

Performance-Line **Measuring wheel system MWE41** **With spring bracket, contact force max. 25 N**



With incremental or absolute encoder with clamping flange \varnothing 58 mm.

Measuring wheel systems from Kübler are the ideal solution for reliable speed measurement, position detection and length measurement in applications with linear movements. These are recorded rotationally via the measuring wheel with attached encoder directly on the surface of the material to be measured and converted into linear data.

The MWE41 measuring wheel system with internal springs can be quickly and easily integrated into many applications.

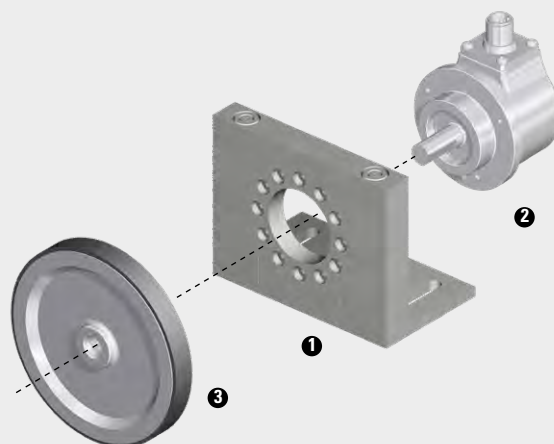


Features

- Simple and safe assembly**
 Measuring wheel system with internal springs to protect against unwanted influences for and by the springs. Encoder can be mounted on the spring bracket in 30° steps.
- Wide range of encoders**
 Incremental Sendix encoders with a max. resolution of up to 36,000 pulses/revolution as well as absolute encoders for different communication interfaces such as IO-Link or Profinet for integration in Industry 4.0 concepts.
- Suitable measuring wheels for all measuring surfaces**
 Circumference 300 mm – measuring wheel coating available with O-ring or double O-Ring, smooth or corrugated plastic, diamond knurl surface and tufted rubber.
- Contact force up to max. 25 N**
 The internal spring ensures a working range of the measuring wheel of up to 10 mm vertical to the measuring surface to compensate for tolerances.

Construction

- ❶ Spring bracket: MWE40
- ❷ Encoder: Clamping flange \varnothing 58 mm
- ❸ Measuring wheel: Circumference 300 mm (Circumference 12" on request)



Measuring wheel systems

Performance-Line **Measuring wheel system MWE41** **With spring bracket, contact force max. 25 N**

Order code with incremental encoder 8.MWE41 . 1 2 1 . XX . XXXX . XXXX

Type ① ② ③ ④ ⑤

① Measuring wheel, circumference / coating
 31 = 300 mm / diamond knurl (aluminum)
 34 = 300 mm / plastic smooth (PU)
 36 = 300 mm / tufted rubber (PU)
 37 = 300 mm / O-ring (NBR)
 38 = 300 mm / double O-ring (NBR)
 39 = 300 mm / plastic corrugated (PU)
 (Measuring wheels with circumference 12" on request)

② Mounted encoder ¹⁾
 50 = KIS50 incremental
 05 = 5805 incremental
 (other encoders on request)

③ Output circuit / supply voltage encoder
 see data sheet encoder

④ Type of connection
 see data sheet encoder

⑤ Pulse rate
 see data sheet encoder

Order code with absolute encoder 8.MWE41 . 1 2 1 . XX . XXXX . XXXX

Type ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Measuring wheel, circumference / coating
 31 = 300 mm / diamond knurl (aluminum)
 34 = 300 mm / plastic smooth (PU)
 36 = 300 mm / tufted rubber (PU)
 37 = 300 mm / O-ring (NBR)
 38 = 300 mm / double O-ring (NBR)
 39 = 300 mm / plastic corrugated (PU)
 (Measuring wheels with circumference 12" on request)

② Mounted encoder ¹⁾
 M1 = M5861
 M3 = M5863
 M8 = M5868
 M8 = M5868
 F8 = F5868
 F8 = F5868
 68 = 5868
 (other encoders on request)

