

- Cost effective non-contacting absolute encoder
- IP68 protection degree for harsh environments, IP69K on request
- Modbus/RS485, SSI & Analogue output
- Programmable resolution
- Self-diagnostics on tape distance & integrity
- Measuring length up to 1250 mm



SMAX • SMAZ

ENVIRONMENTAL SPECIFICATIONS

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|------------------------------|--|
| Shock: | 250 g, 6 ms acc. to CEI EN 60068-2-27 |
| Vibrations: | 10 g, 5-2000 Hz acc. to CEI EN 60068-2-6 |
| Protection: | IP68 |
| Operating temperature range: | -25°C +85°C (-13°F +185°F) |
| Storage temperature range: | -40°C +100°C (-40°F +212°F) |

MECHANICAL SPECIFICATIONS

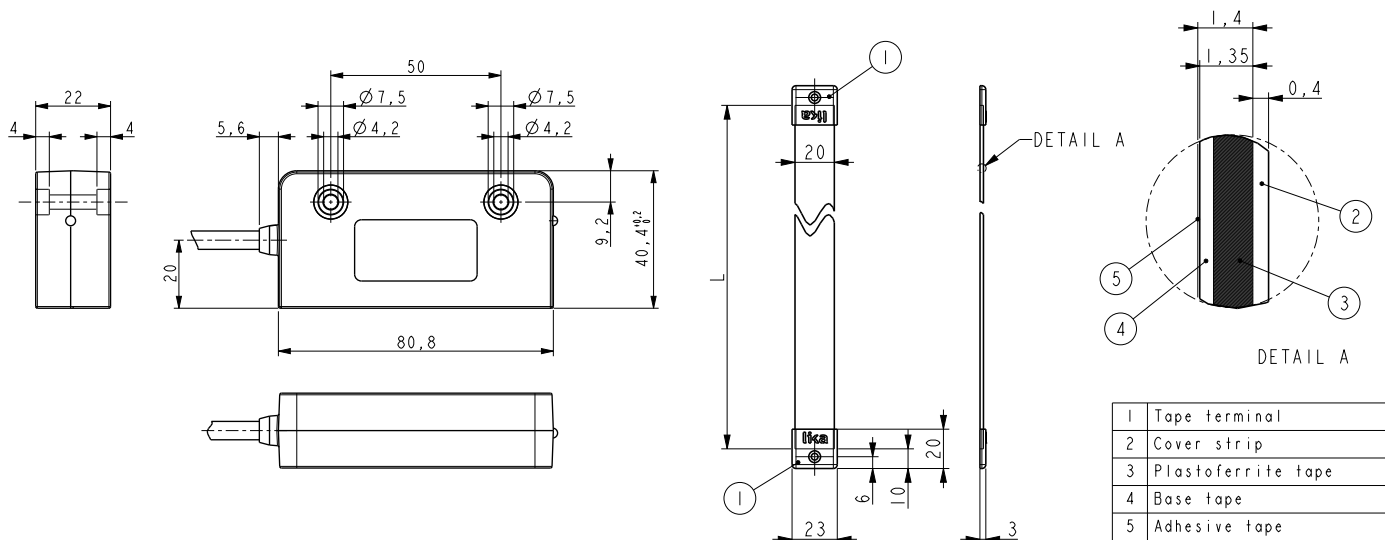
| | |
|----------------------------|---|
| Dimensions: | see drawing |
| Housing material: | Macromelt OM 646-EN |
| Electrical connection: | Lika Hi-flex cable M8 1,0 m or M12 8 pin inline plug |
| Gap between sensor/tape: | 0.1 ÷ 2.0 mm |
| Travel speed (mechanical): | 5 m/s max. |
| Measurement length: | SMAX: 600 mm max., SMAZ: 1250 mm max. Measurement length = tape length - 80 mm |
| Options: | • additional cable |

ELECTRICAL SPECIFICATIONS

| | |
|--------------------|---|
| Resolution: | programmable or fix 1.25, 1.0, 0.5, 0.1 mm |
| Sensor accuracy: | Modbus, SSI: typical $\pm 160 \mu\text{m}$ ($\pm 250 \mu\text{m}$ max.) Analogue output: typical < 0.5% (1% max.) |
| Repeat accuracy: | ± 1 increment |
| Output circuits: | analogue 4-20mA, 0-10V, Modbus/RS485, SSI |
| Position refresh: | 100 μs |
| Power supply: | Modbus, SSI: +10Vdc +30Vdc Analogue output: +13Vdc +30Vdc |
| Power consumption: | 1 W max. |
| Protection: | against inversion of polarity and short-circuit (except AI1 and AV2 circuits) |
| EMC: | acc. to EN 61000-6-2 level 3 |
| Functions: | SSI: zero setting, counting direction Modbus: preset, counting direction, scaling, baud-rate Analogue: Teach-in of output range |

