

Fork Sensor

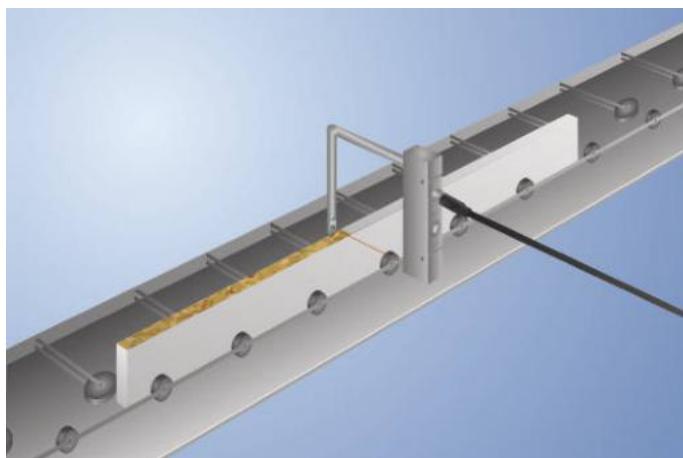
P1HJ005 LASER

Part Number



- Collimated laser beam (\varnothing 0.35 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 0.35 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	220 mm
Smallest Recognizable Part	40 μm
Smallest Detectable Gap	50 μm
Switching Hysteresis	< 10 %
Light Source	Laser (red)
Service Life ($T = +25^\circ\text{C}$)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Spot Diameter	0.35 mm
Repeat Accuracy	< 5 μm

Electrical Data

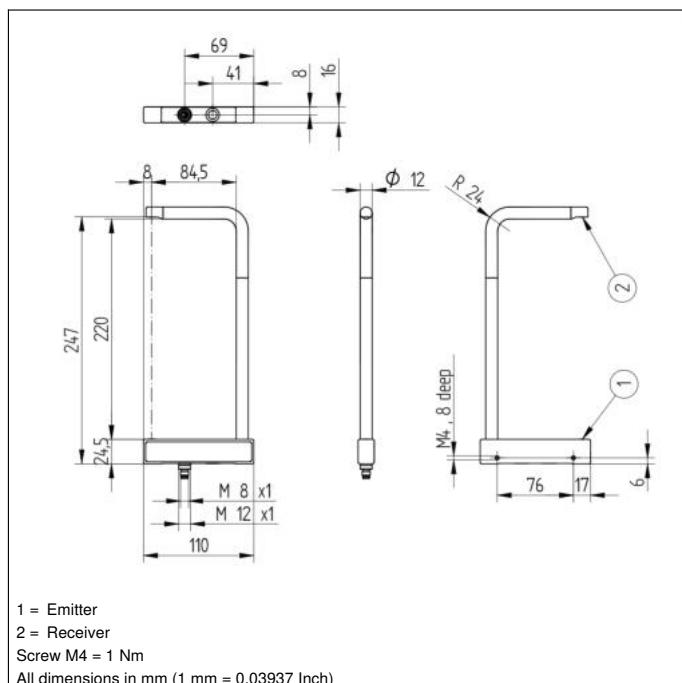
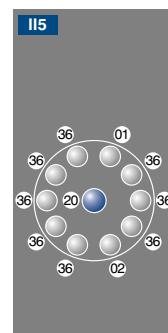
Supply Voltage	10...30 V DC
Current Consumption ($U_b = 24 \text{ V}$)	< 20 mA
Switching Frequency	10 kHz
Response Time	50 μs
Off-Delay	0...100 ms
Temperature Range	-25...60 $^\circ\text{C}$
Switching Output Voltage Drop	< 2.5 V
PNP Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Teach Mode	NT, MT
Protection Class	III

Mechanical Data

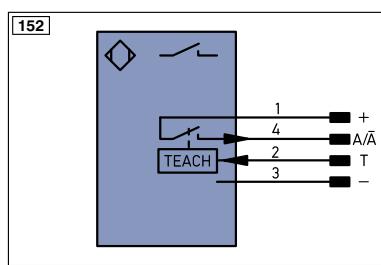
Setting Method	Teach-In
Housing Material	Stainless steel 316L
Optic Cover	Plastic
Degree of Protection	IP69K
Connection	M8 x 1; 4-pin
Ecolab	yes

Safety-relevant Data

MTTFd (EN ISO 13849-1)	1615,89 a
PNP NO/NC switchable	●
Connection Diagram No.	152
Control Panel No.	II5
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	570


Ctrl. Panel


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



Legend	
+	Supply Voltage +
-	Supply Voltage 0 V
~	Supply Voltage (AC Voltage)
A	Switching Output (NO)
Ā	Switching Output (NC)
V	Contamination/Error Output (NO)
Ā	Contamination/Error Output (NC)
E	Input (analog or digital)
T	Teach Input
Z	Time Delay (activation)
S	Shielding
RxD	Interface Receive Path
TxD	Interface Send Path
RDY	Ready
GND	Ground
CL	Clock
E/A	Output/Input programmable
IO-Link	IO-Link
PoE	Power over Ethernet
IN	Safety Input
OSD	Safety Output
Signal	Signal Output
BL-D	Ethernet Gigabit bidirect. data line (A-D)
EN0RS422	Encoder 0-pulse 0-0 (TTL)
PT	Platinum measuring resistor
nc	not connected
U	Test Input
Ū	Test Input inverted
W	Trigger Input
W-	Ground for the Trigger Input
O	Analog Output
O-	Ground for the Analog Output
BZ	Block Discharge
Awv	Valve Output
a	Valve Control Output +
b	Valve Control Output 0 V
SY	Synchronization
SY-	Ground for the Synchronization
E+	Receiver-Line
S+	Emitter-Line
±	Grounding
SnR	Switching Distance Reduction
Rx+/-	Ethernet Receive Path
Tx+/-	Ethernet Send Path
Bus	Interfaces-Bus A(+)B(-)
La	Emitted Light disengageable
Mag	Magnet activation
RES	Input confirmation
EDM	Contactor Monitoring
ENARS422	Encoder A/Ā (TTL)
ENBRS422	Encoder B/Ā (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

