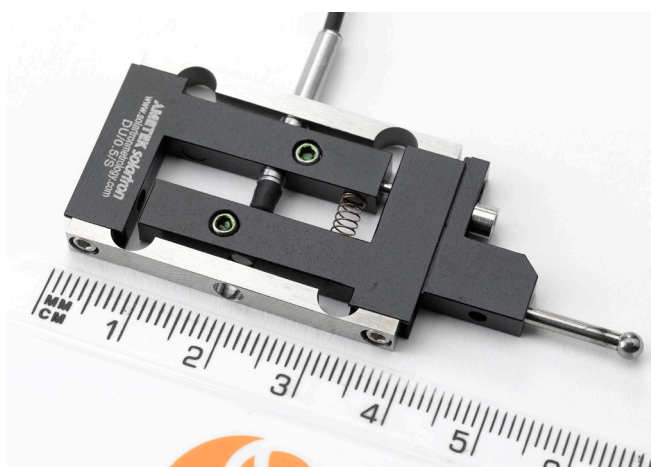


## Digital Miniature Flexure



- ▶ 0.5 mm measuring range
- ▶ Extended Operating Life:> 20 Million Cycles
- ▶ Excellent Repeatability:< 0.1  $\mu\text{m}$
- ▶ Excellent Resolution:< 0.1  $\mu\text{m}$
- ▶ Orbit 3 Compatible
- ▶ Spring Push Operation
- ▶ IP65 Protection
- ▶ Alternative Selection of Contact Tips
- ▶ 3D Drawings available
- ▶ High degree of serviceable parts\*

The new DU/0.5/S miniature flexure is Solartrons latest extension to the family of flexures. The ultra compact design allows for applications in confined space with a high number of measurement points on small objects. The very high resolution and Gauge R&R at <0.1 $\mu\text{m}$  achieved in the larger DU/1.0/S and DU/2/S flexures is kept without degradation over millions of measuring cycles in this new product.

Digital Flexures are the ideal solution for high precision/ high volume post process or in process gauging applications where cycle time is short and high throughput would shorten the life of a conventional pencil probe. There are no sliding parts to wear out or to cause friction within the frame or sensor which makes Solartron Flexures virtually free from Hysteresis.

Flexures can be mounted such that there is little or no stress through the gauge centre line and enabling precision profiling of moving material, such as sheet material or rotating shafts, brake discs etc. The option to take readings of < 0.1  $\mu\text{m}$  at speeds of up to 3906 readings per second per Flexure into the Orbit Network provides very detailed profiling.

The digital miniature flexure is fully compatible with Orbit<sup>®</sup> and is very linear over its full measurement range. The tool mounting assembly can be variously adjusted along the gauges length and fixed with M2.5 screws. A choice of holder and tips are available for maximum flexibility. The unique design offers a high degree of factory serviceable parts, providing a low cost repair which in turn reduces the cost of ownership to the end customer.

\* No customer serviceable parts, product must be returned to factory

## Technical Specification

Measurement Performance	DU/0.5/S
Mechanical Travel	0.9 mm
Measurement Range	0.5 mm
Repeatability	<0.1 $\mu\text{m}$
Resolution (user selectable)	<0.1 $\mu\text{m}$
Accuracy % reading <sup>1</sup>	$\pm 0.1$
Tip Force.Spring Push (horizontal attitude $\pm 20\%$ )	0.5 N at mid position
Temperature Coefficient	<0.01% FS / $^{\circ}\text{C}$

Mechanical Specification	DU/0.5/S
Flexure Materials	Aluminium and Steel
Mass (including tool holder, 20 mm tip holder and ball tip) excluding PIE/cable	14 g
Mass Tool Holder + Screw	2 g
Gaiter Material	High Grade Polymer
Cable Type and Length	2 m PUR
Operating life (dependant on application)	>20 million cycles

