

Compact-Line

Measuring wheel system MWE21

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Features

Compact measuring wheel system

For the tightest installation spaces with flexible mounting options: vertical, horizontal or overhead. Encoders can be mounted on both sides of the spring arm in 30° steps.

• Wide range of encoders

Incremental Sendix encoder with a max. resolution of up to 2500 pulses/revolution as well as absolute encoders for different communication interfaces such as IO-Link for integration in Industry 4.0 concepts.

- Construction
- Spring arm MWE20 with fixing screws
- 2 Encoder with clamping flange ø 36 mm or ø 40 mm
- Measuring wheel with circumference 200 mm or 6"
- Optional mounting bracket

• Suitable measuring wheels for all measuring surfaces Circumference 200 mm or 6" - measuring wheel coating available with 0-ring, smooth plastic or diamond knurl surface.

CANopen

OIO-Link

With spring arm, contact force max. 25 N

Measuring wheel system consisting of spring arm MWE20, compact incremental or absolute Sendix encoders and suitable

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

The compact measuring wheel system MWE21 with adjustable preload can be integrated very flexibly even in the tightest

measuring wheels

converted into linear data.

RS422

installation spaces.

Push-Pull

Analog

• Contact force up to max. 25 N With adjustable preload and mechanical spring deflection limitation for a long service life. The integrated spring ensures a working range of the measuring wheel of up to 16 mm vertical to the measuring surface to compensate for tolerances.





Compact-Line Measuring wh	eel system MWE21	With spring arm, contact force max. 25 N
Order code with incremental encoder KIS40	$8.MWE21 \\ Type \\ .3 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ $	
 Clamping flange of the encoder for clamping flange ø 40 mm Mounting bracket without mounting bracket with mounting bracket with mounting bracket Measuring wheel, circumference / coating (Width of tread 5.5 mm, bore ø 6 mm) 200 mm / diamond knurl (aluminum) 200 mm / Dastic smooth (PU) 200 mm / O-ring (NBR) 61 = 6" / diamond knurl (aluminum) 64 = 6" / plastic smooth (PU) 67 = 6" / O-ring (NBR) (other measuring wheels on request) 	 Mould 40 = KIS (other see 1) Outpose 1) Type see 1) Puls see 1) 	Inted encoder " S40 incremental r encoders on request) out circuit / supply voltage encoder data sheet encoder e of connection data sheet encoder e rate data sheet encoder
Urder code with incremental encoder KIS50	8.MVVE21 . / X 1 . _{Type}	XX . 50 X X . XXXX 3 0 0 0 0
 Clamping flange of the encoder f clamping flange ø 50 mm Mounting bracket = without mounting bracket = with mounting bracket = with mounting bracket Measuring wheel, circumference / coating (Width of tread 12 mm, bore ø 10 mm) 21 = 200 mm / diamond knurl (aluminum) 24 = 200 mm / plastic smooth (PU) 27 = 200 mm / O-ring (NBR) 31 = 300 mm / diamond knurl (aluminum) 34 = 300 mm / plastic smooth (PU) 37 = 300 mm / O-ring (NBR) 71 = 12" / diamond knurl (aluminum) 74 = 12" / plastic smooth (PU) 77 = 12" / O-ring (NBR) (other measuring wheels on request) 	 Moulting KIS Outpase Outpase Type See Puls See 	Inted encoder (incl. flange adapter) ²⁾ S50 incremental rencoders on request) out circuit / supply voltage encoder data sheet encoder e of connection data sheet encoder e rate data sheet encoder

Clamping flange 36 or 40 mm / shaft ø 6 mm - only relevant for ordering an encoder as a single component.
 Clamping flange 50 mm / shaft ø 10 mm - only relevant for ordering an encoder as a single component.



Compact-Line Measuring w	heel system MWE21	With spring arm, contact force max. 25 N
Order code with absolute encoder	8.MWE21 . 4 X 1 .	XX . XX X X . XXXX 8 6 6 6 6 6 1 9
 Clamping flange of the encoder 4 = for clamping flange ø 36 mm 	 Mou M1 = M3 	nted encoder ¹⁾ 661 Analog
 Mounting bracket 1 = without mounting bracket 2 = with mounting bracket 	M3 = M3 M8 = M3	663 сал ореа
 Measuring wheel, circumference / coating 21 = 200 mm / diamond knurl (aluminum) 	M8 = M3 (other	668 IO-Link
24 = 200 mm / plastic smooth (PU) 27 = 200 mm / 0-ring (NBR)	Outp see	<i>ut circuit / supply voltage encoder</i> lata sheet encoder
61 = 6" / diamond knurl (aluminum) 64 = 6" / plastic smooth (PU) 67 = 6" / O-ring (NBR)	d Type see (of connection lata sheet encoder
(other measuring wheels on request)	•+(f)+ see	Interface specifications lata sheet encoder

