

Multi-Element Probe

Multi-Element Probe (MEP) for permanent concrete immersion



The MEP allows the monitoring of steel embedded within concrete.

There are challenges associated with taking reference measurements with steel embedded in concrete due to lack of access to the steel and poor interface between a reference electrode and the concrete. The MEP solves this problem by embedding the reference within the concrete permanently, and making a connection to the steel to be monitored. This is then brought out to a test box along with all the other wires from the probe to be monitored. The reference electrode, and two steel coupons are all available at the same point after installation. No more chipping away concrete or searching around to find a connection point to the steel, all the connections are available in one test box.

Reliability

The MEP allows embedded rebar and piping within concrete to be monitored for corrosion. Corrosion of rebar can affect the strength and integrity of structures, and corrosion of embedded piping is expensive and labour-intensive to fix. Knowing about the corrosion before it progresses is key to preventing later issues.

Accuracy

The MEP includes a manganese dioxide reference electrode, a carbon steel element, and a stainless steel element.

Readings can be taken between the reference electrode and the element that closely matches the structure being monitored.

The steel elements are connected through the test box and the structure lead, so they experience the same cathodic protection as the structure.

Features

- + Validates corrosion prevention system operation on infrastructure/rebar embedded in concrete.
- + Reduces operating costs by eliminating the need to interrupt foreign sources of interference.
- + Allows confirmation of actual versus design operating parameters.
- + Integrated manganese dioxide reference electrode designed for use in concrete.
- + Easy to install before concrete pour.
- + Can be installed in existing concrete.
- + Compatible with remote monitoring and data recording hardware.
- + Carbon steel and stainless steel electrodes.
- + Closely represents the rebar or pipes within the concrete.
- + Serialized for improved traceability.

PURPOSE

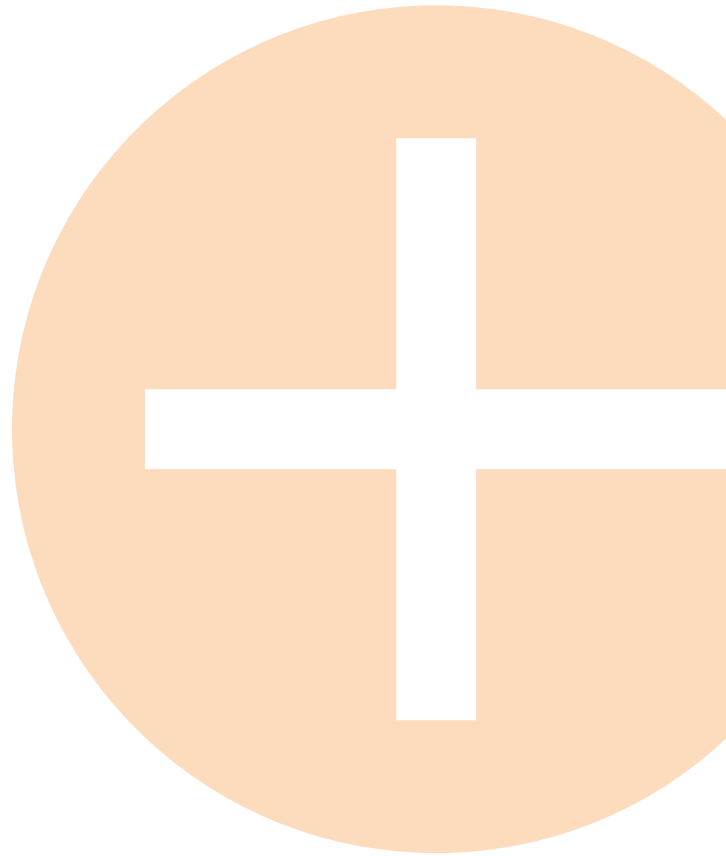
The MEP represents known lengths of uncoated steel within the same concrete environment as the steel to be monitored. Readings can be taken between the steel elements and the integrated reference to determine the protection status of the steel within the concrete.

INSTALLATION INSTRUCTIONS

Step 1	Install the MEP in the area where concrete is to be poured.
Step 2	Connect the green structure wire to the metal that is to be monitored. Connection can be via clamp, pin brazing, or cadweld.
Step 3	Cut the cables to the required length; some cable may be coiled inside the test station.
Step 4	Terminate the coupon wires in the test station or junction box as per design drawings.
Step 5	Connect the element and structure leads together per the operator procedures.

Note

- Remove the protective tape and black cap covering the reference electrode tip.
- Red & Orange leads are connected to the carbon steel element.
- Blue & Black leads are connected to the stainless steel element.
- White lead is connected to the reference electrode.
- Green lead is connected to the structure to be monitored.



SAM-PCP-24-0001_REV1

To the best of our knowledge, the data contained herein are true and accurate at the date of issuance and are subject to change without prior notice. User must contact supplier to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We assume no responsibility for performance or injuries resulting from use. Liability, if any, is limited to replacement of products. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY THE SELLER, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.