Mid Plane Pore Pressure / Suction Probes - Pressure Ranges

100kPa	✓	150kPa	✓
350kPa	✓	700kPa	✓
1500kPa	✓	3500kPa	✓

Suction Probe HAE Values

100kPa	✓	300kPa	✓
500kPa	✓	1500kPa	✓

Mid Plane Pore Pressure and Mid Plane Suction Probes

What is it?

The GDS Mid Plane Pore Pressure probe provides a direct measurement of the specimen pore pressure at the mid height of the sample. The GDS Mid Plane Suction Probe is a similar device but uses a high air entry porous disk in the tip to enable suction measurements to be made for unsaturated soil testing.

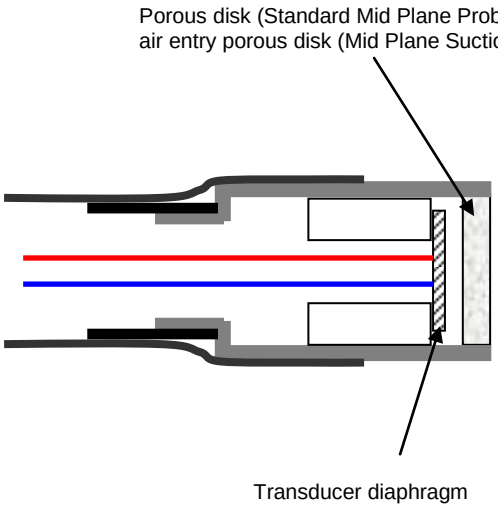
Why use it?

Mid-plane pore pressure measurement is preferred to measurements made in the area of the base pedestal. The reason for this is due to the minimal volume change of pore fluid required to activate the transducer diaphragm compared to that in a base pedestal transducer.

Measurement of matric suction in unsaturated soil

One of the two stress state variables for unsaturated soils is matric suction. The GDS suction probe provides a direct measurement of pore water pressure for the measurement of matric suction. This type of direct measurement is preferred in unsaturated soil tests as measured values of pore water pressures are more rapidly reflected. When the tip is fully saturated, the response of the time of the suction probe is generally less than 3 seconds, even for relatively large changes in pore water pressure.

The principal of making suction measurements using a suction probe is based on the equilibrium between the pore water pressure in the soil and the pore water pressure in the water compartment of the transducer behind the porous tip. Before equilibrium is attained, water flows from the water compartment into the soil, or vice versa. In an unsaturated soil specimen, negative pore water pressure causes the flow of water from the water compartment into the soil. On the other hand, in a saturated soil specimen, positive pore water pressure causes the flow of water from the soil into the water compartment.



Technical specification: Pore Pressure Probe

Pressure Ranges:	Pressure Limit:	CNL&H* (%FSO**)	Thermal Zero Shift "TZS":
100kPa	4.5 x FS	±1%	± 1mV
150kPa	3 x FS	±1%	± 2% FSO
350kPa	2 x FS	±1%	± 2% FSO
700kPa	2 x FS	±0.5%	± 1.5% FSO
1500kPa	2 x FS	±0.5%	± 1.5% FSO
3500kPa	2 x FS	±0.5%	± 1.5% FSO

*CNL&H = Combined Non-Linearity & Hysteresis
**FSO = Full Scale Output

Why buy a Mid Plane Probe?

- Response speed of pore pressure measurement.
- Measurement of pore pressures (and hence effective stress) in the middle third of the specimen where end effects are not present.
- Measurement of pore pressure distribution and equalization throughout the specimen length.
- Direct measurement of suction (suction probe only).

Due to continued development, specifications may change without notice.