



world leaders in the art of linear measurement

DZ Series

Datasheet
502782
Issue 3
EDCR 18450

Compact Digital Gauging Probes



Features

- ▶ 1mm and 2mm total measuring range
- ▶ Resolution programmable to <math>< 0.01\mu\text{m}</math>
- ▶ Simple installation and sensor change
- ▶ Excellent repeatability
- ▶ Very compact and robust
- ▶ Changeable tips
- ▶ Orbit digital
- ▶ IP65 Protection
- ▶ Traceable calibration

A novel approach to High Performance yet Compact Gauge Probes.

Description

The lack of space to fit a gauge probe is often a problem for gauge builders and test engineers alike. Very short pencil style gauge probes have usually meant a reduction in performance and/or life expectancy, but that has now changed.

Solartron Metrology has taken a novel but practical route to solving the problem of miniaturisation with strength to produce the DZ range of compact Gauge Probes.

Up to 50% reduction in length over conventional 1mm and 2mm gauge probes has been achieved yet performance and life expectancy has been maintained. due to a completely new approach to the construction of gauge probes.

The sensor in a gauge probe normally sits behind the bearing. A reduction in overall length of a gauge probe is normally achieved by reducing the size of the bearing, which in turn affects the life or accuracy of the probe. Solartron's novel approach of fitting a specially designed sensor inside a Ball Sleeve Bearing enables the gauge builder to install extremely compact probes without compromising on performance.

Mechanical outline

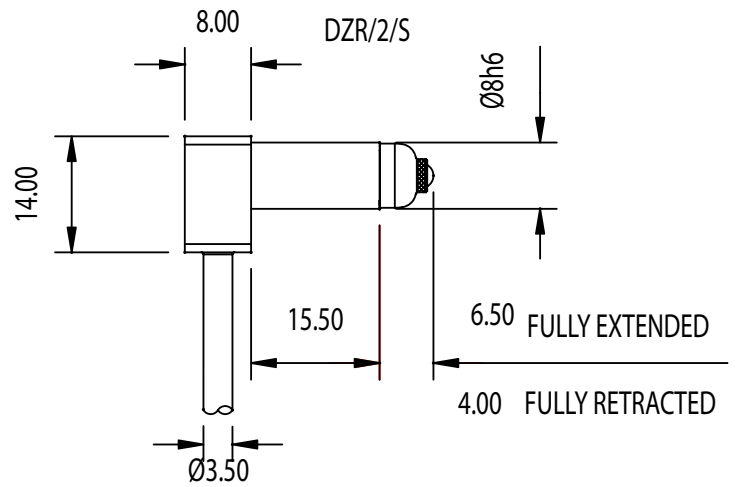
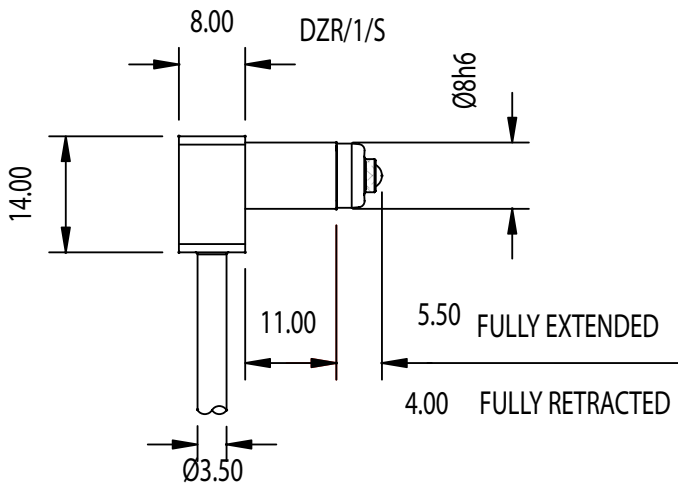
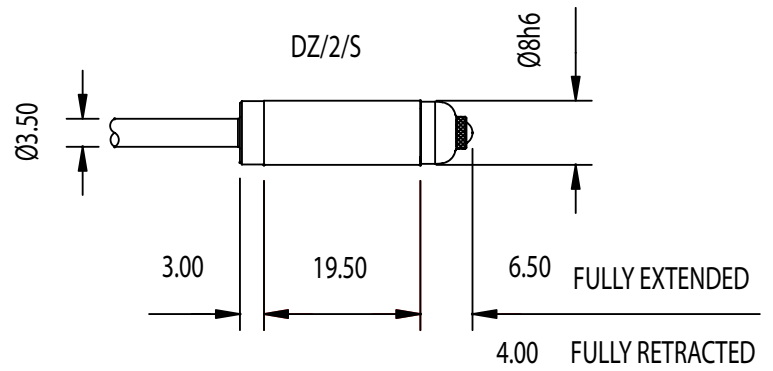
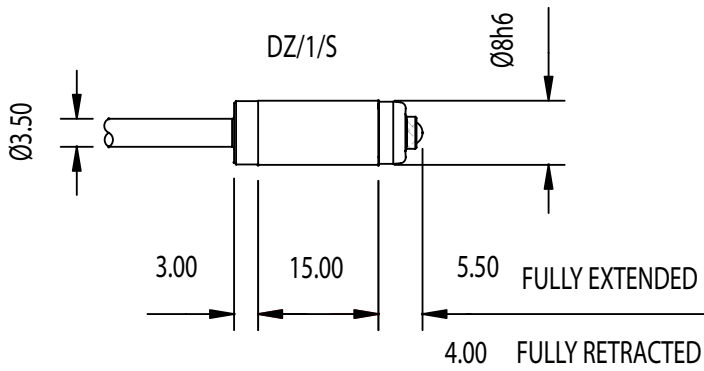


