

Displacement and Pressure Transducers

Specification and technical data sheet



The various Pressuremeter and Dilatometer systems employed by Cambridge Insitu all use the same transducer (sensor) technology, albeit in different configurations within a measurement system.

The core of the transducer system is a series of temperature compensated strain gauges, configured in a balanced Wheatstone bridge circuit. These transducers are fitted within either displacement or pressure measuring systems, according to the application. From initial manufacture to ongoing maintenance, these transducer assemblies are calibrated according to set standards; with values for individual transducer hysteresis, linearity and zero being routinely measured and recorded.

Displacement Transducer	
Measured Range (max):	0 – 20 mm
Resolution:	< 0.001 mm
Raw data unit:	mV
Engineering unit:	mm
Configuration:	Leaf spring, strain arm & roller bearings

Acceptable Displacement Transducer Limits			
Instrument type	Measured Range	Hysteresis	Linearity
47mm Reaming Pressuremeter	0 – 10 mm	< 0.75% FS	< 5%
95mm High-Pressure Dilatometer	0 – 20 mm	< 0.5% FS	< 5%
Self-Boring Pressuremeter	0 – 6 mm	< 0.5% FS	< 5%

Pressure Transducer	
Measured Range (max):	0 – 30 MPa
Resolution:	< 0.3 kPa
Raw data unit:	mV
Engineering unit:	kPa
Configuration:	Diaphragm pressure cell

Acceptable Pressure Transducer Limits			
Instrument type	Measured Range	Hysteresis	Linearity
47mm Reaming Pressuremeter	0 – 10 MPa	< 0.5% FS	< 2%
High-Pressure Dilatometer	0 – 30 MPa	< 0.5% FS	< 2%
Self-Boring Pressuremeter (Total Pressure Cell)	0 – 10 MPa	< 0.5% FS	< 2%
Self-Boring Pressuremeter (Pore Pressure Cell)	0 – 10 MPa	< 0.5% FS	< 2%