

## KUEBLER - MAGNET SENSOR LI20 WITH MAGNETIC RING RI20 SERIE 8.RI20

- 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.X1XX.2XXX Type      a      b      c      d      e				
<b>a</b> Model	1 = IP67, standard 2 = IP68 / IP69k and humidity tested acc. to EN 60068-3-38, EN 60068-3-78	<b>c</b> Type of connection	1 = cable, 2 m [6.56'] PUR A = radial cable, special length PUR *)	<b>d</b> Reference signal	2 = Index periodical	<b>Stock types</b>
<b>b</b> Output circuit / power supply	1 = RS422 / 4.8 ... 26 V DC 2 = Push-pull / 4.8 ... 30 V DC	<b>e</b> Interpolation factor	005, 016, 020, 050			8.LI20.1111.2005 8.LI20.1111.2020 8.LI20.1111.2050 8.LI20.1121.2005 8.LI20.1121.2020 8.LI20.1121.2050
		*) Available special lengths (connection type A): 3, 5, 8, 10, 15 m [9.84, 16.40, 26.25, 32.80, 49.21'] order code expansion .XXXX = length in dm ex.: 8.LI20.111A.2005.0030 (for cable length 3 m)				

**Order code**  
**Magnetic ring RI20**

8.R120	.	XXX	.	XXXX	.	111
Type		<b>a</b>		<b>b</b>		

Min. order quantity for non-stock types: 10 pieces

**a** *Outer diameter*

031 = 31 mm [1.22"]  
041 = 41.2 mm [1.62"]  
045 = 45 mm [1.77"]

**b** *Bore diameter*

0800 = 8 mm [0.32"]	1800 = 18 mm [0.71"]	0952 = 3/8"
1000 = 10 mm [0.39"]	2000 = 20 mm [0.79"]	1587 = 5/8"
1200 = 12 mm [0.47"]	2500 = 25 mm [0.98"] <sup>3)</sup>	2540 = 1" <sup>3)</sup>
1500 = 15 mm [0.59"]	3000 = 30 mm [1.18"] <sup>3)</sup>	

### Stock types

8.RI20.031.0800.111  
8.RI20.031.1000.111  
8.RI20.031.1200.111  
8.RI20.031.1500.111  
8.RI20.041.0800.111  
8.RI20.045.1200.111  
8.RI20.045.1500.111  
8.RI20.045.2500.111  
8.RI20.045.2540.111  
8.RI20.045.3000.111

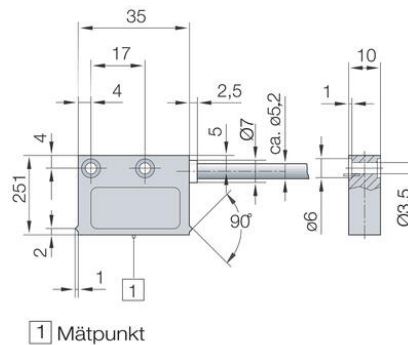
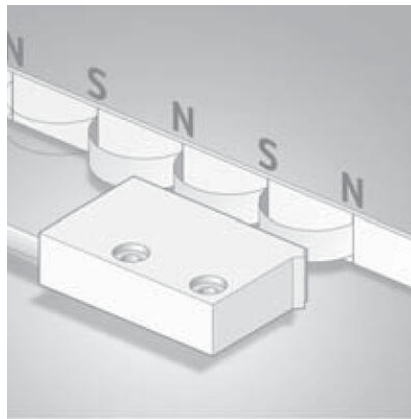
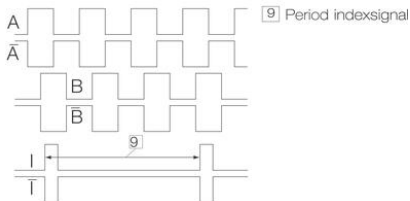
Order code		Sensor head Lines L220	
		Year	<div>8</div> <div>L</div> <div>2</div> <div>0</div> <div> <div>X</div> <div>X</div> <div>X</div> <div>X</div> </div> <div> <div>2</div> <div>X</div> <div>X</div> <div>X</div> </div>
		<div>Year</div> <div> <div>8</div> <div>L</div> <div>2</div> <div>0</div> </div>	<div> <div>X</div> <div>X</div> <div>X</div> <div>X</div> </div> <div> <div>2</div> <div>X</div> <div>X</div> <div>X</div> </div>
1 Model	2 Type of connection	3 Reference signal	Stock type
1 = IP62 standard	1 = cable, 2 = 30-90° Plug	3 = Index position	6.120.1111.2000
2 = IP68 / IP69K and humidity tested acc. to EN 60068-3-30	1 = radial cable, special length (P/N)		6.120.1111.2000
	2 = Available special lengths (connection type A)		6.120.1111.2000
	3 = 1, 6, 12, 15, 18, 24, 30, 36, 45, 60, 75, 90, 120, 150, 180, 240, 300, 420 ft		6.120.1111.2000
3 Output circuit / supply power	4 mil code expression XXXXX	4 Interpretation factor 025, 040, 050	6.120.1111.2000
3 = RoHS2 (1.4 ... 28 V DC)	4 = 0.025, 0.040, 0.050 (for cable length 30 ft)		6.120.1111.2000

