Incremental, standard magnetic | **RLI20 (hollow shaft)** | **Push-pull / RS422**

Thanks to its installation depth of only 16 mm, the bearingless magnetic rotary encoder RLI20, comprising a magnetic ring and sensor head, is ideally suited for plants and machinery where space is very tight. The non-contact measuring principle allows for error-free use even under harsh environmental conditions, as well as ensuring a long service life.

IP68 / IP69k protection, special encapsulation technology and tested resistance to cyclic humidity and damp heat offer the highest levels of reliability, even in exposed outdoor use.
This bearingless encoder can be mounted on shafts with a diameter up to max. 30 mm.

High rotational speed | High protection level | Shock / vibration resistant | Reverse polarity protection

Hard-wearing and robust

- High shock and vibration resistance.
- Sturdy housing with IP67 protection. Option: special housing for maximum resistance against condensation (IP68 / IP69k, resistance to cyclic humidity acc. to EN 60068-3-38 as well as damp heat acc. to EN 60068-3-78).
- Non-contact measuring system, free from wear, ensures a long service life.

Fast start-up

- Requires very little installation space.
- Large mounting tolerance between magnetic band and sensor head.
- Slotted hole fixing ensures simple alignment.
- Function display via LED.

Order code RLI20

8.RLI20	.	X	1	X	X	.	XXXX	.	XXXX
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 = radial 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.RLI20.111A.0250.0080.0030 (for cable length 3 m)

d *Pulses per revolution* 1)
0250, 0360, 1000, 1024, 2500, 3600

e *Bore diameter*
0080 = 8 mm [0.32"]
0100 = 10 mm [0.39"]
0120 = 12 mm [0.47"]
0150 = 15 mm [0.59"]
0180 = 18 mm [0.71"]
0200 = 20 mm [0.79"]
0250 = 25 mm [0.98"] 2)
0300 = 30 mm [1.18"] 2)
0095 = 3/8"
0158 = 5/8"
0254 = 1" 2)

Accessories / Display type 572		Order no.
Position display, 6-digit	with 4 fast switch outputs and serial interface	**6.572.0116.D05**
	with 4 fast switch outputs and serial interface and scalable analog output	**6.572.0116.D95**
Position display, 8-digit	with 4 fast switch outputs and serial interface	**6.572.0118.D05**
	with 4 fast switch outputs and serial interface and scalable analog output	**6.572.0118.D95**

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

1) Other pulse rates on request.
2) Only possible for pulse rates 0360 and 3600.

Incremental, standard magnetic | **RLI20 (hollow shaft)** | **Push-pull / RS422**

Technical data

Mechanical characteristics

Maximum speed		12000 min^{-1}
Protection	Model 1 Model 2	IP67 acc. to EN 60529 IP68 / IP69k acc. to EN 60529, DIN 40050-9 and humidity tested acc. to EN 60068-3-38, EN 60068-3-78
Working temperature		-20°C ... +80°C [-4°F ... +176°F]
Shock resistance		5000 m/s^2, 1 ms
Vibration resistance		300 m/s^2, 10 ... 2000 Hz
Pole gap		2 mm from pole to pole
Housing (sensor head)		aluminum
Cable		2 m [6.56'] long, PUR 8 x 0.14 mm^2 [AWG 26], shielded, may be used in trailing cable installations
Status LED	green red	pulse-index error; speed too high or magnetic fields too weak
CE compliant acc. to		EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

Electrical characteristics

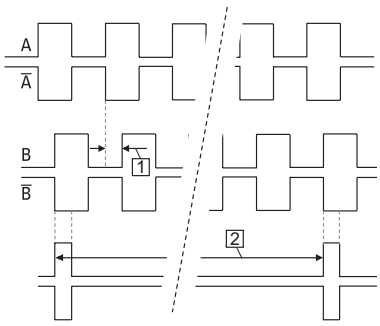
Output circuit		**RS422**	**Push-pull**
Power supply		4.8 ... 26 VDC	4.8 ... 30 VDC
Power consumption (no load)		typ. 25 mA max. 60 mA	typ. 25 mA max. 60 mA
Permissible load / channel		120 Ohm	+/- 20 mA
Min. pulse edge interval		1 µs	1 µs
Signal level	HIGH LOW	min. 2.5 V max. 0.5 V	min. +V - 2.0 V max. 0.5 V
Reference signal		index periodical [1]	
System accuracy		typ. 0.3° with shaft tolerance g6	

Pulse rate [ppr] [2]	**250, 360**	**1000**	**1024**	**2500**	**3600**
max. speed min^{-1}	12000	2400	7000	3900	2700

Signal figures

[1] Pulse edge interval: Pay attention to the instructions in the technical data

[2] Periodic index signal every 2 mm [0.08"] ; the logical assignment A, B and 0-signal can change



