Warnings

- Do not open the sensor housing.
- Do not pull or loop the measuring wire around unprotected body parts.
- Do not pull out the measuring wire beyond the measuring range listed.
- Do not let the measuring wire snap.

> Risk of injury
- Do not damage the measuring wire.
- Do not oil or grease the measuring wire.
- Do not kink the measuring wire.
- Do not pull the measuring wire diagonally.
- Do not let the measuring wire drag around objects.
- Attach the measuring wire to the measured object while the wire is retracted.

> Damage to or destruction of the sensor

Notes on Product Marking

The product meets the requirements of CE and UKCA. All specifications described in the operating instructions must be observed.
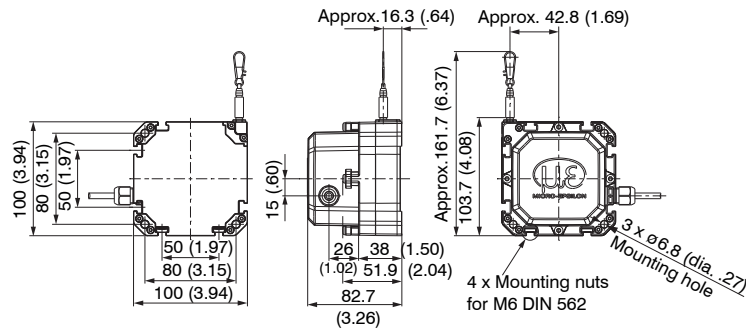
Proper Environment

- Protection class: IP67
                            IP69K [1]

- Temperature range
  - Operation: -40 ... +85 °C (-40 ... +185 °F)
  - Storage temperature: -40 ... +85 °C (-40 ... +185 °F)
- Humidity: 5 ... 95 % RH (non-condensing)
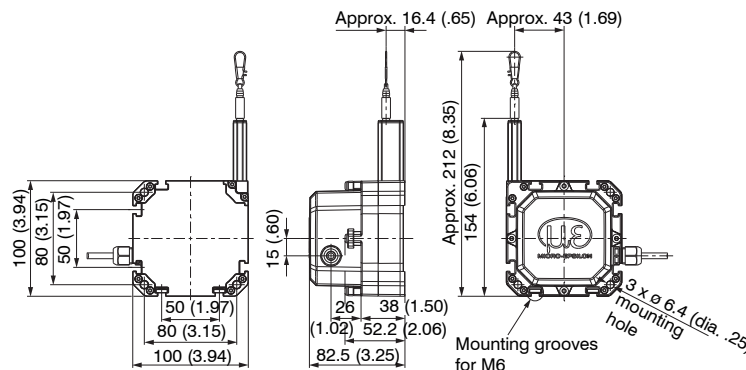- Ambient pressure: Atmospheric pressure

1) Dependent on encoder

Unpacking/Included in Delivery

1 Sensor
4 Slot nuts
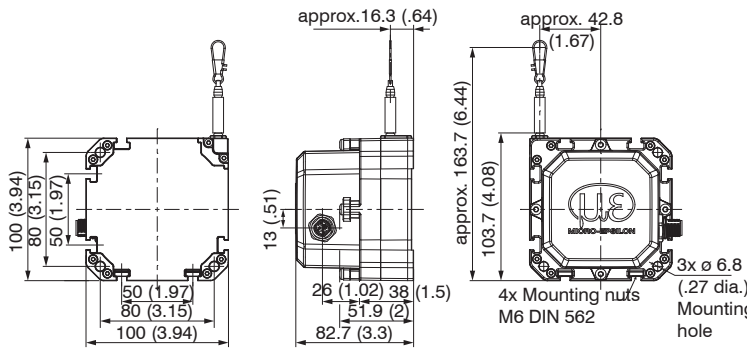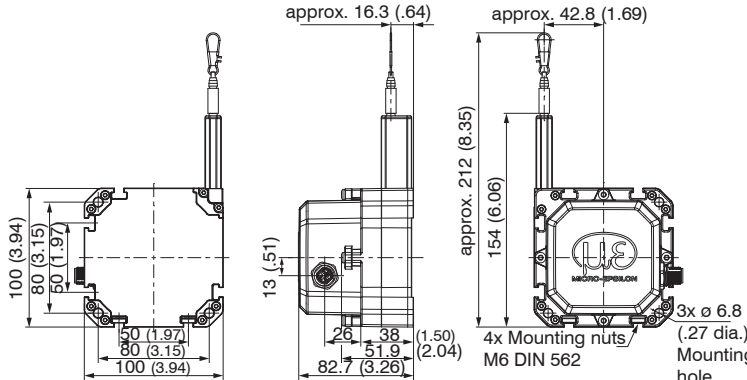1 Installation instructions

