



More Precision.

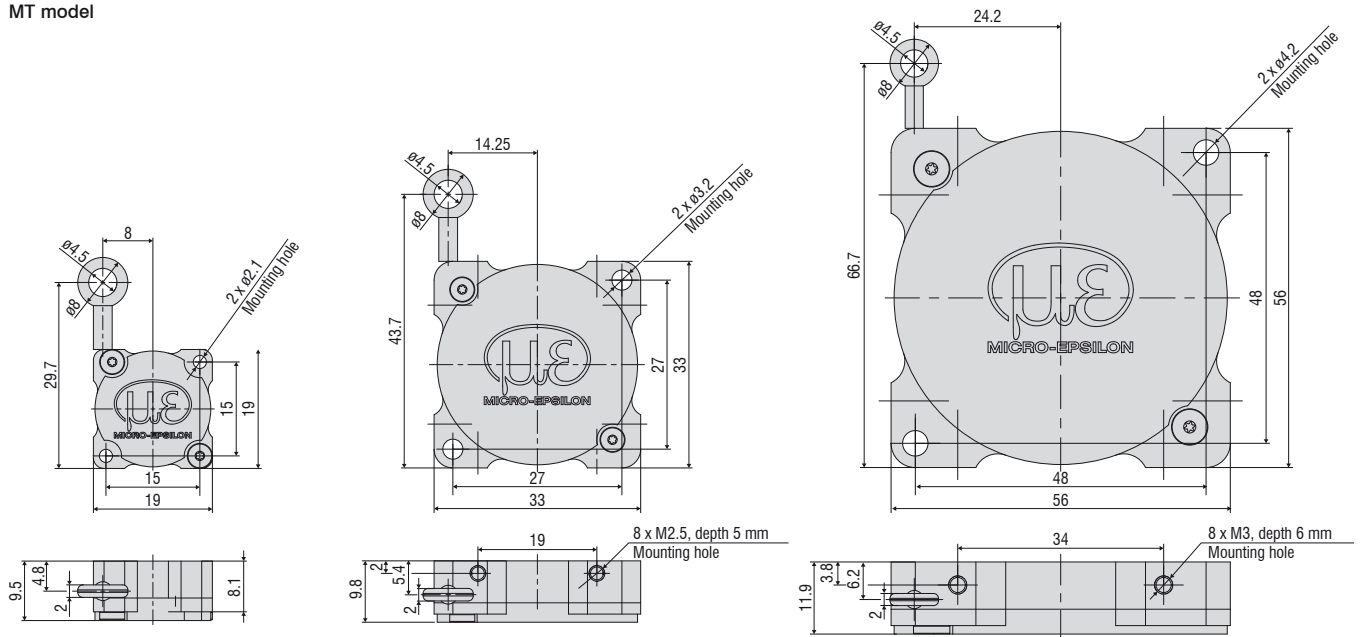
wireSENSOR // Draw-wire displacement sensors





- Smallest sensor design
- Ideal for extremely high accelerations
- Easy, quick and flexible installation
- Potentiometer output

MT model



Dimensions in mm, not to scale.

| Model | WDS-40-MT19-P | WDS-80-MT33-P | WDS-130-MT56-P |
|---------------------------------|--|--|------------------------------------|
| Measuring range | 40 mm | 80 mm | 130 mm |
| Analog output | Potentiometer | | |
| Resolution | towards infinity | | |
| Linearity | $\leq \pm 0.4\%$ FSO | - | $\leq \pm 0.32$ mm |
| | $\leq \pm 1\%$ FSO | $\leq \pm 0.4$ mm | - |
| Sensor element | Conductive plastic potentiometer | | |
| Wire extension force (max.) | approx. 2 N | approx. 1.5 N | approx. 1 N |
| Wire retraction force (min.) | approx. 0.7 N | approx. 0.5 N | approx. 0.3 N |
| Wire acceleration (max.) | approx. 60 g | approx. 60 g | approx. 15 g |
| Material | Aluminum | | |
| | Housing | Aluminum | |
| Measuring wire | Polyamide-coated stainless steel (\varnothing 0.36) | Polyamide-coated stainless steel (\varnothing 0.45) | |
| Wire mounting | Eyelet (\varnothing 4.5 mm) | | |
| Mounting | Through-holes \varnothing 2.1 mm | Through-holes \varnothing 3.2 mm | Through-holes \varnothing 4.2 mm |
| Temperature range | Storage | -40 ... +85 °C | |
| | Operation | -40 ... +85 °C | |
| Connection | Stranded wires, approx. 6 cm | | |
| Shock (DIN EN 60068-2-27) | 50 g / 10 ms in 1 direction, 1000 shocks | | |
| Vibration (DIN EN 60068-2-6) | 20 g / 20 ... 2000 Hz in 3 axes, 10 cycles each | | |
| Protection class (DIN EN 60529) | IP50 | | |
| Weight | approx. 8 g | approx. 22 g | approx. 82 g |

FSO = Full Scale Output

Specifications for analog outputs from page 54 onwards.

