

# DST53-A250U

Performance strain sensor with voltage output and IO-Link

Article number: 11244456

## Overview

- Measuring range  $\pm 250 \mu\text{m/m}$
- IO-Link interface for individual, application specific parameterization
- Minimal influence on the machine structure due to low stiffness
- Integrated amplifier electronics
- Output signal  $\pm 10 \text{ VDC}$ , IO-Link, 2 x I/O
- Bore hole distance 53 mm
- M12 connector, 5 pin



## Technical data

### General data

Nominal strain	0 ... 250 $\mu\text{m/m}$
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 $\mu\text{m/m}$
Weight	135 g
Material sensor body	1.7225, chemically nickel plated
Material housing	Stainless steel, 1.4301
Compensated for thermal expansion coefficient	$11.1 \cdot 10^{-6} 1/\text{K}$
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 <sup>2</sup> /Hz
Shock IEC 60068-2-27	50 g / 11 ms, 100 g / 6 ms

### Electrical data

Output signal	$\pm 10 \text{ VDC}$ IO-Link
Signal polarity positive	Tension
Bridge resistance	350 $\Omega$
Supply voltage	18 ... 30 VDC
Current consumption	< 40 mA

### Electrical data

Reverse polarity protection	Yes
Short circuit protection	Yes
SIO Input high	$\geq 13 \text{ VDC}$
SIO Input low	$\leq 8 \text{ VDC}$
Resolution ADC	24 bit
Resolution DAC	14 bit
Sampling rate input	8 kS/s
Sampling rate output analog	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 kbaud (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 Analog output signal Output range analog signal Alarm state analog signal Functions I/O's selectable
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### IO-Link features

Additional functions	Low pass filter Peak value memory Sample and hold Two digital switching points (SSC) Remote operation
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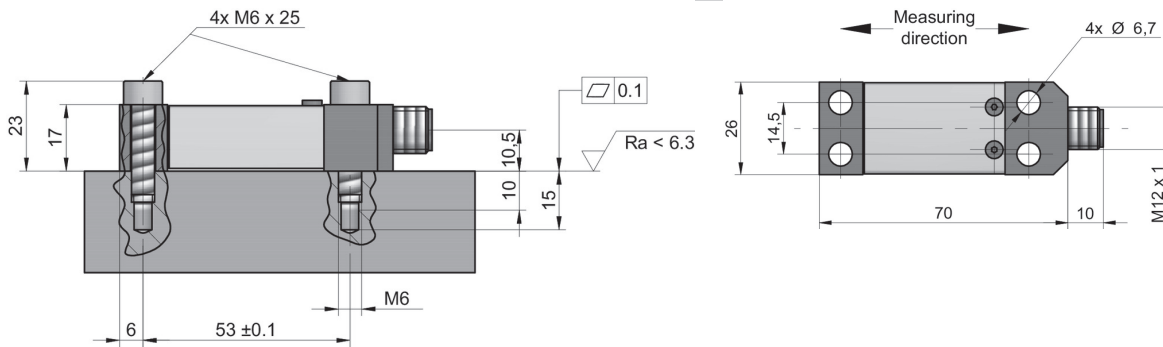
### Additional data

Diagnostic data  
Error detection

### Compliance and approvals

Conformity	CE UL
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## Dimensional drawings (mm)



## Electrical connection

Pin-number	Signals
1	+V <sub>S</sub> / L+
2	V <sub>OUT</sub>
3	0V / L-
4	C/Q
5	DI/DQ
Case	Shield