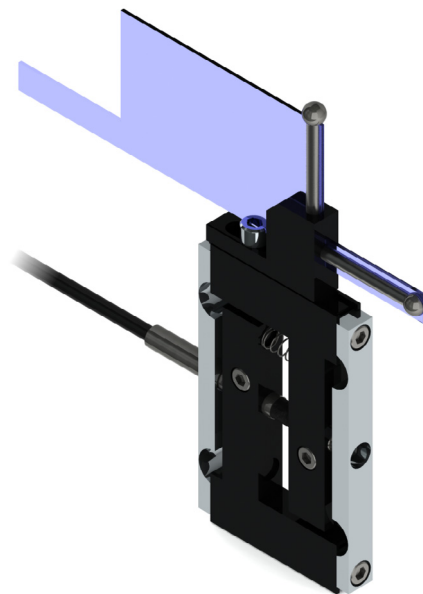
Enviromental	DU/0.5/S
IP Rating	IP 65 (flexure only)
Operating Temperature Flexure only	+5 to +85 $^{\circ}\text{C}$
Operating Temperature Flexure and Electronics	+5 to +65 $^{\circ}\text{C}$
Storage Temperature	-20 to +70 $^{\circ}\text{C}$
Digital Probe Interface Electronics	
Supply Voltage	5 V $\pm 0.25$ VDC
Current Consumption (sensor + PIE)	55 mA at 5 VDC
Bandwidth	up to 460 Hz -3db
Output	Serial RS485 signal level, Orbit Network Protocol
Reading Rate	3906 readings/s
Weight g	
Probe Interface Electronics	52g
T-Con	36g
T-Con with DIN rail adapter fitted	46g

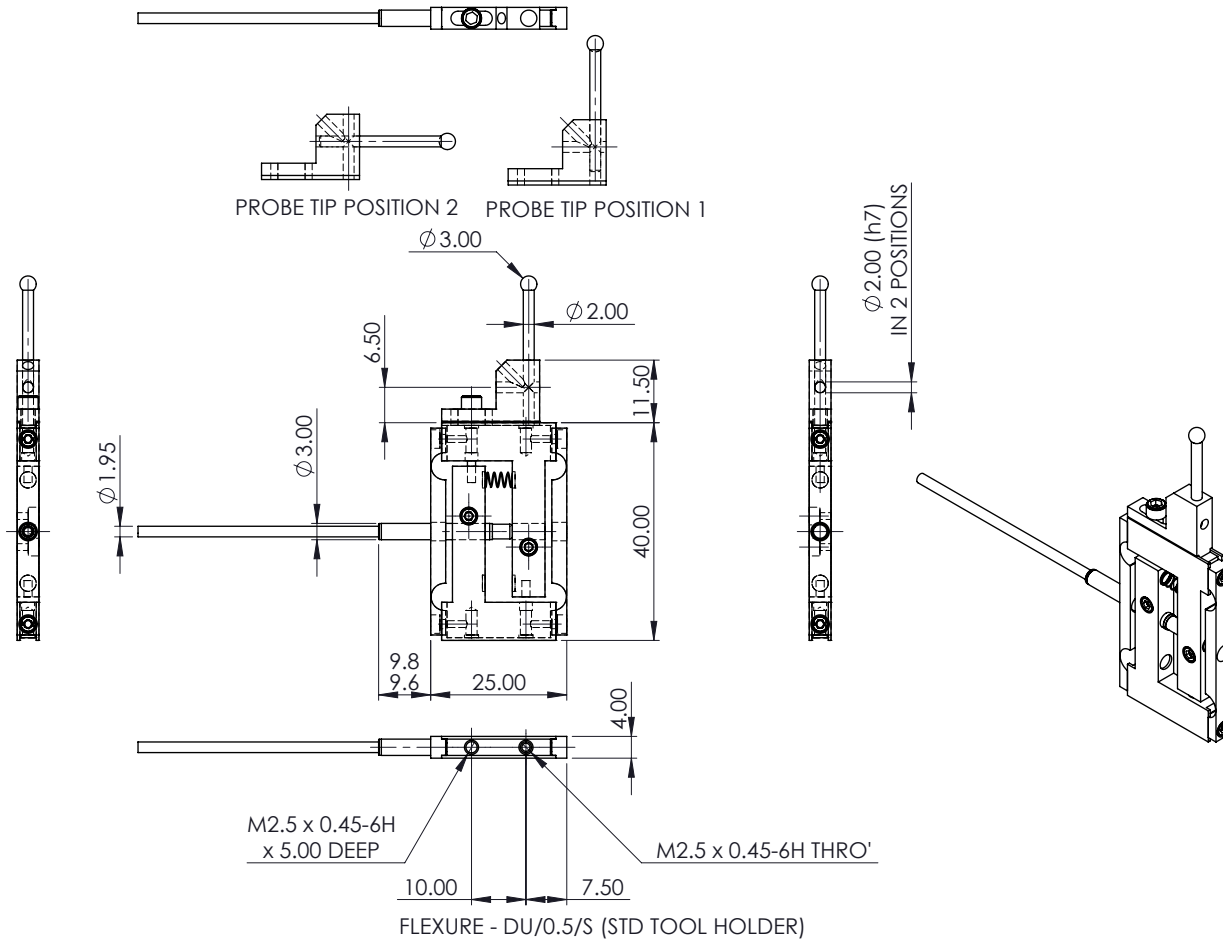
<sup>1</sup> Accuracy 0.2  $\mu\text{m}$  or % reading, whichever greater, accuracy assumes tip holder < 20 mm and mounted on center, spring operation with 0.4 N tip force.