Order code	8..R120	XXX	XXXX	111	Mo, outer quantity for non-stock types 10 pieces
Magnetic ring R120	Type				
Outer diameter 90 ± 0.1 mm [3.54"]	Outer diameter 9000 ± 0.04 [327.16"]	9000 ± 18 mm [357.79"]	0952 ± 38"	Stock type R 8020 010 0900.111	
94 ± 0.2 mm [3.70"]	9400 ± 18 mm [367.31"]	2000 ± 20 mm [78.74"]	1900 ± 1.5"	R 8020 011 0900.111	
94 ± 0.2 mm [3.70"]	1200 ± 12 mm [47.24"]	2000 ± 20 mm [78.74"]	2504 ± 1.5"	R 8020 012 0900.111	
	1500 ± 15 mm [59.07"]	2000 ± 20 mm [78.74"]		R 8020 013 0900.111	
				R 8020 014 0900.111	
				R 8020 015 0900.111	
				R 8020 016 0900.111	
				R 8020 017 0900.111	
				R 8020 018 0900.111	
				R 8020 019 0900.111	
				R 8020 020 0900.111	

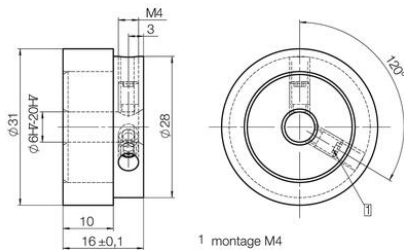
**Pin assignment:**

Signal	Wire colour
0 V, GND	white
$U_B$	brown
A	green
$\overline{A}$	yellow
B	grey
$\overline{B}$	pink
I	blue
$\overline{I}$	red

Shield is on the housing



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



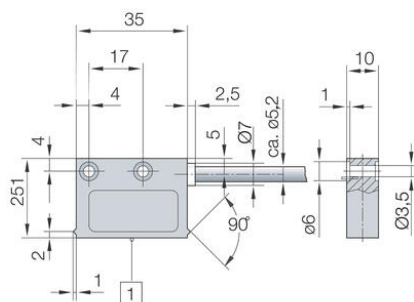
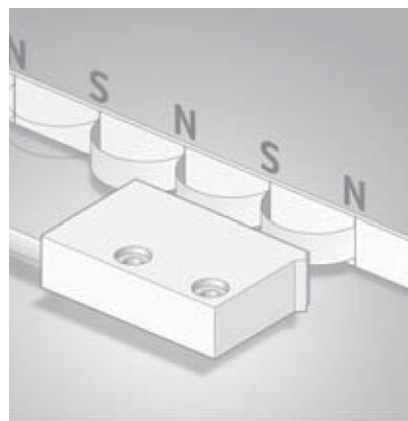
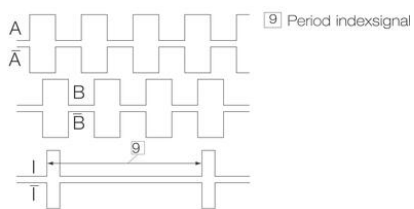
<b>Order code</b>	<b>8.L120</b>	<b>X1XX</b>	<b>2XXX</b>	
<b>Sensor head Limes L120</b>	Type	① ② ③ ④		
<b>A Model</b>	<b>C Type of connection</b>	<b>D Reference signal</b>	<b>E Stock year</b>	
1 = IP67 standard	1 = Cable, 2 m (EN 50171)	2 = Inverse periodic	1 = 8.1101.1111	
2 = IP69 / IP67 and humidity tested acc. to EN ISO 9000-1-79	A = Integral cable, special length (m*)		2 = 8.1101.1121	
	V = Available special lengths (connection type A) 2, 5, 8, 12, 15 m (3A), 16, 40, 25 m (2B), 40 m (2C) order code expansion: XXXX - length in dm, e.g. 8.L120.111A.3000.000 (for cable length 3 m)		3 = 8.1101.1131	
<b>B Output circuit / power supply</b>			4 = 8.1101.1141	
1 = NO/NC 4-20 mA, 3W DC			5 = 8.1101.1151	
			6 = 8.1101.1161	
			7 = 8.1101.1171	
			8 = 8.1101.1181	
			9 = 8.1101.1191	

Order code	8.R120	XXX	XXXX	111	Min. order quantity for non-stock types: 19 pieces
Magnetic ring R120	Type				
<b>Outer diameter</b> 121 ± 0.1 mm [3.2"] 94 ± 0.1 mm [3.7"] 94 ± 0.1 mm [3.7"]	<b>Inner diameter</b> 100 ± 0.1 mm [3.9"] 100 ± 0.1 mm [3.9"] 100 ± 0.1 mm [3.9"] 100 ± 0.1 mm [3.9"] 100 ± 0.1 mm [3.9"]	100 ± 18 mm [3.9"] 200 ± 20 mm [7.9"] 200 ± 20 mm [7.9"] 200 ± 20 mm [7.9"] 200 ± 20 mm [7.9"]	0952 ± 28° 1540 ± 15° 1540 ± 15° 1540 ± 15° 1540 ± 15°	<b>Stock type</b> R.120.041.0000.11 R.120.021.1000.11 R.120.021.0100.11 R.120.021.1500.11 R.120.041.0000.11 R.120.041.1500.11 R.120.041.2500.11 R.120.041.2540.11 R.120.040.0000.11	

**Pin assignment:**

Signal	Wire colour
0 V, GND	white
$U_B$	brown
A	green
$\overline{A}$	yellow
B	grey
$\overline{B}$	pink
I	blue
$\overline{I}$	red

Shield is on the housing



1 Mät punkt

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

