Solartron Metrology / AMETEK

orbit® DIGITAL MEASURING NETWORK

Feather Touch & Ultra Feather Touch Probes

DT Feather Touch

- 8 mm Diameter
- Spring and Pneumatic
- As low as 0.18 N Tip Force
- 2, 5, 10, 20,and 30 mm ranges
- Excellent sideload strength

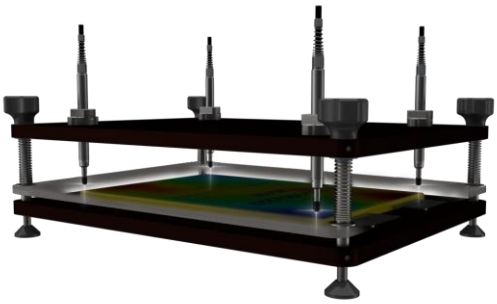
DW Ultra Feather Touch

- 8mm Diameter
- Spring and Pneumatic
- As low as 0.03 to 0.05 N Tip Force
- 10 mm range

Feather Touch transducers have been designed especially to measure delicate surfaces such as car windscreens, pharmaceutical bottles, electro-mechanical components and plastic parts. Whereas a traditional transducer exerts a tip force of approximately 0.7 N, the Feather Touch exerts a mere 0.18 N when used in the horizontal position. This reduction is achieved by replacing the gaiter with a close tolerance gland. Despite the low volume of air flow, the bearing is constantly purged, avoiding the build up of dust

The **Ultra Feather Touch** probe has so light a tip force, it is a viable alternative to a non-contact sensor in many applications. With various tips available in ruby and nylon, the UFT is already being used to check glass, rubber, semi-conductor wafers and other delicate materials.

Note: Feather Touch probes also available in 6 mm and 3 mm diameter.
Please see Short and Skinny probe datasheet.

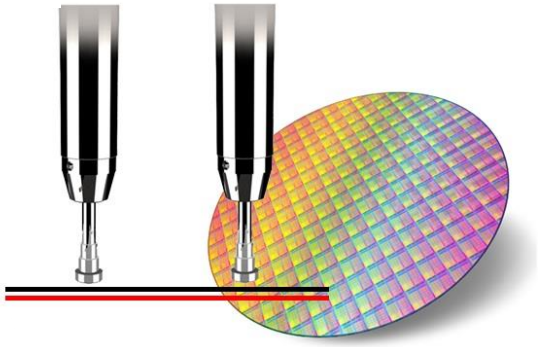


Feather Touch probes checking EV battery expansion

Ultra Feather Touch probes checking curved glass

Applications

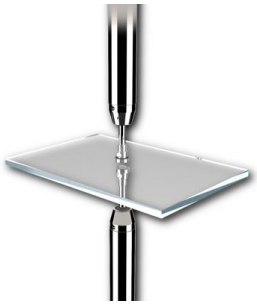
Automotive Glass: Network up to 250 Feather Touch or Ultra Feather Touch probes to check auto glass components, such as a windshield