Article designation

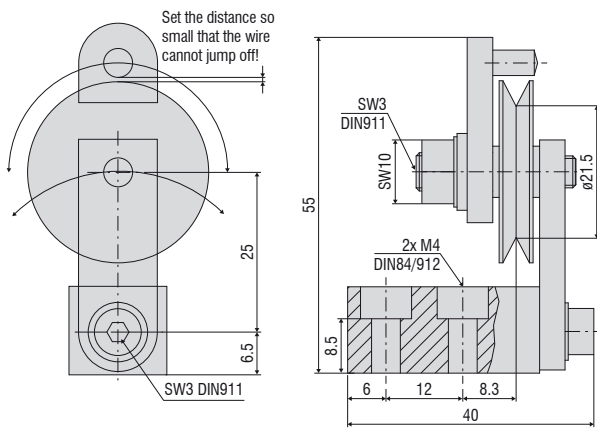
| | | | |
|-------|-----------------------|-----------|----------------------------------|
| WDS - | 40 - | MT - | P |
| | | | Output type: P: potentiometer |
| | | MT series | |
| | Measuring range in mm | | |

Wire deflection pulleys for external installation

| | |
|---------|---|
| TR1-WDS | Wire deflection pulley, adjustable, for sensors with a wire diameter ≤ 0.45 mm |
| TR3-WDS | Wire deflection pulley, fixed, for sensors with a wire diameter ≤ 0.45 mm |
| TR4-WDS | Wire deflection pulley, fixed, for sensors with a wire diameter of 0.8 mm to 1 mm |

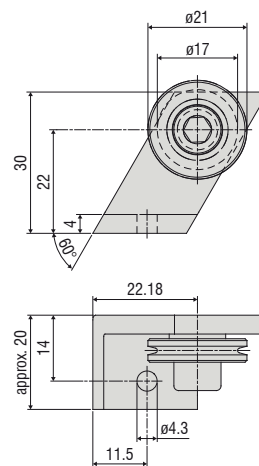
TR1-WDS

Wire deflection pulley, adjustable, for sensors with a wire diameter ≤ 0.45 mm



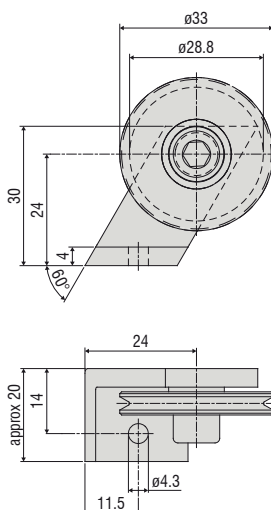
TR3-WDS

Wire deflection pulley, fixed, for sensors with a wire diameter ≤ 0.45 mm



TR4-WDS

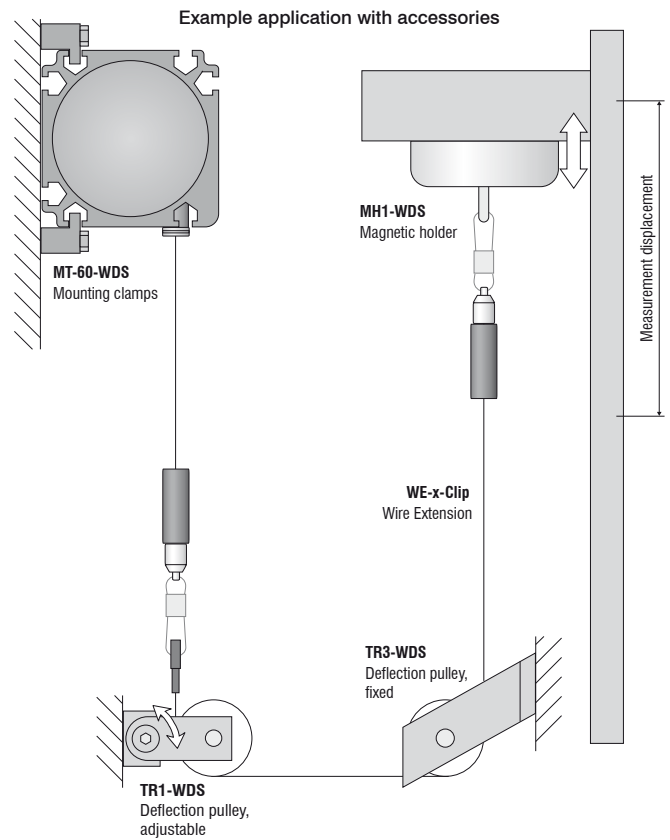
Wire deflection pulley, fixed, for sensors with a wire diameter of 0.8 mm to 1 mm