Calculation of the linear resolution

	Measuring step (distance/pulse)		Resolution (pulses/distance)		
Calculation	distance ppr =	Measuring wheel circumference Pulse number encoder	ppr distance	=	Pulse number encoder Measuring wheel circumference
Example 1 Measuring wheel circumference = 200 mm Pulse number encoder = 1000 ppr	200 mm 2000 ppr =	0,1 mm / puls	2000 ppr 200 mm	=	10 pulses / mm
Example 2 Measuring wheel circumference = 6 inch Pulse number encoder = 600 ppr	<u>6 inch</u> =	0,01 inch / puls	600 ppr 6 inch	=	100 pulses / inch
Example 3 Measuring wheel circumference = 300 mm Pulse number encoder = 3000 ppr	300 mm 3000 ppr =	0,1 mm / puls	3000 ppr 300 mm	=	10 pulses / mm
Example 4 Measuring wheel circumference = 12 inch Pulse number encoder = 1200 ppr	= 12 inch 1200 ppr =	0,01 inch / puls	1200 ppr 12 inch	=	100 pulses / inch

1) Clamping flange 36 or 40 mm / shaft ø 6 mm – only relevant for ordering an encoder as a single component.



Compact-Line	Measuring wheel system MWE2	21 V	Vith spring arm, contact fo	rce max. 25 N
Single components				Order no.
Spring arm MWE20		combinable	with Kübler encoders:	
		incrementa	l: Sendix Base KIS40, 3610	8.MWE20.311.00.0000.0000
		absolute:	Sendix F36xx, M36xx	8.MWE20.411.00.0000.0000
Flange adapter for clamping flange option ① = 7	For the use of encoders of size 50 or 58 mm v spring arm 8.MWE20.4x1.00.0000.0000	with the		8.0000.7000.0079
Measuring wheels		Option 🕄	circumference / coating	
for clamping flange option $0 = 3 + 4$	Width of tread 5,5 mm	21	200 mm / diamond knurl (aluminum)	8.0000.3215.0006
	Bore ø 6 mm	24	200 mm / plastic smooth (PU)	8.0000.3245.0006
		27	200 mm / O-ring (NBR70)	8.0000.3275.0006
ot ot ot		61	6" / diamond knurl (aluminum)	8.0000.3615.0006
ap ap ap		64	6" / plastic smooth (PU)	8.0000.3645.0006
		67	6" / O-ring (NBR70)	8.0000.3675.0006
			(other measuring wheels on request)	
Measuring wheels		Option 🕄	circumference / coating	
for clamping flange option 🛈 = 7	Width of tread 12 mm	21	200 mm / diamond knurl (aluminum)	8.0000.3217.0010
	Bore ø 10 mm	24	200 mm / plastic smooth (PU)	8.0000.3247.0010
		27	200 mm / O-ring (NBR70)	8.0000.3277.0010
		21	300 mm / diamond knurl (aluminum)	8.0000.3317.0010
		24	300 mm / plastic smooth (PU)	8.0000.3347.0010
		27	300 mm / O-ring (NBR70)	8.0000.3377.0010
		61	12" / diamond knurl (aluminum)	8.0000.3717.0010
		64	12" / plastic smooth (PU)	8.0000.3747.0010
		67	12" / O-ring (NBR70)	8.0000.3777.0010
			(other measuring wheels on request)	





Further accessories can be found at: kuebler.com/accessories

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









Spring travel limitation / preload deviating from the recommendation



Based on the recommended preload ① of 15 N, we recommend a working range ② of ±10 mm (corresponds to ±5 N). All technical specifications are based on these settings

If the preload is set lower or higher than the recommended 15 N (1), please note that the working range (2) in one direction may be severely restricted.







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Measuring wheel system MWE21

With spring arm, contact force max. 25 N

Technical data

Mechanical characteristics

Materials	spring spring arm	spring steel aluminum
Weight		53 g
Contact force, max.		25 N
Spring deflection, max.		50 mm
Preload, recommended		15 N (approx. 30 mm spring deflection)
Operating travel, recomme (continuous)	nded	±10 mm ¹⁾ (von der empfohlenen Vorspannung)
Spring operating life		2.0 Mio. cycles ²⁾

Approvals	
UL compliant in accordance with	File no. E224618
CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

Operating deflection is measured after preload applied and with/for continuous operations.
 Life of spring is measured with operating deflection at 1 Hz.





Measuring wheel circumference	A mm [inch]	ø B mm [inch]		
200 mm	108.4 [4.27]	63.7 [2.52]		
6"	100.8 [3.97]	48.5 [1.91]		

D for measuring wheel with coating:



Mountig bracket











\boldsymbol{D} for measuring wheel with coating:



Mountig bracket