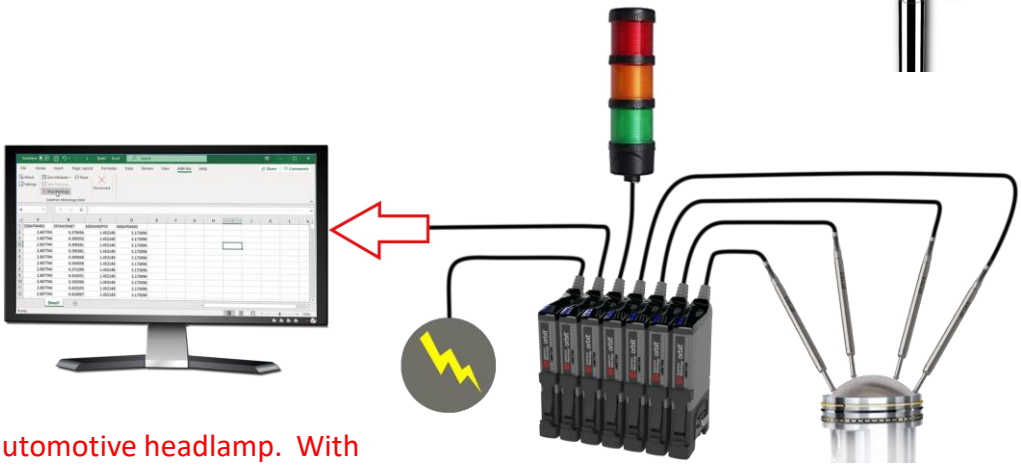


Semi-Conductor

Check flatness of glass in smartphone or tablet

Glass thickness

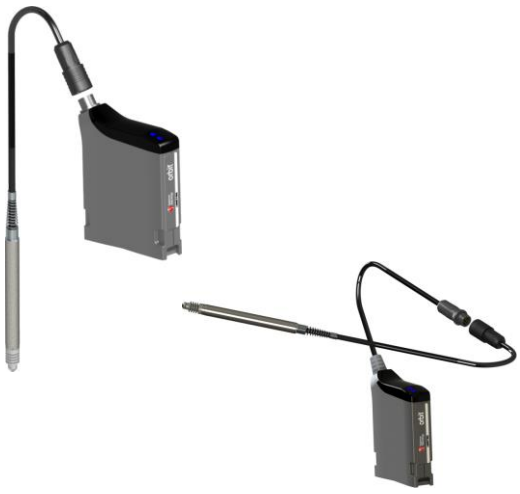




Checking an automotive headlamp. With Orbit®, a DIOM can also be used for Input/Output signals to a PLC or light tower

Customization

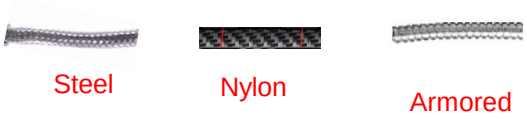
Inline Connector



- Calibration data for probe loaded onto chip inside plug.
- Simple Probe replacement without any need for software programming
- Available with Standard Digital Probes, Flexures and Block Gauges
- Connector has IP67 rating
- Small Diameter Connector for ease of installation
- Resolution programmable to < 0.01 µm
- Traceable calibration

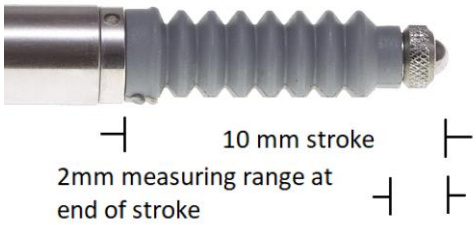
Cable Customization

- Customizable cable lengths up to 10 meters
- Various cable protections available



Offset Pneumatic Probes

- Pneumatic probes that have a 10 or 20 mm stroke, but only 2 or 5 mm measurement range at end of stroke
- Example of DP/10/2/P



