



# More Precision.

**wire**SENSOR

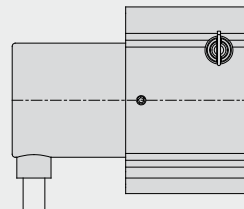
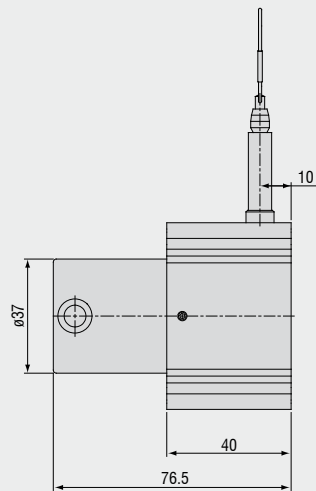
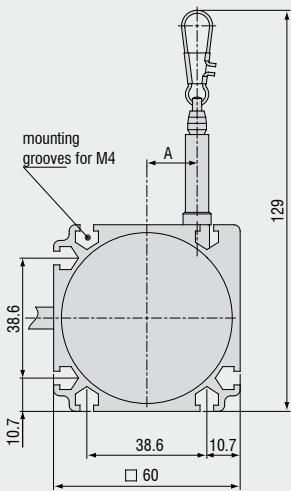
Draw-wire displacement sensors





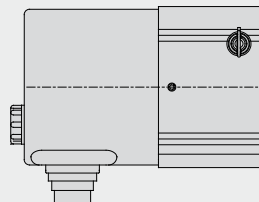
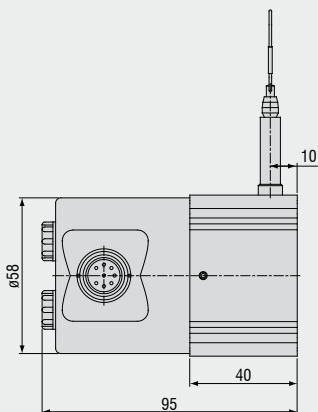
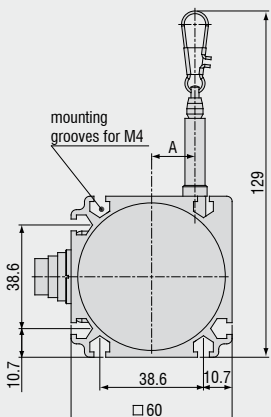
- Robust aluminium profile housing
- Customized versions for OEM
- Potentiometer, current and voltage output

**Model P60 Output P**



Measuring range (mm)	A (mm)
100 / 300 / 500 / 1000	16.15
150 / 750 / 1500	24.2

**Model P60 Output U/I**



Measuring range (mm)	A (mm)
100 / 300 / 500 / 1000	16.15
150 / 750 / 1500	24.2

Model		WDS-100- P60	WDS-150- P60	WDS-300- P60	WDS-500- P60	WDS-750- P60	WDS-1000- P60	WDS-1500- P60	
Output		P/U/I							
Measuring range	mm	100	150	300	500	750	1000	1500	
Linearity	$\pm 0.1\%$ FSO	$\pm$ mm	-	-	-	0.5	0.75	1	1.5
	$\pm 0.25\%$ FSO	$\pm$ mm	-	-	0.75	-	-	-	-
	$\pm 0.5\%$ FSO	$\pm$ mm	0.5	0.75	-	-	-	-	-
Resolution		quasi infinite							
Sensor element		conductive plastic/wire potentiometer				hybrid potentiometer			
Temperature range		-20 ... +80°C							
Material	housing	Aluminium							
	draw wire	coated polyamid stainless steel ( $\varnothing$ 0.45mm)							
Sensor mounting		mounting grooves in the housing							
Wire mounting		wire clip							
Wire acceleration		appr. 10 - 15g (dependent upon measuring range)							
Wire retraction force (min)	N	6.5	4.5	6	6	4	5	3.5	
Wire extension force (max)	N	7.5	5.5	7.5	7.5	5.5	7.5	5.5	
Protection class		IP 65 (only if connected)							
Electrical connection	P	integrated cable, radial, 1m long							
	U/I	flange connector, radial, 8-pin, DIN45326							
Weight		appr. 370g							

FSO = Full Scale Output  
Specifications for analog outputs on page 43.