Dimensional Drawings

Dimensional drawing WPS-1500-K100, WPS-2500-K100 with integrated cable, radial, length 1 m, dimensions in mm (inches, rounded off)
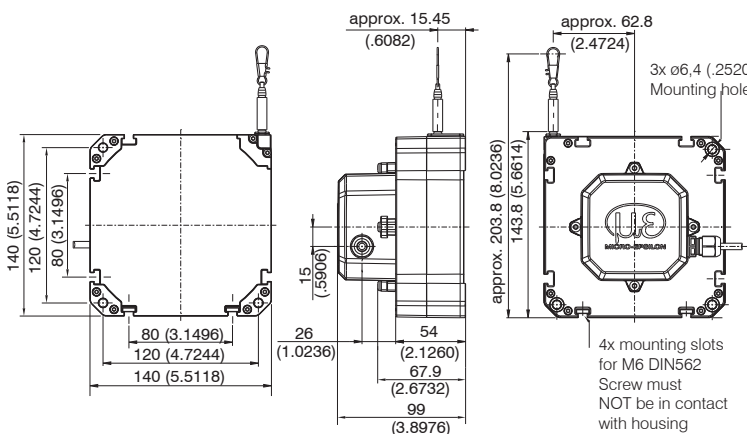

Dimensional drawing WPS-3500-K100, WPS-5000-K100, WPS-8000-K100 with integrated cable, radial, length 1 m, dimensions in mm (inches, rounded off)

Dimensional drawing WPS-3500-K100, WPS-5000-K100 with 5-pole M12x1 connector, dimensions in mm (inches, rounded off)

Dimensional drawing, WPS-3500-K100, WPS-5000-K100, WPS-8000-K100 with 5-pole M12x1 connector, dimensions in mm (inches, rounded off)

Dimensional drawing, WPS-12000-K140, with integrated cable, radial, length 1 m dimensions in mm (inches, rounded off)

Sensor Mounting

➡ Mount the sensor either with M6 screws (through-hole) or with slot nuts (mounting grooves) according to the specifications in the following table:

Model	Screws for through-hole	Slot nuts for mounting grooves
WPS-1500-K100	3 x M6	M6 x 3.2 mm
WPS-2500-K100	3 x M6	M6 x 3.2 mm
WPS-3500-K100	3 x M6	M6 x 3.2 mm
WPS-5000-K100	3 x M6	M6 x 3.2 mm
WPS-8000-K100	3 x M6	M6 x 3.2 mm
WPS-12000-K140	3 x M6	M6 x 3.2 mm

The slot nuts can be mounted on each side and positioned as desired.

Make sure that the thread length of the screws, which you use for the slot nuts, protrude from the sensor edge between 5 mm and 7 mm into the mounting groove.

> Damage of the sensor housing due to the screw being too long

The sensor does not have to be oriented in a special way.

➡ Select the installation position in such a way that damage to or contamination of the measuring wire is avoided.

ℹ If possible, prefer an installation position in which the measuring wire exits downward. This prevents liquids from entering the measuring wire outlet.

