OEM Automatic Ltd
Address: Whiteacres, Whetstone Leicester, LE8 6ZG
0116 284 9900 | Orders@oem.co.uk | www.oem.co.uk

# 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 ±3°, the rotation must not exceed ±3° and the offset must not exceed ±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 | . | X | 1 | X | X | . | 2 | XXX |
|---|---|---|---|---|---|---|---|---|
| Type | | a | | b | c | | d | e |

**a** *Model*
1 = IP67, standard
2 = IP68 / IP69k and humidity tested acc. to EN 60068-3-38, EN 60068-3-78

**b** *Output circuit / power supply*
1 = RS422 / 4.8 ... 26 V DC
2 = Push-pull / 4.8 ... 30 V DC

**c** *Type of connection*
1 = cable, 2 m [6.56'] PUR
A = radial cable, special length PUR *)
*) 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)

**d** *Reference signal*
2 = Index periodical

**e** *Interpolation factor*
005, 016, 020, 050

*Stock types*
8.LI20.1111.2005
8.LI20.1111.2020
8.LI20.1111.2050
8.LI20.1121.2005
8.LI20.1121.2020
8.LI20.1121.2050

## Order code Magnetic ring RI20

| 8.RI20 | . | XXX | . | XXXX | . | 111 |
|---|---|---|---|---|---|---|
| Type | | ⓐ | | ⓑ | | |

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

**ⓐ** *Outer diameter*

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

**ⓑ** *Bore diameter*

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

*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

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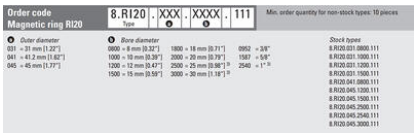
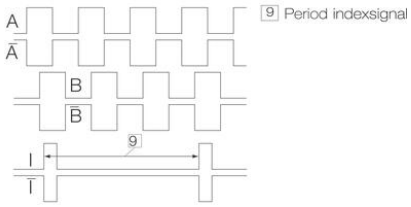
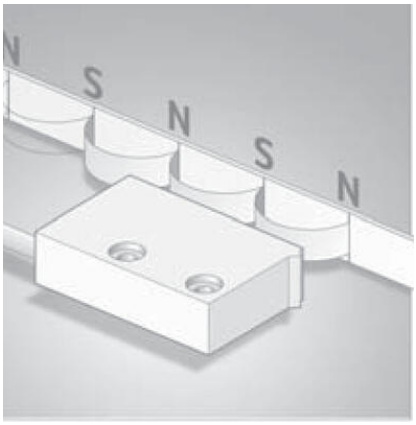


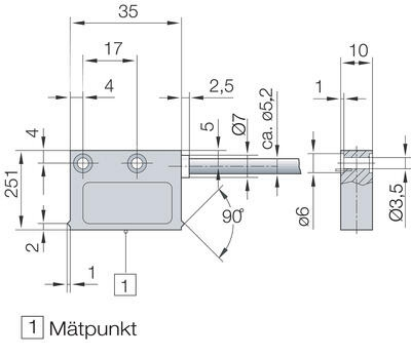

**Pin assignment:**

| 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 |

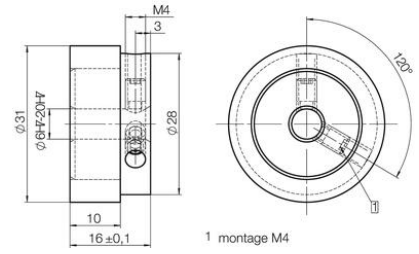
Shield is on the housing

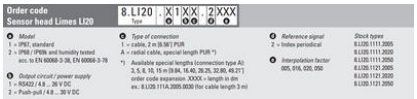


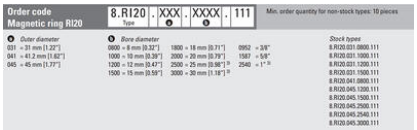




**Magnetring** 8.RI20.031.XXXX.111, ø 31 mm



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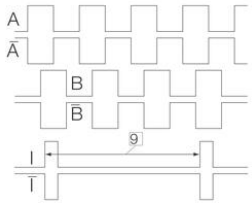
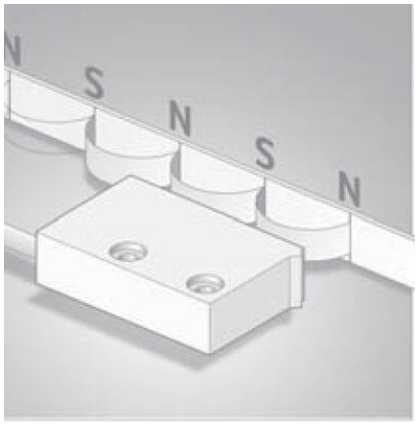
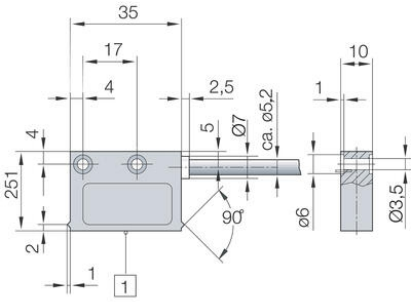
Shield is on the housing



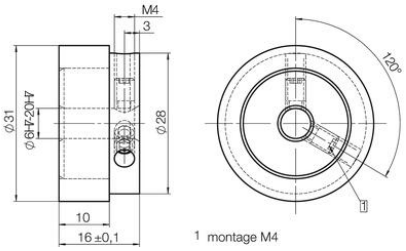

9 Period indexsignal




1 Mätpunkt

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




1 montage M4