



More Precision.

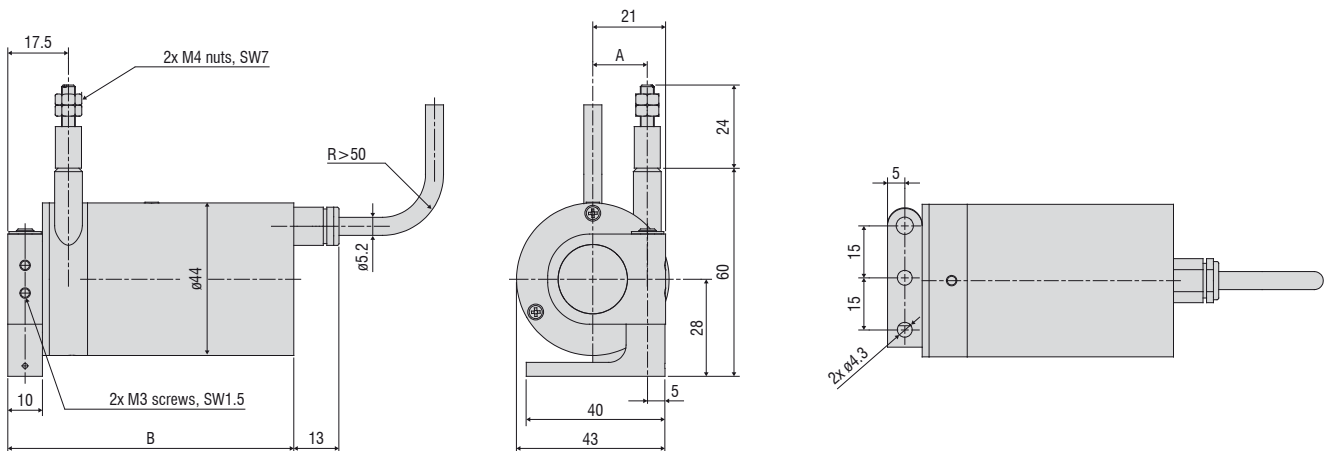
wireSENSOR // Draw-wire displacement sensors





- Miniature design
- Optional IP67 (MPW)
- For fast movements and harsh application environments

MP / MPW models



Measuring range (mm)	A (mm)	B (mm)
100 / 300 / 500 / 1000-MP	15.7	82.5
100 / 300 / 500 / 1000-MPW	15.7	86.5

Dimensions in mm, not to scale.

Model	WDS-100-MP(W)	WDS-300-MP(W)	WDS-500-MP(W)	WDS-1000-MP(W)
Measuring range	100 mm	300 mm	500 mm	1000 mm
Analog output	Potentiometer			
Resolution	0.15 mm	0.2 mm	towards infinity	
Linearity	Hybrid potentiometer P10 $\leq \pm 0.1$ % FSO	-	-	$\leq \pm 0.5$ mm
	Wire potentiometer P25 $\leq \pm 0.25$ % FSO	-	$\leq \pm 0.75$ mm	-
	Wire potentiometer P50 $\leq \pm 0.5$ % FSO	$\leq \pm 0.5$ mm	-	-
Sensor element	Wire potentiometer		Hybrid potentiometer	
Wire extension force (max.)	approx. 8.5 N	approx. 8.5 N	approx. 8.5 N	approx. 8 N
Wire retraction force (min.)	approx. 7 N	approx. 7 N	approx. 6.5 N	approx. 5 N
Wire acceleration (max.)	approx. 30 g			
Material	Housing	Aluminum		
	Measuring wire	Stainless steel (ϕ 0.45 mm)		
Wire mounting	M4 threaded bolts			
Mounting	Mounting flange rotatable in two axes 180° / 360°			
Temperature range	Storage	-20 ... +80 °C		
	Operation	-20 ... +80 °C		
Connection	integrated cable, axial, length 1 m			
Shock (DIN EN 60068-2-27)	50 g / 20 ms in 3 axes, 1000 shocks each			
Vibration (DIN EN 60068-2-6)	20 g / 20 ... 2000 Hz in 3 axes, 10 cycles each			
Protection class (DIN EN 60529)	MP series	IP65		
	MPW series	IP67		
Weight	approx. 270 g (incl. cable)			

FSO = Full Scale Output

Specifications for analog outputs from page 54 onwards.

