

Miniature Single Leaf Flexure (DUSM)

The Miniature Single Leaf Flexure is another variant of flexure based contact probes. The miniature single leaf flexure has a calibrated range of 0 – 500 microns and provides the means for alternative configurations of contact tip mounting.

Description:

The gauge body mounting to the fixture is accomplished using a single M2.5 screw.

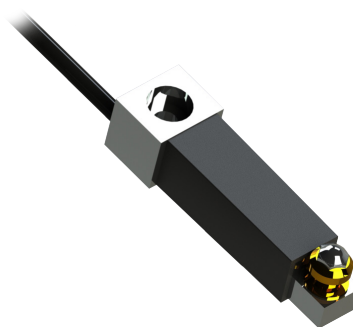
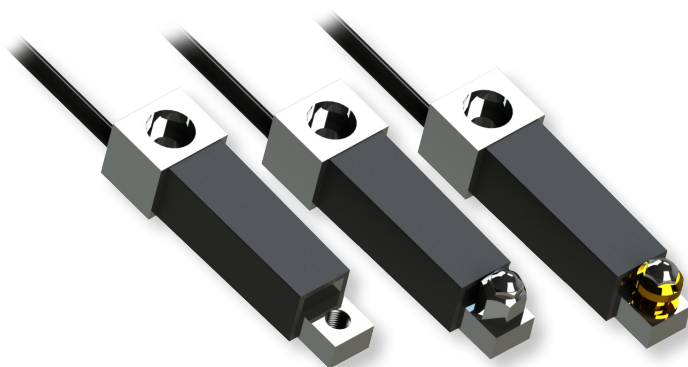
Contact tip mounting is attached by using either the integral M3 locking thread insert, primarily

intended for use with length extensions, OEM's fixed length contact tips or with Solartron's tip adapter, which when applied with Solartron's dedicated tip allows for 0.5 mm of height adjustment. OEM tips may be fitted to either option, but it is advised that the height be limited to a maximum of 6 mm above the gauge top surface, to avoid significantly prejudicing gauge life and repeatability. Mid adjustment range is the reference point for the calibration using the standard tip.

Length extensions may be applied to this style of gauge but should be used with care. A maximum length of 12 mm, between tip and mounting thread, is advised, but this does depend on other variables such as tip height approach angle and measurement deflection – extremes of these conditions will significantly reduce the gauge life and severely degrade the repeatability. To enable direct reading of the gauge using extensions, the use of a software multiplier will be necessary. However, as the reference dimension for the gauge is 18 mm by using a 12 mm extension, a range of 833 microns is achieved but a reading of only 500 microns is observed.

Features:

- Accuracy better than 1 μm
- Excellent Repeatability <0.5 μm
- Measurement range 0.5 mm
- Multiple Tip Configurations
- Robust design in compact package



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Specifications

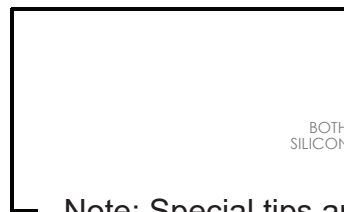
Specifications	Miniature Single Flexure (DUSM)
Axial Cable Outlet	DUSM/0.5/S
Radial Cable Outlet	N/A
Product Body Width (mm)	7
Measurement Performance	
Measurement Range (mm) (Note 3)	0.5
Accuracy (% of Reading) (Note 1)	0.05
Repeatability (µm) (Note 2)	0.5
Range:0-100 µm nominal	N/A
Range:100-250 µm nominal	N/A
Range:500-1000 µm nominal	N/A
Range:250-500 µm nominal	N/A
Resolution (µm)	<0.1
Pre Travel (mm)	0.01/0.02
Post Travel (mm)	0.07
Tip Force (N) at Middle of Range ±20% (Horizontal)	
Spring Push	0.55 ±50%
Pneumatic at 2 bar	N/A
Temperature Coefficient (µm/°C)	0.1
Environmental	
Sealing	IP68
Sealing for Probe Interface Electronics	IP43 for module and TCON
Storage Temperature (°C)	-20 to +80
Block Gauge Operating Temperature (°C)	+5 to +80
Electronics Operating Temperature (°C)	0 to 60
EMC Emissions	EN61000-6-3
EMC Immunity	EN61000-6-2
Shock	Do not subject Block Gauge to excessive shocks. This may damage the bearings. Do not subject any flexure products to excessive loads, follow instructions when adjusting
Material	
Probe Tip (options) (Note 4)	Nylon, Ruby, Silicon Nitride, Tungsten Carbide
Gaiter	Fluoroelastomer
Cable	PUR
Electronics Module	ABS
Electronics Interface (Orbit®)	
Orbit® Interface Options	USB, Ethernet, RS232, Modbus, EtherNet/IP, Bluetooth™
Reading Rate	3906 Readings per second
Bandwidth of Electronics (Hz) user selectable	460, 230, 115, 58, 29, 14, 7, 4
Power	5±0.25 VDC @ 0.06 A typical

Note 1: Accuracy 0.1 µm or % whichever greater, assume 20 mm arm for block gauges and Applicable Parallel Flexures

