

APPLICATION NOTE EPB-PW FAQ

(Frequently Asked Questions)

OVERVIEW

The EPB-PW is designed for use for Pore Water applications. Pore water being the relationship between water content and soils (clays, sand) and in turn their relationship on earthquakes, landslides etc. Commonly the product is used in Research Institutes, Universities but also on occasion by commercial organizations making pore water pressure measurements.

The sensor is normally connected to a Centrifuge which as it spins, scales up the modelling tests. The sensor is in direct contact with the Soil (clay or sand based medium) and is protected by a porous ceramic stone (clays) or sintered bronze filter (sand). Each stone or filter has a relevant air entry and porosity value.



Over the past 6-8 months, we have researched the technical requirements of the customers to provide the best possible product. Interviews have been conducted at ETH (Switzerland), Schofield Institute (UK), University of Durham (UK), City University London (UK) and Iffstar (France). Over 30 units have been built and supplied already.

Is the sensor case sensitive?

No, we have designed the sensor so it may be externally clamped to mount the sensor into the application.

Is this sensor a direct replacement to the recently obsolete GE Sensing PDCR-81?

Yes, it is a direct drop in replacement to the PDCR-81 however has enhanced features should as an IP68 rating.

What pressure ranges are you intending to offer?

We currently start at 1 bar (15 psi) to 70 bar (1 kpsi) Sealed gauge or Absolute. As yet we have not received any enquiries for a lower pressure than 1 bar, nor a vented gauge version. Both of these could be designed if required.

What are the effects of Matric suction on the sensor?

The application is somewhat unique. In the case of Saturated or Unsaturated soils, the presence (or lack of) water in the soil sample causes a unique effect called Matric suction. This is where the water sucks the diaphragm in a negative pressure. In the case of unsaturated soils, this can be significant suction upwards of 20 bar. We have designed the sensor to work in negative pressure, matric suction is not an issue.

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Do you fit the Porous stones?

If requested by the customer yes. We have available air entry value options of 0.5, 1, 3 5 & 15 bar ceramics stones, others available on request. Our standard fitting is to affix the stone in 2 places by epoxy. In unique cases of high pressure unsaturated soil applications, we can located an fix the stone by epoxy around the circumference of the stone.

In the case on Bronze sintered filters, this are a push fit only and not fixed.

Do you supply the Porous stones separately?

Yes, we will have the ability to supply stone as a separate part number as spares. These are normally ordered by Air entry value (which the customer will know). If not, we can provide a selection chart so they can identify the best option for them.

In need 5V supply, can you do this?

Yes, option code V5. In most instances customers will need 5V supply however our standard for all products is 10V. Therefore, to avoid any production errors, we propose option V5 instead of standardising on this supply.

What about cable lengths?

We have standardised on 2M cable as standard, but extra lengths can be ordered as an option. There is a cost adder for this option. The cable is designed to be flexible and have a good bend radius. It is sealed IP68 as standard.

If you have any further questions regarding the product, please do not hesitate to contact us.

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity Company
45738 Northport Loop West
Fremont, CA 94538
USA
Tel: 1-800-767-1888
Fax: 1-510-498-1578
customercare.frmt@te.com

EUROPE

Measurement Specialties (Europe), Ltd.
a TE Connectivity Company
26 Rue des Dames
78340 Les Clayes-Sous-Bois, France
Tel: +33 (0) 130 79 33 00
Fax: +33 (0) 134 81 03 59
CustomerCare.lcsb@te.com

ASIA

Measurement Specialties (China), Ltd.,
a TE Connectivity Company
No. 26 Langshan Road
Shenzhen High-Tech Park (North)
Nanshan District, Shenzhen 518057 China
Tel: +86 755 3330 5088
Fax: +86 755 3330 5099
CustomerCare.shzn@te.com

te.com/sensorsolutions

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