B/B̄ (TTL)
			ENA Encoder A
			ENB Encoder B
			AMIN Digital output MIN
			AMAX Digital output MAX
			AOK 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

Detection Range	30 mm	60 mm	100 mm
Light Spot Diameter	2 mm	1 mm	3 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission



dSr = Switching Distance Change

Sr = Switching Distance

black 6 % remission

grey 18 % remission