Right Angle Outlets

- Ideal for tighter spaces
- No change in probe performance

Nylon and Ruby tips available

Technical Specifications

Products (Note 4)	Feather Touch						Ultra Feather Touch
Spring Push Axial Cable	DT/2/S	DT/5/S	DT/10/S	DT/20/S	N/A	DT/10/2/S	DW/10/S
Pneumatic Axial Cable	DT/2/P	DT/5/P	DT/10/P	DT/20/P	DT/30/P	DT/10/2/P	DW/10/P
Diameter	8h6						
Measurement Performance							
Measurement Range (mm)	2	5	10	20	30	2	10
Accuracy (% of Reading) (Note 1)	0.05	0.05	0.06	0.07	0.1	0.05	0.06
Accuracy (% of Reading) (Note 1) - with Inline Connector	0.2	0.15	0.15	0.15	0.2	0.2	0.15
Repeatability (worst case) µm (Note 2)	0.15	0.15	0.15	0.25	0.5	0.15	0.15
Repeatability (typical) µm (Note 3)	0.05	0.05	0.08	0.16	0.25	0.05	0.05
Resolution (µm)	0.01	0.02	0.04	0.08	0.12	0.01	0.04
Pre Travel (mm)	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Post Travel (mm)	0.85	0.85	0.85	0.85	0.85	8.85	0.85
Tip Force (N) at Middle of Range ±20% (Note 7)							
Spring Push	0.3	0.3	0.3	0.3	N/A	0.3	0.03 to 0.06
Pneumatic ±30% at 0.3 bar (Note 6) (Note 7)	0.18	0.18	0.18	0.18	N/A	0.18	0.06
Pneumatic ±30% at 1 bar (Note 6) (Note 7)	1.1	1.1	1.1	1.1	0.85	1.1	0.25
Temperature Coefficient %FS/ºC	0.01	0.01	0.01	0.01	0.03	0.01	0.01
Environmental							
Sealing for Probe	IP 50						
Sealing for Probe Interface Electronics	IP43 for module and TCON						
Storage Temperature (°C)	-20 to +80						
Probe Operating Temperature (°C)	-10 to +80						
Electronics Operating Temperature (°C)	+0 to +60						
EMC Emission	EN61000-6-3						
EMC Immunity	EN61000-6-2						
Probe life (Operating Cycles)	100 million cycles (no side load) > 10 million cycles in most applications						> 10 million
Material							
Probe Body	Stainless Steel						
Probe Tip (options)	Nylon, Ruby, Silicon Nitride, Tugnsten Carbide						
Cable	PUR						
Electronics Module	ABS						
Electronics Interface (Orbit®)							
Orbit® Interface options	PC: USB, Ethernet®, RS232, R5485, Bluetooth™						
	PLC: Modbus®, EtherNet/IP®, Profinet®, EtherCat®, CC-Link®						
Reading Rate	Up to 3906 readings per second, per Orbit module						
Power	5±0.25 VDC @ 0.06 A typical						

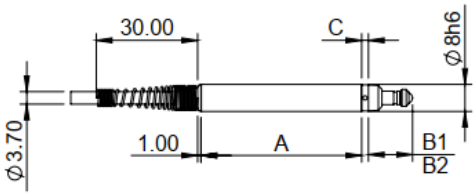
Note 1: Accuracy 0.1 µm or % reading whichever is greater
Note 2: Repeated operation against a carbide target with side load applied to the bearing using max-min
Note 3: Repeated operation against a carbide target standard deviation from average (68%)
Note 4: Right angle outlet versions of all of the standard 8h6 diameter probes for measuring ranges 2 mm to 20 mm are available, part description add R after first two letters e.g DPR/2/S is the right-angled version of a DP/2/S
Note 5: Different gaiter materials available for specific applications - Fluoroelastomer standard option
Note 6: Pneumatic Actuation: For continual reliable operation and to maximise working life, the air supply should be clean and dry. 60% maximum relative humidity, filtered to better than 5 µm particle size.
Note 7: Maximum Pressure for Ultra Feather Touch is 1 Bar.

VACUUM PROBES: Feather Touch and Ultra Feather Touch probes are available in Vacuum Retract as well. They match the dimensions and specifications of the standard Feather Touch and Ultra Feather Touch Pneumatic probes. For more information, contact your local Solartron representation

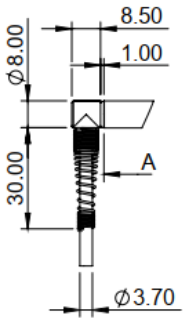
Dimensions

Feather Touch Spring Push (DT/S)

	DT/2/S	DT/5/S	DT/10/S	DT/20/S
A	47.50	66.50	90.50	127.00
C	2.00	2.00	2.00	3.00
B1	14.25	18.00	25.50	34.00
B2	11.25	12.00	14.50	13.00
D	33.50	52.50	76.50	113.50

