

# Fork Sensor

## P1HJ001

## LASER

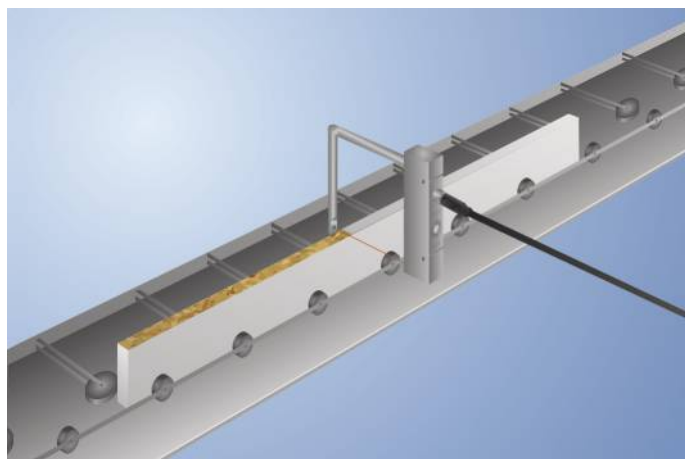
Part Number

InoxSens



- Collimated laser beam (0.6 mm diameter over the entire fork width)
- Recognition of transparent objects
- Rugged, corrosion-free V4A stainless steel housing in hygienic design
- Teach-in key and external teach-in

Fork sensors have a collimated laser beam with a very small diameter of 0.6 mm over the entire fork width. As a result, they're capable of detecting extremely small parts down to a size of just 40 µm and even transparent objects at high speeds of up to 10 kHz. The innovative layout of the fork sensors in hygienic design permits various fork widths within a range of 50 to 220 mm, and allows contamination and cleaning agents to flow off of the surface in an ideal manner.



### Technical Data

#### Optical Data

Fork Width	120 mm
Smallest Recognizable Part	40 µm
Smallest Detectable Gap	50 µm
Switching Hysteresis	< 10 %
Light Source	Laser (red)
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	2
Max. Ambient Light	10000 Lux
Light Spot Diameter	0,6 mm
Repeat Accuracy	< 5 µm

#### Electrical Data

Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 20 mA
Switching Frequency	10 kHz
Response Time	50 µs
Off-Delay	0...100 ms
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Teach Mode	NT, MT
Protection Class	III

#### Mechanical Data

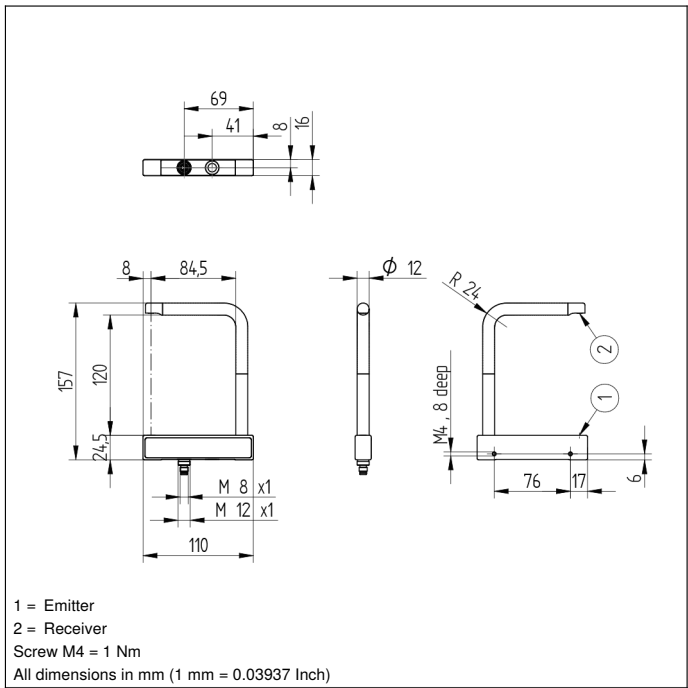
Setting Method	Teach-In
Housing Material	Stainless Steel 316L
Optic Cover	Glass
Degree of Protection	IP69K
Connection	M8 × 1; 4-pin
Ecolab	yes

#### Safety-relevant Data

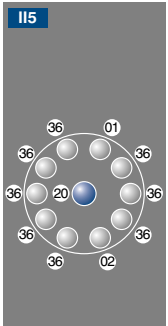
MTTFd (EN ISO 13849-1)	1615,89 a
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PNP NO/NC switchable

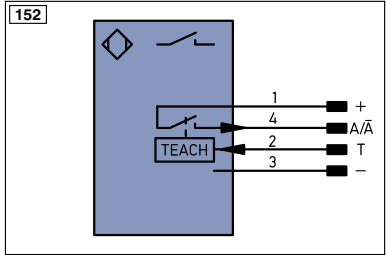
Connection Diagram No.	152
Control Panel No.	115
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	570



## Ctrl. Panel



01 = Switching Status Indicator  
02 = Contamination Warning  
20 = Enter Button  
36 = Mode Indicator



### 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
Ā	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
Ṽ	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)	AWV	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	SnR	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
EN0.05422	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
		EDM	Contactor Monitoring

EN0.05422	Encoder A/Ā (TTL)
EN0.05422	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 757	
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