

# Laser Distance Sensor

## High-Precision

# CP25QXVT80 LASER

Part Number

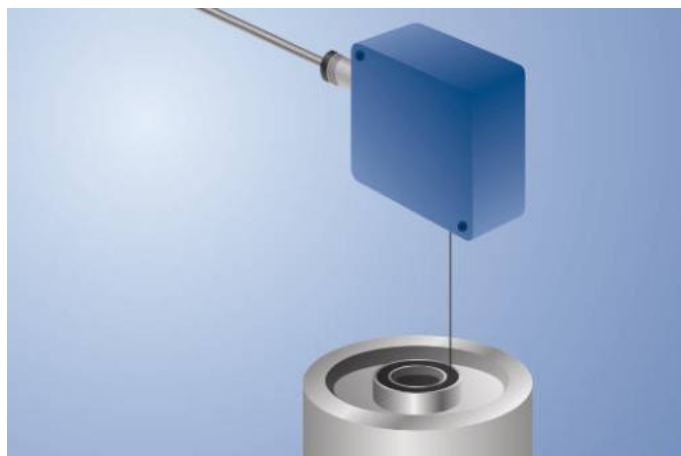


- CMOS line array
- Highly accurate switching distance
- Minimal switching hysteresis
- Switching point independent of material, color and brightness

These sensors work with a high resolution CMOS line and DSP technology and calculate the distance via an angle measurement. This virtually eliminates switching point differences caused by material, color and brightness.

Two independent switching outputs are available, at which two switching thresholds and one on-delay or off-delay time can be set in 10 ms increments.

Sensor functions can be activated and values can be output via the RS-232 interface.

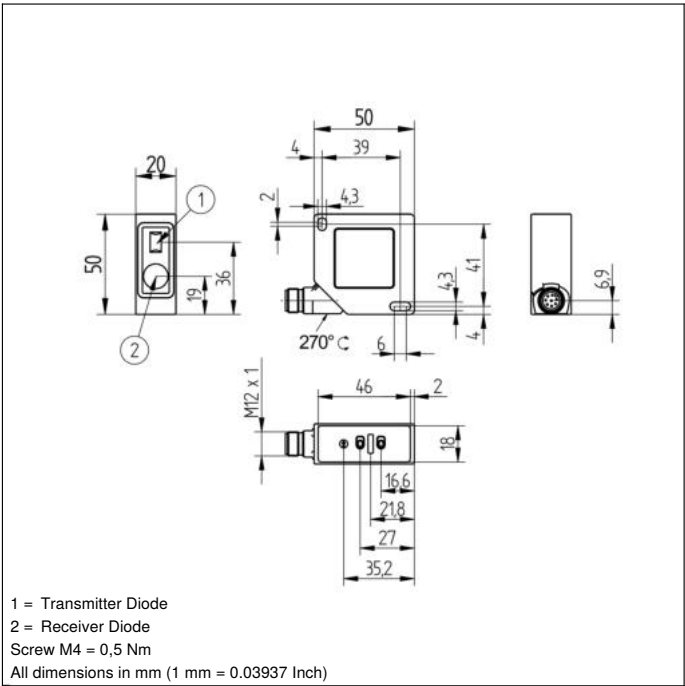


## Technical Data

| Optical Data                                |                |
|---------------------------------------------|----------------|
| Range                                       | 240 mm         |
| Adjustable Range                            | 40...240 mm    |
| Switching Hysteresis                        | < 0,5 %        |
| Light Source                                | Laser (red)    |
| Wavelength                                  | 655 nm         |
| Service Life (T = +25 °C)                   | 100000 h       |
| Laser Class (EN 60825-1)                    | 2              |
| Max. Ambient Light                          | 10000 Lux      |
| Light Spot Diameter                         | see Table 1    |
| Electrical Data                             |                |
| Supply Voltage                              | 10...30 V DC   |
| Current Consumption (U <sub>b</sub> = 24 V) | < 50 mA        |
| Switching Frequency                         | 500 Hz         |
| Response Time                               | < 1 ms         |
| On-/Off-Delay (RS-232)                      | 0...1 s        |
| Temperature Drift                           | < 15 µm/K      |
| Temperature Range                           | -25...60 °C    |
| Number of Switching Outputs                 | 2              |
| Switching Output Voltage Drop               | < 1,5 V        |
| Switching Output/Switching Current          | 200 mA         |
| Short Circuit Protection                    | yes            |
| Reverse Polarity Protection                 | yes            |
| Teach Mode                                  | HT, VT, TP     |
| Baud Rate                                   | 38400 Bd       |
| Protection Class                            | III            |
| FDA Accession Number                        | 0820586-000    |
| Mechanical Data                             |                |
| Setting Method                              | Teach-In       |
| Housing Material                            | Plastic        |
| Degree of Protection                        | IP67           |
| Connection                                  | M12 × 1; 8-pin |
| Error Output                                | ●              |
| PNP NO                                      | ●              |
| RS-232 Interface                            | ●              |
| Connection Diagram No.                      | 737            |
| Control Panel No.                           | P8             |
| Suitable Connection Equipment No.           | 80             |
| Suitable Mounting Technology No.            | 380            |