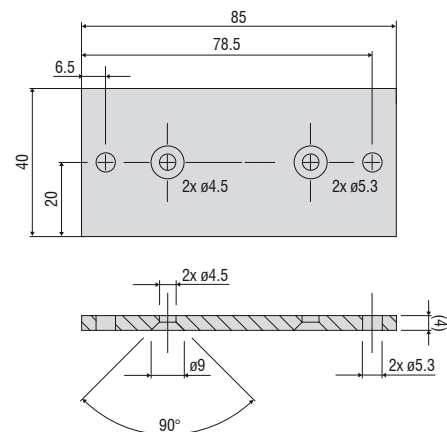
Dimensions in mm, not to scale.

Accessories

| | |
|-----------------|--|
| WE-xxx-M4 | Wire extension with M4 wire connection, x=wire length |
| WE-xxx-Clip | Wire extension with eyelet, x = wire length |
| WE-xxx-Clip-WSS | Wire extension with clip and uncoated wire d=0.45 mm |
| WE-xxx-Ring-PW | Wire extension with plastic ring and para-aramid wire, 1 mm |
| GK1-WDS | Fork head for M4 |
| MH1-WDS | Magnetic holder for wire attachment |
| MH2-WDS | Magnetic holder for sensor mounting |
| MT-60-WDS | Mounting clamps for WDS-P60 |
| FC8 | Mating plug for WDS straight, 8-pin |
| FC8/90 | Mating plug, 90° angled for WDS |
| PC3/8-WDS | Sensor cable, 3 m long |
| PS2020 | Power supply unit 24 V / 2.5 A; input 100-240 VAC, output 24 VDC / 2.5 A; mounting onto symmetrical standard rail 35 mm x 7.5 mm, DIN 50022) |
| WDS-MP60 | Mounting plate for P60 models |
| PC2/10-WDS-A | Cable for SSI encoder, 2 m long |
| PC2/10-WDS-E | Cable for incremental encoder, 2 m long |
| PC10/10-WDS-A | Cable for SSI encoder, 10 m long |
| PC10/10-WDS-E | Cable for incremental encoder, 10 m long |

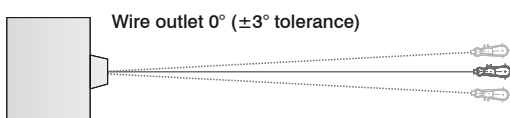


WDS-MP60
Mounting plate for P60 models

**Installation instructions:**

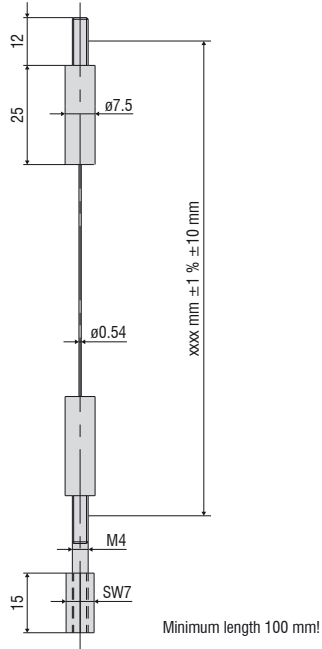
Wire attachment: during installation, do not allow at any time the measuring wire to freely return.

Angle of wire outlet: Make sure during installation that the wire outlet is straight (tolerance of $\pm 3^\circ$). Exceeding this tolerance leads to increased wear of the wire material and on the wire outlet.



