SELECT A SENSOR FOR THE ORBIT® NETWORK

Choose from a full array of linear measurement sensors, each with their own application advantages

CONTACT MEASUREMENT

DIGITAL PROBES AND TRANSDUCERS

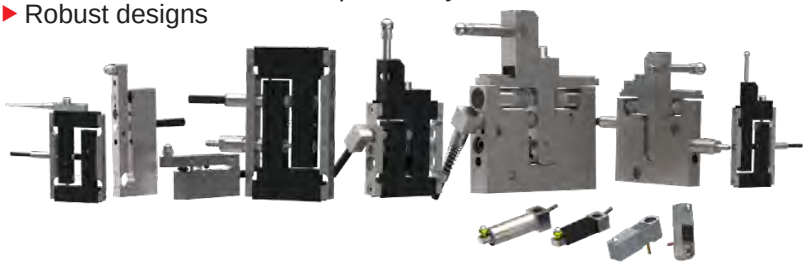
- Accurate
- Repeatable
- Robust
- Small size
- Low tip force
- Long life
- Displaces light, dirt and oil
- Absolute measurement
- Works on all surfaces
- Best cost vs performance
- Can be used in most environments
- Very wide range of products

"FEATHER TOUCH" PROBES WITH LOW TIP FORCE

- Tip forces from 20 g to as low as 3 g
- Ideal for glass, delicate surfaces, or easily damaged materials
- Nylon, Silicon Nitride and Ruby tips available
- Same high accuracy and resolution as digital probe

Specialised Sensors

- Sensors for hard to reach areas, such as bores or gaps
- Multiple ranges and sizes
- Excellent resolution and repeatability
- Robust designs



Linear Encoder

- Glass Scale
- Best Accuracy over full scale range

CUSTOM PRODUCTS

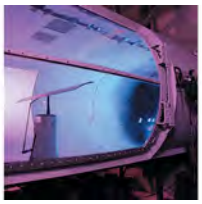
At Solartron Metrology our experienced design team have worked closely with customers to produce customised measurement solutions. If you require a specialised sensor to solve your measurement problem then please contact your local Solartron representative.

Example: Customised Feather Touch Probe

- Built for glass industry
- Long 30 mm travel, but with 5 mm range at end of stroke
- Ensures tip is clear when glass removed
- R/A Outlet with Steel Braided Cable

Automation

Metrology



Bench Test

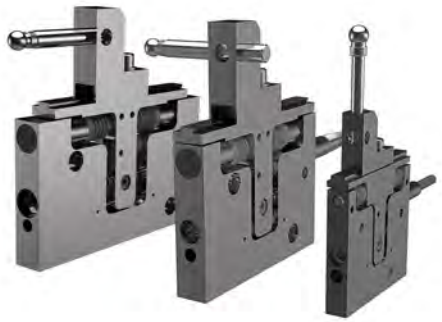
Medical

- Position feedback
- Level measurement
- Machine alignment

- Assembly checking
- Closed loop control
- Tool positioning

ORBIT® DIGITAL SPECIALIST TRANSDUCERS

Solartron's specialist gauging and measurement transducers are for applications where the standard pencil style probe will not fit.

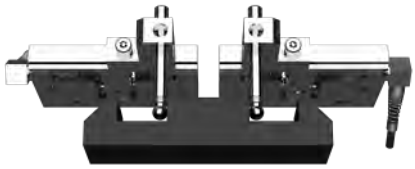


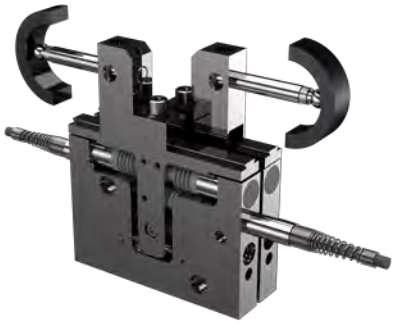
DK - BLOCK GAUGE

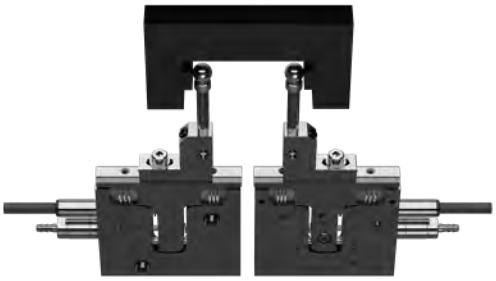
- Accuracy better than 1 µm
- Excellent Repeatability to 0.25 µm
- Measurement ranges of 2, 5 & 10 mm
- Spring or Pneumatic Actuation
- Multiple configurations with Top Tools and Tip holders

Solartron's Block Gauge make precision measurements of bores and cavities a simple and reliable process. More generally, the use of these devices is recommended in applications where space and access is limited and where the use of axial probes is not possible. The 2 mm Block Gauge is only 8 mm wide.