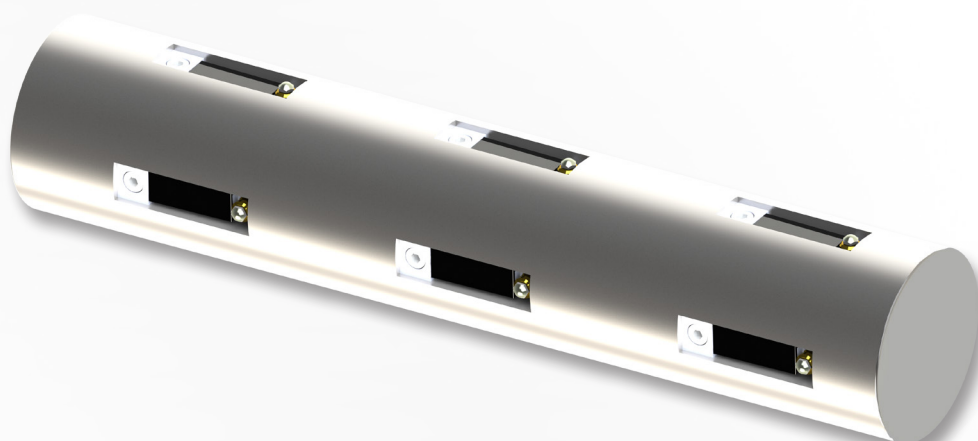
Note 2: Repeatability for Flexures depends on the configuration of the tip and holder - see diagram

Note 3: DU/0.5/S - Range is at 50 mm from flex point, extension arms will multiply this parameter, for DUSM range is with no extension arm fitted

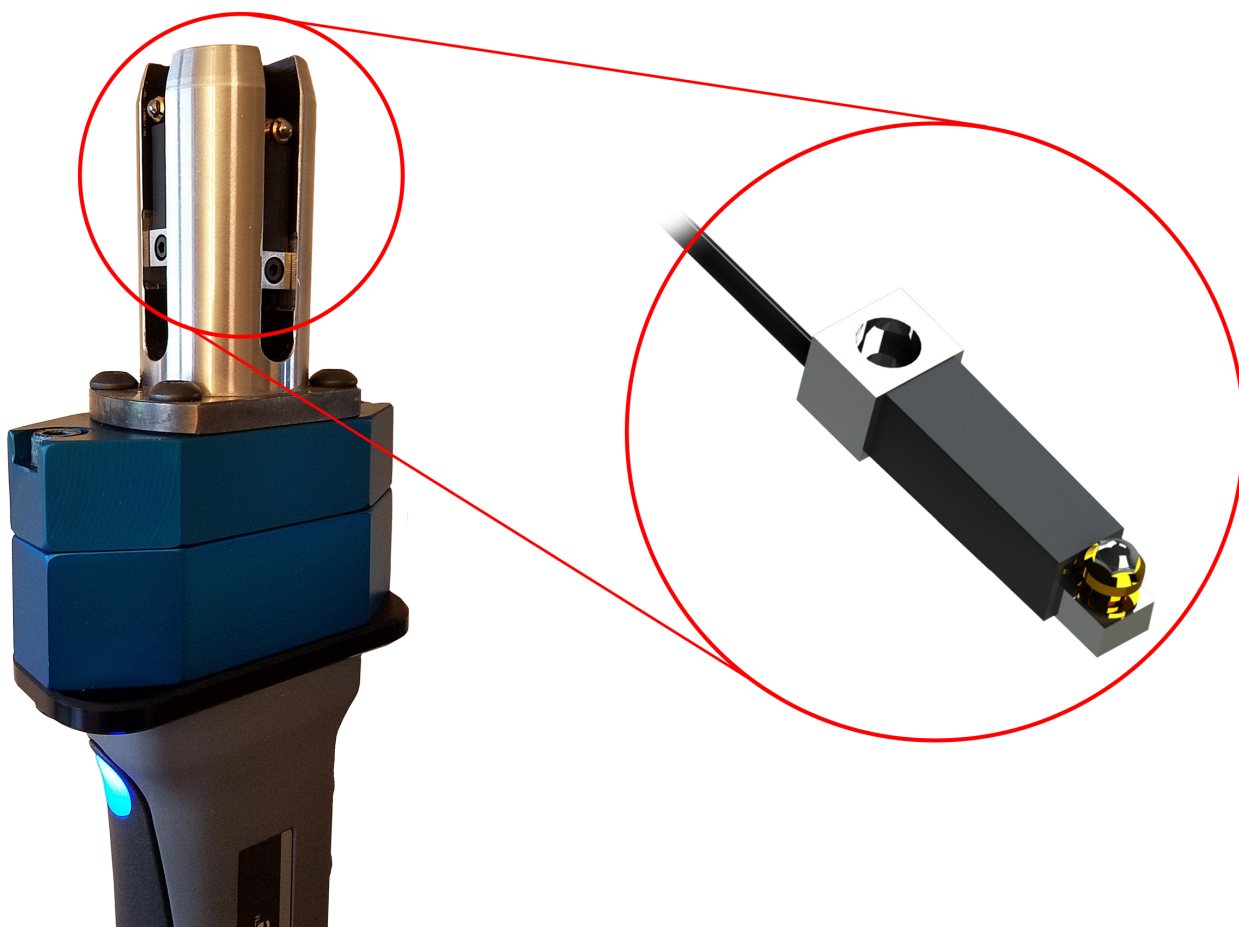
Note 4: Lever Probe has tips in diameters of 2.54 mm, 1.59 mm, 0.79 mm, 0.39 mm mounting thread 1-74 UNF



A top-down view of a circular room with a blue floor. Four cameras are positioned at the corners of the room, each mounted on a grey base and pointing towards the center. The cameras are arranged in a square pattern, with one at the top, one at the bottom, one on the left, and one on the right.



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DUSM inside a bore gauge being used with our wireless hand tool (WiGauge™)



WiGauge™

For 3D drawings, please contact sales.solartronmetrology@ametek.co.uk

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