Article designation

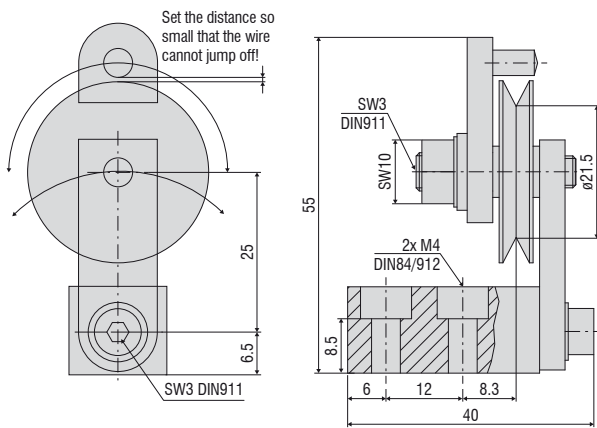
WDS -	100 -	MP -	C -	P
				Output type: P: potentiometer
				Connection C: integrated cable, axial, 1 m
				MP / MPW series (IP67)
				Measuring range in mm

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

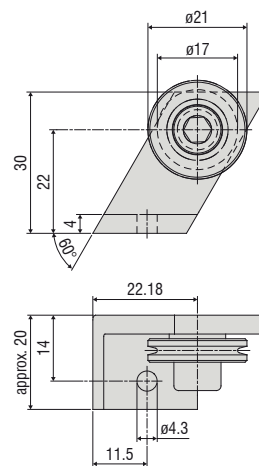
TR1-WDS

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



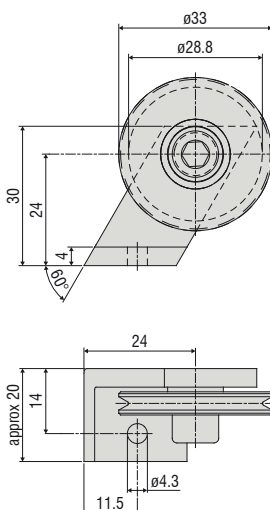
TR3-WDS

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



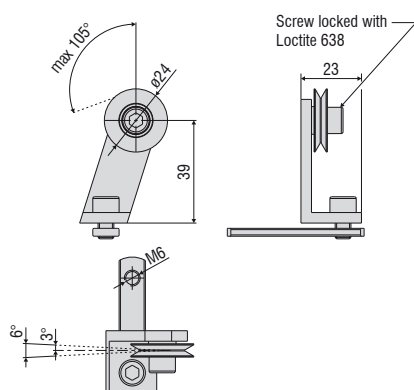
Dimensions in mm, not to scale.

Wire deflection pulley for direct installation on the sensor housing

TR5-WDS	Integrated wire deflection pulley for P115 sensors with a wire diameter of 0.45 mm
TR5-WDS(03)	Integrated double deflection pulley for P115 sensors with a wire diameter of 0.45 mm
TR5-WDS(04)	Integrated double deflection pulley, 90° angled, for P115 sensors with a wire diameter of 0.45 mm
TR6-WDS(01)	Integrated wire deflection pulley for the P115 sensors with a wire diameter of 1 mm

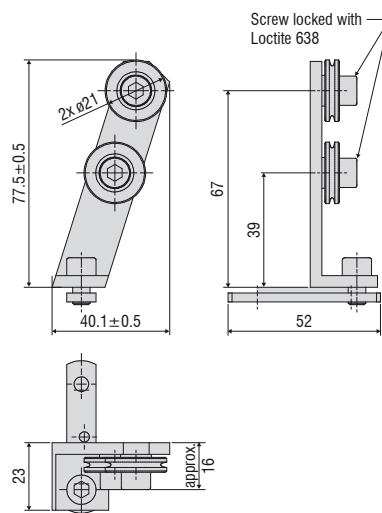
TR5-WDS

Integrated wire deflection pulley for P115 sensors with a wire diameter of 0.45 mm



