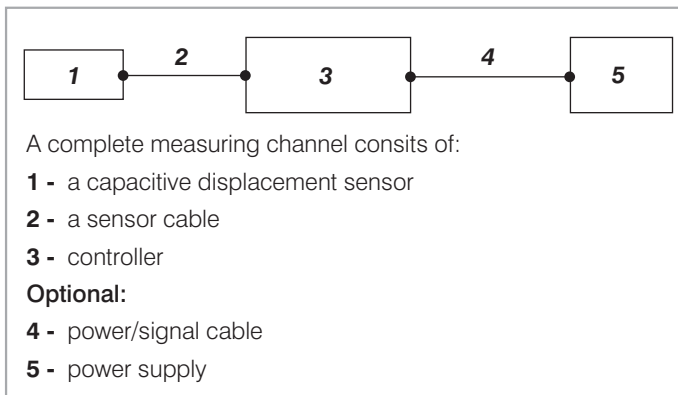


M61 Distance sensor

ADVANTAGES

- Sensors are wear-free and maintenance free
- Extreme temperature stability
- Tri-electrode and active guarding technology
- Nanometer repeatability
- Any conductive target



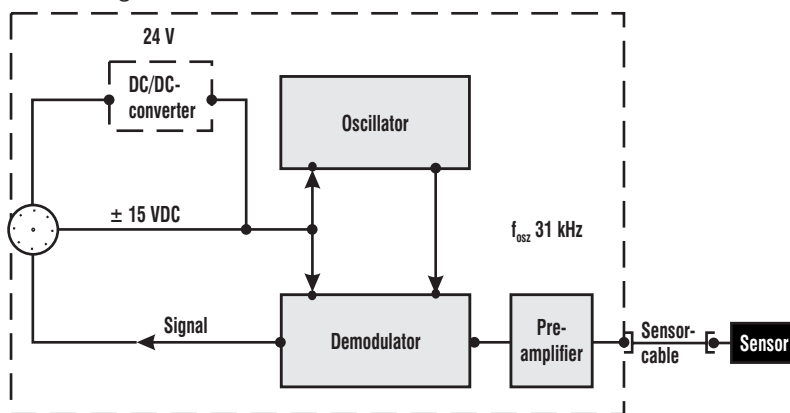
Controller

Amplifier-electronics

Power supply: 24 VDC, ± 15 VDC or 9-36 VDC

Output: 0-10 V

Block diagram



Technical data

| Specification | | Sensor | | C0.2 | C0.5 | C1 | D1 | C0.2 | C3 | C5 | C10 |
|-----------------------------------|-------------------------------|--------|--|--|------|-----|-----|------|-------|------|------|
| | | | | | | | | | | | |
| Measuring range | mm | | | .2 | .5 | 1 | 1 | 2 | 3 | 5 | 10 |
| | inch | | | .008 | .02 | .04 | .04 | .08 | .12 | .2 | .4 |
| Linearity | standard <0.3 % FSO | ±μm | | 0.6 | 1.5 | 3 | 3 | 6 | 9 | 15 | 30 |
| | tuned ² <0.1 % FSO | ±μm | | 0.2 | 0.5 | 1 | 1 | 2 | 3 | 5 | 10 |
| Resolution | | | | <0.015 % FSO | | | | | | | |
| Sensor outer diameter | mm | | | 6 | 8 | 10 | 10 | 20 | 30 | 40 | 60 |
| | inch | | | .23 | .31 | .39 | .39 | .78 | 1.17 | 1.56 | 2.34 |
| Weight | | g | | 2 | 12 | 7.1 | 7.1 | 61 | 95 | 120 | 230 |
| Active measuring area | Diameter | mm | | 2.3 | 3.9 | 5.5 | 5.5 | 7.9 | 9.8 | 12.6 | 17.8 |
| | | inch | | .09 | .15 | .21 | .21 | .31 | .38 | .49 | .69 |
| Guard ring width | mm | | | 1 | 1.4 | 1.5 | 1.5 | 4 | 8.1 | 11.8 | 18.1 |
| | inch | | | .04 | .05 | .06 | .06 | .16 | .32 | .46 | .71 |
| Min. diameter of target | mm | | | 5 | 7 | 9 | 9 | 17 | 27 | 37 | 57 |
| | inch | | | .2 | .3 | .35 | .35 | .7 | 1.1 | 1.5 | 2.3 |
| Temperature stability | Sensors | | | <0.01 % FSO / °C | | | | | | | |
