

Incremental Encoders

Magnetic measurement system	RI50 / LI50	Push-Pull / RS422
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Thanks to its installation depth of just 16 mm, the magnetic measurement system RI50/LI50, comprising a magnetic ring and sensor head, is ideally suited to plant and machinery where space is very tight.

In contrast to our measuring system RI20/LI20, a single zero pulse is also implemented here.



Incremental Encoders

High rotational speed	High IP value	Shock / vibration resistant	Reverse polarity protection

Hard-wearing and robust

- High shock and vibration resistance
- Protection rating IP67
- Non-contact measurement system

Fast start - up

- Function display via LED
- Large mounting tolerance between magnetic band and sensor head
- Slotted hole fixing ensures simple alignment

Selection guide Limes LI50 / Magnetic ring RI50

Pulse rates/PPR ¹⁾	Order code Magnetic ring RI50	Order code Magnetic sensor Limes LI50	max. rotational speed (electronic) ²⁾	
			without using index signal	using index signal
1000	8.RI50.031.XXXX.112	8.LI50.11X1.1050	9000	3000
2000	8.RI50.031.XXXX.112	8.LI50.11X1.1100	4000	3000
1024	8.RI50.048.XXXX.112	8.LI50.11X1.1032	9000	2000
2048	8.RI50.048.XXXX.112	8.LI50.11X1.1064	4000	2000
3600	8.RI50.055.XXXX.112	8.LI50.11X1.1100	2500	1700

Order code Magnetic sensor Limes LI50	8.LI50 Type	. 1 1 X 1 . 1 XXX
a Output circuit/ Power supply 1 = RS422 / 4.8 ... 26 V DC 2 = Push-Pull / 4.8 ... 30 V DC	b Type of connection 1 = cable PUR, 2 m length	c Reference signal 1 = separate index signal (linked with A and B)
		d Interpolation factor ¹⁾ 032, 050, 064, 100 Stock types 8.LI50.1121.1032

Order code Magnetic ring RI50	8.RI50 Type	. XXX . XXXX . 112
a Outer diameter 031 = 31 mm 048 = 48.3 mm 055 = 54.7 mm	b Bore diameter 0600 = 6 mm 1500 = 15 mm 0800 = 8 mm 1587 = 15.875 mm (5/8") 1000 = 10 mm 2000 = 20 mm 1200 = 12 mm 2500 = 25 mm ³⁾	Stock types 8.LI50.048.0600.112 2540 = 25.4 mm (1") ³⁾ 3000 = 30 mm ³⁾ 3500 = 35 mm ⁴⁾

1) The pulse rate (ppr) results from the combination of the magnetic sensor with the various outer diameters.
 2) With an input frequency of the evaluation unit of 250 kHz
 3) Only possible for outer diameters 048 and 055
 4) Only possible for outer diameter 055

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Accessory for Limes LI50: Display Type 572



Counter series for demanding applications, with two individually scalable encoder inputs. HTL or TTL in each case A, A', B, B' for count frequencies up to 1 MHz per channel. Operating modes can be selected for position or event counter, total counter, difference counter, cut-to-length display, diameter calculator, batch counter and more.

- 2 separate freely scalable count inputs - HTL or TTL; also with inverted inputs
- Max. input frequency 1 MHz/ channel (at TTL-input)
- 4 freely programmable fast solid-state outputs, each with 350 mA output current
- Step or tracking preset
- AC and DC supply voltage
- Can be used as a counter or position display with limit values
- Monitoring function, where 2 values are monitored or calculated with respect to each other
- 4 fast programmable inputs with various functions such as reset, gate, display memory, reference input or switching between the display values.
- Optional scalable analogue output 0/4 ... 20 mA, +/-10 V or 0 ... 10 V
- 2 auxiliary power supplies for sensors: 5.2 V DC and 24 V DC
- Standard interface RS232

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 analogue 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 analogue output

6.572.0118.D95

Mechanical characteristics	
Speed	max. 12000 min ⁻¹
Protection acc. to EN60529	IP67 (housing)
Working temperature	-20°C ... +80°C
Shock resistance	500 g / 1 ms
Vibration resistance	30 g / 10...2000 Hz
Pole gap	5 mm from pole to pole
Housing (Sensor)	Zinc die-cast
Cable	2 m long, PUR 8 x 0.14 mm ² , shielded, may be used in trailing cable installations
Status LED	Green pulse-index Red Error; Speed too high or magnetic fields too weak (8.LI50.XXXX.X020 and 8.LI50.XXXX.X050)
CE compliant acc. to	EN 61 000-6-2, EN 61 000-6-4 and EN 61 000-6-3
RoHS compliant acc. to	EG guideline 2002/95/EG