ℹ Do not let the measuring wire snap! There is no liability for material defects in case of damage due to snapping.

MICRO-EPSILON

Setup Guide
wireSENSOR
Serie WPS
WPS-XXXX-K100
WPS-12000-K140

Electrical Data

Potentiometer output (P)

Potentiometer output (P)		Integrated cable -CR
Input voltage	max. 32 VDC with 1 kOhm / max. 1 W	White = Input + Brown = Ground Green = Signal
Resistance	1 kOhm ±10 % (resistance divider)	
Temperature coefficient	±0.0025 % FSO/°C	
Contact current	≤ 10 μA	
Sensitivity	Dependent on measuring range	

Table of potentiometer output

FSO = Full Scale Output

Draw-wire displacement sensors with potentiometer output are connected according to the table, see above. Use any potentiometer only when switched to voltage divider. Using it as a variable resistor destroys the component. Observe maximum contact currents.

i Use potentiometers only as voltage dividers, not as variable series resistors!

Voltage output (U)

Voltage output (U)		Integrated cable -CR
Supply voltage	14 ... 27 VDC (non-stabilized [2])	White = Supply Brown = Ground Green = Signal White = Supply
Current consumption	max. 30 mA	
Output voltage	0 ... 10 VDC Options 0 ... 5 / ±5 V	
Output current	2 mA max.	
Last resistance	> 5 kOhm	
Output noise	0.5 mV_eff	
Temperature coefficient	±0.05 % FSO/°C	

Table of voltage output

FSO = Full Scale Output
2) Non-stabilized, measured on the input terminals of the sensor

Current output (I)

Current output (I)		Integrated cable -CR
Supply voltage	9 ... 32 VDC (non-stabilized [2])	White = Supply Brown = Ground
Output current	4 ... 20 mA	
Load	< 600 Ohm	
Output noise	1.6 μA_eff	
Temperature coefficient	±0.005 % FSO/°C	

Table current output

FSO = Full Scale Output
2) Non-stabilized, measured on the input terminals of the sensor

CANopen

Pin	Assignment	
1	n.c.	
2	V+ /7 ... 32 VDC)	
3	GND	*5-pin housing connector View on pin side A-coded*
4	CAN-High	
5	CAN-Low	

Table CANopen

A detailed description of the CANopen interface can be found online on the product website in the Download section:

https://www.micro-epsilon.com/download-file/man--wireSENSOR-CANopen--en.pdf

You can find more information about the sensor in the operating instructions. They are available online at:

https://www.micro-epsilon.com/download-file/man--wireSENSOR-WPS-K100--en.pdf
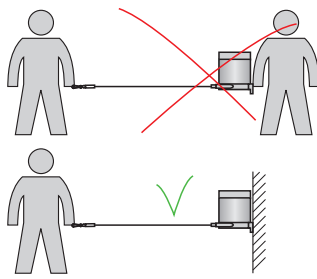
Guiding and Attaching the Wire

If the measuring wire must be pulled out of the sensor to guide the wire or attach it to the measured object:
- the sensor must not be held by a second person during that process,
- the measuring wire must not be pulled out beyond the measuring range listed,
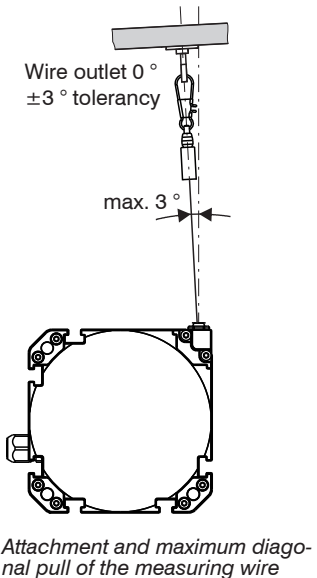- the area around the sensor must be protected against snapping of the measuring wire.

▶ Fix the measuring wire to the target using a wire clip.

▶ Guide the measuring wire vertically out of the sensor housing.