ACCESSORIES

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| MTAX-A301: | Magnetic tape for SMAX |
| MTAZ-A302: | Magnetic tape for SMAZ |
| KIT LKM-1439: | Set of tape terminals (10 pcs) |
| EM12F8: | M12 8 pin mating connector |
| EC-M12F8-LK-M8-050: | cordset 5 meters with M12 conn. |
| EC-M12F8-LK-M8-100: | cordset 10 m. with M12 conn. |



SMAX • SMAZ

MTA-A301 • MTA-A302

Order code sensor - SSI output

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|--------------|---|----------|---|-----------|---|-----------|------------|
| SMAX SMAZ | - | XXX a | - | XXXX b | - | XXXX c | /Sxxx d |
|--------------|---|----------|---|-----------|---|-----------|------------|

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| <p>a OUTPUT CIRCUITS & POWER SUPPLY</p> <p>BG2 = Binary, SSI MSB aligned, +10Vdc +30Vdc</p> <p>GG2 = Gray, SSI MSB aligned, +10Vdc +30Vdc</p> | <p>b RESOLUTION</p> <p>1250 = 1,25 mm</p> <p>1000 = 1,0 mm</p> <p>0500 = 0,5 mm</p> <p>0100 = 0,1 mm</p> | <p>c CABLE TYPE & LENGTH</p> <p>L010 = cable output 1 m (standard)</p> <p>Lxx0 = cable out. x m (max. length 10m)</p> <p>M005 = 0,5 m cable + M12 8 pin inline plug</p> <p>M020 = 2 m cable + M12 8 pin inline plug</p> | <p>d CUSTOM VERSION</p> |
|--|---|--|--------------------------------|

Order code sensor - Modbus/RS485, Analogue output

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|--------------|---|----------|---|-----------|---|-----------|------------|
| SMAX SMAZ | - | XXX a | - | XXXX b | - | XXXX c | /Sxxx d |
|--------------|---|----------|---|-----------|---|-----------|------------|

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| <p>a OUTPUT CIRCUITS & POWER SUPPLY</p> <p>MB2 = Modbus/RS485, +10Vdc +30Vdc</p> <p>AI1 = 4-20 mA (10 bit), +5Vdc ±5</p> <p>AV2 = 0-10V (10 bit), +10Vdc +30Vdc</p> | <p>b RESOLUTION</p> <p>OPRG = programmable</p> | <p>c CABLE TYPE & LENGTH</p> <p>L010 = cable output 1 m (standard)</p> <p>Lxx0 = cable out. x m (max. length 10m)</p> <p>M005 = 0,5 m cable + M12 8 pin inline plug</p> <p>M020 = 2 m cable + M12 8 pin inline plug</p> | <p>d CUSTOM VERSION</p> |
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Order code - Magnetic tape

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|--------------|---|-----------|---|---------|---|-------------|---|--------|---|--------|---|--------|---|----------|------------|
| MTAX MTAZ | - | XXXX a | - | XX b | - | XXXXXX c | - | X d | - | X e | - | X f | - | XXX g | /Sxxx h |
|--------------|---|-----------|---|---------|---|-------------|---|--------|---|--------|---|--------|---|----------|------------|

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| <p>a CODING</p> <p>A301 = SMAX absolute coding (MTAX)</p> <p>A302 = SMAZ absolute coding (MTAZ)</p> | <p>b WIDTH</p> <p>20 = 20 mm</p> | <p>c PROFILE LENGTH</p> <p>000280 = 280 mm (ML = 200) only for MTAX</p> <p>000380 = 380 mm (ML = 300) only for MTAX</p> <p>000680 = 680 mm (ML = 600) only for MTAX</p> <p>001330 = 1330 mm (ML = 1250) only for MTAZ</p> | <p>d BIADHESIVE</p> <p>B = supplied</p> <p>N = not supplied</p> | <p>e PRINTING</p> <p>P = standard</p> <p>S = custom</p> | <p>f COVER STRIP</p> <p>C = supplied</p> <p>N = not supplied</p> | <p>g ACCURACY CLASS</p> <p>050 = ± 35µm/m</p> | <p>h CUSTOM VERSION</p> |
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| Document release | Date | Description |
|------------------|---------------|----------------|
| 1.0 | December 2023 | New order code |