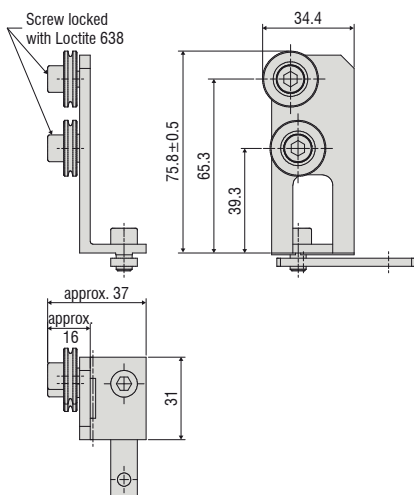
TR5-WDS(03)

Integrated double deflection pulley for P115 sensors with a wire diameter of 0.45 mm



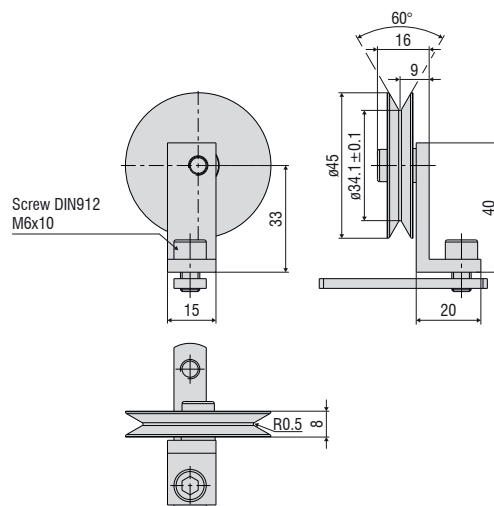
TR5-WDS(04)

Integrated double deflection pulley, 90° angled, for P115 sensors with a wire diameter of 0.45 mm



TR6-WDS(01)

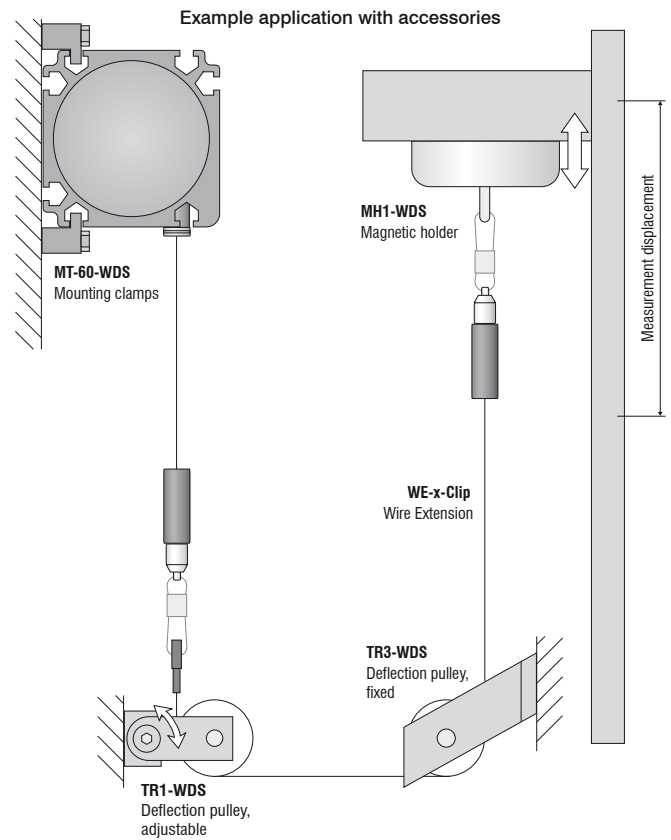
Integrated wire deflection pulley for the P115 series with a wire diameter of 1 mm



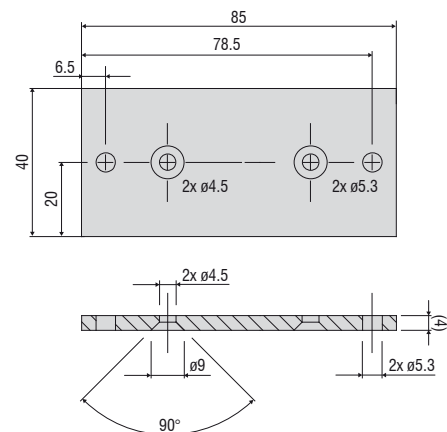
Dimensions in mm, not to scale.