Diagonal pull is only permitted up to 3 degrees.

If you drag the measuring wire over the insertion hole or other objects, the measuring wire will be damaged and/or tear.

i If the measuring wire cannot be fed vertically out of the housing, it is essential to use a guide pulley (accessory TR1-WDS or TR3-WDS, see Operating instructions, chapter Accessories).

▶ Guide the measuring wire in a protected area so that it cannot get caught or otherwise be damaged.

Wire outlet 0 ° ±3 ° tolerance

max. 3 °

Attachment and maximum diagonal pull of the measuring wire

Declaration of Incorporation

Declaration of incorporation according to EC Machinery Directive 2006/42/EC, Annex II B

The manufacturer and person authorized to compile the relevant technical documents

MICRO-EPSILON MESSTECHNIK GmbH & Co. KG
Königbacher Straße 15, 94496 Ortenburg / Germany

hereby declare that the machine designated below complies with the relevant fundamental health and safety requirements of the EC Machinery Directive, including modifications to it applicable at the time of this declaration, based on its design and construction and in the version put on the market by us – to the extent that the scope of supply allows.

Machine design: Draw-wire sensor
                   (mechanics and models with potentiometer output)
Type designation: WDS-xxx, WPS-xxx

The following fundamental health and safety requirements according to Annex I of the directive specified above have been applied and complied with:
- No. 1.1.2. Principles of safety integration
- No. 1.7.3. Marking of machinery
- No. 1.7.4. Operating instructions

Furthermore, we declare compliance with the following directives and standards including the modifications applicable at the time this declaration is made:
- Directive 2006/42/EC (machinery)
  - EN ISO 13857:2019 Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
  - EN 60204-1:2018 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- Directive 2011/65/EU (RoHS)
  - EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

We also declare that the special technical documentation for this partially completed machine has been created in accordance with Annex VII, Part B, and commit ourselves to disclose this to the market surveillance authorities upon request. The commissioning of these partially completed machines is prohibited until the partially completed machine(s) has/have been installed in a machine that meets the requirements of the EC Machinery Directive and for which an EU Declaration of Conformity according to Annex II, Part A exists.

Ortenburg, Germany   Dipl.-Ing.(FH) Eduard Huber, MBA
July 1, 2021   Quality Manager

Declaration of incorporation

Declaration of Incorporation of Partly Completed Machinery according to The Supply of Machinery (Safety) Regulations 2008, No. 1597 Annex II B

The manufacturer and person authorised to compile the relevant technical documentation

MICRO-EPSILON MESSTECHNIK GmbH & Co. KG
Königbacher Straße 15 , 94496 Ortenburg / Germany

hereby declare that the machine designated below complies with the essential health and safety requirements of the Supply of Machinery (Safety) Regulations 2008, No. 1597, including modifications to it applicable at the time of this declaration, based on its design and construction and in the version put on the market by us – to the extent that the scope of supply allows.

Machine design: Draw-wire sensor (mechanics and models with potentiometer output)

Type designation: WDS-xxx, WPS-xxx

The following essential health and safety requirements according Annex II of o.g. regulation are applied and fulfilled:
- Nr. 1.1.2 "Principles of safety integration"
- Nr. 1.7.3 "Marking of machinery"
- Nr. 1.7.4 "Instruction"

Furthermore, we declare compliance with the following directives and standards including the modifications applicable at the time this declaration is made:
- SI 2008 No. 1597: The Supply of Machinery (Safety) Regulations 2008
  - EN ISO 13857:2019 Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
- SI 2012 No. 3032: The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
  - EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

We also declare that the special technical documentation for this partially completed machine has been created in accordance with Annex VII, Part B, and commit ourselves to disclose this to the market surveillance authorities upon request.

The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive, where appropriate.

Ortenburg, Germany   Dipl.-Ing.(FH) Eduard Huber, MBA
June 21, 2023   Quality Manager

CE   UKCA

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