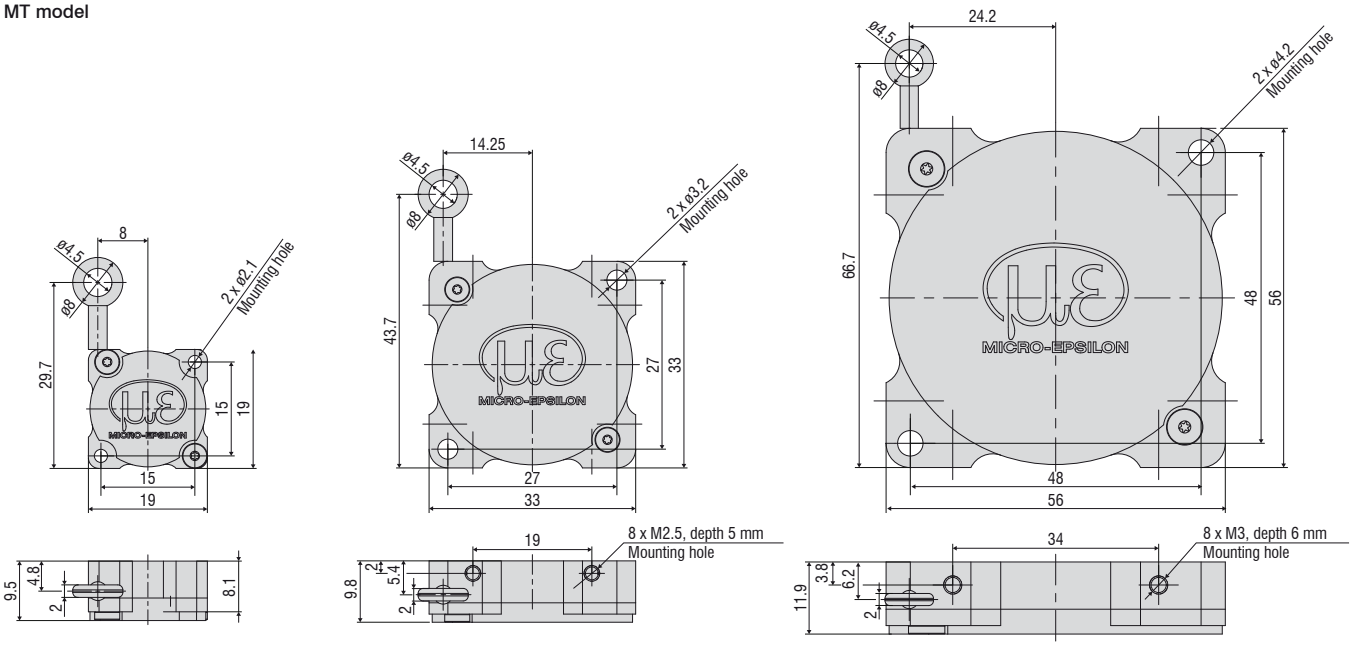
MICRO-EPSILON

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	≤ ±0.4 % FSO	-	≤ ±0.32 mm	≤ ±0.52 mm
	≤ ±1 % FSO	≤ ±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	Housing	Aluminum		
	Measuring wire	Polyamide-coated stainless steel (ø 0.36)	Polyamide-coated stainless steel (ø 0.45)	
Wire mounting		Eyelet (ø 4.5 mm)		
Mounting		Through-holes ø 2.1 mm	Through-holes ø 3.2 mm	Through-holes ø 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.

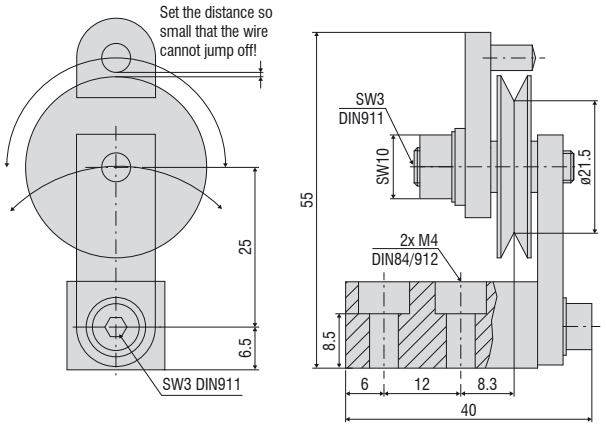
Article designation

WDS - **40 -** **MT -** **P**

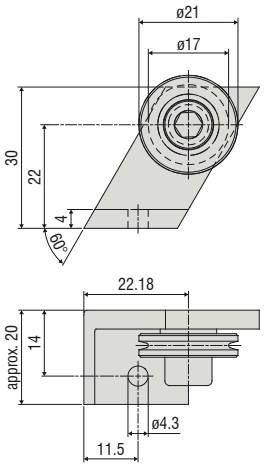
- **P**: Output type: P: potentiometer
- **MT -**: MT series
- **40 -**: Measuring range in mm

