

# ORBIT® COMPACT AND NARROW BODY PROBES



## D6P - 6 MM DIAMETER - SPRING AND PNEUMATIC

- ▶ 2, 5, and 12 mm Measuring Ranges
- ▶ 6 mm Diameter body
- ▶ Same resolution and repeatability as 8 mm probes
- ▶ Excellent when points are in close proximity
- ▶ IP65 rating with Spring Probes, no rating for Jet Pneumatic Probes.
- ▶ Also available as Feather Touch option

With the D6P probes, a 25% diameter reduction over conventional probes has been achieved, yet performance and life expectancy has been maintained. Long life precision bearings ensure that probes maintain their performance for millions of cycles.



6 mm Probes  
Checking  
Flatness of a  
Coin



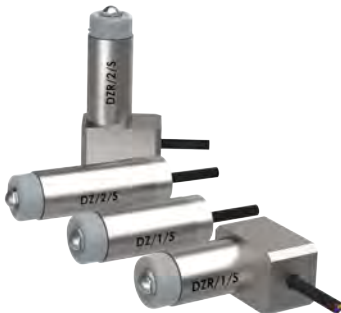
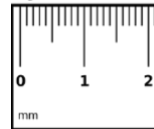
## D3P/D3T - 3MM DIAMETER - SPRING PUSH

- ▶ 1 mm Measuring Range
- ▶ 3 mm Diameter body
- ▶ IP50 Sealing
- ▶ Also available as Feather Touch option

Quite possibly the world's thinnest probe, the tiny 3 mm diameter allows for even tighter packing densities for measuring features on intricate parts.



3 mm Probe



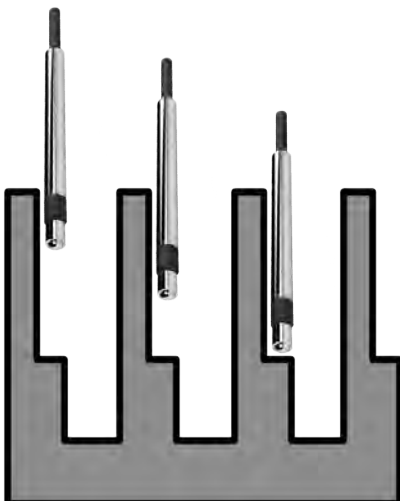
## DZ - ULTRA SHORT SPRING

- ▶ 1 or 2 mm measuring ranges
- ▶ Tip force 0.7 N (options available)
- ▶ IP65 Sealing
- ▶ Spring actuation
- ▶ R/A Outlets available
- ▶ Use where space is a premium



DZR Pneumatic Probe

The DZ range of probes are the shortest available on the market, with a full calibrated measuring range of 1mm or 2mm. The unique bearing design creates a compact probe body while still maintaining the performance of a standard Digital Orbit probe.



