Linear Measuring Technology Linear magnetic measurement system



Linear magnetic measurement system LIMES LI20/B1









High IP Tempera

Temperature Shock/vibra-

- Reverse polarity

Robust

Increased ability to withstand vibrations and rough installation

Eliminates machine downtime and repairs High shock and vibration resistance, thanks to noncontact technology.

Stays sealed even when subjected to harsh everyday use. Offers security against failures in the field.

Solid housing with up to IP 67 protection.

Compact

- Installation depth only 10 mm, width of magnetic band 10 mm
- Installation height only 28 mm
 Can be used even where space is very tight

Simple installation

- Fast start-up of the measuring system
 Easy fixing of the magnetic band and the sensor head
- Easy mounting with large tolerances possible

Distance of sensor head to magnetic band from 0.1 to 1.0 mm Tolerates lateral misalignment + 1 mm

Tolerates lateral misalignment + 1 mm Warning signal when magnetic field is too weak (LED)

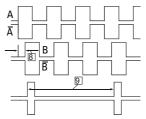
Technical data magnetic sensor LIMES LI20:

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Output circuit:	Push-Pull		RS422	
Supply voltage:	4,8 30 V DC		4,8 26 V	DC
Load/channel, max cable length:	±20 mA, max. 30	m	120 Ohm,	RS422 standard
Current consumption (without load):	typ. 25 mA, max.	60 mA		
Short circuit proof outputs 1):	yes		yes ²⁾	
Min. Pulse interval:	1 μs (edge interval)	corresponds to 4 µs/c	ycle (see si	nal figures below)
Output signal:		$A, \overline{A}, B, \overline{B}, I, \overline{I}$		
Reference signal:		Index periodical		
System Accuracy:		typ. $\pm 200 \mu m$, max. (L in [m], up to L = 5		
Repeat accuracy:		±1 increment		
Resolution and speed ³⁾ :		100 µm (quadruple), 25 µm (quadruple), 10 µm (quadruple),	max. 4 m/	3
Permissible alignment tolerance		see draft "Mountin	g toleranc	es"
Gap sensor / magnetic band:		0.1 1.0 mm (0,4 m	ım recomn	nended)
Offset:		max. ±1 mm		
Tilting:		max. 3 °		
Torsion:		max. 3 °		
Working temperature:		−20 +80 °C		
Shock resistance:		500g/1 ms		
Vibration strength:		30 g/10 2000 Hz		
Protection class:		IP 67 according to	DIN 60 529	(housing)
Humidity:		100 %, condensation	on possible)
Housing:		Zinc die-cast		
Cable:		2 m , PUR $8 \times 0.14 \text{ mm}^2$, shielded,		
		may be used in trailing cable installations		
Status-LED:		Green: Pulse-index; Red: Error		
		Speed too high or magnetic fields too weak		ields too weak
		(for sensors		
		8.LI20.XXXX.X 020 a	nd 8.LI20.>	(XXX.X 050)
CE-compliant according to:		EN 61 000-6-1, EN 6 EN 61 000-4-8 (mag		

Function principle:



Signal figures



- 9 periodic index signal (every 2 mm)
 The logical assignment A, B and I-Signal can change
- 8 Min. Pulse interval: pay attention to the instructions in the technical data
- 1) With supply voltage correctly applied
- 2) A max. of one channel only may be short-circuited: (when UB=5 V, a short circuit to another channel, 0 V, or +UB is permissible.) (when UB=5-30 V, a short circuit to another channel or to 0 V is permissible.)
- 3) At the listed rotational speed the min. pulse interval is 1µs, this corresponds to 250 kHz. For the max. rotational speed range a counter with a count input frequency of not less then 250 kHz. should be provided.

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RoHS compliant acc. to EU guideline 2002/95/EG

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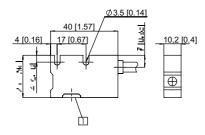
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Technical data magnetic band *LIMES* B1:

Pole gap	2 mm from pole to pole
Dimensions:	Width: 10 mm, Thickness: 1.7 mm incl. masking tape
Temperature coefficient:	(11±1)x10 ⁻⁶ /K
Temperature ranges:	working temperature: -20+80 °C
	storage temperature: −40+80 °C
Mounting:	adhesive joint
Measuring:	0,1 m (to receive an optimal result of measurement, the magnetic
	band should be ca. 0.1 m longer than the desired measuring length) $$
Bending radius:	≤ 50 mm

Dimensions:

Magnetic sensor LIMES LI20:



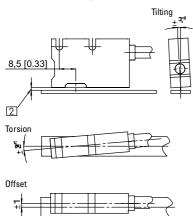
1 active measuring area

Pin assignment

	Signal	Wire colour		
	0 V, GND	white		
	U_{B}	brown		
	Α	green		
	Ā	yellow		
	В	grey		
	\overline{B}	pink		
	1	blue		
	ī	red		
Shield is on the housing				

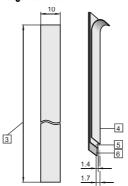


Permissible Mounting tolerances:



2 Distance Sensor / Magnetic band: 0.1... 1.0 mm (0.4 mm recommended)

Magnetic band LIMES B1:



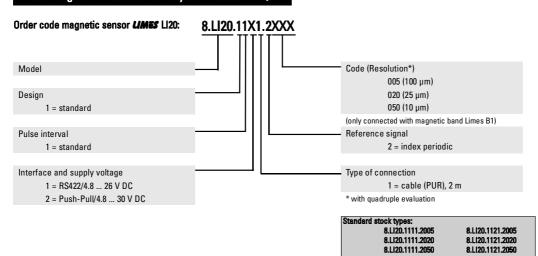
- 3 length L, max. 90 m
- 4 masking tape
- 5 magnetic band
- 6 carrier band

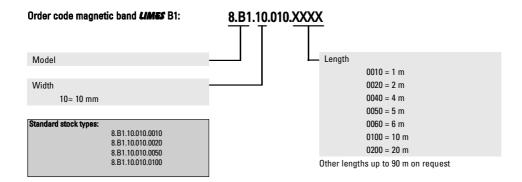
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Display Type 572 for *LIMES* LI20:



Counter series for demanding applications, with two individually scalable encoder inputs. HTL or TTL in each case A, \overline{A} , B, \overline{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
- 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 RS 232

Order code specification:

Position display, 6 digits, with 4 fast switch outputs and serial interface:

6.572.0116.D05

Position display, 6 digits, with 4 fast switch outputs and serial interface and scalable analogue output:

6.572.0116.D95

Position display, 8 digits, with 4 fast switch outputs and serial interface:

6.572.0118.D05

Position display, 8 digits, with 4 fast switch outputs and serial interface and scalable analogue output:

6.572.0118.D95

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