Electrical characteristics		
Output circuit	RS422	Push-Pull
Supply voltage	4.8...26 V DC	4.8...30 V DC
Power consumption (no load)	typ 25 mA / max. 60 mA	
Permissible load/channel	max. 20 mA	
Min. pulse edge interval	1 µs	
Reference signal	fixed	
System accuracy	typ 0.3° with shaft tolerance g6	

Terminal assignment

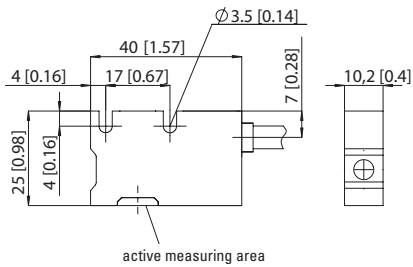
Signal	0 V GND	U _B	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	shield
Cable colour	WH	BN	GN	YE	GY	PK	BU	RD	shield is on the housing

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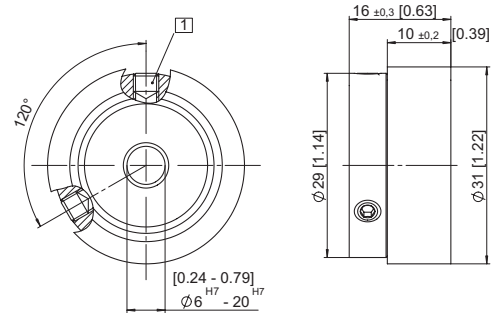
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Dimensions

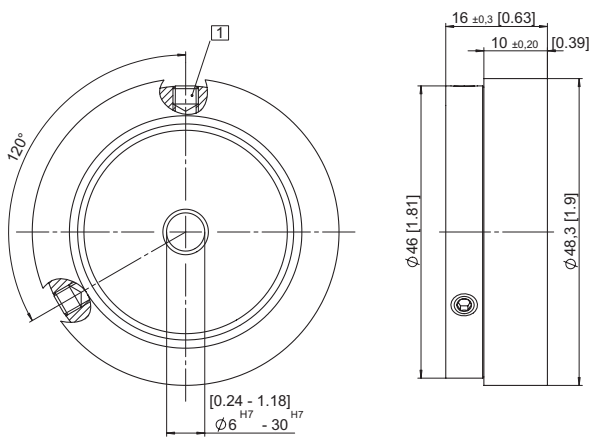
Measuring head Limes LI50



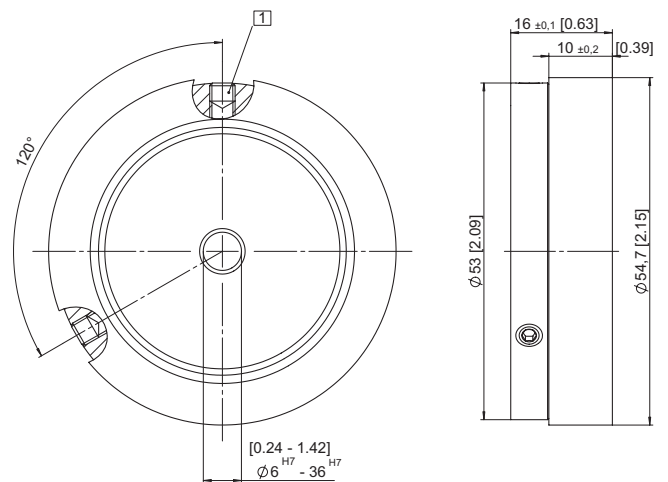
Magnetic ring, \varnothing 31 mm, 8.RI50.031.XXXX.112



Magnetic ring, \varnothing 48.3 mm, 8.RI50.048.XXXX.112



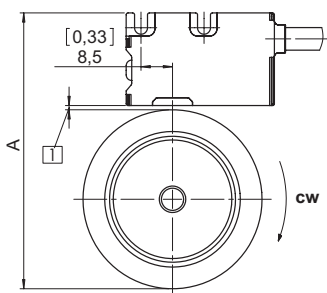
Magnetic ring, \varnothing 54.7 mm, 8.RI50.055.XXXX.112



1 M4 Set screw

Mounting orientation and permissible mounting tolerances

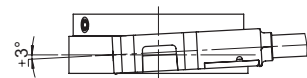
Distances



1 Distance Sensor / Magnetic ring:
0.1 ... 1.5 mm (1 mm recommended)

Magnetic ring	A for distance sensor / magnetic ring = 1 mm
8.RI50.031.XXXX.111	57.0
8.RI50.048.XXXX.111	74.3
8.RI50.055.XXXX.111	80.7

Torsion



Offset



Tilting



Warning:

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