#### Article description

**WDS - 100 - P60 - CR - P**

Output option:  
P = potentiometer (with connection CR)  
U = voltage (with connection SR)  
I = current (with connection SR)

Connection:  
SR: radial plug  
CR: integrated cable, radial, 1m

Model P60

Measuring range in mm

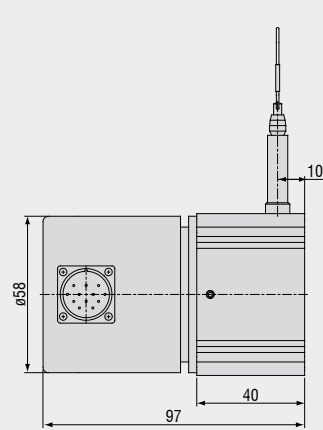
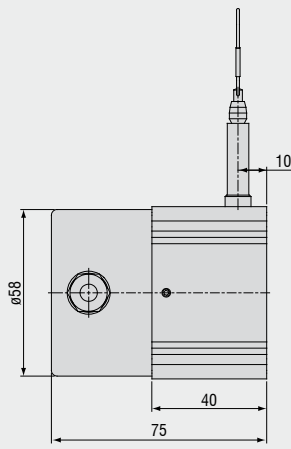
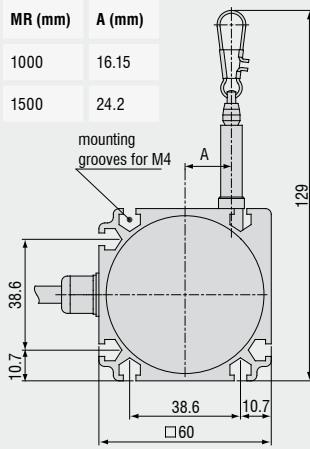


- Robust aluminium profile housing
- Customized versions for OEM
- Incremental/absolute encoder

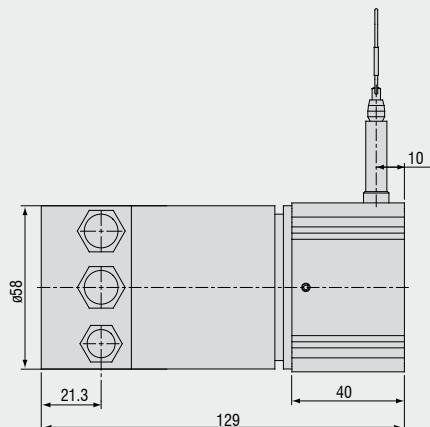
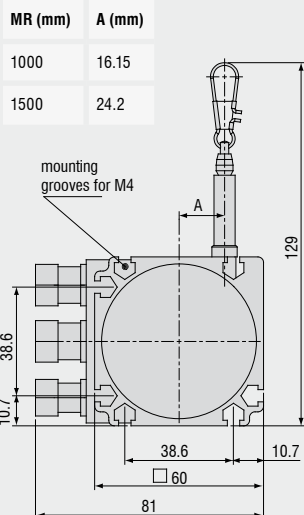
**Model P60**

**Output HTL/TTL**

**Output SSI**



**Model P60 Output CO/PB**



Model		WDS-1000-P60	WDS-1500-P60
Output		HTL/ TTL/ PB/ CO/ SSI	
Measuring range		1000mm	1500mm
Linearity	±0.02% FSO	±0.2mm	±0.3mm
Resolution	HTL, TTL	0.067mm (15 Pulses/mm)	0.1mm (10 Pulses/mm)
	SSI, PB, CO	0.024mm	0.03mm
Sensor element		incremental encoder	
Temperature range		-20 ... +80°C	
Material	housing	Aluminium	
	draw wire	coated polyamid stainless steel (ø 0.45mm)	
Sensormontage		mounting grooves in the housing	
Wire mounting		wire clip	
Wire acceleration		10g	15g
Wire retraction force (min)		5N	3.5N
Wire extension force (max)		7.5N	5.5N
Protection class		IP 65 (only if connected)	
Electrical connection	HTL/TTL	integrated cable, radial, 1m long	
	SSI	flange connector, radial, 12-pin	
	PB/CO	bus cover	
Weight		appr. 1kg	

FSO = Full Scale Output  
 Specifications for digital outputs on page 44.

