



## Linear measuring systems

**Linear position and speed measurement realized with different technologies.**

Whether incremental or absolute – Kübler offers both magnetically robust and optically precise measuring solutions. Our portfolio ranges from a large selection of draw-wire encoders and magnetic length measuring systems to custom length measuring sets and SIL3 certified shaft copying systems. Kübler always provides you with the optimum sensor technology for your application. That’s why we have countless ordering options and the readiness to realize modifications and special solutions for you.

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## Draw-wire encoders

		Measuring length max. in m	Dimensions mechanics in mm [inch] Depth depending on sensor type	Linearity max. [±% of measuring range]	Traverse speed max. in m/s	Wire diameter in mm [inch]	Temperature range in °C [°F]	Protection (sensor) max.	Combinable with Sensix encoder	Interchangeable installation	Absolute digital	Absolute analog	Incremental	Redundant sensors <b>new</b>	Integrated inclinometer <b>new</b>	Type of connection
	<b>A30</b> Compact-Line	0.6	30 x 30 [1.18 x 1.18]	±0.35	0.8	0.36	-10 ... +80 [+14 ... +176]	IP50	-	-	-	•	-	-	-	cable
	<b>A40/A41</b> Compact-Line	2	41 x 41 [1.61 x 1.61]	±0.25	1	0.45	-10 ... +80 [+14 ... +176]	IP65	•	-	•	•	•	-	-	cable M12 M23
	<b>A50</b> Performance-Line	1.25	50 x 50 [1.97 x 1.97]	±0.02	10	0.5	-20 ... +85 [-4...+185]	IP65	•	-	•	•	•	-	-	cable M12
	<b>B75</b> Compact-Line	3	75 x 75 [2.95 x 2.95]	±0.2	0.8	0.6	-40 ... +85 [-40...+185]	IP65	•	•	•	•	•	•	-	cable M12 M23
	<b>B80</b> Performance-Line	3	80 x 80 [3.15 x 3.15]	±0.02	10	0.5	-20 ... +85 [-4...+185]	IP65	•	•	•	•	•	-	-	cable M12 M23
	<b>C60</b> Robust-Line	4	60 x 60 [2.36 x 2.36]	±0.1	3	1	-40 ... +85 [-40...+185]	IP69k	-	-	•	•	•	•	-	cable M12
	<b>C100</b> Base-Line	5	100 x 100 [3.94 x 3.94]	±0.5	1	0.9	-40 ... +85 [-40...+185]	IP67	-	-	•	•	•	•	•	M12
	<b>C105</b> Compact-Line	6	105 x 85 [4.13 x 3.35]	±0.2	3	0.6	-20 ... +85 [-4...+185]	IP65	•	•	•	•	•	•	-	cable M12 M23
	<b>C120</b> Performance-Line	6	120 x 120 [4.72 x 4.72]	±0.02	10	0.5	-20 ... +85 [-4...+185]	IP65	•	•	•	•	•	-	-	cable M12 M23
	<b>D120</b> Robust-Line	10	120 x 120 [4.72 x 4.72]	±0.1	3	1.5	-40 ... +85 [-40...+185]	IP69k	-	-	•	•	•	•	-	cable M12
	<b>D125</b> Base-Line	10	125 x 125 [4.92 x 4.92]	±0.5	1	0.9	-40 ... +85 [-40...+185]	IP67	-	-	•	•	•	•	•	M12
	<b>D135</b> Performance-Line	42.5	135 x 135 [5.32 x 5.32]	±0.02	10	0.5	-20 ... +85 [-4...+185]	IP65	•	•	•	•	•	-	-	cable M12 M23






