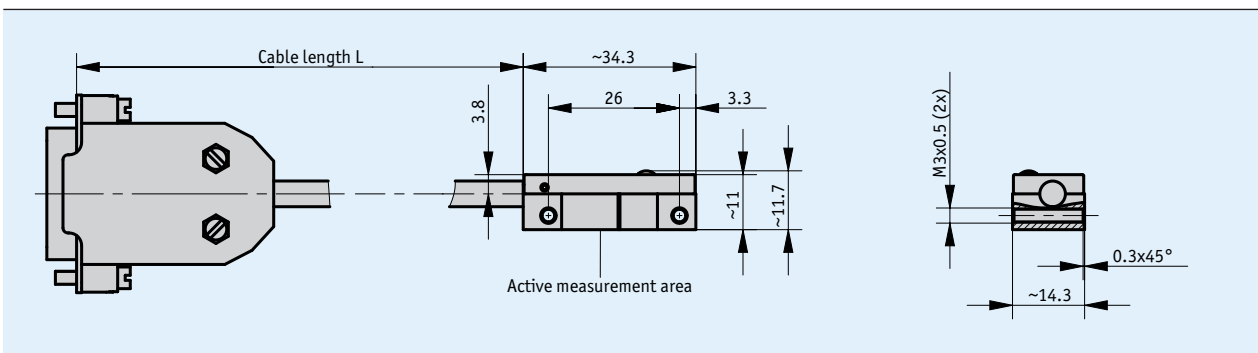
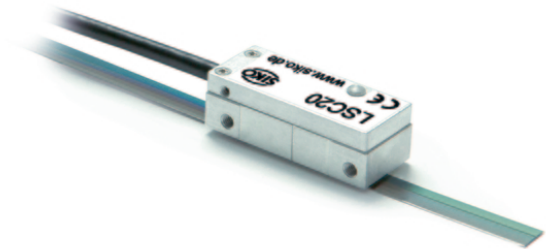


## Profile

- very compact design
- Integrated diagnosis LED for simple assembly
- High band/sensor distance
- Scale length up to 30000 mm
- Reference points can be positioned flexibly
- Optional end marks (metal strip) and a limit switch integrated in the sensor - no additional wiring required
- Use in 10<sup>-8</sup> torr vacuum is possible



## Mechanical data

| Feature                      | Technical data   | Additional information              |
|------------------------------|--|-------------------------------------|
| Housing                      | Aluminum   |                                     |
| Sensor/band reading distance | 1 mm $\pm$ 0.15  |                                     |
| Cable length                 | 1.0, 3.0 and 5.0 m<br>Double-shielded cable, $\phi$ 3.6 mm | bending cycles                      |
| Cable sheath                 | PVC  | Sensor                              |
| Cable bending radius         | $\geq$ 20 mm   | static operation, dynamic operation |
| Weight                       | $\sim$ 8 g   | Sensor without cable                |
|                              | 14 g/m   | Cable                               |

## Electrical data

| Feature             | Technical data                                       | Additional information   |
|---------------------|--|--|
| Operating voltage   | 5 V DC $\pm$ 5 %                                     |  |
| Current consumption | $\sim$ 140 mA  | with terminating resistor  |
| Output signals      | A, /A, B, /B, R, /R<br>left and right limit switches | according to RS422<br>High/Low active (programmable) PP3.3 Volt max. CVTTL compatible<br>High > 2.4 V DC, Low < 0.4 V DC |
| output frequency    | $\leq$ 7.5 MHz                                       | per channel  |
| Standstill noise    | 1 increment(s)                                       | 1 MHz (per channel)  |
| Signal period       | 20 $\mu\text{m}$                                     |  |
| Type of connection  | D-Sub  | 15-pole  |

