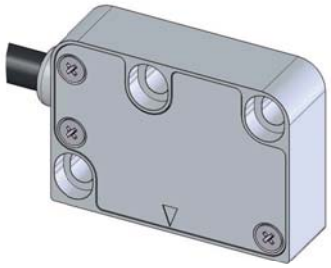
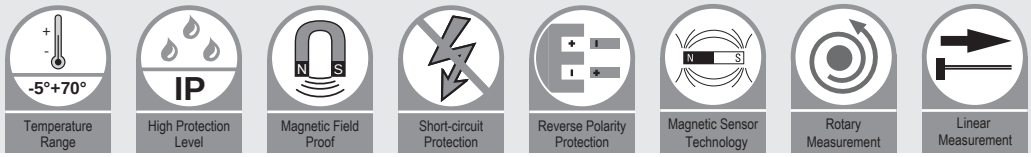
# Magnetic sensor

## L2-SI0



Description:

- Non-contact measurement
- High resolution
- Linear or rotary measurement
- High IP protection
- Operating temperature -5°C ... +70°C




### Highlight:

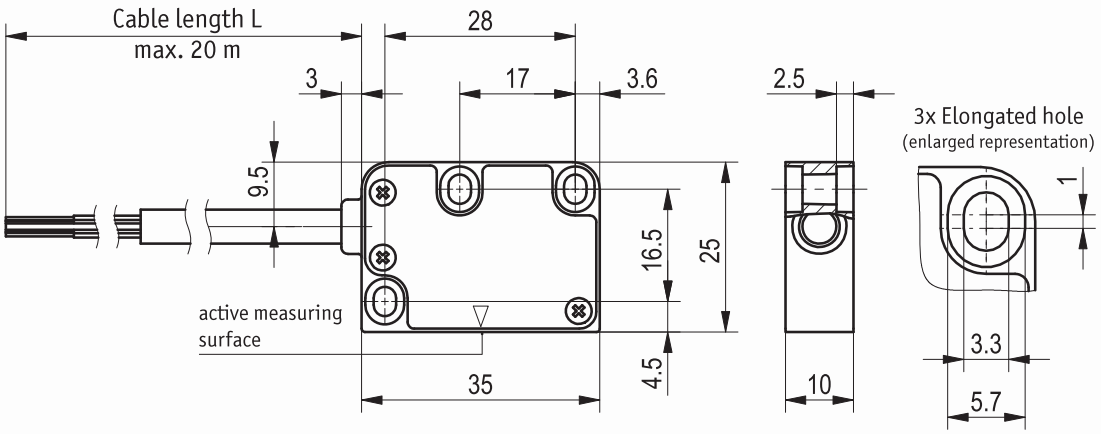
- Resolution up to 0.001 mm
- Real-time signal processing
- Scale L2-TI0 (linear) / L2-RI0 (radial)
- Reference signal periodic

| Technical data | | Additional information |
|---|---|---|
| Mechanical data | | |
| Housing | zinc die cast | |
| Sensor/band reading distance | 0.1 ... 2 mm | |
| Sensor/ring reading distance | 0.1 ... 2 mm | |
| Cable sheath | PVC | 4, 5, 6, 8 wire |
| Pole length | 5 mm | |
| | | |
| Electrical data | | |
| Operating voltage | 5 ... 30 V DC | polarity protection |
| Current consumption | <25 mA | at 24 V DC; unloaded |
| Output circuit | PP, LD (RS422), TTL | TTL + LD only with operating voltage 5 V DC |
| Output signals | A, /A, B, /B, I, /I | |
| Output signal level high | >UB - 2.5 V<br>>2.5 V | PP<br>LD, TTL |
| Output signal level low | <0.8 V | |
| Index marks | periodic | |
| Real-time requirement | real-time signal processing | |
| Type of connection | flying leads | |
| | | |
| System data | | |
| Resolution | 0.001, 0.005, 0.01, 0.025, 0.05, 0.1 mm | |
| System accuracy | ±0.025 mm<br>±1° | |
| Repeat accuracy | ±10 µm | |
| Measuring range | ∞ | |
| Circumferential speed | depends on resolution and pulse interval | see table |
| Travel speed | depends on resolution and pulse interval | see table |
| | | |
| Ambient conditions | | |
| Operating temperature | -5 ... 70 °C | |
| Storage temperature | -30 ... 70 °C | |
| Relative humidity | 100 % | condensation permitted |
| EMC | EN 61000-6-2<br>EN 61000-6-4 | interference resistance/immission<br>emitted interference/emission |
| Protection category | IP67 | EN 60529 |
| Vibration resistance | 100 m/s², 50 Hz | EN 60068-2-6 |
| | | |
| Accessory: | 2x allen screw (ISO 4762-M3x14) | separately enclosed |
| | 2x lock washer (3 DIN 7980) | separately enclosed |