| | Controller | | | <0.03 % FSO / °C | | | | | | | |
| Sensitivity | V/mm | | | 50 | 20 | 10 | 10 | 5 | 3.33 | 2 | 1 |
| | V/inch | | | 1270 | 508 | 254 | 254 | 127 | 83.58 | 50.8 | 25.4 |
| Output | Standard | | | 0 - 10 V Resistance min. 1.2 kΩ / Capacitance max. 1 nF | | | | | | | |
| | Option I | | | 4 - 20 mA / load max. 400 Ω | | | | | | | |
| Power supply | | | | 24 VDC / 85 mA (9...36 VDC) or ±15V / ±55 mA | | | | | | | |
| Bandwidth | | | | 10 Hz (-3 dB) / 2 kHz (-3 dB) (switchable) | | | | | | | |
| Temperature range | Sensors and cables | | | -50 to +150 °C / -60 to +300 °F | | | | | | | |
| | Controller | | | +10 to +50 °C / +50 to +125 °F | | | | | | | |
| Sensor ambient air humidity | | | | 5 to 95 % (non condensing) | | | | | | | |
| Electromagnetic compatibility EMC | | | | EN 50081-1 Spurious emission | | | | | | | |
| | | | | EN 50082-2 Immunity to interference ³ | | | | | | | |
| Protection class | Sensors | | | IP 54 | | | | | | | |

FSO = Full Scale Output

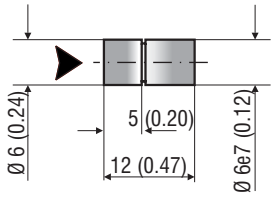
1 μm = 1 micron

1) INVAR sensor

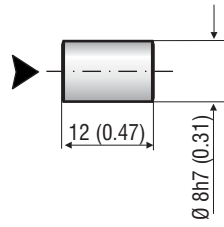
2) Controller and sensor matched and calibrated

3) Uncertainty of measurement: Immunity to interference / electromagnetic fields acc. to EN 50082-2 max. 1 %

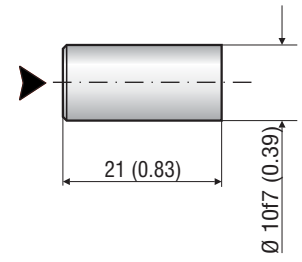
0.2



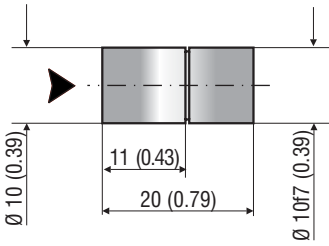
0.5



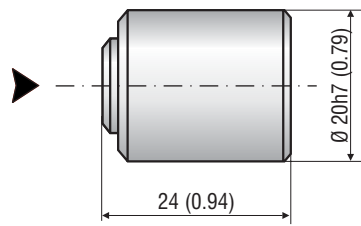
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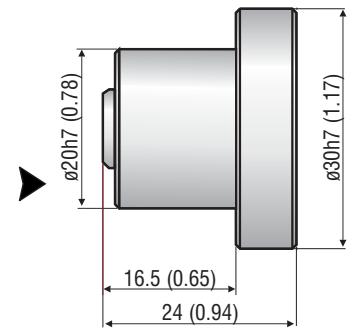
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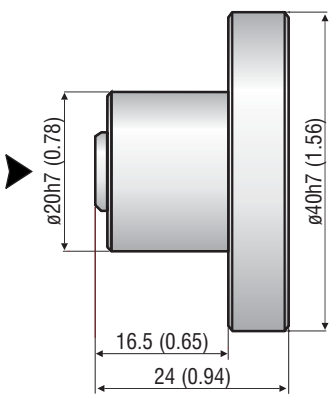
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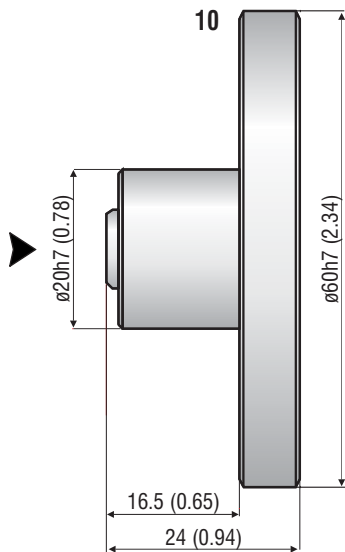
3