Figure showing general dimension and datum surfaces (please refer to the technical drawing for the complete set of dimensions)

Technical Specification

Product type	Digital	Digital
	DZ/1/S	DZ/2/S
Axial cable outlet: Standard Spring	DZ/1/S	DZ/2/S
Radial Cable Outlet: Standard Spring	DZR/1/S	DZR/2/S

Measurement

Measurement Range (mm)	1	2
Accuracy ⁽¹⁾ (% of reading)	< 0.1 %	< 0.1 %
Resolution	up to .01 µm User Selectable	
Repeatability ⁽²⁾ µm	0.15	0.15
Pre-travel (mm)	0.15	0.15
Post-travel (mm)	0.35	0.35
Pre-travel Adjustment range (mm)	N/A	N/A
Tip force: Standard ±20% (N) at mid position	0.70	0.70
Temperature Coefficient % FS/°C	0.01	0.01

Mechanical

Body Diameter (mm)	8h6	8h6
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Materials

Case:	Stainless Steel
Tip:	Tungsten Carbide
Gaiter ³ :	Viton®
Cable ⁴ :	PUR

Environmental (Probe Head Only)

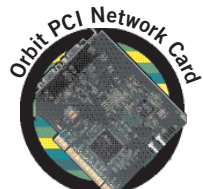
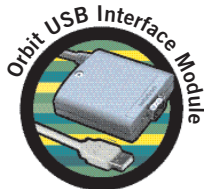
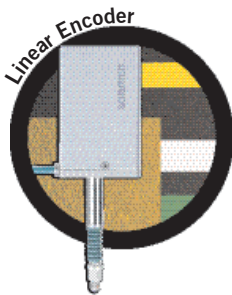
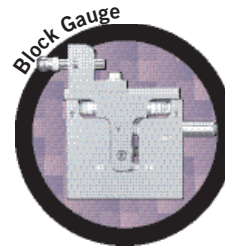
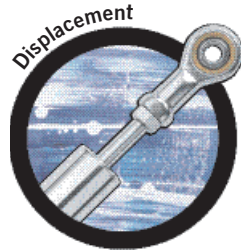
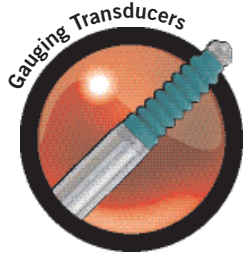
Storage Temp (°C)	-40 to + 100
Operating Temp with gaiter (°C)	+ 5 to + 80
Operating Temp without gaiter (°C)	-10 to + 80
IP Rating	IP65

- (1) Accuracy definition
- (2) Obtained by step gauging: Repeatedly pushing the probe against the edge of the intended target prior to recording the measurement. This replicates the actual DZ operation in the field.
- (3) Viton is a trademark of DuPont Dow Elastomers
- (4) All probes are supplied with 2 m of PUR cable as standard. Other lengths and options such as nylon braided, metal braided and armoured are available on request.

Digital Probe interface Electronics	
Reading Rate:	Up to 3906 readings/second
Bandwidth:	Up to 460 Hz dependent on noise performance required
Output:	Serial communication -RS485 signal level (solartron Orbit Protocol)
Power:	5 ±0.25 VDC @ 0.06A (includes power for probe)
Storage Temp (°C)	-20 to +70
Operating Temp (°C)	0 to +60
IP Rating	IP43

If you have a specific requirement, please contact your local Solartron Metrology office.

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