

# Laser Distance Sensor

## Triangulation

# CP08MHT80S805

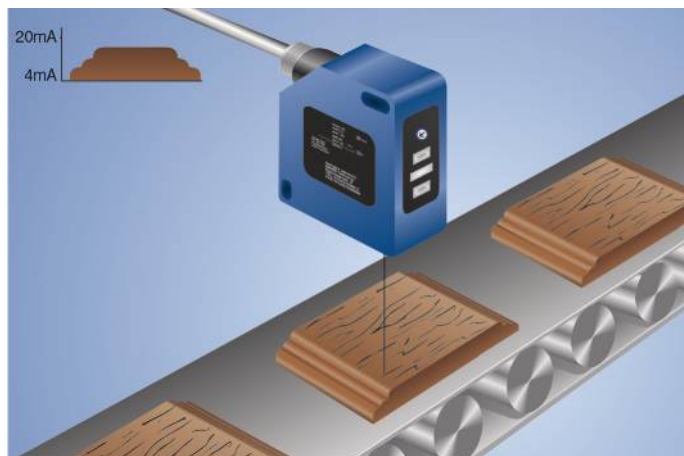
Part Number



- CMOS line array
- Laser light
- Measured value independent of material, color and brightness
- Response time: < 660  $\mu$ s (speed-mode)
- Zoom function

These sensors work with a high-resolution CMOS line and DSP technology and determine distance using angular measurement. As a result, material, color and brightness related measurement differences are virtually eliminated.

Integrated analogue output provides a current of 4...20 mA.



## Technical Data

### Optical Data

|                           |             |
|---------------------------|-------------|
| Working Range             | 30...80 mm  |
| Measuring Range           | 50 mm       |
| Reproducibility maximum   | 60 $\mu$ m  |
| Reproducibility: 1 Sigma  | 20 $\mu$ m  |
| Linearity Deviation       | 80 $\mu$ m  |
| Light Source              | Laser (red) |
| Wavelength                | 660 nm      |
| Service Life (T = +25 °C) | 100000 h    |
| Laser Class (EN 60825-1)  | 2           |
| Max. Ambient Light        | 10000 Lux   |

### Electrical Data

|                                  |                |
|----------------------------------|----------------|
| Supply Voltage                   | 18...28 V DC   |
| Current Consumption (Ub = 24 V)  | < 80 mA        |
| Measuring Rate                   | 1500 /s        |
| Measuring Rate (Resolution-Mode) | 600 /s         |
| Response Time                    | < 660 $\mu$ s  |
| Response Time (Resolution Mode)  | < 1660 $\mu$ s |
| Temperature Drift                | < 15 $\mu$ m/K |
| Temperature Range                | -25...60 °C    |
| Analog Output                    | 4...20 mA      |
| Current Output Load Resistance   | < 300 Ohm      |
| Interface                        | RS-485         |
| Transmission rate                | 38400 Bd       |
| Protection Class                 | III            |

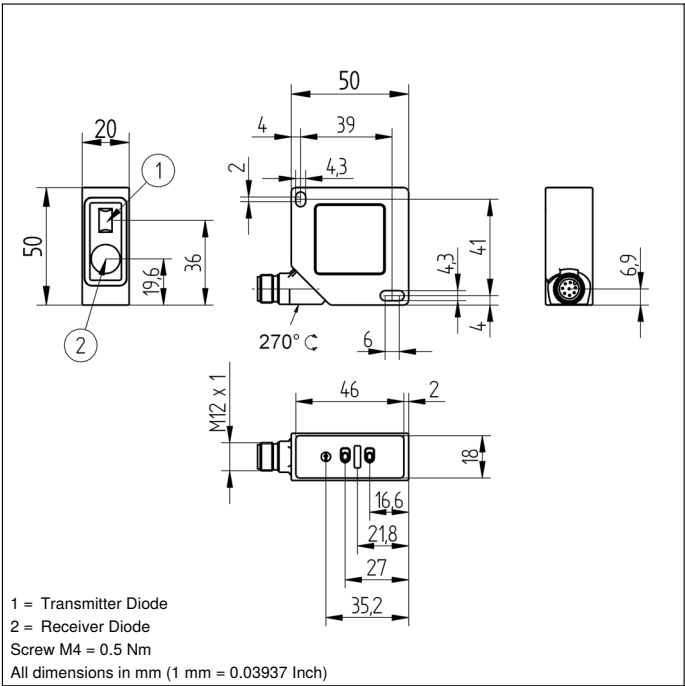
### Mechanical Data

|                      |                       |
|----------------------|-----------------------|
| Setting Method       | Teach-In              |
| Housing Material     | Plastic, ABS          |
| Housing Material     | Plastic, PC           |
| Optic Cover          | Plastic, PMMA         |
| Degree of Protection | IP67                  |
| Connection           | M12 $\times$ 1; 8-pin |

|                                   |     |
|-----------------------------------|-----|
| Error Output                      | ●   |
| Analog Output                     | ●   |
| RS-485 Interface (half duplex)    | ●   |
| Connection Diagram No.            | 511 |
| Control Panel No.                 | P7  |
| Suitable Connection Equipment No. | 88  |
| Suitable Mounting Technology No.  | 380 |

