

Reflex Sensor with Background Suppression

P1PH702 LASER

Part Number



- Data storage
- High-end
- IO-Link 1.1
- Teach-in
- Two independent switching outputs
- Wireless settings via NFC

The reflex sensor with background suppression works with laser light according to the angle measurement principle. It has a IO-Link interface with a data storage function as well as additional configuration and diagnostic options. The interface can also be used to configure the sensors (PNP/NPN, NC/NO, switching distance, error output), as well as for reading out switching statuses and distance values. The teach-in function also provides another configuration option. Two independent switching outputs can be used, for instance, to monitor minimum and maximum values of distances or fill levels and stack heights.

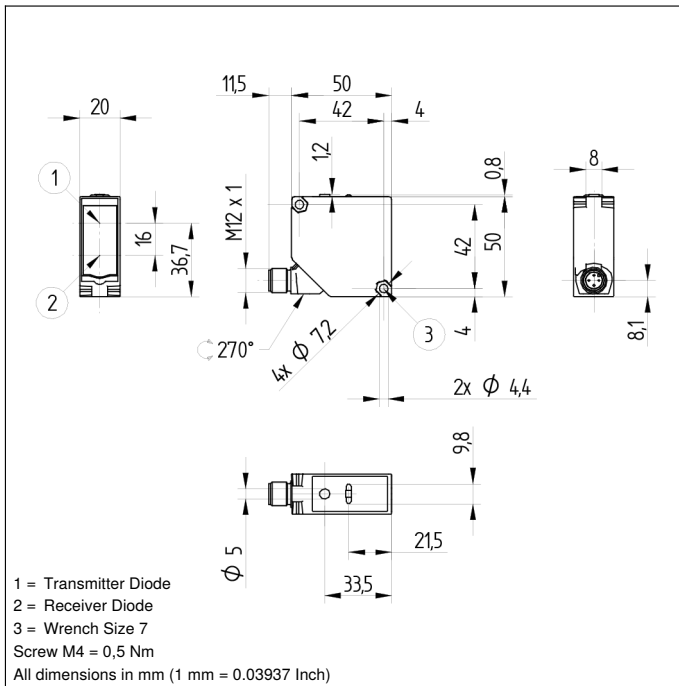


Technical Data

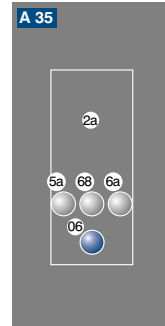
Optical Data	
Range	300 mm
Adjustable Range	65...300 mm
Switching Hysteresis	< 2 %
Light Source	Laser (red)
Wavelength	655 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	15...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U _b = 24 V)	< 20 mA
Switching Frequency	150 Hz
Switching Frequency (1 Switching Output)	800 Hz
Response Time	3,3 ms
Response time (1 switching output)	1,25 ms
Temperature Drift	< 3 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Interface	IO-Link V1.1
Protection Class	III
Mechanical Data	
Setting Method	Teach-in/NFC
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4-pin
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	885,62 a
NPN NO	●
IO-Link	●
NFC interface	●
Connection Diagram No.	221
Control Panel No.	A35
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	380

Complementary Products

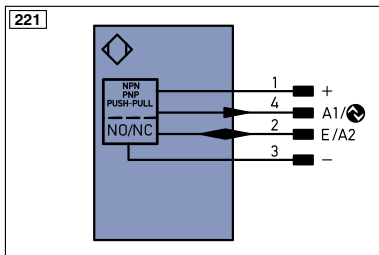
IO-Link Master
Set Protective Housing Z1PS001
Software



Ctrl. Panel



06 = Teach Button
2a = NFC interface
68 = Supply Voltage Indicator
6a = Switching Status Display, O2



Legend

+	Supply Voltage +	PT	Platinum measuring resistor
-	Supply Voltage 0 V	nc	not connected
~	Supply Voltage (AC Voltage)	U	Test Input
A	Switching Output (NO)	U	Test Input inverted
Ä	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
Z	Time Delay (activation)	Aw	Valve Output
S	Shielding	a	Valve Control Output +
RxD	Interface Receive Path	b	Valve Control Output 0 V
TxD	Interface Send Path	SY	Synchronization
RDY	Ready	SY-	Ground for the Synchronization
GND	Ground	E+	Receiver-Line
CL	Clock	S+	Emitter-Line
E/A	Output/Input programmable	±	Grounding
IO-Link	IO-Link	SrR	Switching Distance Reduction
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path
IN	Safety Input	Tx+/-	Ethernet Send Path
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)
Signal	Signal Output	La	Emitted Light disengageable
BL-D+/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0.65422	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
		EDM	Contactur Monitoring

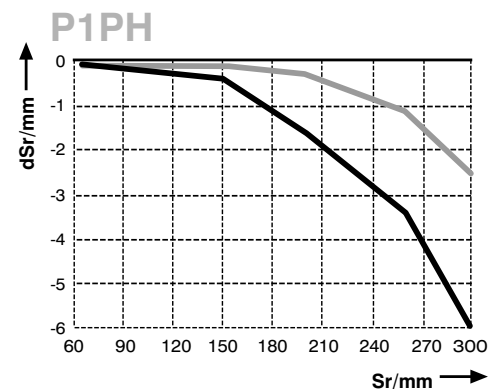
EN0.65422	Encoder A/Ä (TTL)
EN0.65422	Encoder B/B (TTL)
ENa	Encoder A
ENb	Encoder B
AMIN	Digital output MIN
AMAX	Digital output MAX
AOK	Digital output OK
SY in	Synchronization In
SY OUT	Synchronization OUT
OLt	Brightness output
M	Maintenance
rsv	reserved
Wire Colors according to IEC 60757	
BK	Black
BN	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	65 mm	150 mm	300 mm
Light Spot Diameter	3 mm	2,5 mm	2 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission



Sr = Switching Distance

dSr = Switching Distance Change

