

Fork Sensor

P1HJ001

LASER

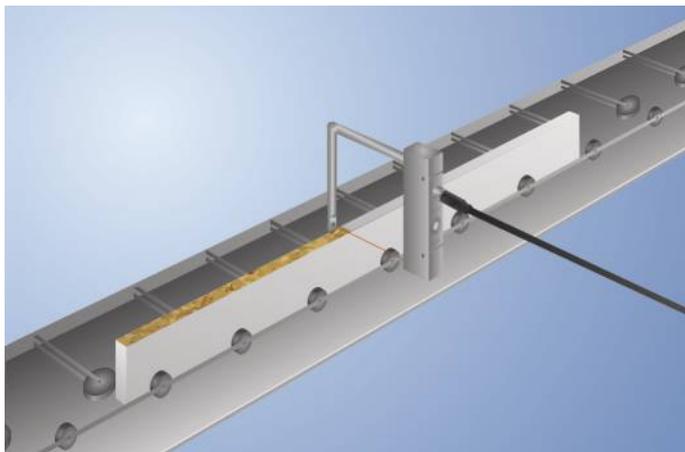
Part Number

InoxSens



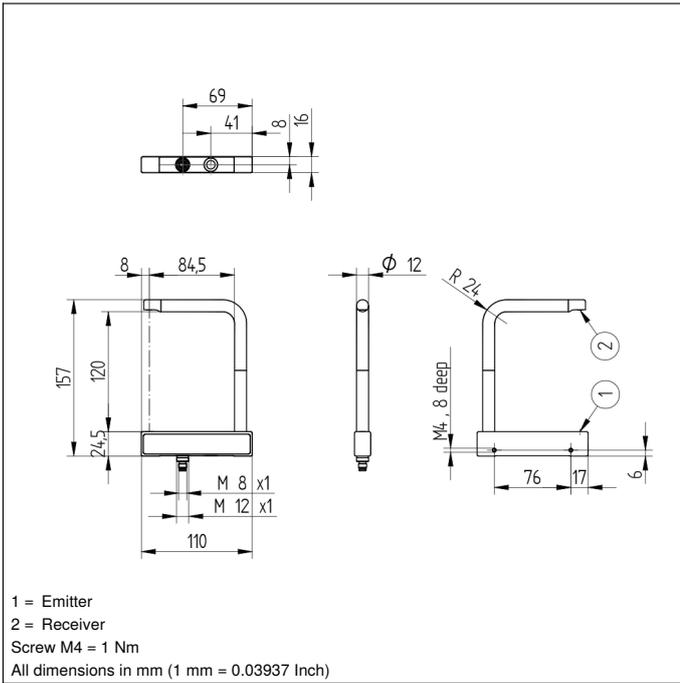
- Collimated laser beam (0.6 mm diameter over the entire fork width)
- Recognition of transparent objects
- Rugged, corrosion-free V4A stainless steel housing in hygienic design
- Teach-in key and external teach-in

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.

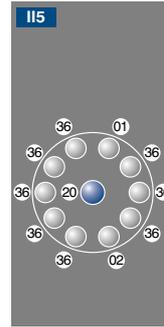


Technical Data

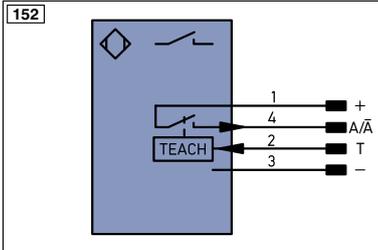
| Optical Data | |
|---|----------------------|
| Fork Width | 120 mm |
| Smallest Recognizable Part | 40 μm |
| Smallest Detectable Gap | 50 μm |
| Switching Hysteresis | < 10 % |
| Light Source | Laser (red) |
| Service Life (T = +25 °C) | 100000 h |
| Laser Class (EN 60825-1) | 2 |
| Max. Ambient Light | 10000 Lux |
| Light Spot Diameter | 0,6 mm |
| Repeat Accuracy | < 5 μm |
| Electrical Data | |
| Supply Voltage | 10...30 V DC |
| Current Consumption (U _b = 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 |
| 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 | EN ^{A/RS422} | Encoder A/ \bar{A} (TTL) |
| - | Supply Voltage 0 V | nc | not connected | EN ^{B/RS422} | Encoder B/ \bar{B} (TTL) |
| ~ | Supply Voltage (AC Voltage) | U | Test Input | EN ^A | Encoder A |
| A | Switching Output (NO) | \bar{U} | Test Input inverted | EN ^B | Encoder B |
| \bar{A} | Switching Output (NC) | W | Trigger Input | A ^{MIN} | Digital output MIN |
| V | Contamination/Error Output (NO) | W- | Ground for the Trigger Input | A ^{MAX} | Digital output MAX |
| \bar{V} | Contamination/Error Output (NC) | O | Analog Output | A ^{OK} | Digital output OK |
| E | Input (analog or digital) | O- | Ground for the Analog Output | SY ^{In} | Synchronization In |
| T | Teach Input | BZ | Block Discharge | SY ^{OUT} | Synchronization OUT |
| Z | Time Delay (activation) | A ^{MV} | Valve Output | OL ^T | Brightness output |
| S | Shielding | a | Valve Control Output + | M | Maintenance |
| RxD | Interface Receive Path | b | Valve Control Output 0 V | rsv | reserved |
| TxD | Interface Send Path | SY | Synchronization | Wire Colors according to DIN IEC 757 | |
| RDY | Ready | SY- | Ground for the Synchronization | BK | Black |
| GND | Ground | E+ | Receiver-Line | BN | Brown |
| CL | Clock | S+ | Emitter-Line | RD | Red |
| E/A | Output/Input programmable | \pm | Grounding | OG | Orange |
| | IO-Link | S ^{nR} | Switching Distance Reduction | YE | Yellow |
| PoE | Power over Ethernet | Rx+/- | Ethernet Receive Path | GN | Green |
| IN | Safety Input | Tx+/- | Ethernet Send Path | BU | Blue |
| OSSD | Safety Output | Bus | Interfaces-Bus A(+)/B(-) | VT | Violet |
| Signal | Signal Output | L ^a | Emitted Light disengageable | GY | Grey |
| Bl_D+/- | Ethernet Gigabit bidirect. data line (A-D) | Mag | Magnet activation | WH | White |
| EN ^{0/RS422} | Encoder 0-pulse 0-0 (TTL) | RES | Input confirmation | PK | Pink |
| | | EDM | Contactur Monitoring | GNYE | Green/Yellow |