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

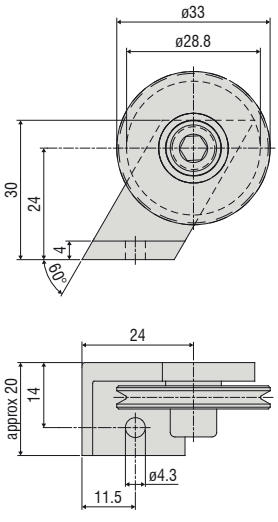
TR1-WDS
Wire deflection pulley, adjustable, for sensors with a wire diameter ≤ 0.45 mm



TR3-WDS
Wire deflection pulley, fixed, for sensors with a wire diameter ≤ 0.45 mm



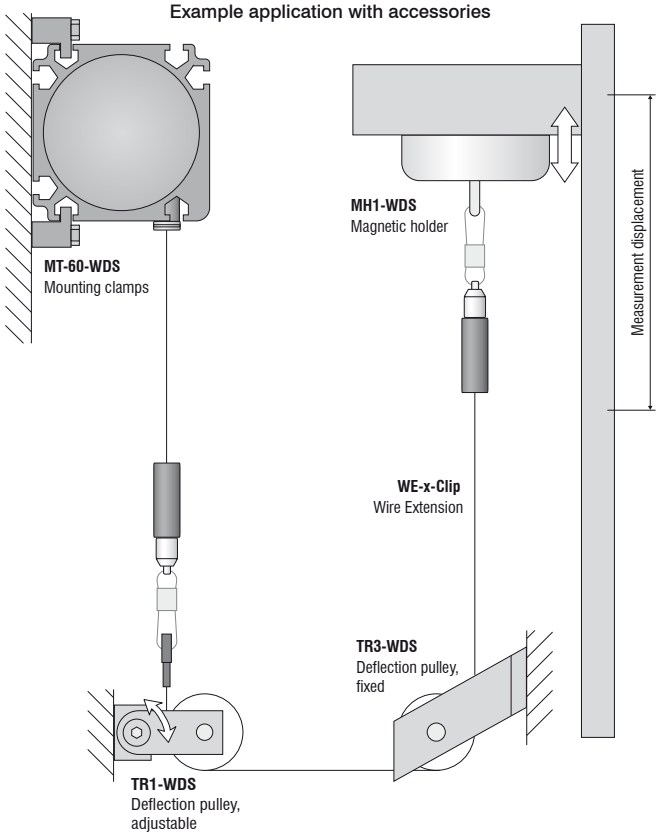
TR4-WDS
Wire deflection pulley, fixed, for sensors with a wire diameter of 0.8 mm to 1 mm



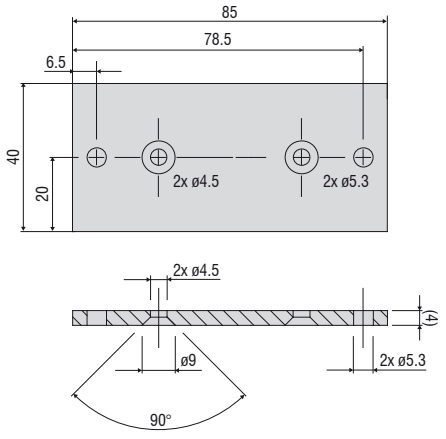
Dimensions in mm, not to scale.

Accessories	
WE-xxxx-M4	Wire extension with M4 wire connection, x=wire length
WE-xxxx-Clip	Wire extension with eyelet, x = wire length
WE-xxx-Clip-WSS	Wire extension with clip and uncoated wire d=0.45 mm
WE-xxxx-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

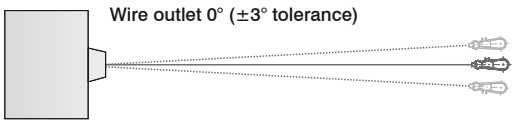
Example application with accessories



WDS-MP60
Mounting plate for P60 models

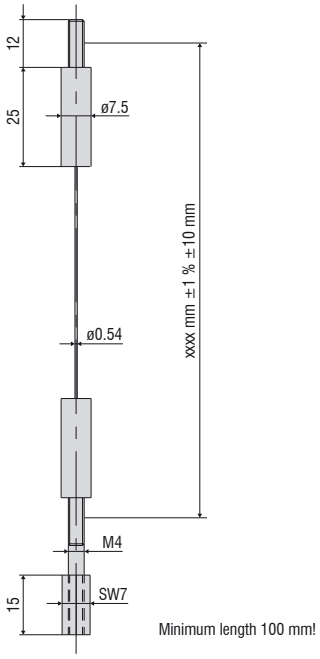


Installation instructions:
Wire attachment: during installation, do not allow at any time the measuring wire to freely return.
Angle of wire outlet: Make sure during installation that the wire outlet is straight (tolerance of ±3°). Exceeding this tolerance leads to increased wear of the wire material and on the wire outlet.

