

# KUEBLER - MAGNET SENSOR LI20 WITH MAGNETIC RING RI20

SERIE 8.LI20

- Robust and able to withstand vibration
- Easy to install
- High resolution
- IP67. Impervious to chips, oil, water, etc.



## PRODUCT DESCRIPTION

The combination RI20/LI20 is used to measure length via a rotary shaft, e.g. in woodturning machines, materials handling, overhead cranes, etc. This sensor is more or less totally impervious to chips, oil, dust and water and thus can be used in troublesome environments, it is sealed and has no moving parts. The sensor is fitted to read on a yoke. This yoke is available for shaft dimensions 8-30 mm. There are three different yoke sizes; 31 mm, 41.2 mm and 45 mm. The yoke RI20 has a pole distance of 2 mm. The distance between the sensor and the yoke should be 0.1 to 1.0 mm (recommended 0.4 mm). For the magnet sensor, the slope must not exceed  $\pm 3^\circ$ , the rotation must not exceed  $\pm 3^\circ$  and the offset must not exceed  $\pm 1$  mm.

The following information is required to select the right combination:

- yoke size
- max. shaft rotation speed (given the frequency to following systems)

Pulses/revolution	Yoke	Magnet sensor	Max. revolutions (rpm)
250	RI20.031.XXXX	LI20.11X1.2005	12000
1000	RI20.031.XXXX	LI20.11X1.2020	2400
2500	RI20.031.XXXX	LI20.11X1.2050	3900
1024	RI20.041.XXXX	LI20.11X1.2016	7000
360	RI20.045.XXXX	LI20.11X1.2005	12000
3600	RI20.045.XXXX	LI20.11X1.2050	2700

Please refer to the images below for ordering information.

**Order code**  
Sensor head Limes LI20

8.LI20 - X1XXX 2XXXX

1 = IP67 standard  
2 = IP68 / PPM and humidity tested  
acc. to EN 60969-3-36 (EN 60969-3-36)

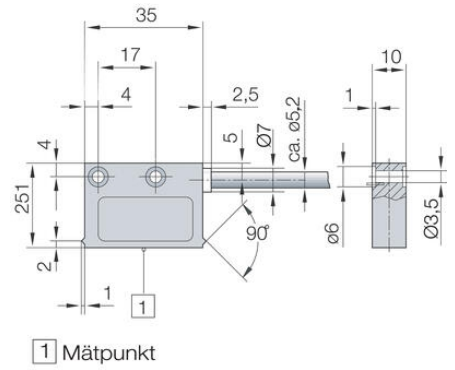
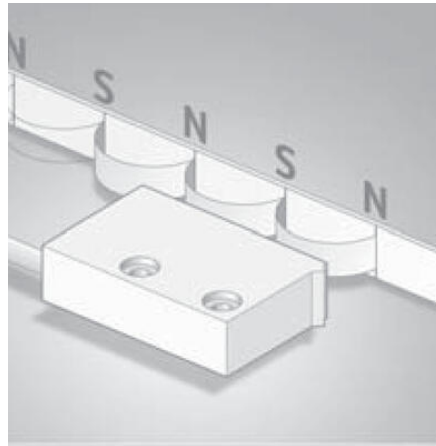
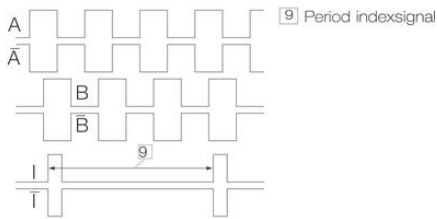
3 = Output control / power supply  
1 = Push-pull / A.B. - 24 V DC  
2 = Push-pull / A.B. - 30 V DC

1 = Type of connection  
1 = cable, 2 = (BNC) PPM  
A = radial cable, special length (P.L.R. \*)  
\*) Available special lengths Connection type A):  
3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99, 102, 105, 108, 111, 114, 117, 120, 123, 126, 129, 132, 135, 138, 141, 144, 147, 150, 153, 156, 159, 162, 165, 168, 171, 174, 177, 180, 183, 186, 189, 192, 195, 198, 201, 204, 207, 210, 213, 216, 219, 222, 225, 228, 231, 234, 237, 240, 243, 246, 249, 252, 255, 258, 261, 264, 267, 270, 273, 276, 279, 282, 285, 288, 291, 294, 297, 300, 303, 306, 309, 312, 315, 318, 321, 324, 327, 330, 333, 336, 339, 342, 345, 348, 351, 354, 357, 360, 363, 366, 369, 372, 375, 378, 381, 384, 387, 390, 393, 396, 399, 402, 405, 408, 411, 414, 417, 420, 423, 426, 429, 432, 435, 438, 441, 444, 447, 450, 453, 456, 459, 462, 465, 468, 471, 474, 477, 480, 483, 486, 489, 492, 495, 498, 501, 504, 507, 510, 513, 516, 519, 522, 525, 528, 531, 534, 537, 540, 543, 546, 549, 552, 555, 558, 561, 564, 567, 570, 573, 576, 579, 582, 585, 588, 591, 594, 597, 600, 603, 606, 609, 612, 615, 618, 621, 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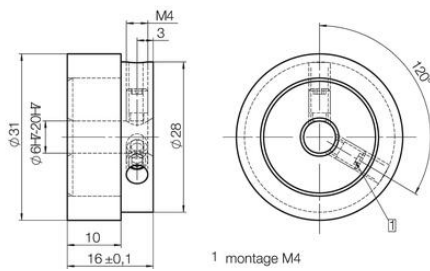
**Pin assignment:**

