

DST53-AxxxP

Performance strain sensor without amplifier

DST53-A####P

Overview

- Cost-effective force measurement of large forces
- Minimal influence on the machine structure due to low stiffness
- Measuring ranges ± 250 , ± 1000 , $\pm 2000 \mu\text{m/m}$
- Output signal mV/V
- 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 | $11.1 * 10^{-6} 1/\text{K}$ |
| Electrical connection | M12, 5 pin, male |

Environmental conditions

| | |
|-----------------------------|------------------|
| Operating temperature range | -40 °C ... 85 °C |
|-----------------------------|------------------|

Environmental conditions

| | |
|-------------------------------------|--|
| 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 | mV/V |
| Signal polarity positive | Tension |
| Nominal sensitivity | 0.5 mV/V @ 250 $\mu\text{m/m}$ 1.3 mV/V @ 1000 & 2000 $\mu\text{m/m}$ |
| Bridge resistance | 350 Ω |
| Supply voltage | 0.5 ... 12 VDC |
| Current consumption | < 40 mA |
| Reverse polarity protection | Yes |
| Short circuit protection | Yes |

Compliance and approvals

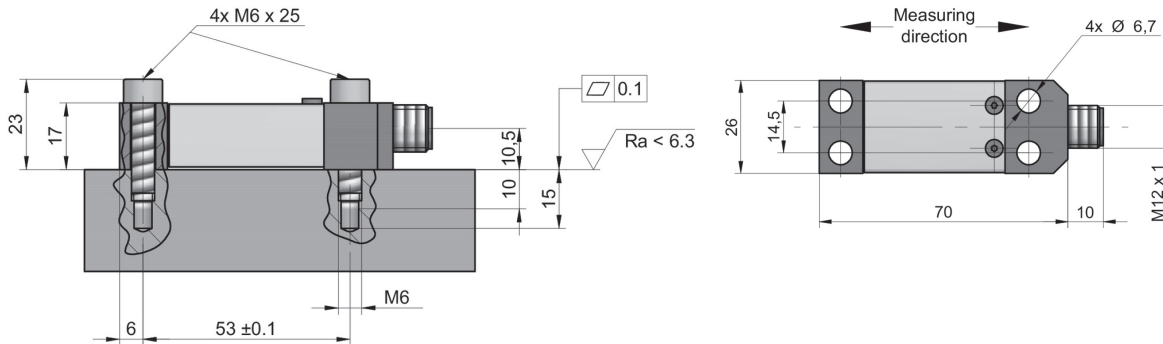
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|------------|----------|
| Conformity | CE UL |
|------------|----------|

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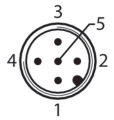
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Dimensional drawings (mm)



Electrical connection

| Pin-number | Signals |
|------------|-----------------|
| 1 | +V _s |
| 2 | Sig - |
| 3 | -V _s |
| 4 | Sig + |
| 5 | n. c. |
| Case | Shield |



Ordering key - Configuration possibilities see website

| | DST53 | - | A | ### | P |
|------------------------|---|---|---|-----|-----|
| 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 | Passiv | | | | P |