

Magnetic sensor MSK1100



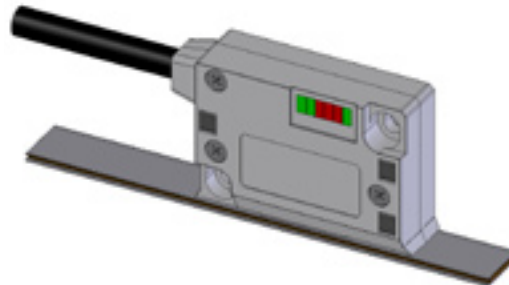
Contactlessly measuring read head with two integrated limit switches and digital signal output. Combined with the magnetic strip MB100 the sensor establishes an open and robust measuring system with very high resolution and a sensing distance of up to 0.4mm.

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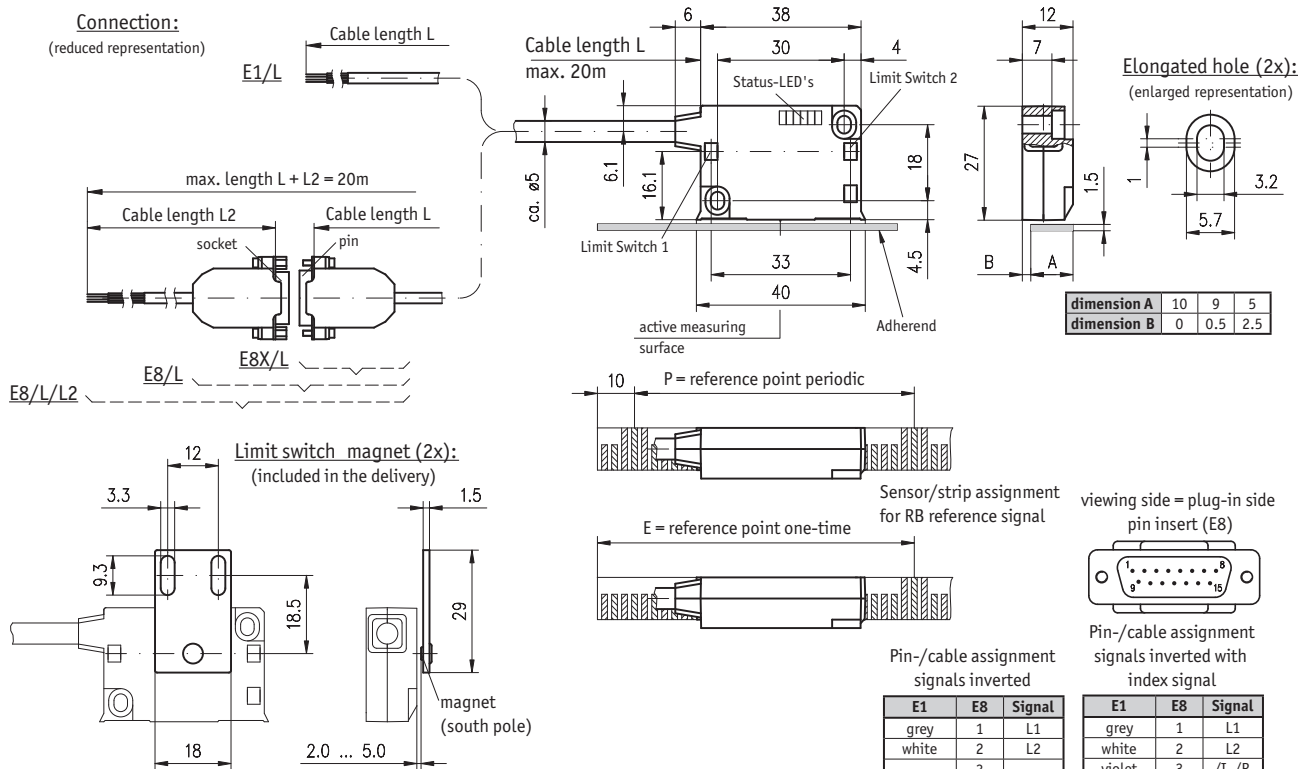
Features:

- Resolution up to 0.2µm
- Status LED display
- Real-time signal processing
- Reference signal fixed or periodic
- robust metal housing
- two integrated limit switches

| Feature | Order text | Additional information |
|------------------------|------------|--|
| Operating voltage | 10 | 6.5VDC ... 30VDC |
| | 11 | 4.75VDC ... 6VDC |
| Connection | E1 | E8X; E8 |
| | | |
| Cable length L (in m) | ... | max. 20m standard 1,0m |
| Cable length L2 (in m) | ... | L + L2 = max. 20m |
| Reference signal | 0 | without |
| | I | periodic index |
| | RB | reference fixed, scanning on tape side |
| Resolution in µm | 1 | 0.2; 2; 5 |
| Pulse interval in µs | 1.00 | 0.25; 0.5; 2,0 |

Your ordering: MSK1100 - A G

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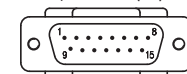
Note: The internal translation module can generate fast counting pulses, the lengths of which are limited by the pulse interval. The follower electronics must be adjusted accordingly. Select the pulse interval in advance, if necessary.

| Resolution in μm | Travel speed V_{max} (m/s) | | | |
|----------------------------------|-------------------------------------|--------|--------|--------|
| 0.2 | 0.64 | 0.32 | 0.16 | 0.08 |
| 1 | 3.20 | 1.60 | 0.80 | 0.40 |
| 2 | 6.40 | 3.20 | 1.60 | 0.80 |
| 5 | 16.00 | 8.00 | 4.00 | 2.00 |
| Pulse interval (μs) | 0.25 | 0.50 | 1.00 | 2.00 |
| Count. frequ. (kHz) | 1000.00 | 500.00 | 250.00 | 125.00 |

Pin-/cable assignment signals inverted

| E1 | E8 | Signal |
|-----------|----|--------|
| grey | 1 | L1 |
| white | 2 | L2 |
| --- | 3 | --- |
| --- | 4 | --- |
| green | 5 | /b |
| orange | 6 | B |
| red | 7 | A |
| yellow | 8 | /A |
| --- | 9 | --- |
| black | 10 | GND |
| --- | 11 | --- |
| brown | 12 | +UB |
| --- | 13 | --- |
| screening | 14 | --- |
| --- | 15 | --- |

viewing side = plug-in side pin insert (E8)



Pin-/cable assignment signals inverted with index signal

| E1 | E8 | Signal |
|-----------|----|--------|
| grey | 1 | L1 |
| white | 2 | L2 |
| violet | 3 | /L, /R |
| blue | 4 | I, R |
| green | 5 | /b |
| orange | 6 | B |
| red | 7 | A |
| yellow | 8 | /A |
| --- | 9 | --- |
| black | 10 | GND |
| --- | 11 | --- |
| brown | 12 | +UB |
| --- | 13 | --- |
| screening | 14 | --- |
| --- | 15 | --- |

Technical data

Mechanical data:

| | | |
|--------------|----------------------------|---|
| Housing | zinc die casting | |
| Sensor cable | PUR, drag chain-compatible | alternating bending strength $\geq 4 \times 10^5$ double strokes; bending radius min. $r > 5 \times$ cable diam.; $V = 30$ double strokes/min |

Electrical data:

| | | |
|-------------------------------|-------------------------------------|---|
| Power supply | 6,5VDC ... 30VDC ; 4,75VDC ... 6VDC | |
| Power consumption | <25mA without load | |
| Output signals | A; /A; B; /B; I; /I bzw. R; /R | |
| Output circuit | LD – line driver RS422 | |
| Realtime requirements | real-time signal processing | |
| Index mark | periodic, fixed | |
| Limit switch L1/L2 | NPN (open collector) End = lo | max. 50VDC/50mA max. 0,1W power loss |
| Interference protection class | 3 | IEC-61000-6-2 |
| Test mark | CE | |

Environmental conditions :

| | | |
|---------------------------------|--------------------------------------|-------------------------|
| Temperature coefficient (strip) | $(11 \pm 1) \times 10^{-6}/\text{K}$ | |
| Working temperature | -10°C ... +70°C (sensor) | -20°C ... +70°C (strip) |
| Storage temperature | -30°C ... +80°C (sensor) | -40°C ... +70°C (strip) |
| Humidity | 100% rF, condensation permitted | |
| Type of protection | IP67 | |

System data:

| | | |
|---------------------------|--|---|
| Pole length | 1mm | |
| Suitable magnetic tape | MB100 | |
| Travel speed | depending on resolution and pulse interval | |
| System accuracy | $\pm 10 \mu\text{m}$ | |
| Repeat accuracy | max. $\pm 5 \mu\text{m}$ | |
| Sensor/magnetic strip gap | 0,1 - 0,4mm 0,1 - 0,2mm | reference signal 0 + I reference signal RB |