## Complementary Products

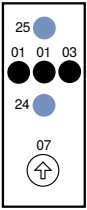
|                                  |
|----------------------------------|
| Interface Cable S232W3           |
| Protective Housing ZSV-0x-01     |
| Set Protective Housing ZSP-NN-02 |
| Software                         |



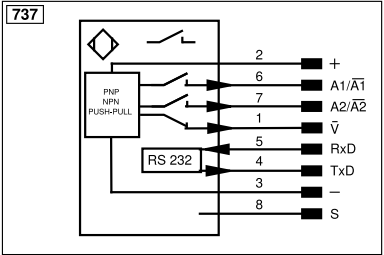
1 = Transmitter Diode  
2 = Receiver Diode  
Screw M4 = 0,5 Nm  
All dimensions in mm (1 mm = 0.03937 Inch)

**Ctrl. Panel**

**P8**



01 = Switching Status Indicator  
03 = Error Indicator  
07 = Selector Switch  
24 = Plus Button  
25 = Minus Button



| Legend    |                                            |           |                                |                                        |                     |
|-----------|--------------------------------------------|-----------|--------------------------------|----------------------------------------|---------------------|
| +         | Supply Voltage +                           | nc        | Not connected                  | ENBRS422                               | Encoder B/B (TTL)   |
| -         | Supply Voltage 0 V                         | U         | Test Input                     | ENA                                    | Encoder A           |
| ~         | Supply Voltage (AC Voltage)                | Ü         | Test Input inverted            | ENb                                    | Encoder B           |
| A         | Switching Output (NO)                      | W         | Trigger Input                  | AMIN                                   | Digital output MIN  |
| Ä         | Switching Output (NC)                      | W-        | Ground for the Trigger Input   | AMAX                                   | Digital output MAX  |
| V         | Contamination/Error Output (NO)            | O         | Analog Output                  | Ack                                    | Digital output OK   |
| Ȳ         | Contamination/Error Output (NC)            | O-        | Ground for the Analog Output   | SY In                                  | Synchronization In  |
| E         | Input (analog or digital)                  | BZ        | Block Discharge                | SY OUT                                 | Synchronization OUT |
| T         | Teach Input                                | Amv       | Valve Output                   | OLT                                    | Brightness output   |
| Z         | Time Delay (activation)                    | a         | Valve Control Output +         | M                                      | Maintenance         |
| S         | Shielding                                  | b         | Valve Control Output 0 V       | rsv                                    | Reserved            |
| RxD       | Interface Receive Path                     | SY        | Synchronization                | Wire Colors according to DIN IEC 60757 |                     |
| TxD       | Interface Send Path                        | SY-       | Ground for the Synchronization | BK                                     | Black               |
| RDY       | Ready                                      | E+        | Receiver-Line                  | BN                                     | Brown               |
| GND       | Ground                                     | S+        | Emitter-Line                   | RD                                     | Red                 |
| CL        | Clock                                      | ±         | Grounding                      | OG                                     | Orange              |
| E/A       | Output/Input programmable                  | SnR       | Switching Distance Reduction   | YE                                     | Yellow              |
| IO-Link   | IO-Link                                    | Rx+/-     | Ethernet Receive Path          | GN                                     | Green               |
| PoE       | Power over Ethernet                        | Tx+/-     | Ethernet Send Path             | BU                                     | Blue                |
| IN        | Safety Input                               | Bus       | Interfaces-Bus A(+)/B(-)       | VT                                     | Violet              |
| OSSD      | Safety Output                              | La        | Emitted Light disengageable    | GY                                     | Grey                |
| Signal    | Signal Output                              | Mag       | Magnet activation              | WH                                     | White               |
| Bl_D+/-   | Ethernet Gigabit bidirect. data line (A-D) | RES       | Input confirmation             | PK                                     | Pink                |
| ENo RS422 | Encoder 0-pulse 0/0 (TTL)                  | EDM       | Contact Monitoring             | GNYE                                   | Green/Yellow        |
| PT        | Platinum measuring resistor                | ENARIS422 | Encoder A/A (TTL)              |                                        |                     |

**Table 1**

| Detection Range | 40 mm        | 240 mm   |
|-----------------|--------------|----------|
| Spot Size       | 0,6 × 2,5 mm | 1 × 4 mm |

