

Model CM – Ag/AgCl Probe for Concrete

Featuring

Long term reliability with thermodynamically stable Ag/AgCl element

Proprietary grout surrounding the element provides low resistance coupling to concrete

Typical Applications

Model CM can be used in all types of concrete structures. When it is used in seawater applications, where the chloride level of the pore water is expected to remain nearly constant, it functions as a reference electrode providing stable reproducible potential readings. When used in other structures in which the chloride level can vary slowly over time, Model CM provides short term stability suitable for depolarization measurements. This product is a replacement for graphite probes.



Housing Specifications

1 1/4 inch (3 1/2 cm) dia. x
2 1/4 inch (6 1/2 cm) long
Shipping weight – 0.4 lb (0.25 kg)

Element Specifications

Design life – min. 30 yrs.
Shelf life - 1 year minimum

Element Types

AGC - Ag/AgCl for concrete

Terminations

SWnnn - nnn ft of #14 RHW blue
CWnnn – nnn ft wire as specified

Model Designation

Specify as Model CM-AGC-termination code

Installation Notes

Model CM should be installed directly in the concrete as close as possible to the rebar where measurements are to be taken. Allow 60 days from the date of installation for the electrode to equilibrate to its surroundings. When used in marine concrete structures such as seawalls, bridge pilings, piers and docks, Model CM will remain stable after equilibration.

Model CB-AGG reference electrodes should be used when long term stability is required in structures where conditions vary, or for concrete in fresh or brackish water.

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*C Series
Concrete
Products*

Concrete Reference Electrode

These instructions apply to EDI Model CM-AGC reference electrodes with a silver/silver chloride (Ag/AgCl) element designed for use in reinforced concrete. Be sure to follow the correct procedures. Failure to do so can significantly shorten the life of the reference electrode.

Pre-installation Conditioning – Pre-installation conditioning is not necessary for the Model CM reference electrodes. To verify the potential before installing, soak the electrodes in salt water (1/3 cup non-iodized table salt with 2 gallons of tap water) for an hour prior to testing their potential to a lab electrode. After testing, keep electrodes wet until ready to install.

Installation in New Structures - Use plastic coated wire ties to secure reference electrodes to the center of a rebar net square. This should be done not more than four hours before the concrete will be poured.

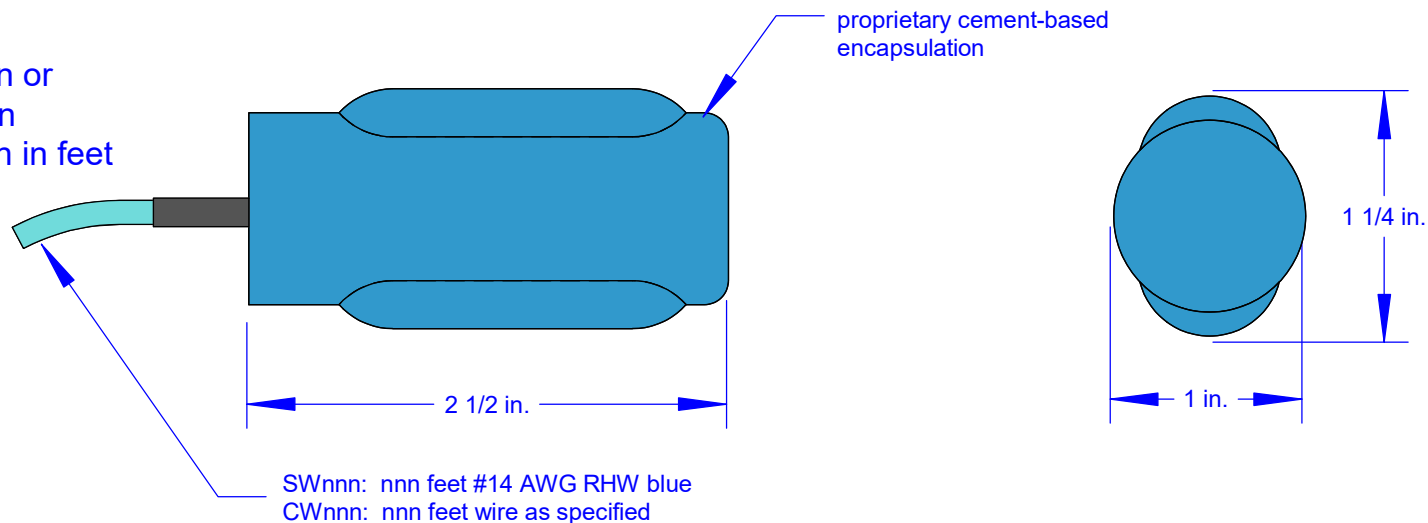
Installation in Existing Structures - Excavate hole to required depth for proper location. Recommended minimum dimensions for the hole are 2 ½" x 2 ½" x 8" (6 cm x 6 cm x 20 cm). A layer of the original concrete should remain between the reference electrode and the rebar. Lead wires can be embedded in saw slots. The preferred location for the reference is at the center of a rebar square at the same depth as the outer rebars. Place it in the hole and fill the hole with Portland cement patching grout. Potassium chloride (KCl) may be added to the patching grout to lower the resistance between the electrode and the existing concrete.

Substituting Sodium Chloride (NaCl) for Potassium Chloride (KCl) - KCl is the preferred salt to use for both conditioning the electrode and adding to the patching grout. Substituting NaCl for KCl in these steps will not damage the electrode but it will cause a several millivolt error in measurements due to a junction potential between the KCl in the electrode gel and the NaCl in the conditioning water or patching grout.

Caution: Do not use patching grouts containing polymer additives.

Single Wire Termination - The Model CB electrode with a single wire termination (code **SW**) has a single #14 HMW/PE lead wire, length as specified. On the Model CM, the single lead wire is #14 RHW2. The lead wire should not share a conduit with power leads. For elevated structures, the lead wire should be encased in a metal conduit. These precautions will minimize errors in potential measurements due to interference.

Model CM-AGC-SWnnn or
 Model CM-AGC-CWnnn
 where nnn = wire length in feet



EDI Model CM-AGC is installed directly in concrete using a grout composition that matches that in the original structure. Non-conductive additives such as plasticizers must not be used in the grout mix. During the first sixty days after installation, the reference potential may shift as the electrode equilibrates with its surroundings.