

Temperature Sensor for Contactless Measurement

TIF352U0089

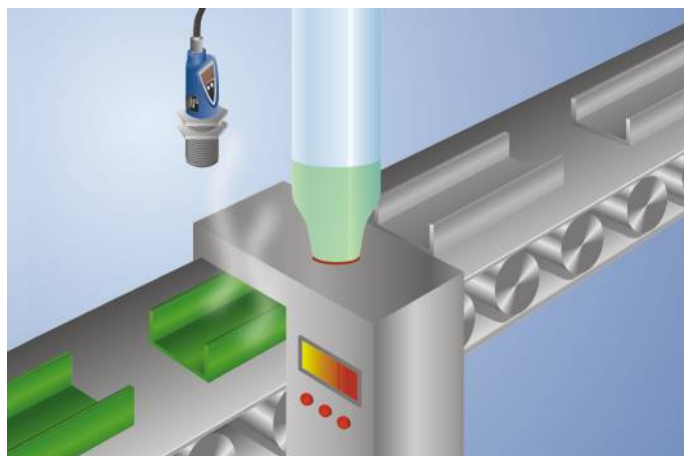
LASER

Part Number



- Analog output
- Degree of emission adjustable or teachable from 0,1...1
- Integrated laser alignment aid
- Target performance-value comparison through 2 adjustable switching outputs

This temperature sensor has a spectral sensitivity of 8...14 μm . It receives the emitted radiation within this range and processes this to output signals. Temperatures from -25 to 350 $^{\circ}\text{C}$ can be measured. Via the 4-digit 7-segment display the sensor can be adjusted easily and the measured temperature can be displayed.



Technical Data

Sensor-specific data

| | |
|---|------------------------------|
| Working Range | -25...350 $^{\circ}\text{C}$ |
| Measuring Range | 375 $^{\circ}\text{C}$ |
| Resolution | 0,1 $^{\circ}\text{C}$ |
| Spectral Sensitivity | 8...14 μm |
| Linearity Deviation (-25 $^{\circ}\text{C} < T_{\text{obj}} \leq 350$ $^{\circ}\text{C}$) | 3,4 K |
| Linearity Deviation (-20 $^{\circ}\text{C} < T_{\text{obj}} \leq 200$ $^{\circ}\text{C}$) | 0,7 K |
| Switching Hysteresis | 1 K |
| Opening Angle | 10 $^{\circ}$ |
| Degree of Emission | 0,1...1 |
| Service Life ($T = +25$ $^{\circ}\text{C}$) | 100000 h |
| Laser Class (EN 60825-1) | 1 |

Electrical Data

| | |
|--|------------------------------------|
| Supply Voltage | 18...30 V DC |
| Current Consumption ($U_b = 24$ V) | < 60 mA |
| Switching Frequency | 15 Hz |
| Response Time | 0,065...30 s |
| Temperature Drift (-20 $^{\circ}\text{C} < T_u \leq 0$ $^{\circ}\text{C}$) | < 0,63 $^{\circ}\text{C}/\text{K}$ |
| Temperature Drift (0 $^{\circ}\text{C} < T_u \leq 60$ $^{\circ}\text{C}$) | < 0,14 $^{\circ}\text{C}/\text{K}$ |
| Temperature Range | -20...60 $^{\circ}\text{C}$ |
| Number of Switching Outputs | 2 |
| Switching Output/Switching Current | 200 mA |
| Analog Output | 0...10 V/4...20 mA |
| Reproducibility | 2,5 K |
| Short Circuit Protection | yes |
| Reverse Polarity and Overload Protection | yes |
| Interface | RS-232 |
| Protection Class | III |