# Magnetic sensor

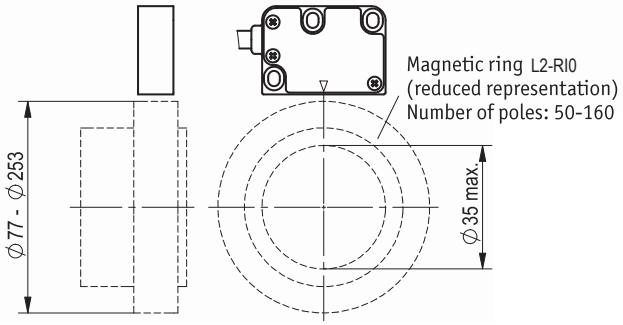
## L2-SI0

| Resolution in mm | Travel speed in m/s | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.001 | 0.01 | 0.03 | 0.05 | 0.10 | 0.20 | 0.32 | 0.80 | 1.60 | 3.20 | 4.00 |
| 0.005 | 0.06 | 0.13 | 0.25 | 0.50 | 1.00 | 1.60 | 4.00 | 8.00 | 16.00 | 20.00 |
| 0.010 | 0.12 | 0.25 | 0.50 | 1.00 | 2.00 | 3.20 | 8.00 | 16.00 | 25.00 | 25.00 |
| 0.025 | 0.30 | 0.63 | 1.25 | 2.50 | 5.00 | 8.00 | 20.00 | 25.00 | 25.00 | 25.00 |
| 0.050 | 0.61 | 1.25 | 2.50 | 5.00 | 10.00 | 16.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| 0.100 | 1.21 | 2.50 | 5.00 | 10.00 | 20.00 | 25.00 | 25.00 | 25.00 | 2500 | 25.00 |
| Pulse interval (µs) | 66.00 | 32.00 | 16.00 | 8.00 | 4.00 | 2.50 | 1.00 | 0.50 | 0.25 | 0.20 |
| Count. frequ. (kHz) | 3.79 | 7.81 | 15.63 | 31.25 | 62.50 | 100.00 | 250.00 | 500.00 | 1000.00 | 1250.00 |




Cable assignment signals inverted with index signal

| Color | Signal |
|---|---|
| red | A |
| orange | B |
| blue | I |
| brown | +UB |
| black | GND |
| yellow | /A |
| green | /B |
| violet | /I |




## Order Code

L2 - S I 0 5 1 - 1 1 5 3 - 0 0 1 0
a b c d e f g h

**a** Sensor type
I = Incremental

**b** Resolution type
0 = Standard

**c** Pole length
5 = 5+5mm

**d** Pulse interval µs
0 = 0.2
1 = 0.25
2 = 0.5
3 = 1
4 = 2.5
5 = 4
6 = 8
7 = 16
8 = 32
9 = 66

**e** Reference signal
0 = without
1 = Periodic index

**f** Output circuit / Power supply
2 = RS422 / 5-30 VDC
3 = Push-Pull without inverted signal / 5-30 VDC
5 = Push-Pull with inverted signal / 5-30 VDC

**g** Cable length*
2 = 2m
3 = 3m
5 = 5m

**h** Resolution
1 = 0.001 / 1250 (linear/radial scale)
2 = 0.005 / 250 (linear/radial scale)
3 = 0.025 / 50 (linear/radial scale)
4 = 0.05 / 25 (linear/radial scale)
5 = 0.1 / 12.5 (linear/radial scale)

* max.20m (TTL max.5m).

Note: The internal translation module can generate fast counting pulses, the lengths of which are limited by the pulse interval. The follower electronics must be adjusted accordingly. Select the pulse interval in advance, if necessary. With a 4-increment wide (= 360°) index/reference signal, index/reference signal interpretation can be made after the 5th counting step (increment) only. Corresponding time delay has to be considered when power is switched on.