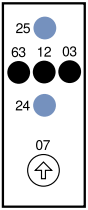
## Complementary Products

|                                     |
|-------------------------------------|
| Analog Evaluation Unit AW02         |
| Fieldbus Gateway ZAGxxxN01, EPGG001 |
| Interface Cable S232W3              |

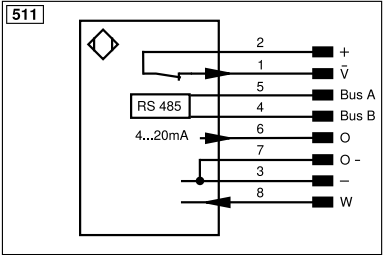


# Ctrl. Panel

P7



- 03 = Error Indicator
- 07 = Selector Switch
- 12 = Analog Output Indicator
- 24 = Plus Button
- 25 = Minus Button
- 63 = Analog Output Current Indicator

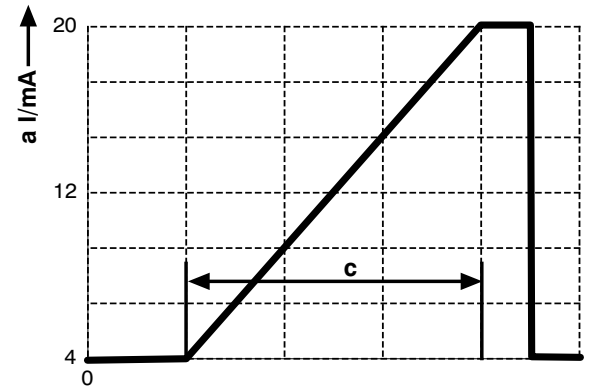


| Legend    |                                            |                                        |                                |
|-----------|--------------------------------------------|----------------------------------------|--------------------------------|
| +         | Supply Voltage +                           | nc                                     | Not connected                  |
| -         | Supply Voltage 0 V                         | U                                      | Test Input                     |
| ~         | Supply Voltage (AC Voltage)                | Ū                                      | Test Input inverted            |
| A         | Switching Output (NO)                      | W                                      | Trigger Input                  |
| Ā         | Switching Output (NC)                      | W-                                     | Ground for the Trigger Input   |
| V         | Contamination/Error Output (NO)            | O                                      | Analog Output                  |
| ȳ         | Contamination/Error Output (NC)            | O-                                     | Ground for the Analog Output   |
| E         | Input (analog or digital)                  | BZ                                     | Block Discharge                |
| T         | Teach Input                                | Amv                                    | Valve Output                   |
| Z         | Time Delay (activation)                    | a                                      | Valve Control Output +         |
| S         | Shielding                                  | b                                      | Valve Control Output 0 V       |
| RxD       | Interface Receive Path                     | SY                                     | Synchronization                |
| TxD       | Interface Send Path                        | SY-                                    | Ground for the Synchronization |
| RDY       | Ready                                      | E+                                     | Receiver-Line                  |
| GND       | Ground                                     | S+                                     | Emitter-Line                   |
| CL        | Clock                                      | ±                                      | Grounding                      |
| E/A       | Output/Input programmable                  | SnR                                    | Switching Distance Reduction   |
| IO-Link   |                                            | Rx+/-                                  | Ethernet Receive Path          |
| PoE       | Power over Ethernet                        | Tx+/-                                  | Ethernet Send Path             |
| IN        | Safety Input                               | Bus                                    | Interfaces-Bus A(+)/B(-)       |
| OSSD      | Safety Output                              | La                                     | Emitted Light disengageable    |
| Signal    | Signal Output                              | Mag                                    | Magnet activation              |
| BI_D+/-   | Ethernet Gigabit bidirect. data line (A-D) | RES                                    | Input confirmation             |
| ENo RS422 | Encoder 0-pulse 0/0 (TTL)                  | EDM                                    | Contact Monitoring             |
| PT        | Platinum measuring resistor                | ENARIS422                              | Encoder A/Ā (TTL)              |
|           |                                            | ENBRIS422                              | Encoder B/B̄ (TTL)             |
|           |                                            | ENA                                    | Encoder A                      |
|           |                                            | ENB                                    | Encoder B                      |
|           |                                            | AMIN                                   | Digital output MIN             |
|           |                                            | AMAX                                   | Digital output MAX             |
|           |                                            | ACK                                    | Digital output OK              |
|           |                                            | SY In                                  | Synchronization In             |
|           |                                            | SY OUT                                 | Synchronization OUT            |
|           |                                            | OLT                                    | Brightness output              |
|           |                                            | M                                      | Maintenance                    |
|           |                                            | rsv                                    | Reserved                       |
|           |                                            | Wire Colors according to DIN 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                   |

Table 1

| Working Distance | 30 mm      | 80 mm    |
|------------------|------------|----------|
| Spot Size        | 0,5 × 1 mm | 1 × 2 mm |

# Output Graph



c = Measuring Range  
a = Analog Output Current