Terminal assignment

Output circuit	Type of connection	Cable (isolate unused cores individually before initial start-up)									
1, 2	1, A	Signal:	0 V	+V	A	Ā	B	B̄	0	0̄	⏚
		Core color:	WH	BN	GN	YE	GY	PK	BU	RD	shield [3]

+V: Encoder power supply +V DC
0 V: Encoder power supply ground GND (0 V)
A, Ā: Incremental output channel A / cosine signal
B, B̄: Incremental output channel B / sine signal
0, 0̄: Reference signal
⏚: Plug connector housing (shield)

1) At every pole change. The signal is generated by the sensor.
2) With an input frequency of the evaluation unit of 250 kHz.
3) Shield is attached to connector housing.

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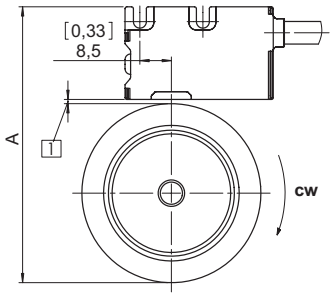
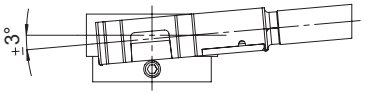
Mounting orientation and permissible mounting tolerances

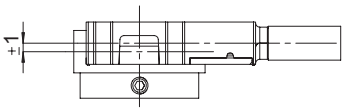
Distances



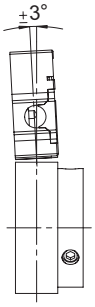
Torsion



Offset



Tilting



1 Distance sensor head / magnetic ring:
0.1 ... 1.0 (0.4 [0.02] recommended)

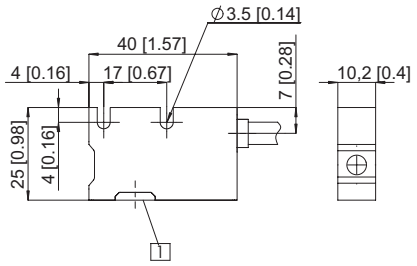
Pulse rate	A for distance sensor head / magnetic ring: = 0.4 [0.02]
250, 1000, 2500	56.4 [2.22]
1024	66.6 [2.62]
360, 3600	70.4 [2.77]

Warning: When mounting the sensor head, please ensure its correct orientation to the magnetic ring!

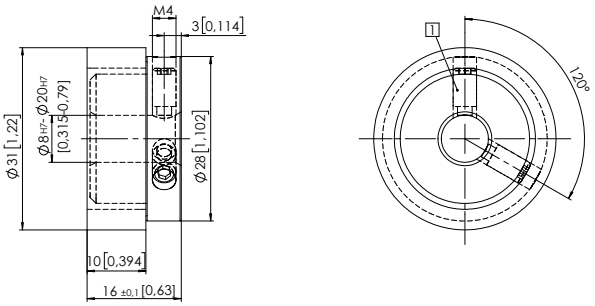
Dimensions

Dimensions in mm [inch]

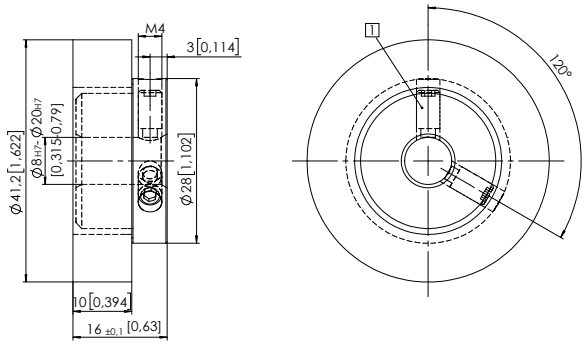
Sensor head



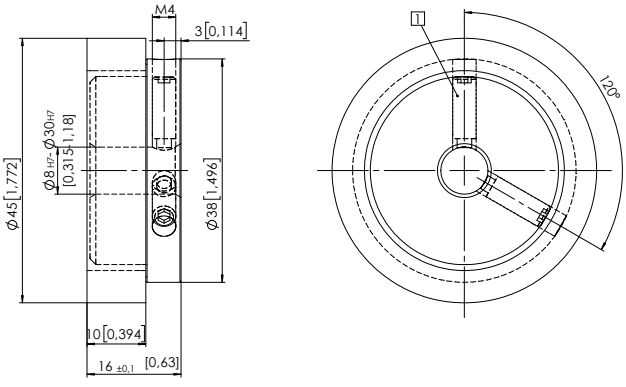
Magnetic ring for pulse rate 250, 1000 or 2500



Magnetic ring for pulse rate 1024



Magnetic ring for pulse rate 360 or 3600



1 Set screw M4

Recommended tolerance of the drive shaft diameter: g6