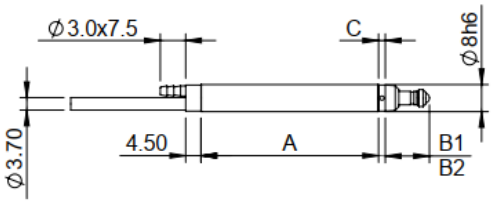


Radial Cable Outlet
Plastic Adapter

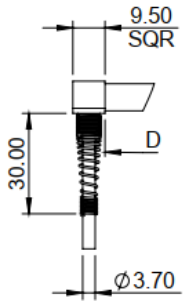


Feather Touch Pneumatic Push DT/P

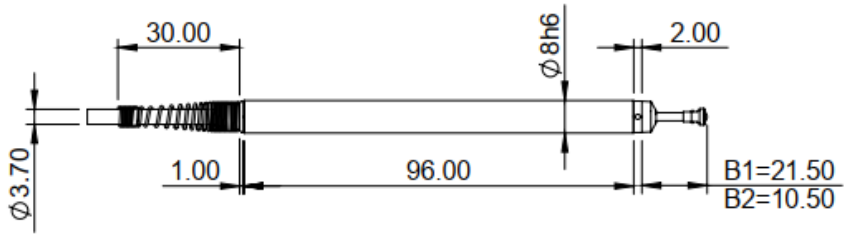
	DT/2/P	DT/5/P	DT/10/P	DT/20/P
A	52.50	71.00	96.00	127.00
C	2.00	2.00	2.00	3.00
B1	14.25	18.00	25.50	34.00
B2	11.25	12.00	14.50	13.00
D	38.50	57.50	82.50	113.50



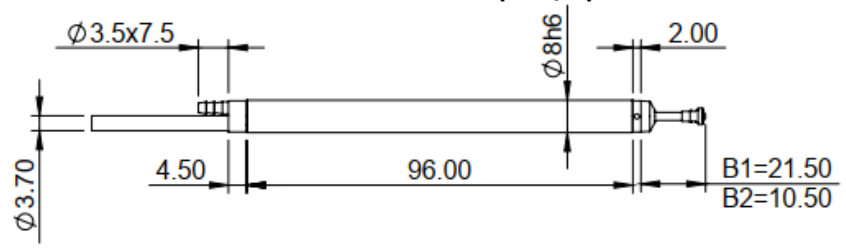
Radial Cable Outlet
Fixed / Spring Push



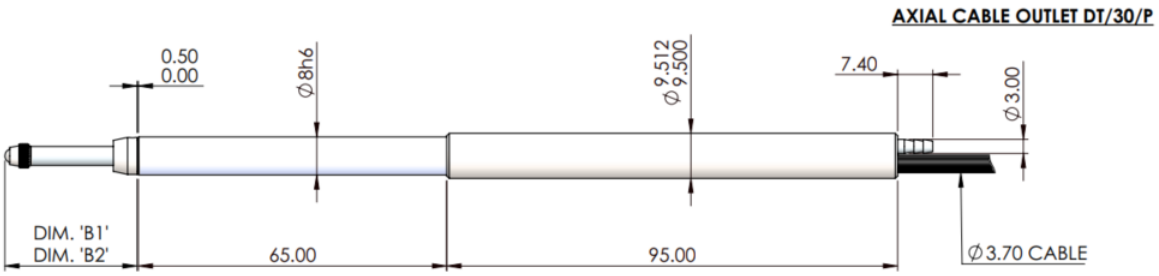
Ultra Feather Touch Spring Push (DW/S)