### Zonal Repeatability

Results for both accuracy & non-repeat may be degraded when using the angularly variable holder and tip. Degree will depend on the final geometry.

DU/0.5/S Repeatability
< 0.1 $\mu\text{m}$





DIMENSIONS ARE NOMINAL AND SPECIFIED IN MILLIMETRES  
SOLARTRON PURSUES A POLICY OF CONTINUOUS DEVELOPMENT.  
SPECIFICATIONS IN THIS DOCUMENT MAY THEREFORE BE CHANGED WITHOUT NOTICE.

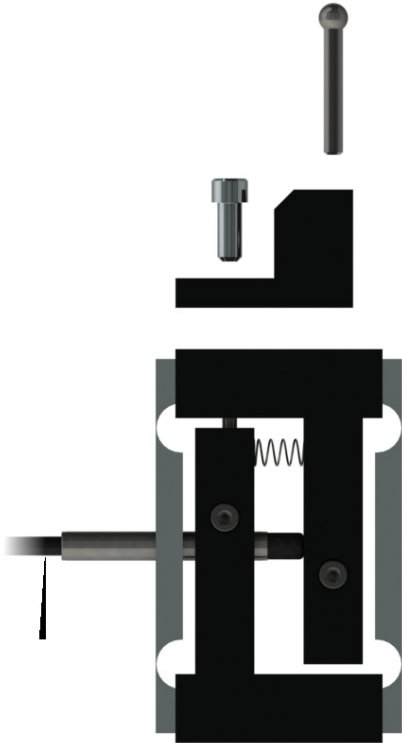
540002-115    ISS 1 EDCR19460

For 3D drawings please contact [sales.solartronmetrology@ametek.com](mailto:sales.solartronmetrology@ametek.com)

# Ordering Guide For Digital Flexure Gauge Components



The Gauge is supplied inclusive of sensor and Orbit 3 PIE but does not include the tool holder, tip carrier or tips.



Ø3 Tip + Ø2 holder - Part Number 209568

Tool holder Part Number 806398-SX

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Solartron pursues a policy of continuous development. Specifications in this document may therefore be changed without notice.

Datasheet 503023  
Issue 4  
EDCR 20248