

Through-Beam Sensor

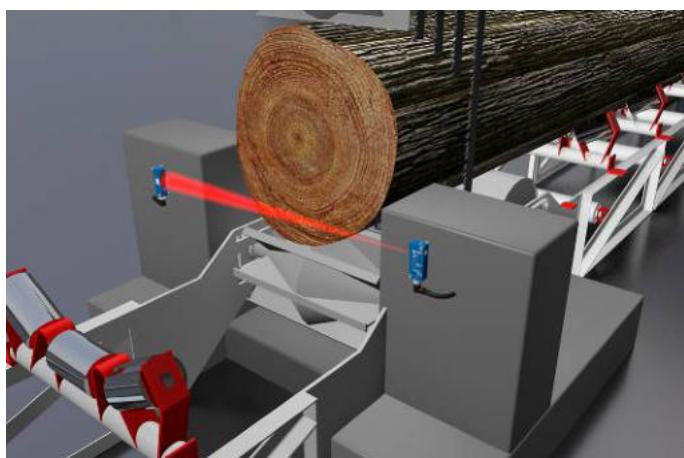
P1NE102

Part Number



- Condition monitoring
- High light intensity with large switching reserve
- IO-Link 1.1
- Test input for high operational reliability

The through-beam sensor works with red light as well as a transmitter and a receiver. Thanks to their high light intensity, the sensor provides a high degree of operational reliability even with interferences like steam, fog or dust. The transmitter can be deactivated using test input in order to test the functionality of the through-beam sensor. The IO-Link interface can be used to configure the sensor (PNP/NPN, NC/NO, switching distance), as well as for reading out switching statuses and signal values.



Technical Data

Optical Data

Range	20000 mm
Smallest Recognizable Part	see Table 1
Switching Hysteresis	10 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux

Electrical Data

Sensor Type	Receiver
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	1000 Hz
Switching Frequency (interference-free mode)	500 Hz
Response Time	0,5 ms
Response time (interference-free mode)	1 ms
Temperature Drift	< 10 %
Temperature Range	-40...60 °C
Switching Output Voltage Drop	< 2 V
Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 µA
Short Circuit and Overload Protection	yes
Reverse Polarity Protection	yes
Interface	IO-Link V1.1
Protection Class	III

Mechanical Data

Setting Method	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 x 1; 4-pin
Optic Cover	PMMA

Safety-relevant Data

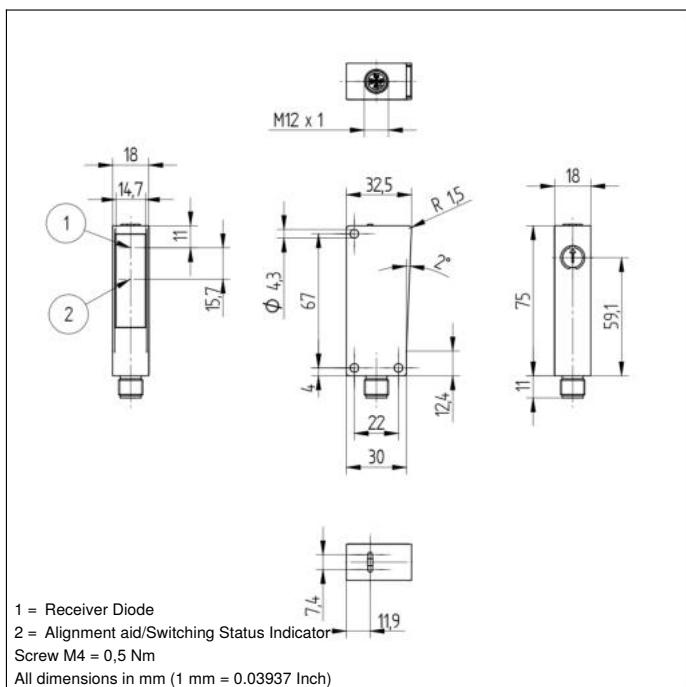
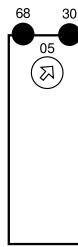
MTTFd (EN ISO 13849-1)	1688,43 a
NPN NO/NC antivalent	
IO-Link	●
Connection Diagram No.	213
Control Panel No.	A28
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	350

Suitable Emitter

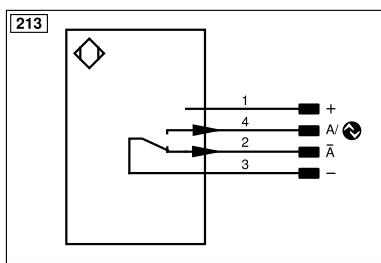
P1NS101

Complementary Products

Dust Extraction Tube STAUBTUBUS-03
IO-Link Master
Set Protective Housing Z1NS001
Software


Ctrl. Panel
A28


05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = supply voltage indicator


Legend

+	Supply Voltage +	nc	Not connected	EN _{RS422}	Encoder B/B (TTL)
-	Supply Voltage 0 V	U	Test Input	ENA	Encoder A
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted	EN _B	Encoder B
A	Switching Output (NO)	W	Trigger Input	AMIN	Digital output MIN
À	Switching Output (NC)	W-	Ground for the Trigger Input	A _{MAX}	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	Aok	Digital output OK
Ù	Contamination/Error Output (NC)	O-	Ground for the Analog Output	SY In	Synchronization IN
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	Amv	Valve Output	Ol _r	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	±	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
IO-Link		Rx+/-	Ethernet Receive Path	GN	Green
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)	VT	Violet
OSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BL_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
EN _{RS422}	Encoder 0-pulse 0/Ü (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	EN _{RS422}	Encoder A/À (TTL)		

Table 1

Distance transmitter/receiver	4 m	10 m	20 m
Smallest Recognizable Part	6 mm	2 mm	2,5 mm