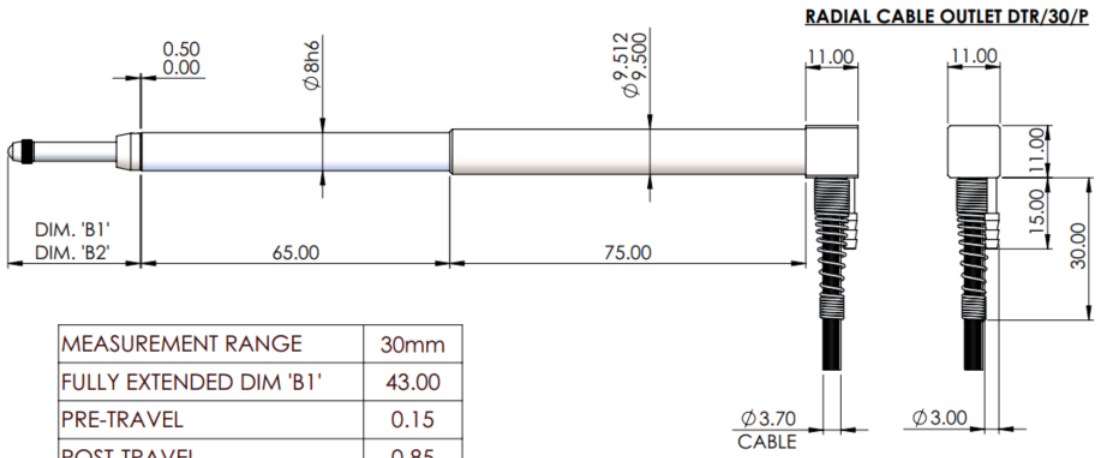


Ultra Feather Touch Pneumatic Push (DW/P)



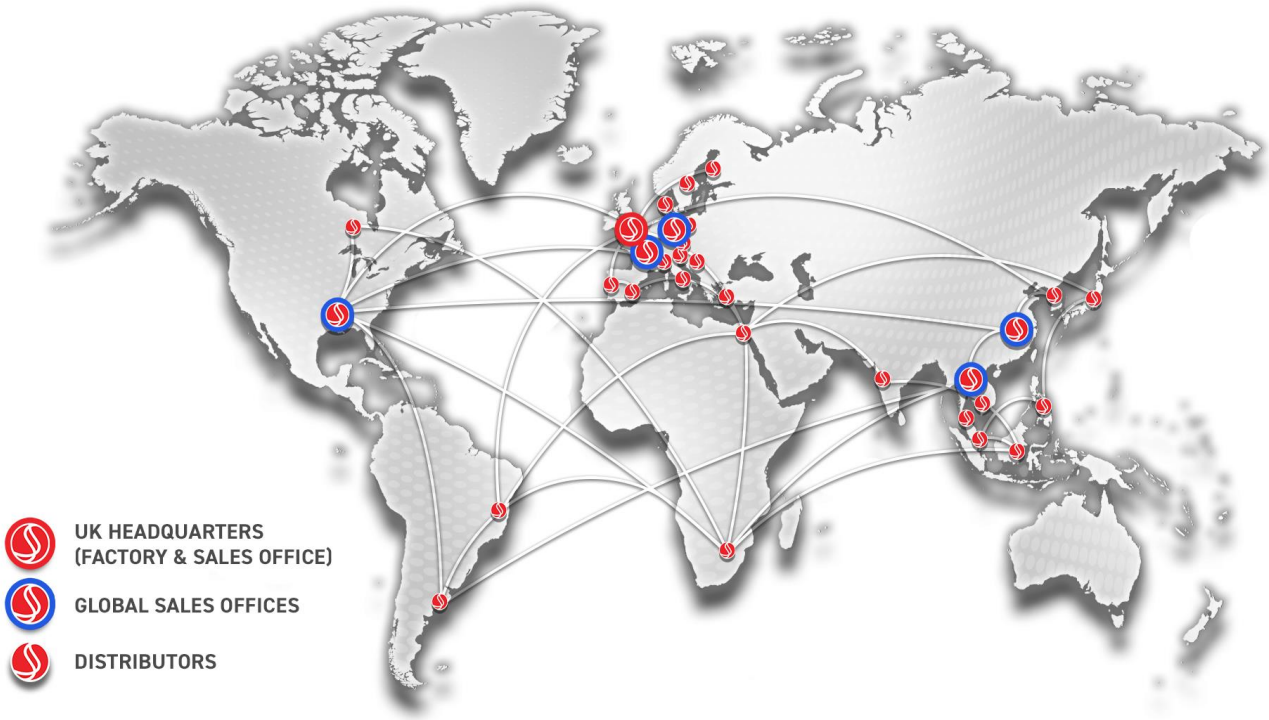
Dimensions





MEASUREMENT RANGE	30mm
FULLY EXTENDED DIM 'B1'	43.00
PRE-TRAVEL	0.15
POST-TRAVEL	0.85
FULLY RETRACTED DIM 'B2'	12.00

Worldwide Sales Offices



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Solartron Metrology also carries an extensive network of sales agents in all major countries. For a local contact, go to www.solartronmetrology.com/contact or email at sales.solartronmetrology@ametek.com