APPLICATION: 3MM CHECKING RIDGES



APPLICATION: DZ PROBE CHECKING ID OF RING

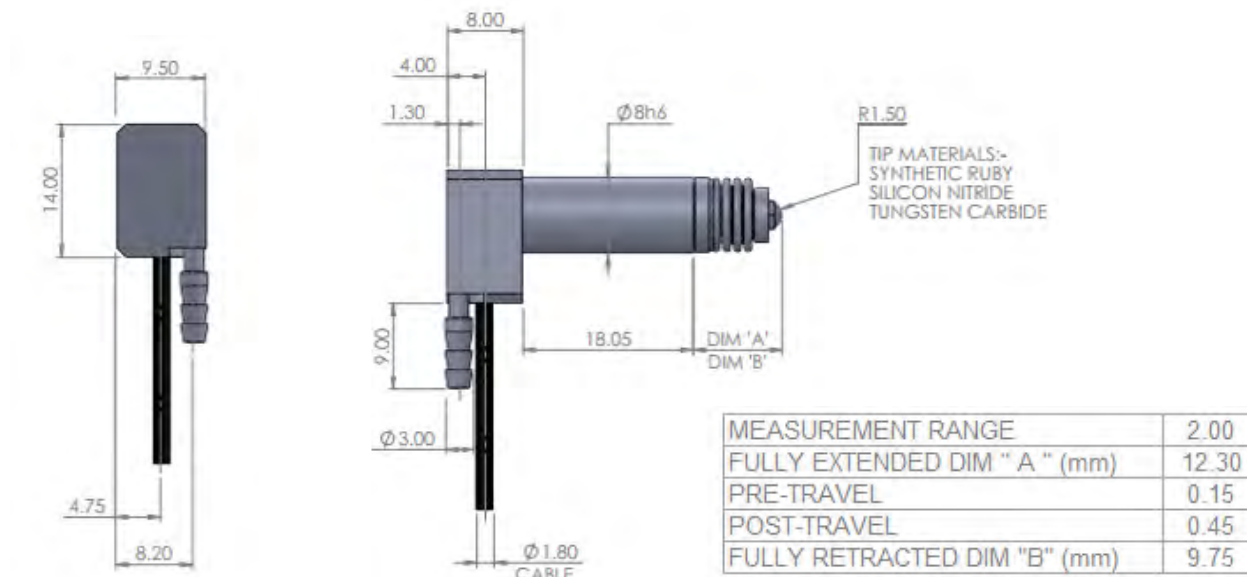
# TECHNICAL SPECIFICATIONS

PRODUCTS <i>(Note 4)</i>	COMPACT			NARROW BODY			
Spring Push Axial Cable	DZ/1/S	DZ/2/S	N/A	D6P/2/S	D6P/5/S	N/A	D3P/1/S
Spring Push Feather Touch	N/A	N/A		D6T/2/S	N/A		D3T/1/S
Pneumatic Axial Cable			DZR/2/P	N/A		N/A	
Pneumatic Axial Cable Jet			N/A	D6J/2/P	D6J/5/P	D6J/12/P	N/A
Diameter	8h6			6h6			3h6
MEASUREMENT PERFORMANCE							
Measurement Range (mm)	1	2	2	2	5	12	1
Accuracy (% of Reading) (Note 1)	0.10	0.10	0.1% or 0.5 µm	0.05	0.05	0.10	0.20
Accuracy (% of Reading) (Note 1) - with In line Connector	0.15	0.15	0.15	0.15	0.15	0.50	0.30
Repeatability (worst case) µm (Note 2)	0.05	0.05	0.25	0.05	0.05	0.25	0.5
Repeatability (typical) µm (Note 3)	0.01	0.01	0.01	0.01	0.05	0.1	0.25
Resolution (µm)	0.01	0.01	0.01	0.01	0.02	0.05	0.01
Pre Travel (mm)	0.15	0.15	0.15	0.15	0.15	0.15	0.075
Post Travel (mm)	0.35	0.35	0.45	0.85	0.85	0.85	0.30
Tip Force (N) at Middle of Range ±20%							
Spring Push	0.70	0.70	N/A	0.70	0.70	N/A	0.50
Pneumatic at 0.4 bar Minimum	N/A	N/A	0.7	N/A	N/A	N/A	N/A
Pneumatic at 1 bar Maximum	N/A	N/A	2.6	N/A	N/A	N/A	N/A
Pneumatic Jet ±30% at 1 bar (Note 6) (Note 7)	N/A	N/A	N/A	0.70	0.70	0.50	N/A
Temperature Coefficient %FS/°C	0.01	0.01	0.03	0.01	0.01	0.01	0.03
ENVIRONMENTAL							
Sealing for Probe	IP65 for spring probe with Gaiter, IP40 with Feather Touch, no IP rating for Jet probes						IP50 (Std), IP40 (FT)
Sealing for Probe Interface Electronics	IP43 for module and TCON						
Storage Temperature (°C)	-20 to +80						+5 to +65
Probe Operating Temperature with Gaiter (°C)	+5 to +80						+5 to +65
Probe Operating Temperature without Gaiter (°C)	-10 to +80						N/A
Electronics Operating Temperature (°C)	0 to 60						
EMC Emission	EN61000-6-3						
EMC Immunity	EN61000-6-2						
Probe life (Operating Cycles)	> 10 million						
MATERIAL							
Probe Body	Stainless Steel						
Probe Tip (options)	Nylon, Ruby, Silicon Nitride, Tungsten Carbide						
Gaiter (Note 5)	Fluoroelastomer						
Cable	PUR						
Electronics Module	ABS						
ELECTRONICS INTERFACE (ORBIT®)							
Orbit® Interface options	PC: USB, Ethernet®, RS232, R5485, Bluetooth™						
	PLC: MODBUS® TCP/IP, EtherNet/IP®, Profinet®, EtherCat®, CC-Link®						
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 % 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 right angled version of DP/2/S
- ▶ Note 5: Different gaiter materials available for specific applications - Fluoroelastomer standard option
- ▶ Note 6: D6P/2/P @ 0.8 bar, D6J/5/P and D6J/12/P at 0.9 bar
- ▶ Note 7: 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 5µm particle size.

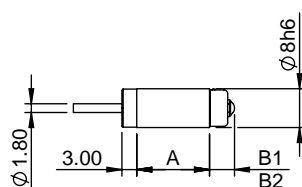
# ORBIT® TRANSDUCER DIMENSIONS

## DZ Compact Pneumatic Probes (DZR/P)

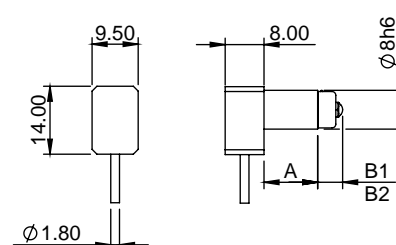


## Ultra Short Spring Push (DZ/S)

	DZ/1/S	DZ/2/S	DZR/1/S	DZR/2/S
A	15.00	19.50	11.00	15.50
B1	5.15	6.25	5.15	6.25
B2	3.65	3.65	3.65	3.65



## Radial Cable Outlet (DZR/S)



MRM Metrology Inc.  
 905 595 1000  
[sales@MRMmetrology.com](mailto:sales@MRMmetrology.com)  
[www.MRMmetrology.com](http://www.MRMmetrology.com)