## Magnetic length measuring systems

	Measuring length max. in m	Accuracy max.	Resolution max. in $\mu\text{m}$	Dimensions in mm [inch]	Incremental RS422 / Push-Pull	Incremental SinCos	Absolute SSI / BiSS	Absolute fieldbus	Traverse speed max. in m/s	Temperature range in $^{\circ}\text{C}$ [ $^{\circ}\text{F}$ ]	Protection max.	Type of connection
<b>Incremental</b>												
 Sensor head, magnetic band <b>Limes LI20/B1</b>	70	dep. on measuring length 0.08 mm for 1 m	10	10 x 25 x 40 [0.39 x 0.98 x 1.57]	•	-	-	-	25	-20 ... +80 [-4 ... +176]	IP69k	cable
 Sensor head, magnetic band <b>Limes LI50/B2</b>	70	dep. on measuring length 0.1 mm for 1 m	5	10 x 25 x 40 [0.39 x 0.98 x 1.57]	•	-	-	-	16	-20 ... +80 [-4 ... +176]	IP69k	cable
<b>Absolut</b>												
 Sensor head, magnetic band <b>Limes LA10/BA1</b>	8	dep. on measuring length 0.03 mm for 1 m	1	16 x 30 x 70 [0.63 x 1.18 x 2.76]	-	•	•	•	10	-10 ... +70 [+14 ... +158]	IP64	M12
 Sensor head, magnetic band <b>Limes LA50/BA5</b>	20	dep. on measuring length 0.17 mm for 1 m	10	24 x 26 x 75 [0.94 x 1.02 x 2.95]	-	-	•	•	4	-10 ... +70 [+14 ... +158]	IP40	cable

## Measuring wheel systems Length measuring sets

	Measuring length max. in m	Accuracy max.	Resolution max. in mm	Dimensions in mm [inch]	Incremental RS422 / Push-Pull	Incremental SinCos	Absolute analogue	Absolute SSI/BISS	Absolute fieldbus	Traverse speed max.	Temperature range in °C [°F]	Protection max.	Type of connection
 Mini measuring wheel system, incremental incl. encoder	8	±0.015°	0.1	74 x 50 x 52 [2.91 x 1.97 x 2.05]	•	•	-	-	-	2.000 min <sup>-1</sup>	-20 ... +80 [-4 ... +176]	IP64	cable
 Rack and pinion incremental/ absolute incl. encoder / preset counter	8	0.5 mm	0.1	dep. on rack	•	•	-	•	-	0.5 m/s	-20 ... +80 [-4 ... +176]	IP67	cable M12 M23 MIL
 With measuring wheels incremental/ absolute incl. encoder / preset counter	8	±0.015°	0.1	dep. on the measuring wheel	•	•	-	•	-	2.000 min <sup>-1</sup>	-25 ... +80 [-13 ... +176]	IP67	cable M12 M23 MIL

## Measuring wheel systems Measuring wheels

	Circumference / ø / width [mm]					Suitable for									
	200 ±0.2 / ø 63.7 / 12	500 ±1.0 / ø 159.2 / 25	6" (152.4 ±0.2) / ø 48.38 / 12 <b>new</b>	12" (304.8 ±0.2) / ø 97.02 / 12 <b>new</b>	12" (304.8 ±0.2) / ø 97.02 / 10	Cardboard	Wood	Textile	Paper	Plastic (PVC, PE, ...)	Painted surfaces	Carpet, cables, nonwoven	Rubber, soft plastic	Wire, greased metals, steel profiles, leather	Greased metals, glass, floor coverings
 Coating: diamond knurl (aluminum)	•	•	•	•	-	•	•	•	-	-	-	-	•	-	-
 Coating: plastic (polyurethane) smooth	•	•	-	•	-	•	•	•	•	•	•	-	-	•	-
 Coating: tufted rubber (polyurethane)	•	•	-	•	-	•	•	•	•	•	-	•	-	-	-
 Coating: plastic (polyurethane) corrugated	•	•	-	•	-	•	•	•	•	•	•	-	-	-	•
 Coating: natural rubber (NR) smooth	-	-	-	-	•	•	•	-	•	•	-	-	-	-	-