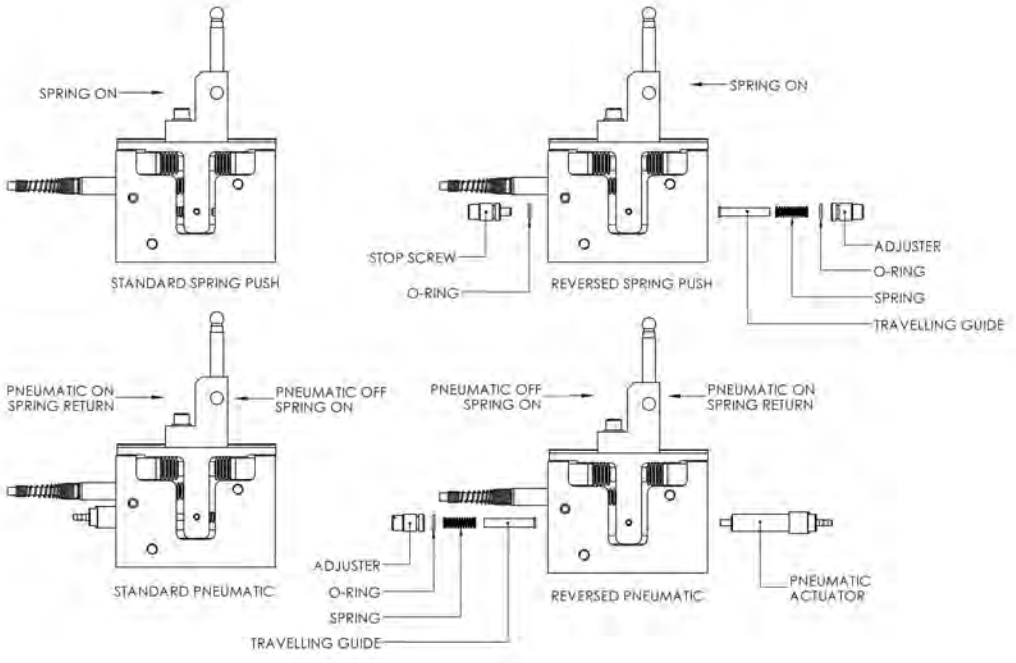
The Block Gauges offer unrivalled ruggedness, accuracy and repeatability. All three units are extremely versatile and provide datum surfaces and all the adjustments required for precision gauging applications. Block Gauges have robust precision linear bearings with minimal clearance, which limits unmeasured movements, maintaining good repeatability even when the contact tip is mounted off centre.







SPRING AND PNEUMATIC CONFIGURATIONS



Spring and Pneumatic kits enable the automatic loading of components. Pneumatic actuation coupled with a spring controls the tip force for accurate measurements.

ORBIT® DIGITAL SPECIALIST TRANSDUCERS

	BLOCK GAUGES			LEVER	
Axial Cable Outlet	DK/2	DK/5	DK/10	DL/0.5/S	
Radial Cable Outlet	DKR/2	DKR/5	DKR/10	N/A	
Product Body Width (mm)	8	12		9.5	
MEASUREMENT PERFORMANCE					
Measurement Range (mm) (Note 3)	2	5	10	0.5	
Accuracy (% of Reading) (Note 1)	0.05	0.05	0.08	1.2 (Note 5)	
Repeatability (µm) (Note 2)	<0.25	<0.25	<0.5	On Axis	Cross Axis
Range:0-100 µm nominal	N/A	N/A	N/A	N/A	N/A
Range:100-250 µm nominal	N/A	N/A	N/A	N/A	N/A
Range:500-1000 µm nominal	N/A	N/A	N/A	<0.15	<0.3
Range:250-500 µm nominal	N/A	N/A	N/A	N/A	N/A
Resolution (µm)	0.01	0.02	0.04	0.01	
Pre Travel (mm)	0.15	0.15	0.15	0.02/0.03	
Post Travel (mm)	0.85	0.85	0.85	0.06	
Tip Force (N) at Middle of Range ±20% (Horizontal) (Note 7)					
Spring Push	1.5	1.5	1.5	0.05-0.2	
Pneumatic at 2 bar	Note 6			N/A	
Temperature Coefficient (µm/ºC)	0.2	0.5	1	0.1	
ENVIRONMENTAL					
Sealing	IP65			IP43	
Sealing for Probe Interface Electronics	IP43 for Module and TCON				
Storage Temperature (ºC)	-20 to +80				
Block Gauge Operating Temperature (ºC)	-20 to +80				
Micro Single Leaf Flexure Operating	+5 to +80				
Temperature with Gaiter (ºC)	0 to +80				
Electronics Operating Temperature (ºC)	0 to +60				
EMC Emissions	EN61000-6-3				
EMC Immunity	EN61000-6-2				
MSLF Vibration					
Shock	Do not subject Block Gauge to excessive shocks. This may damage the bearings.				
MATERIAL					
Block Gauge Body	Stainless Steel				
MSLF Probe Body					
Probe Tip (options) (Note 4)	Nylon, Ruby, Silicon Nitride, Tungsten Carbide			Tungsten Carbide	
Gaiter	Fluoroelastomer or Silicon				
Cable					
Electronics Module					
ELECTRONICS INTERFACE (ORBIT®)					
Orbit® Interface Options	USB, Ethernet®, RS232, R5485,				
Reading Rate					
Bandwidth of Electronics (Hz) user selectable					
Power					