③ Output circuit / supply voltage encoder
 see data sheet encoder

④ Type of connection
 see data sheet encoder





⑤ + ⑥ + ⑧ Interface specifications
 see data sheet encoder

Calculation of the linear resolution

	Measuring step (distance/pulse)	Resolution (pulses/distance)
Calculation	$\frac{\text{distance}}{\text{ppr}} = \frac{\text{Measuring wheel circumference}}{\text{Pulse number encoder}}$	$\frac{\text{ppr}}{\text{distance}} = \frac{\text{Pulse number encoder}}{\text{Measuring wheel circumference}}$
Example Measuring wheel circumference = 300 mm Pulse number encoder = 3000 ppr	$\frac{300 \text{ mm}}{3000 \text{ ppr}} = 0.1 \text{ mm / puls}$	$\frac{3000 \text{ ppr}}{300 \text{ mm}} = 10 \text{ pulses / mm}$

1) Clamping flange 58 mm / shaft ø 10 mm - only relevant for ordering an encoder as a single component.

Measuring wheel systems

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Single components			Order no.
Spring bracket MWE40		combinable with Kübler encoders: clamping flange \varnothing 58 mm incremental: Sendix Base KIS50, 5805 absolute: Sendix F58xx, M58xx, 58xx	8.MWE40.121.00.0000.0000
			
Measuring wheels		Option ❶ circumference / coating 31 300 mm / diamond knurl (aluminum) 34 300 mm / plastic smooth (PU) 36 300 mm / tufted rubber (PU) 37 300 mm / O-ring (NBR70) 38 300 mm / double O-ring (NBR70) 39 300 mm / plastic corrugated (PU) (Measuring wheels with circumference 12" on request)	8.0000.3317.0010 8.0000.3347.0010 8.0000.3367.0010 8.0000.3377.0010 8.0000.3387.0010 8.0000.3397.0010
			
Evaluation			Order no.
Preset counter Codix 924		Multifunction device: - Tachometer with limit values - Position indicators with limit values - Time preset counter	6.924.01XX.XXX
			
Accessories			Order no.
O-rings		For measuring wheels with O-ring: Measuring wheel circumference 300 mm, ❶ = 37 For measuring wheels with double O-ring: Measuring wheel circumference 300 mm, ❶ = 38	8.0000.7000.0074 8.0000.7000.0075
			

Further accessories can be found at: kuebler.com/accessories
 Cables and connectors can be found at: kuebler.com/connection-technology