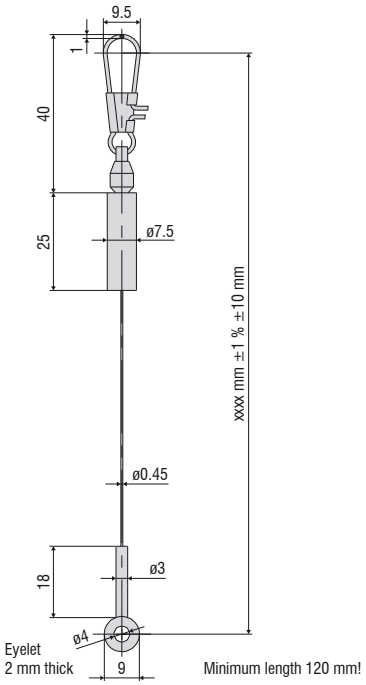


Dimensions in mm, not to scale.

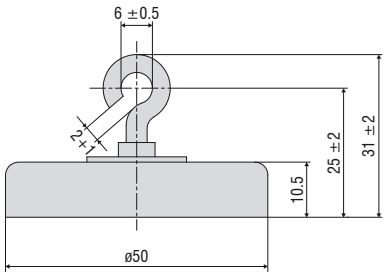
WE-xxxx-M4
Wire extension with M4 wire connection, x=wire length



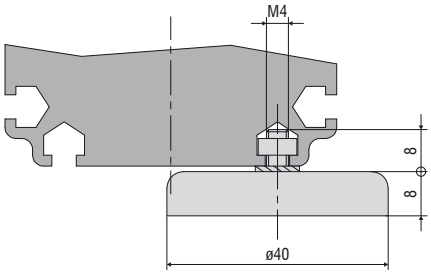
WE-xxxx-Clip
Wire extension with eyelet, x = wire length



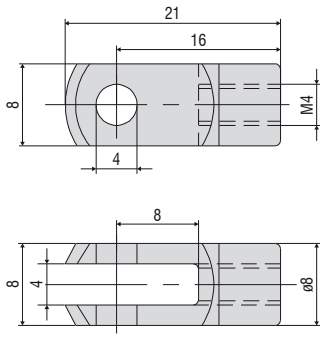
MH1-WDS
Magnetic holder for wire attachment



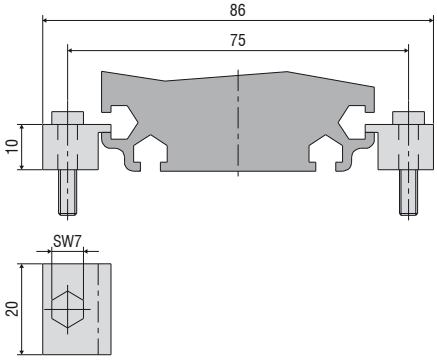
MH2-WDS
Magnetic holder for sensor mounting



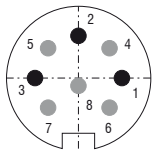
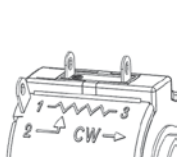
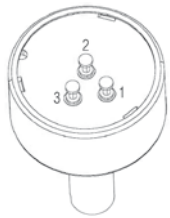
GK1-WDS
Fork head for M4

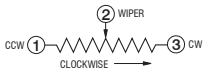


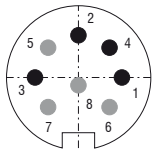
MT-60-WDS
Mounting clamps for WDS-P60

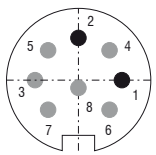


Output	Connector M16 -SA / -SR	Integrated cable -CA / -CR	Open contacts

Potentiometer output (P)				
Input voltage	max. 32 VDC with 1 kOhm / max. 1 W	 Sensor side		 
Resistance	1 kOhm ±10 % (resistance divider)			
Temperature coefficient	±0.0025 % FSO/°C			
		1 = Input + 2 = Ground 3 = Signal	White = Input + Brown = Ground Green = Signal	1 = Input + 2 = Signal 3 = Ground



Voltage output (U)				
Supply voltage	14 ... 27 VDC (non-stabilized)	 Sensor side		
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	±0.005 % FSO/°C			
Electromagnetic compatibility (EMC)	EN 61000-6-4 EN 61000-6-2			
Adjustment range (if supported by the model)				
Zero	±20 % FSO	1 = Power supply 2 = Ground 3 = Signal 4 = Ground	White = Supply Brown = Ground Green = Signal Yellow = Ground	
Sensitivity	±20 %			

Current output (I)				
Supply voltage	14 ... 27 VDC (non-stabilized)	 Sensor side		
Current consumption	max. 35 mA			
Output current	4 ... 20 mA			
Load	<600 Ohm			
Output noise	<1.6 μA_{eff}			
Temperature coefficient	±0.01 % FSO/°C			
Electromagnetic compatibility (EMC)	EN 61000-6-4 EN 61000-6-2			
Adjustment range (if supported by the model)				
Zero	±18 % FSO	1 = Power supply 2 = Ground	White = Supply Brown = Ground	
Sensitivity	±15 %			

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