- 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, 0.38 mm mounting thread 1-72 UNF
- Note 5: Lever Probe accuracy with arm normal to axis of the stylus

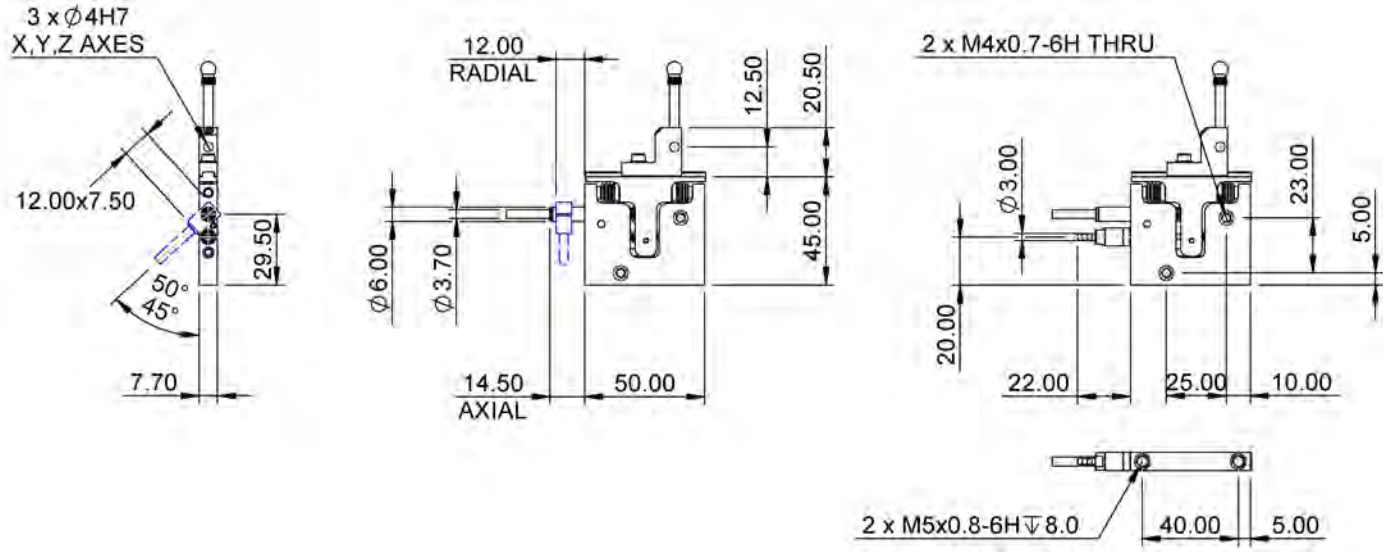
TECHNICAL SPECIFICATIONS

PARALLEL FLEXURES							SINGLE LEAF FLEXURES		
DM/0.5/S		DM/1/S		DU/0.5/S	DU/1/S	DU/2/S	DUS/0.5/S	DUSM/0.5/S	MSLF/0.4/S
N/A		N/A		N/A	DUR/1/S	DUR/2/S	N/A	N/A	N/A
6.5		7.5		4	8		6	8.5	5
0.5		1		0.5	1	2	0.5	0.5	0.4
0.05		0.05		0.10	0.10	0.10	0.10	0.05	0.05
On Axis	Cross Axis	On Axis	Cross Axis	<0.1	<0.1	<0.1	<0.1	0.5	0.5
0.10	0.10	0.10	0.10	N /A	N/A	N/A	N/A	N/A	N/A
0.25	0.15	0.10	0.10	N/A	N/A	N/A	N/A	N/A	N/A
0.5	0.25	0.15	0.15	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	0.3	0.2	N/A	N/A	N/A	N/A	N/A	N/A
0.01		0.01		0.01	0.01	0.01	0.01	0.01	0.01
0.01/0.02		0.015/0.025		0.03/0.06	0.05/0.1	0.05/0.1	0.02/0.03	0.01/0.02	0.02/0.05
0.07		0.07		0.29	0.4	0.4	0.05/0.1	0.07	0.19
0.85		0.85		0.5	1.5	1.5	1.25	0.8 ±50%	90
N/A				N/A	1	1	N/A	N/A	N/A
0.08		0.8		0.5	0.5	0.5	0.5	0.1	0.3
IP60				IP65			IP65	IP68	IP40
IP43 for Module and TCON									
-20 to +80									
-20 to +80									
+5 to +80									
0 to +80									
0 to +60									
EN61000-6-3									
EN61000-6-2									
									10g up to 2kHz
Do not subject any flexure products to excessive loads, follow instructions when adjusting.									
									17-7PH
Nylon, Ruby, Silicon Nitride, Tungsten Carbide									Fixed (1.25mm Rad Ball)
Fluoroelastomer									N/A
PUR									
ABS									
MODBUS® TCP/IP, EtherNet/IP®, Bluetooth™, Profinet®, EtherCat®									USB, Ethernet, RS232
3906 Readings per second									
460, 230, 115, 58, 29, 14, 7, 4									
5±0.25 VDC @ 0.06 A typical									