#### Article description

**WDS - 1000 - P60 - CR - TTL**

Output option:

HTL

TTL

CO: CANopen

PB: Profibus DP

SSI

Connection:

SR (Output SSI): radial plug

CR (Output HTL, TTL): integrated cable, radial, 1m

BH (Output CO, PB): bus cover

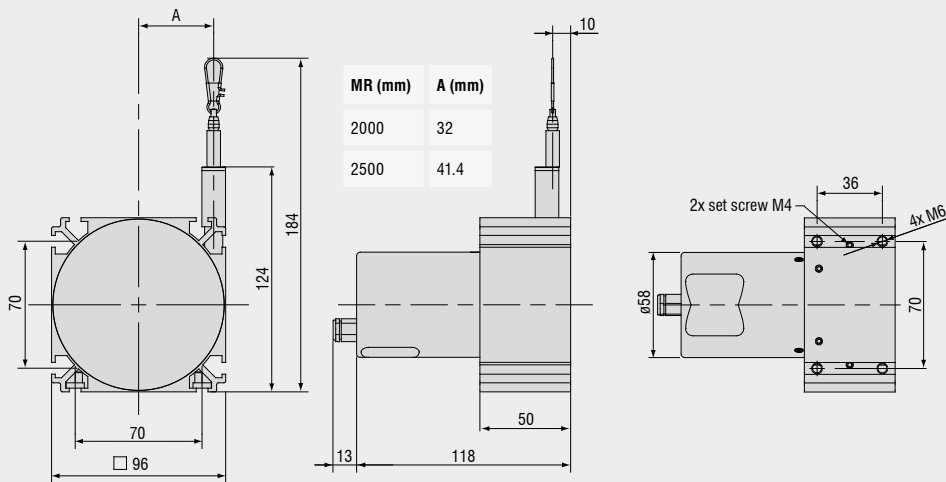
Model P60

Measuring range in mm

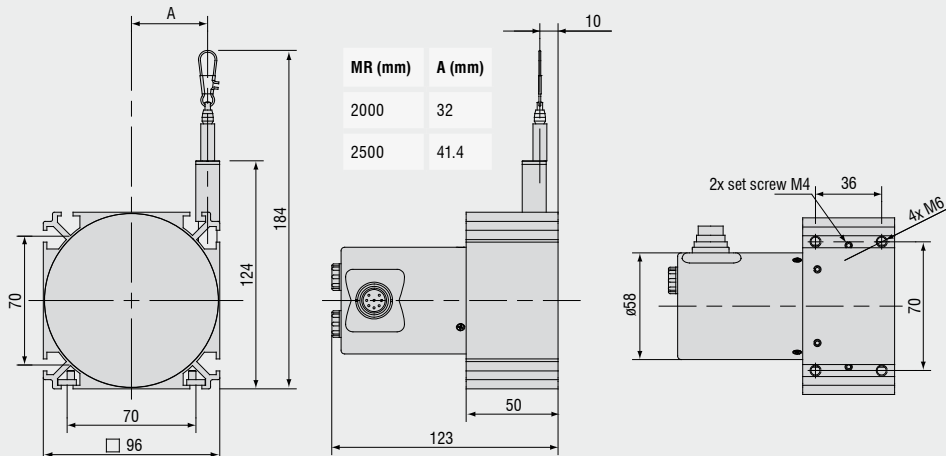


- Robust aluminium profile housing
- Customized versions for OEM
- Potentiometer, current and voltage output

#### Model P96 Output P



#### Model P96 Output U/I



Model		WDS-2000-P96	WDS-2500-P96
Output		P/U/I	
Measuring range	mm	2000	2500
Linearity	$\pm 0.1\%$ FSO $\pm$ mm	2.0	2.5
Resolution		quasi infinite	
Sensor element		hybrid potentiometer	
Temperature range		-20 ... +80°C	
Material	housing	Aluminium	
	draw wire	$\varnothing$ 0.8mm	
Sensor mounting		slot nuts	
Wire mounting		wire clip	
Wire acceleration		8g	
Wire retraction force (min)		7.5N	5.5N
Wire extension force (max)		11N	9N
Protection class		IP 65 (only if connected)	
Electrical connection	P	integrated cable, radial, 1m long	
	U/I	flange connector, axial, 8-pin DIN45326	
Weight		appr. 1.1kg	

FSO = Full Scale Output  
 Specifications for analog outputs on page 43.

