

DST53-AxxxL

Performance strain sensor with IO-Link interface

DST53-A###L

Overview

- IO-Link interface for individual and application specific parameterization
- Minimal influence on the machine structure due to low stiffness
- Specifically adaptable measuring ranges up to $\pm 2000 \mu\text{m/m}$
- Integrated amplifier electronics
- Output signal IO-Link with 2 x I/O
- Bore hole distance 53 mm
- M12 connector, 5 pin, male



Technical data

General data

| | |
|---------------------|----------------------------|
| Nominal strain | 0 ... 2000 $\mu\text{m/m}$ |
| Non-linearity | < 0.3 % |
| Repeatability | < 0.1 % |
| Mechanical mounting | 4 x M6 screws |

Mechanical data

| | |
|---|---|
| Overload | 150 % |
| Fatigue strength | >10 Mio cycles at 0...100% FS |
| Sensor stiffness | 260 N @ 250 $\mu\text{m/m}$ 200 N @ 1000 $\mu\text{m/m}$ 130 N @ 2000 $\mu\text{m/m}$ |
| Weight | 135 g |
| Material sensor body | 1.7225, chemically nickel plated |
| Material housing | Stainless steel, 1.4301 |
| Compensated for thermal expansion coefficient | $11.1 \cdot 10^{-6} \text{ 1/K}$ |
| Electrical connection | M12, 5 pin, male |

Environmental conditions

| | |
|-------------------------------------|--|
| Operating temperature range | -40 °C ... 85 °C |
| Storage temperature range | -40 °C ... 85 °C |
| Protection class EN 60529, ISO20653 | IP 65 |
| Vibration IEC 60068-2-6 | 10 ... 57 Hz: 1.5 mm p-p, 58 ... 2000 Hz: 10 g |
| Random IEC 60068-2-64 | 20 ... 1000 Hz: 0.1 g^2/Hz |
| Shock IEC 60068-2-27 | 50 g / 11 ms, 100 g / 6 ms |

Electrical data

| | |
|--------------------------|---------------|
| Output signal | IO-Link |
| Signal polarity positive | Tension |
| Bridge resistance | 350 Ω |
| Supply voltage | 18 ... 30 VDC |

Electrical data

| | |
|-----------------------------|---------|
| Current consumption | < 40 mA |
| Reverse polarity protection | Yes |
| Short circuit protection | Yes |
| Measuring resolution | 14 bit |
| Sampling rate input | 8 kS/s |
| Cut-off frequency (3 db) | 1000 Hz |

IO-Link interface

| | |
|-----------------------|---|
| IO-Link version | 1.1 |
| IO-Link port type | Class A |
| Baud rate | 230,4 baud (COM3) |
| Process data length | 32 bit |
| Cycle time | $\geq 1 \text{ ms}$ |
| SIO-mode | Yes |
| Process data (cyclic) | Process Value Scale exponent SSC 1 SSC 2 Quality Alarm |

IO-Link features

| | |
|----------------------|--|
| Parameterizable | Unit (N, kg, $\mu\text{m/m}$) selectable Teach-in Offset/ Tare Correlation to known force Functions I/O's selectable |
| Additional functions | Low pass filter Peak value memory Sample and hold Two digital switching points (SSC) Remote operation |
| Additional data | Diagnostic data Error detection |

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Performance strain sensor with IO-Link interface

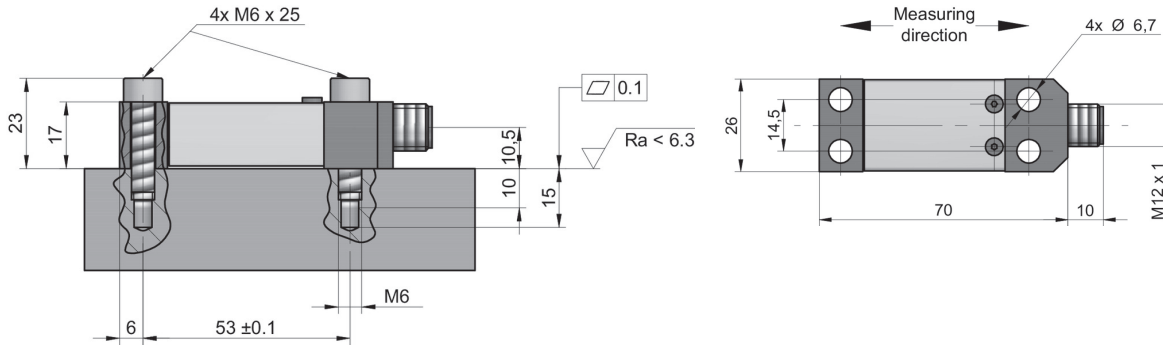
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Technical data

Compliance and approvals

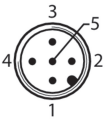
Conformity CE
UL

Dimensional drawings (mm)



Electrical connection

| Pin-number | Signals |
|------------|---------|
| 1 | L+ |
| 2 | DI/DQ |
| 3 | L- |
| 4 | C/Q |
| 5 | n. c. |



Ordering key - Configuration possibilities see website

| | DST53 | - | A | ### | L |
|------------------------|---|---|---|-----|-----|
| Product family | Performance strain sensor | | | | |
| Version | Soft mechanics, 4 x M6 screws, M12 plug | | A | | |
| Measuring range | 250 µm/m | | | | 250 |
| | 1000 µm/m | | | | 102 |
| | 2000 µm/m | | | | 202 |
| Output signal | IO Link | | | | L |