### System data

| Feature         | Technical data  | Additional information |
|-----------------|-----------------|------------------------|
| Resolution      | 0.1 µm, 0.05 µm |                        |
| System accuracy | ±5 µm /m        |                        |
| Repeat accuracy | ±1 increment(s) | bidirectional          |
| Sensor type     | TS20            |                        |
| Travel speed    | 3 m/s           | at 0.1 µm resolution   |
|                 | 1.5 m/s         | at 0.05 µm resolution  |

### Ambient conditions

| Feature               | Technical data                              | Additional information                                 |
|-----------------------|---|--|
| Operating temperature | 0 ... 70 °C                                 |  |
| Storage temperature   | -20 ... 85 °C                               |  |
| Relative humidity     | 10 ... 90 %                                 | at 20 °C   |
| EMC                   | EN 55011                                    |  |
|                       | EN 61000-4-2, -3, -6                        | interference resistance / immission                    |
|                       | EN 61000-4-4                                | emitted interference / emission                        |
| Protection category   | IP54  | EN 60529, only with mating connector or protective cap |
| Shock resistance      | <3000 m/s <sup>2</sup> , 0.5 m/s half shaft | EN 60068-2-27  |
| Vibration resistance  | <300 m/s <sup>2</sup> , 17 Hz               | EN 60068-2-6 (axial, radial)                           |

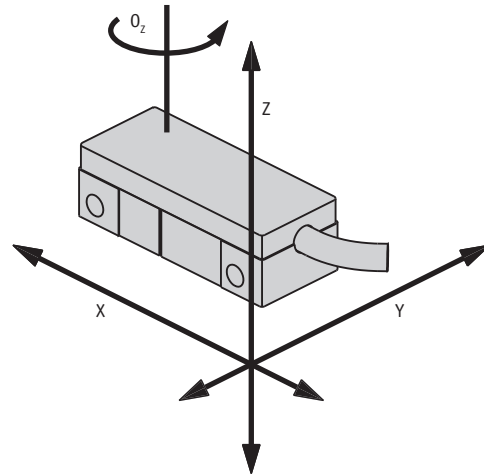
### Pin assignment

| Signal | PIN |
|--------|-----|
| nc     | 1   |
| GND    | 2   |
| nc     | 3   |
| /R     | 4   |
| /B     | 5   |
| /A     | 6   |
| +5 V   | 7   |
| +5 V   | 8   |
| GND    | 9   |
| L2     | 10  |
| L1     | 11  |
| R      | 12  |
| B      | 13  |
| A      | 14  |
| nc     | 15  |

### Hint for mounting

Orientation and tolerances of sensor mounting

| Axis       | Tolerance       |
|------------|-----------------|
| X          | Sense of motion |
| Y          | $\pm 0.20$ mm   |
| Z          | $\pm 0.15$ mm   |
| $\alpha_x$ | $\pm 1.0^\circ$ |
| $\alpha_y$ | $\pm 1.0^\circ$ |
| $\alpha_z$ | $\pm 2.0^\circ$ |



symbolic representation

### Order

#### ■ ordering information

the following system components are required:

Optical Scale TS20

[www.siko-global.com](http://www.siko-global.com)

#### ■ Ordering table

| Feature      | Ordering data | specification        | Additional information |
|--------------|---------------|----------------------|------------------------|
| Resolution   | 0.1           | 0.1 $\mu\text{m}$    |                        |
|              | 0.05          | 0.05 $\mu\text{m}$   |                        |
| End position | E0            | without end position |                        |
|              | EM            | with end position    |                        |
| Cable length | ...           | 1.0, 3.0, 5.0 m      |                        |

#### ■ Order key

LSC20 - **LD** -  -  - **E8X** -

A                      B                      C

**Scope of delivery:** Mounting instructions, distance gage, D-SUB connector 15-pin

#### you can find accessories:

|                            |  |
|----------------------------|--|
| Diagnostic Tool DT20       | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Sensor Adapter 87173       | on request   |
| Tape Assembling Tool 87206 | on request   |
| Reference Marker 87207     | on request   |
| Limit Marker 87211         | on request   |