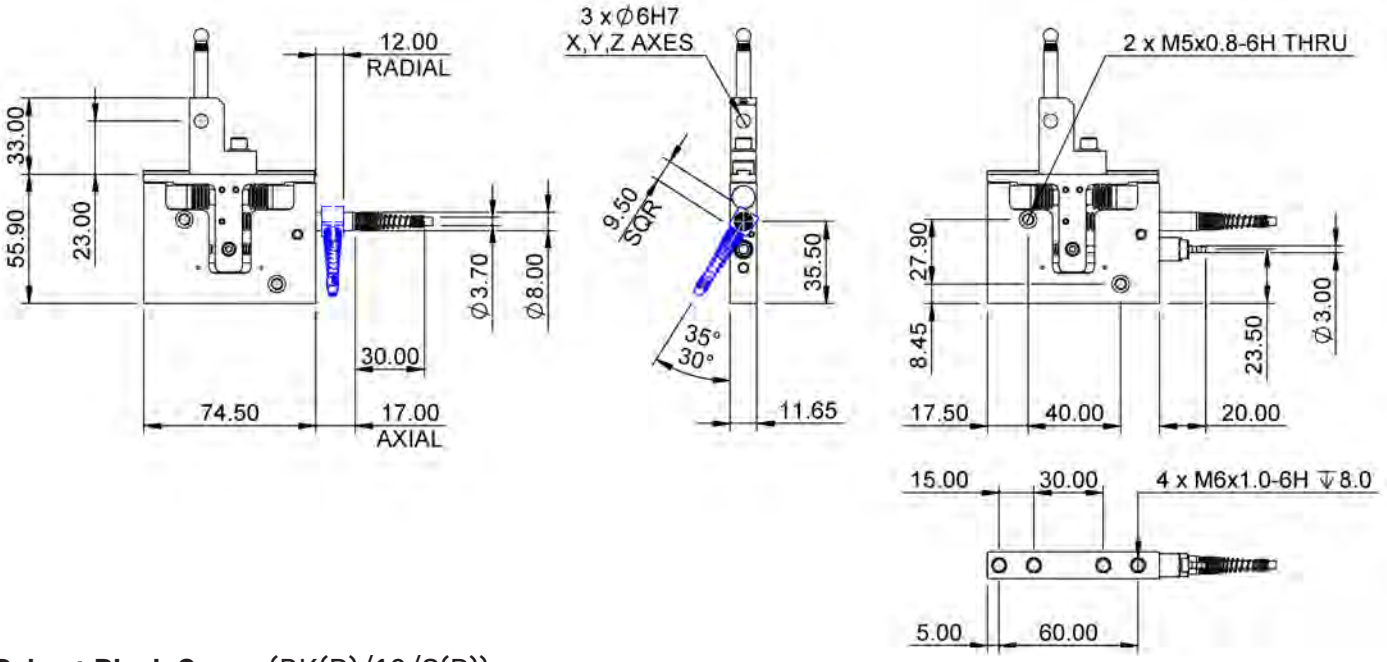
- Note 6: Block gauge tip force is dependent on mounting attitude and spring for the pneumatic block gauge it is also air pressure and balancing spring combination
- Note 7: Tip Force (gf) at Middle of Range ±30% for MSLF
- Designation Title/Measurement Range/Type (Spring Actuation, Pneumatic Actuaton, Vacuum Type): DK: Block Gauge, DM: Mini Probe, DU: Parallel Flexures, DUS: Single Leaf Flexures, DUSM: Miniature Single Leaf Flexure, DL: Lever Probe

ORBIT® TRANSDUCER DIMENSIONS

Block Gauge (DK(R)/2/S(P))



Robust Block Gauge (DK(R)/5/S(P))



Robust Block Gauge (DK(R)/10/S(P))