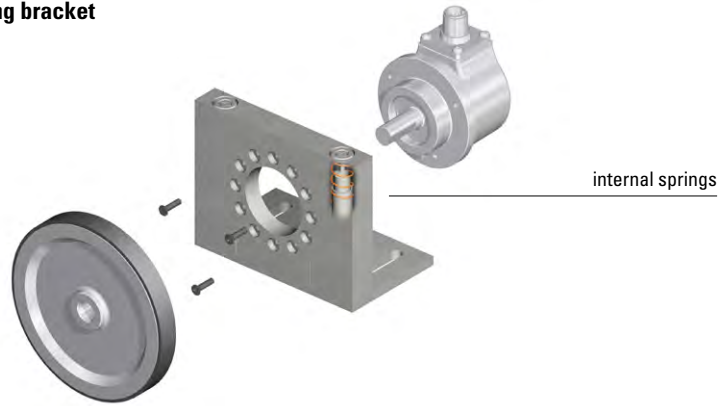
Measuring wheel systems

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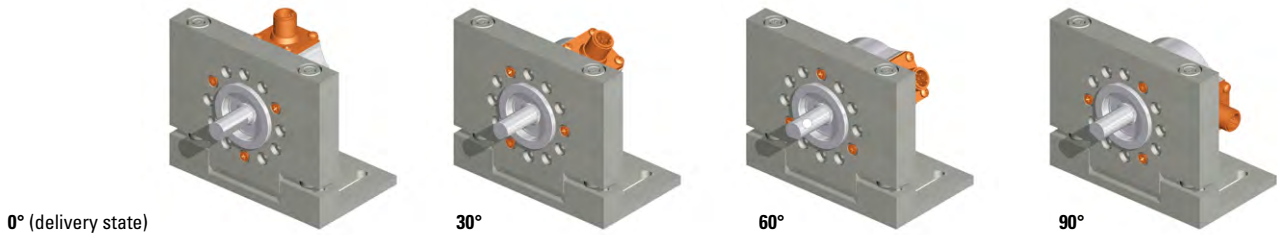
Technology in detail

Mounting options encoder on spring bracket

The encoder is attached to the spring bracket with 3 screws.



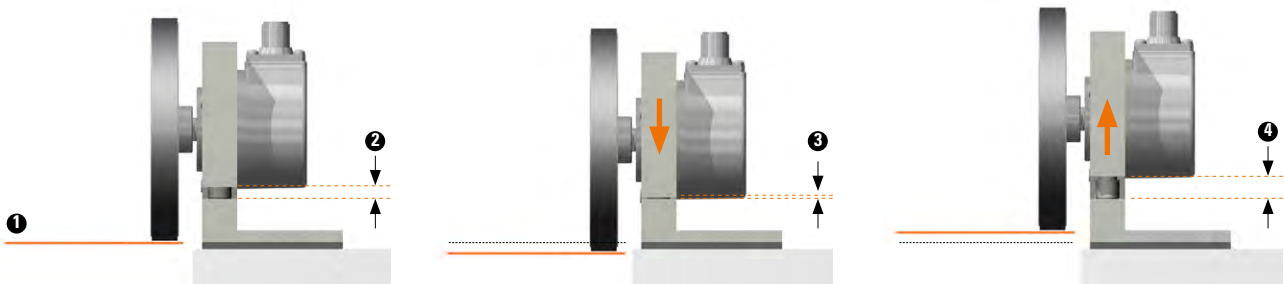
For a flexible outlet direction of the cable or connector, the encoder can additionally be mounted in 30° steps.



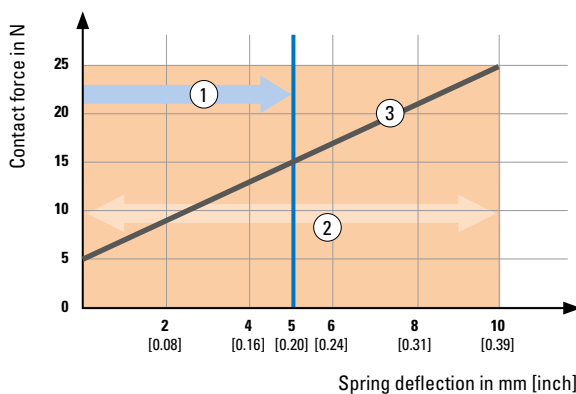
Mounting on the application

Install the MWE41 on the material to be measured ❶ in such a way that the requested preload is obtained. (ideally approx. 5 mm of the spring deflection ❷)

The working range is from 0 mm ❸ (equivalent to 5 N) to 10 mm ❹ (equivalent to 25 N)



Contact force of the measuring wheel on the material to be measured



- ❶ Preload, recommended : 15 N (approx. 5 mm deflection)
- ❷ Operating travel, max. : 10 mm
- ❸ Contact force in relation to spring deflection
(Functional principle based on 2 integrated springs)
- ❹

Measuring wheel systems

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Technical data

Mechanical characteristics spring bracket MWE40	
Materials	spring steel spring bracket aluminum
Weight	350 g
Contact force, max.	25 N
Preload, recommended	15 N (at 5 mm spring deflection)
Operating travel, max.	10 mm
Working temperature range	-20 °C ... +70 °C [-40 °F ... +176 °F]
Shock resistance acc. EN 60068-2-27	1000 m/s ² , 6 ms
Vibration resistance acc. EN 60068-2-6	100 m/s ² , 55 ... 2000 Hz