Signal	Wire colour
0 V, GND	white
U <sub>B</sub>	brown
A	green
$\bar{A}$	yellow
B	grey
$\bar{B}$	pink
I	blue
$\bar{I}$	red

Shield is on the housing



**Magnetring 8.RI20.031.XXXX.111, ø 31 mm**



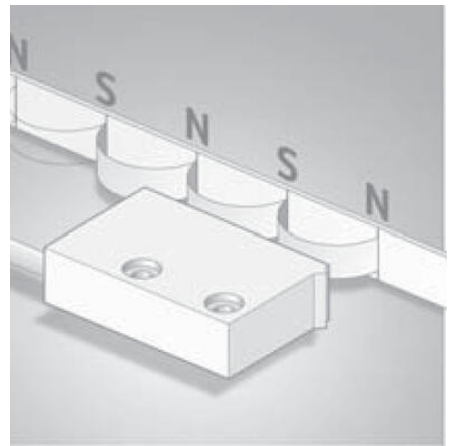
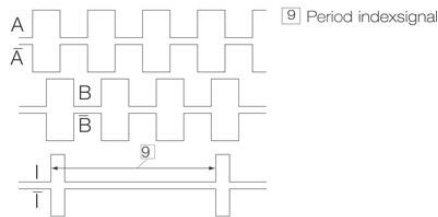
Order code	8.LI20	X1	XX	2	XXX
Sensor head Lines LI20	Type	Time	Time	Time	Time
Model	Type of connection	Reference signal	Stock type		
1 = IP67, standard	1 = cable, 2 = 3x 361 PUR	2 = Index periodical	8.LI20.111.2005		
2 = IP69K (P/N and humidity tested acc. to EN 60068-3-28, EN 60068-3-78)	A = radial cable, special length PUR (*)	3 = Index interpolator	8.LI20.111.2006		
	*) Available special lengths (connection type A): 2, 3, 6, 9, 15 m (BMA: 18, 30, 36, 39, 42, 45, 48, 51) order code expansion: XXXX = length in dm ex.: 8.LI20.111A.2005.0020 (for cable length 2 m)	4 = Interpolator factor 90°, 45°, 450°	8.LI20.111.2008		
			8.LI20.112.2005		
			8.LI20.112.2006		
			8.LI20.112.2007		
			8.LI20.112.2009		
Output circuit / power supply					
1 = 0-5V/1 A, -30 V DC					
2 = Push-pull / 4.8...30 V DC					

Order code	8.RI20	XXX	XXXX	111	Min. order quantity for non-stock types: 10 pieces
Magnetic ring RI20	Size	Time	Time	Time	
Outer diameter	Outer diameter	Outer diameter	Outer diameter	Outer diameter	Stock type
031 = 31 mm [1.22"]	090 = 90 mm [3.54"]	180 = 180 mm [7.09"]	092 = 92 mm [3.62"]	093 = 93 mm [3.66"]	8.RI20.031.0005.111
041 = 41 mm [1.61"]	100 = 100 mm [3.94"]	200 = 200 mm [7.87"]	101 = 101 mm [3.98"]	102 = 102 mm [4.02"]	8.RI20.041.0005.111
045 = 45 mm [1.77"]	120 = 120 mm [4.72"]	250 = 250 mm [9.84"]	251 = 251 mm [9.88"]	252 = 252 mm [9.92"]	8.RI20.045.0005.111
	150 = 150 mm [5.91"]	300 = 300 mm [11.81"]	301 = 301 mm [11.85"]	302 = 302 mm [11.89"]	8.RI20.045.0005.111
					8.RI20.045.0005.111
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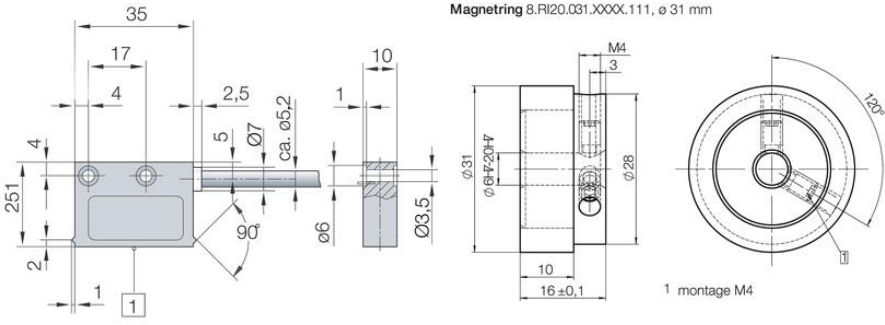
**Pin assignment:**

Signal	Wire colour
0 V, GND	white
U <sub>B</sub>	brown
A	green
$\bar{A}$	yellow
B	grey
$\bar{B}$	pink
I	blue
$\bar{I}$	red

Shield is on the housing



Magnetring 8.RI20.031.XXXX.111, ø 31 mm



1 Mätpunkt