

DST53-ZxxxU

Performance strain sensor with voltage output

Article number:

Overview

- Cost-effective force measurement of large forces
- Replacement for former DSRT strain sensor
- Minimal influence on the machine structure due to low stiffness
- Measuring ranges $\pm 100 \dots 750 \mu\text{m/m}$
- Integrated amplifier electronics, output signal $\pm 10 \text{ VDC}$
- Bore hole distance 53 mm
- M12 connector, 5 pin



Technical data

General data

Nominal strain	0 ... 750 $\mu\text{m/m}$
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	105 N @ 100 $\mu\text{m/m}$ 260 N @ 250 $\mu\text{m/m}$ 70 N @ 350 $\mu\text{m/m}$ 100 N @ 500 $\mu\text{m/m}$ 150 N @ 750 $\mu\text{m/m}$
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
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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

Signal polarity positive	Tension
Bridge resistance	350 Ω
Supply voltage	18 ... 30 VDC
Current consumption	< 40 mA
Reverse polarity protection	Yes
Short circuit protection	Yes
Cut-off frequency (3 db)	1000 Hz
Zero adjustment active	$\geq 5 \text{ VDC}$
Zero adjustment inactive	$\leq 1 \text{ VDC}$
Zero adjustment time	< 30 ms

Compliance and approvals

Conformity	CE UL
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Dimensional drawings (mm)