5



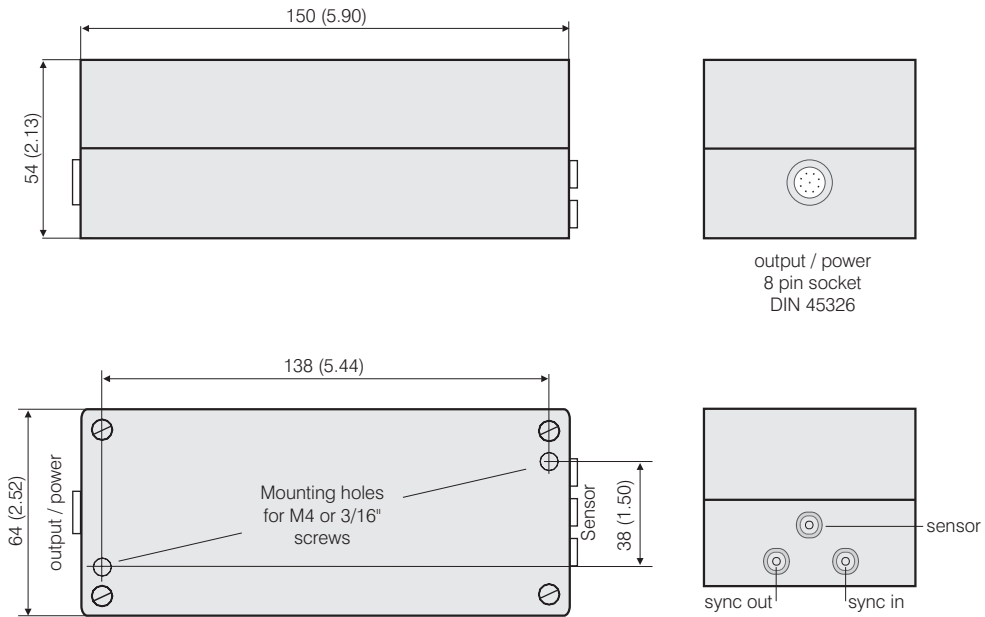
10



▶ connector

| Dimension | Fit tolerance (µm) |
|-----------|--------------------|
| 7 h7 | 0 -15 |
| 7 f7 | - 13 -28 |
| 8 h7 | 0 -15 |
| 20 h7 | 0 -21 |
| 6 f7 | - 10 -22 |
| 6 e7 | - 20 -32 |
| 10 f7 | - 13 -28 |

Controller - Dimensions in mm (rounded inch), not to scale



Weight: appr 380 g

Accessories

Power- and output cable, 3 m (10 ft.) long, 8-pin

Synchronization cable 30 cm / 1 ft long

Power supply for DIN rail mounting
Input 230 VAC (115 VAC)
Output 24 VDC / 2.5 A
L/W/H 120 x 120 x 40 mm

Micrometer calibration fixture
Range 0 - 2.5 mm (0 - 0.1 inch)
Division 1 μm
for sensors S 601-0.05 thru to CS2

Digital micrometer calibration fixture
Range 0 - 25 mm (0 - 1 inch)
Adjustable offset (zero), for all sensors

Digital signal processing unit with display for synchronous processing of two channels