Incremental, large hollow shaft magnetic | **RLI200 (hollow shaft)** | **Push-pull / RS422**

Thanks to its installation depth of min. 10 mm, the bearingless magnetic rotary encoder RLI200, 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. 390 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 RLI200

8.RLI200	.	X	X	1	X	X	.	XXXXX	.	XXXX
Type		a	b		c	d		e		f

a *Magnetic ring mounting method*
1 = Press fit
2 = Hub screw [1)]
3 = Screwed flange [1)]

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

c *Output circuit / Supply voltage*
1 = RS422 / 4.8 ... 26 V DC
2 = Push-pull / 4.8 ... 30 V DC

d *Type of connection*
1 = radial cable, 2 m [6.56'] PUR
A = radial cable, special length PUR *)
*) Available special lengths [2)] (connection type A):
3, 5, 8, 10, 15, 20 m [9.84, 16.40, 26.25, 32.80, 49.21, 65.62']
order code expansion .XXXX = length in dm
ex.: 8.RLI200.1111A.07000.0760.0030 (for cable length 3 m)

e *Pulses per revolution*
700, 2240, 2800, 7000 (for hollow shaft ø 76 mm)
1600, 5120, 6400, 16000 (for hollow shaft ø 180 mm)
(e.g.: 1600 pulses => 01600)

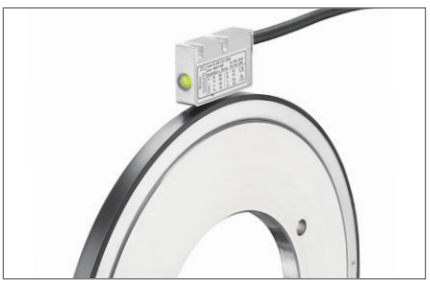
f *Hollow shaft diameter*
0760 = 76 mm [2.99"] [3)]
1800 = 180 mm [7.09"] [3)]

Optional on request
- other pulse rates
- other hollow shaft diameter (up to max. 390 mm)

Press fit

Hub screw

Screwed flange



1) On request.
2) Cable lengths >10 m only possible with supply voltage >10 V.
3) With magnetic ring mounting method 2 or 3 on request.

Incremental, large hollow shaft magnetic | **RLI200 (hollow shaft)** | **Push-pull / RS422**

Accessories / Displays

		Order no.
Codix 560, preset counter 6-digit 	- Counter, tachometer, time counter and position display in one device - Scalable display - Readable via RS232/485 interface or configurable via MODBUS or CR/LF protocol	**6.560.010.XXX** Details s. datasheet
571T touch, multifunction preset counters 8-digit 	- Measuring function for RPM, speed, speed from elapsed time, machine cycle time, throughput time (reciprocal rotary speed), as well as numerous count functions such as position display - Fast counting input (250 kHz/HTL, 1 MHz/RS422) - 4 switching outputs as limit values (response time < 1 ms) - Scalable analog output (response time < 150 ms), resolution 16 bit - Serial interface RS232 or RS485 for reading in and out the data	**6.571T.01X.XXX** Details s. datasheet

Further Kübler accessories can be found at: kuebler.com/accessories
Further Kübler cables and connectors can be found at: kuebler.com/connection-technology

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

Electrical characteristics

Output circuit		**RS422**	**Push-pull**
Supply voltage		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]	**700**	**2240**	**2800**	**7000**
max. speed min^{-1}	12000	6600	5300	2100
	1600	**5120**	**6400**	**16000**
max. speed min^{-1}	9300	2900	2300	900

Approvals

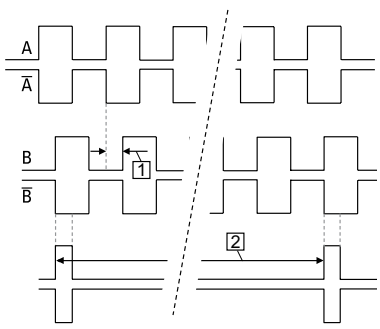
CE compliant in accordance with

EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

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



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

Incremental, large hollow shaft magnetic | **RLI200 (hollow shaft)** | **Push-pull / RS422**