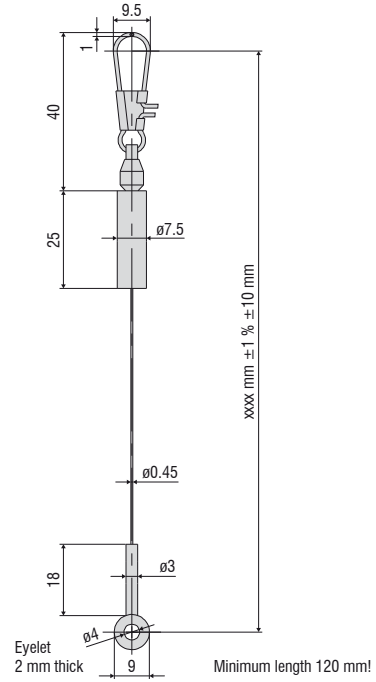
WE-xxxx-M4

Wire extension with M4 wire connection, x=wire length



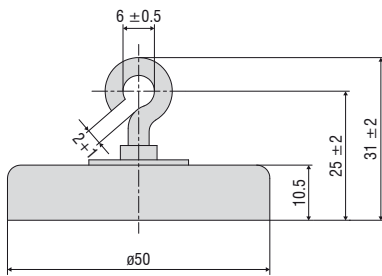
WE-xxxx-Clip

Wire extension with eyelet, x = wire length



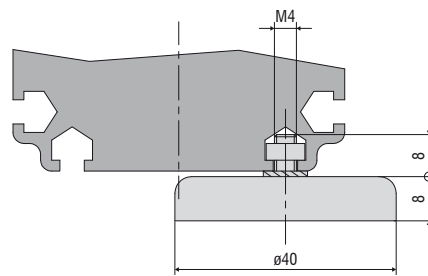
MH1-WDS

Magnetic holder for wire attachment



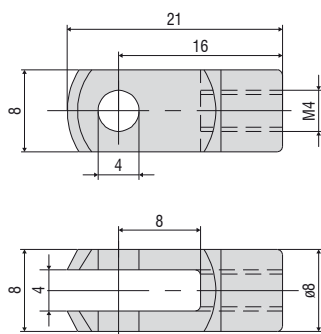
MH2-WDS

Magnetic holder for sensor mounting



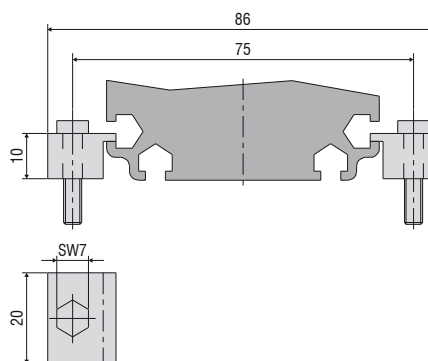
GK1-WDS

Fork head for M4



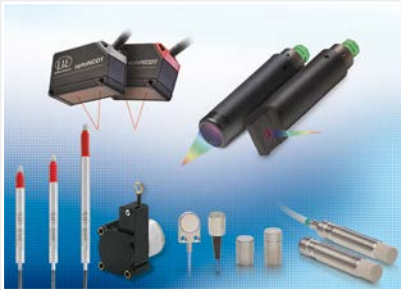
MT-60-WDS

Mounting clamps for WDS-P60



| Output | | Connector M16 -SA / -SR | Integrated cable -CA / -CR | Open contacts | |
|---|--|--|---|--|--|
| Potentiometer output (P) | |  <p>Sensor side</p> <p>1 = Input + 2 = Ground 3 = Signal</p> | <p>White = Input + Brown = Ground Green = Signal</p> |  <p>1 = Input + 2 = Signal 3 = Ground</p> | |
| Input voltage | max. 32 VDC with 1 kOhm / max. 1 W | | | | |
| Resistance | 1 kOhm $\pm 10\%$ (resistance divider) | | | | |
| Temperature coefficient | $\pm 0.0025\%$ FSO/ $^{\circ}$ C | | | | |
| Voltage output (U) | |  <p>Sensor side</p> <p>1 = Power supply 2 = Ground 3 = Signal 4 = Ground</p> | <p>White = Supply Brown = Ground Green = Signal Yellow = Ground</p> | | |
| Supply voltage | 14 ... 27 VDC (non-stabilized) | | | | |
| Current consumption | max. 30 mA | | | | |
| Output voltage | 0 ... 10 VDC Option 0 ... 5 / ± 5 V | | | | |
| Load resistance | > 5 kOhm | | | | |
| Output noise | 0.5 mV _{eff} | | | | |
| Temperature coefficient | $\pm 0.005\%$ FSO/ $^{\circ}$ C | | | | |
| Electromagnetic compatibility (EMC) | EN 61000-6-4 EN 61000-6-2 | | | | |
| Adjustment range (if supported by the model) | | | | | |
| Zero | $\pm 20\%$ FSO | | | | |
| Sensitivity | $\pm 20\%$ | | | | |
| Current output (I) | |  <p>Sensor side</p> <p>1 = Power supply 2 = Ground</p> | <p>White = Supply Brown = Ground</p> | | |
| Supply voltage | 14 ... 27 VDC (non-stabilized) | | | | |
| Current consumption | max. 35 mA | | | | |
| Output current | 4 ... 20 mA | | | | |
| Load | < 600 Ohm | | | | |
| Output noise | $< 1.6 \mu\text{A}_{\text{eff}}$ | | | | |
| Temperature coefficient | $\pm 0.01\%$ FSO/ $^{\circ}$ C | | | | |
| Electromagnetic compatibility (EMC) | EN 61000-6-4 EN 61000-6-2 | | | | |
| Adjustment range (if supported by the model) | | | | | |
| Zero | $\pm 18\%$ FSO | | | | |
| Sensitivity | $\pm 15\%$ | | | | |

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