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

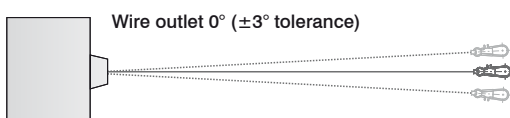


WDS-MP60
Mounting plate for P60 models

**Installation instructions:**

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

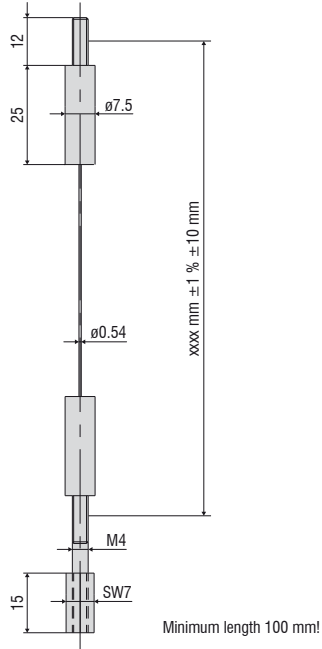
Angle of wire outlet: Make sure during installation that the wire outlet is straight (tolerance of $\pm 3^\circ$). Exceeding this tolerance leads to increased wear of the wire material and on the wire outlet.



Dimensions in mm, not to scale.

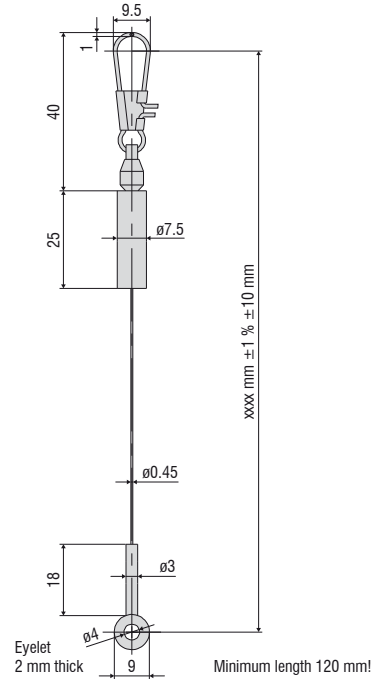
WE-xxxx-M4

Wire extension with M4 wire connection, x=wire length



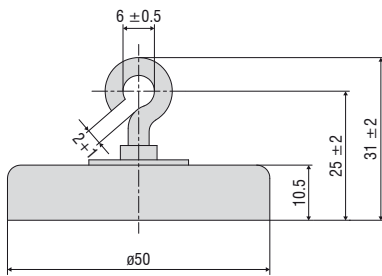
WE-xxxx-Clip

Wire extension with eyelet, x = wire length



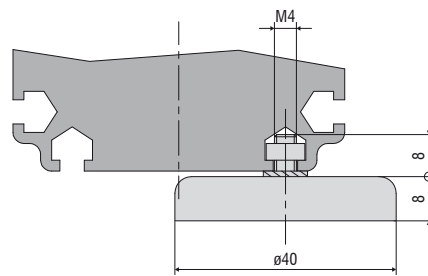
MH1-WDS

Magnetic holder for wire attachment



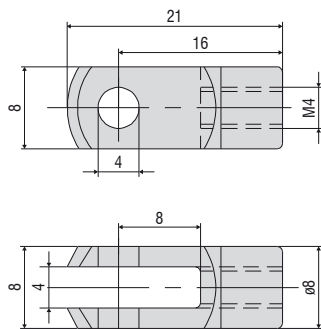
MH2-WDS

Magnetic holder for sensor mounting



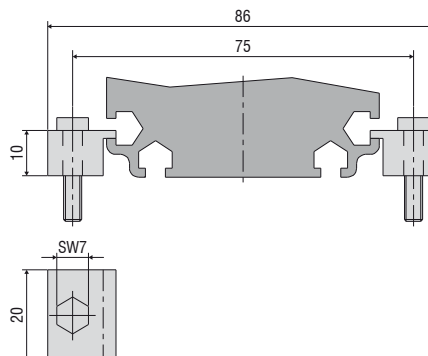
GK1-WDS

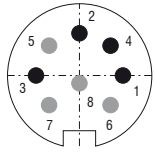
Fork head for M4



MT-60-WDS

Mounting clamps for WDS-P60



Output		Connector M16 -SA / -SR	Integrated cable -CA / -CR	Open contacts
Potentiometer output (P)		 <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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