#### Article description

**WDS - 2000 - P96 - CA - P**

Output option:  
 P = potentiometer (with connection CA)  
 U = voltage (with connection SR)  
 I = current (with connection SR)

Connection:  
 SR: radial plug  
 CA: integrated cable, axial, 1m

Model P96

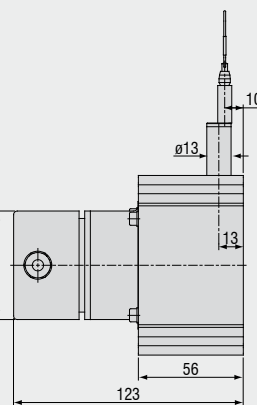
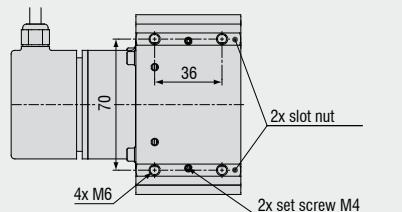
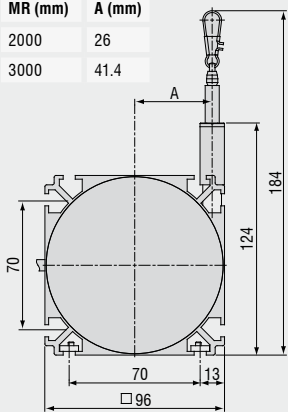
Measuring range in mm



- Robust aluminium profile housing
- Incremental/absolute encoder

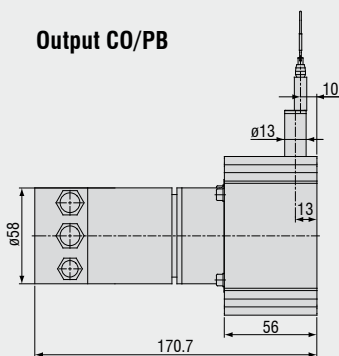
### Model P96

MR (mm)	A (mm)
2000	26
3000	41.4

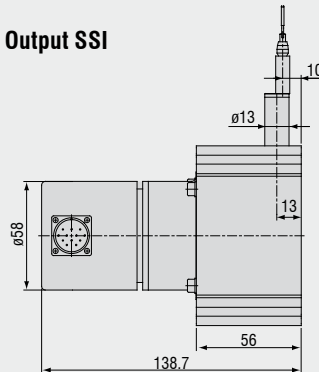


### Output HTL/TTL

### Output CO/PB



### Output SSI



Model	WDS-3000-P96	
Output	HTL/ TTL/ SSI/ PB/ CO	
Measuring range	3000mm	
Linearity	±0.02% FSO	±0.6mm
Resolution	HTL, TTL	0.087mm (11.53 pulses/mm)
Resolution	SSI, PB, CO	0.032mm
Sensor element	Incremental/absolute encoder	
Temperature range	-20 ... +80°C	
Material	housing	Aluminium
	draw wire	coated polyamid stainless steel (ø 0.8mm)
Sensor mounting	slot nuts	
Wire mounting	wire clip	
Wire acceleration	7g	
Wire retraction force (min)	5.5N	
Wire extension force (max)	9N	
Protection class	IP 65 (only if connected)	
Electrical connection	HTL, TTL	integrated cable, radial, 1m long
	SSI	flange connector, radial, 12-pin
	PB, CO	bus cover
Weight	appr. 1.7kg	

FSO = Full Scale Output

Specifications for digital outputs on page 44.

#### Article description

**WDS - 3000 - P96 - CR - TTL**

Output option:

HTL

TTL

CO: CANopen

PB: Profibus DP

SSI

Connection:

SR (Output SSI): radial plug

CR (Output HTL, TTL): integrated cable, radial, 1m

BH (Output CO, PB): bus cover

Model P96

Measuring range in mm

## High performance sensors made by Micro-Epsilon



### Sensors and systems for displacement, position and dimension

Eddy current displacement sensors  
Optical and laser sensors  
Capactive sensors  
Linear inductive sensors  
Draw wire displacement sensors  
Laser micrometer  
2D/3D profile sensors (laser scanner)  
Image processing



### Sensors and systems for non-contact temperature measurement

IR handheld  
Stationary IR sensors  
Thermal imager



### Turn key systems for quality inspection

of plastics and film  
of tires and rubber  
of endless band material  
of automotive components  
of glass



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