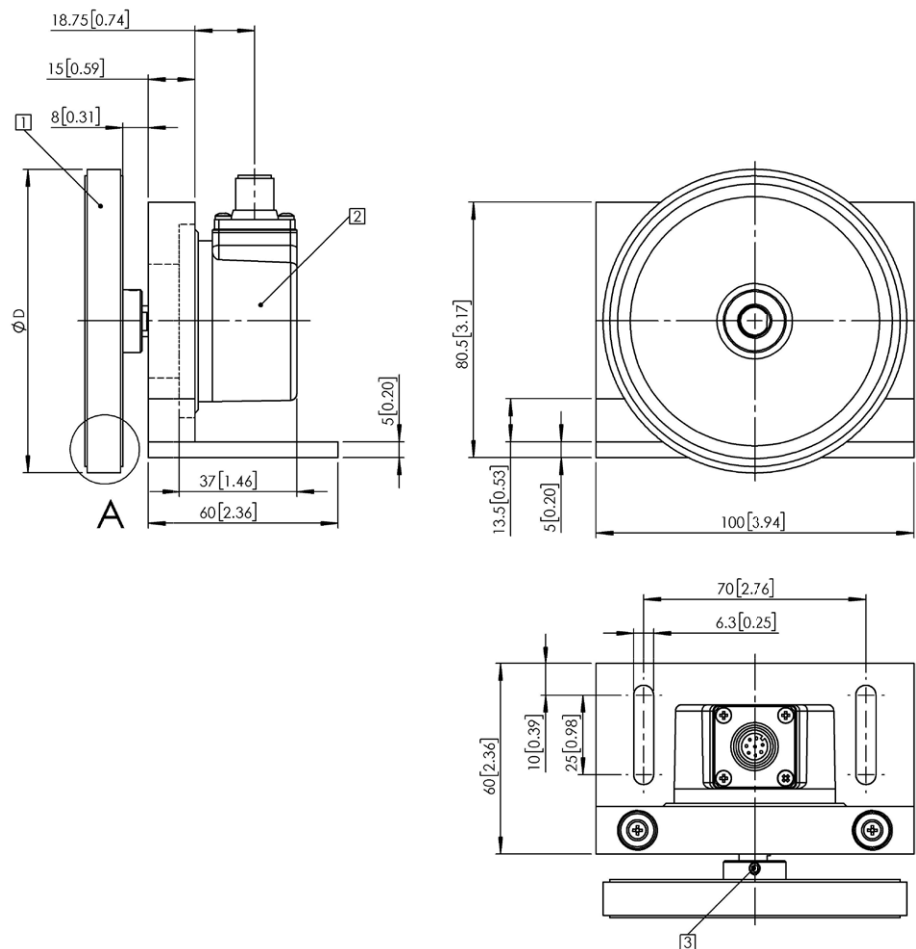
Approvals	
UL compliant in accordance with	File no. E224618
CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
UKCA compliant in accordance with	
EMC Regulations	S.I. 2016/1091
RoHS Regulations	S.I. 2012/3032

Dimensions

Dimensions in mm [inch]

Spring bracket MWE40 in combination with measuring wheel and encoder KIS50

- 1 Measuring wheel
- 2 Encoder
- 3 Fixing screw M4 x 6 for measuring wheel



Measuring wheel circumference	ø D mm [inch]
200 mm	63.7 [2.50]
300 mm	95.54 [3.76]
500 mm	159.23 [6.26]
12"	97.07 [3.82]

A for measuring wheel with coating:

Diamond knurl (aluminum)

Plastic smooth (PU)

Tufted rubber (PU)

O-ring (NBR)

Double O-ring (NBR)

Plastic corrugated (PU)