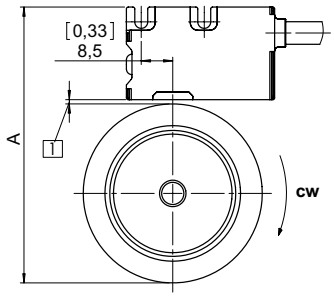
Terminal assignment

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

+V: Supply voltage encoder +V DC
0 V: Supply voltage encoder ground GND (0 V)
A, $\overline{A}$: Incremental output channel A / cosine signal
B, $\overline{B}$: Incremental output channel B / sine signal
0, $\overline{0}$: Reference signal
⏚: Plug connector housing (shield)

Mounting orientation and permissible mounting tolerances

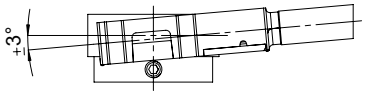
Distances



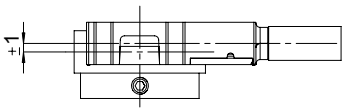
1 Distance sensor head / magnetic ring:
0.1 ... 1.0 (0.4 [0.02] recommended)

Pulse rate	A for distance sensor head / magnetic ring = 0.4 mm [0.02]
700, 2240, 2800, 7000	112.5 [4.43]
1600, 5120, 6400, 16000	227.7 [8.96]

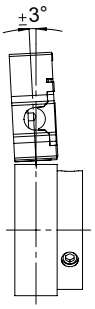
Torsion



Offset



Tilting



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

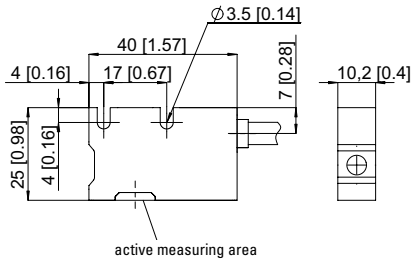
1) Shield is attached to connector housing.

Incremental, large hollow shaft magnetic | **RLI200 (hollow shaft)** | **Push-pull / RS422**

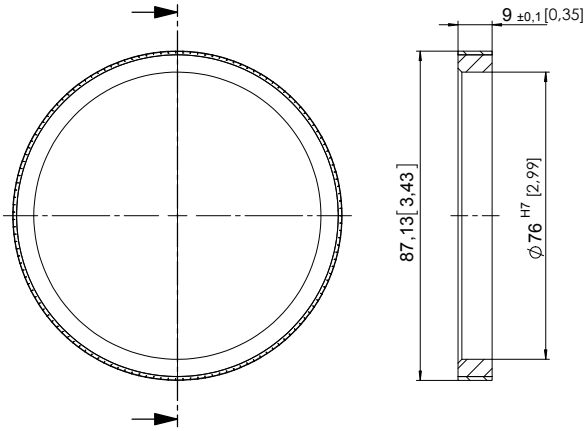
Dimensions

Dimensions in mm [inch]

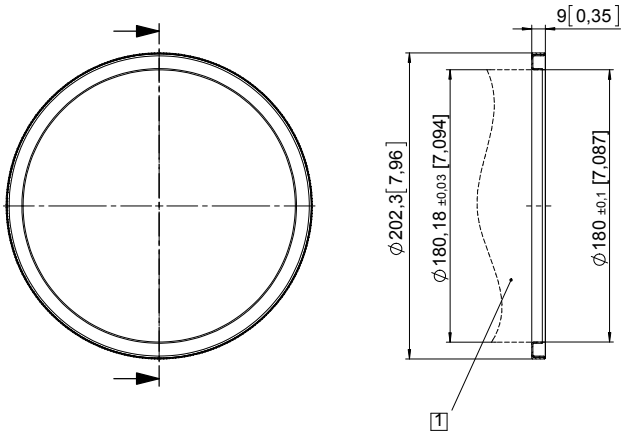
Sensor head



Magnetic ring (press fit) for pulse rate 700, 2240, 2800, 7000



Magnetic ring (press fit) for pulse rate 1600, 5120, 6400, 16000



1 Customer shaft