# Distance Sensor

# UMF402U035

- ● **Digital and analog output**
- ● **Stainless steel housing**
- ● **Synchronous and multiplex mode**
- ● **Temperature drift eliminable**

These ultrasonic sensors evaluate the sound reflected by the object. They detect almost every object and are suited especially for the filling level monitoring of fluids or bulk material or the detection of transparent objects. The sensor detects objects independent from their material, aggregate state, color or transparency. The sensors can be adjusted easily by the 4-digit 7-segment display. Convenient programming and quick diagnosis is possible via the IO-Link interface. The sensor can only be used in reflex mode operation.
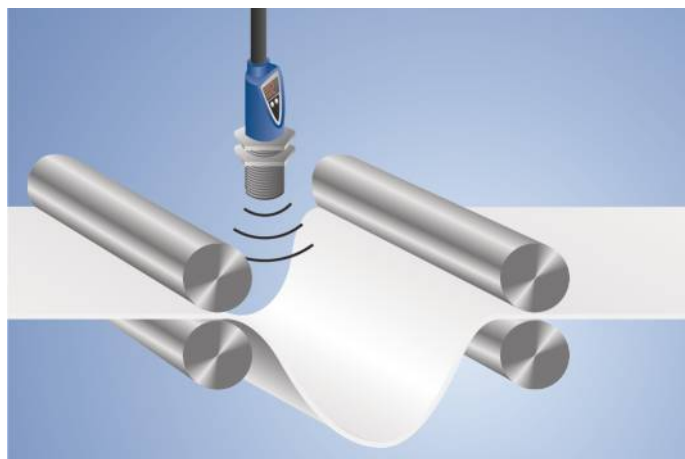
| Ultrasonic Data | |
|---|---|
| Working Range | 50...400 mm |
| Measuring Range | 350 mm |
| Reproducibility maximum | 1 mm |
| Linearity Deviation | 3 mm |
| Resolution | 0,1 mm |
| Ultrasonic Frequency | 300 kHz |
| Opening Angle | < 12 ° |
| Service Life (T = +25 °C) | 100000 h |
| Switching Hysteresis | 2 mm |
| **Electrical Data** | |
| Supply Voltage | 18...30 V DC |
| Current Consumption (Ub = 24 V) | < 40 mA |
| Switching Frequency | 20 Hz |
| Response Time | 25 ms |
| Temperature Range | -30...60 °C |
| Number of Switching Outputs | 1 |
| Switching Output Voltage Drop | < 2,5 V |
| PNP Switching Output/Switching Current | 100 mA |
| Analog Output | 0...10 V |
| Synchronous Mode | up to 40 sensors |
| Multiplex Mode | up to 16 sensors |
| Short Circuit Protection | yes |
| Reverse Polarity Protection | yes |
| Overload Protection | yes |
| Lockable | yes |
| Interface | IO-Link V1.0 |
| Protection Class | III |
| **Mechanical Data** | |
| Setting Method | Teach-In |
| Housing Material | Plastic, ABS |
| Housing Material | Stainless steel, V2A (1.4305 / 303) |
| Sensing face | Epoxy resin/glass bubble mixture |
| Sensing face | Plastic, PBT |
| Sensing face | Silicone |
| Degree of Protection | IP67 |
| Connection | M12 × 1; 4/5-pin |
| **Safety-relevant Data** | |
| MTTFd (EN ISO 13849-1) | 727,87 a |

| | |
|---|---|
| Error Output | ● |
| PNP NO | ● |
| Analog Output | ● |
| IO-Link | ● |

| | |
|---|---|
| Connection Diagram No. | 184 |
| Control Panel No. | U1 |
| Suitable Connection Equipment No. | 2   35 |
| Suitable Mounting Technology No. | 130 |

## Complementary Products

| |
|---|
| Analog Evaluation Unit AW02 |
| Baffle Plate Z0023, Z0024 |
| IO-Link Master |
| PNP-NPN Converter BG2V1P-N-2M |
| Software |

1 = Sensing Face



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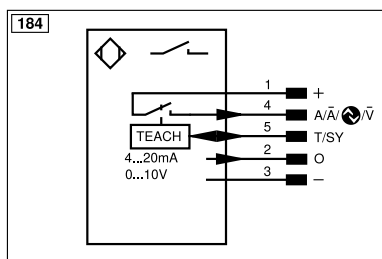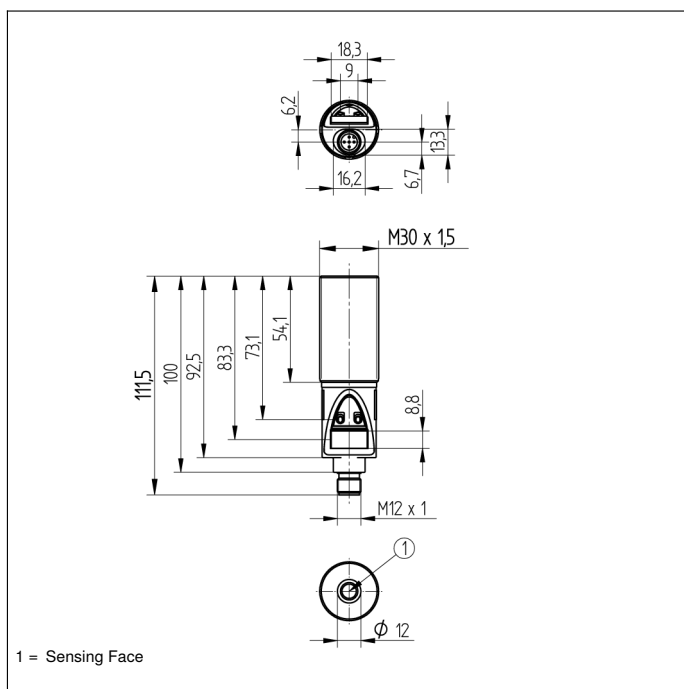
## Ctrl. Panel

U1
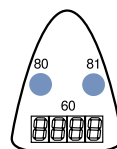


60 = display
80 = Mode Button/Switching Status Indicator
81 = Plus Button/Error Warning

## Characteristic response curve

Characteristic curves show the position of the center or the front edge of the measured object (100 × 100 mm plate) at the time of switching.

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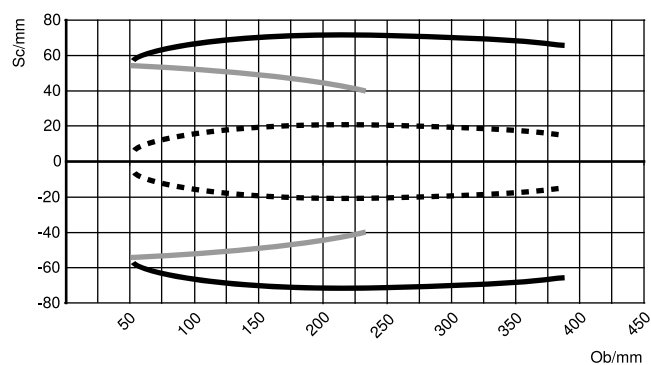


Ob = Object

Sc = Sonic cone width

━━ Standard sonic cone (center of the measured object)

━━ Extra-narrow sonic cone (center of the measured object)

▪▪▪ Standard sonic cone (front edge of the measured object)