Mechanical Data

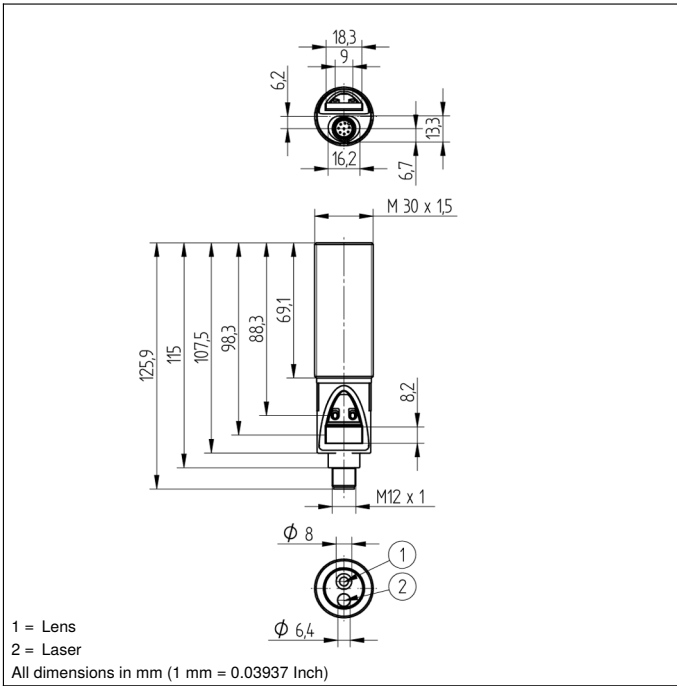
| | |
|----------------------|--------------------------|
| Setting Method | Menu |
| Housing Material | Stainless Steel; Plastic |
| Degree of Protection | IP67 |
| Connection | M12 \times 1; 8-pin |

Safety-relevant Data

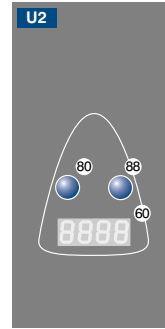
| | |
|-----------------------------------|----------|
| MTTFd (EN ISO 13849-1) | 712,08 a |
| Analog Output | ● |
| Switchable to NC/NO | ● |
| Configurable as PNP/NPN | ● |
| Connection Diagram No. | 530 |
| Control Panel No. | U2 |
| Suitable Connection Equipment No. | 89 |
| Suitable Mounting Technology No. | 130 |

Complementary Products

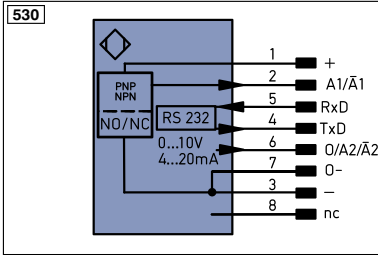
| |
|------------------------|
| Interface Cable S232W3 |
| Software |



Ctrl. Panel

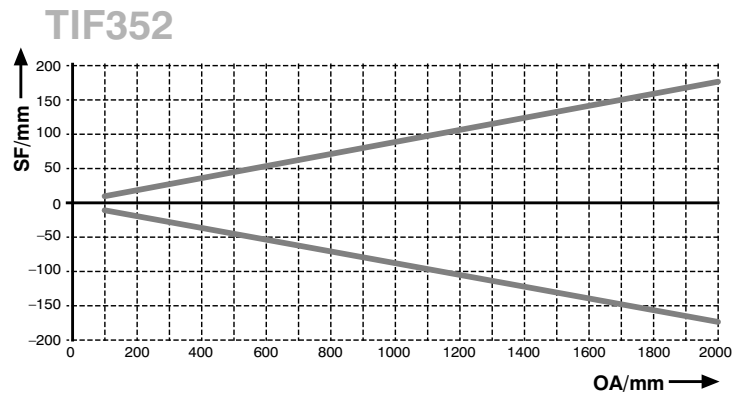


- 60 = Display
- 80 = Mode Button/Switching Status Indicator
- 88 = Plus Button/Error Indicator/Switching Status Indicator



| Legend | | | | | |
|-----------------------|--|------------------|--------------------------------|--------------------------------------|---------------------|
| + | Supply Voltage + | PT | Platinum measuring resistor | EN _A RS422 | Encoder A/Ā (TTL) |
| - | Supply Voltage 0 V | nc | not connected | EN _B RS422 | Encoder B/B̄ (TTL) |
| ~ | Supply Voltage (AC Voltage) | U | Test Input | EN _A | Encoder A |
| A | Switching Output (NO) | Ū | Test Input inverted | EN _B | Encoder B |
| Ā | 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 |
| Ṽ | 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 | ± | Grounding | OG | Orange |
| | IO-Link | S _n R | 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 0-0̄ (TTL) | RES | Input confirmation | PK | Pink |
| | | EDM | Contactur Monitoring | GNVE | Green/Yellow |

Visual Field



OA = Distance to Object
 SF = Visual field width

