

Fork Sensor

P1HJ101

Part Number



- 2 switching outputs and switching status indicator
- Detect extremely small parts starting at 0.7 mm
- Flexible cable outlet with 4-pin plug, M8 × 1
- Miniature design (20 × 40 mm)
- Sensitivity set via IO-Link 1.1

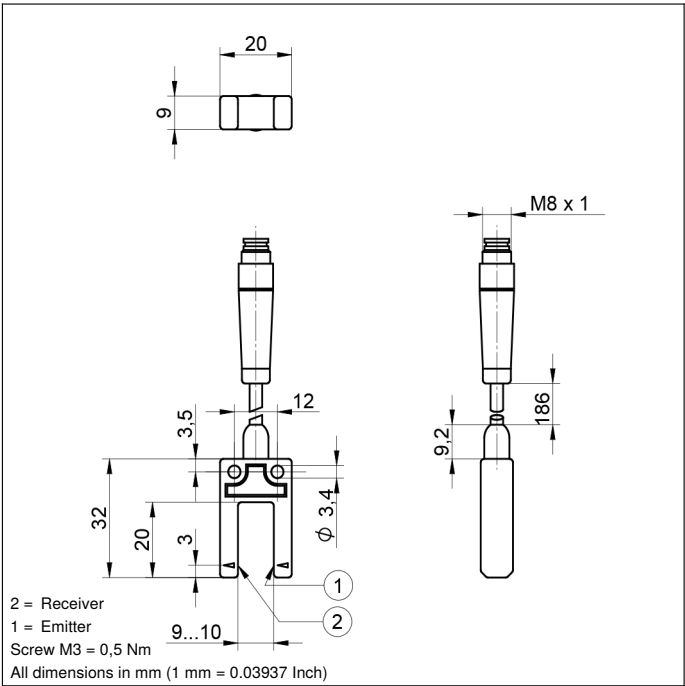
Fork sensors in a miniature design are photoelectric sensors. The emitter and the receiver are positioned opposite each other in a housing as a barrier. As soon as the light beam is interrupted, the sensor's output switches. The use of visible red light and the beam marking on the fork legs make it easier to align the fork sensor. This fork sensor can be used to detect small holes, grooves and notches as well as to detect small parts. The minimal construction volume, the flexible connection cable and the integrated mounting holes enable use in confined installation situations, such as shuttles, AGVs or robot grippers.

Technical Data

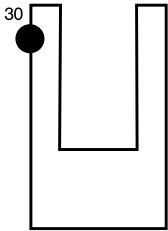
Optical Data	
Fork Width	9 mm
Smallest Recognizable Part	0,7 mm
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Repeat Accuracy	0,05 mm
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	< 20 mA
Switching Frequency	1900 Hz
Switching frequency (speed mode)	3000 Hz*
Response Time	0,26 ms
Response time (speed mode)	0,16 ms *
Temperature Range	-30...60 °C**
Temperature Drift	< 10 %
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2 V
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	IO-Link
Housing Material	Plastic
Optic Cover	Plastic, PA
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M8 × 1; 4-pin
Cable length (L)	186 mm
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	4838,37 a
Scope of delivery	1 × initial start-up instructions 1 × sensor
Packaging unit	1 Piece
PNP NC, PNP NO	☒
IO-Link	☒
Suitable Connection Equipment No.	7

* Default

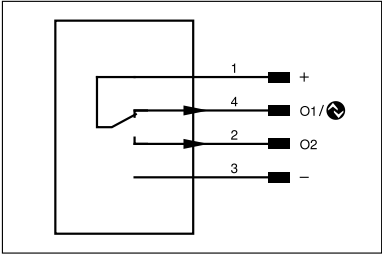
** Temperature range with permanently installed cable; bending radius: > 20 mm



Ctrl. Panel
OP5



30 = Switching Status/Contamination Warning



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)	Ū	Test Input inverted
Ā	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
Ū	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
R	Reset 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(-)
QSSD	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
		ENARs422	Encoder A/Ā (TTL)
		ENBRs422	Encoder B/Ḃ (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

