

Model IR - Immersion Reference

Typical Applications:

- Elevated water tanks, standpipes, ground storage tanks, clarifiers, traveling screens, trash racks, submerged pipelines, locks, dams, dock structures

Featuring:

- Rugged 1 inch white PVC housing
- 25 year design life
- Optional magnetic mount for easy attachment to steel structure
- Optional antifreeze protection to -30F (-35C)



Housing Specifications

1 5/8 inch (4 cm) dia. x 10 3/4 inch (28 cm) long
Heavy duty strain relief at wire end
Shipping weight without wire – 1 lb (1/2 kg)

Element Specifications

Design life - 25 yrs.
Shelf life - 1 yr. with end cap in place
Max. Temp. - +140F (60C)
Min. Temp. - + 10F (-12C)

Element Types

AGG - saturated gelled Ag/AgCl
CUG - saturated gelled Cu/CuSO₄

Terminations

LWnnn - nnn ft. #12 AWG RHW/USE
CWnnn - nnn ft. of custom wire

Options

M - Magnetic mount
A - Antifreeze protection to -30F (-35C)
S - 3/4 IPS socket end

Model Designation

Specify as EDI Model IRzz-xxx-yy
zz = Option code
xxx = Element type
yy = Termination type

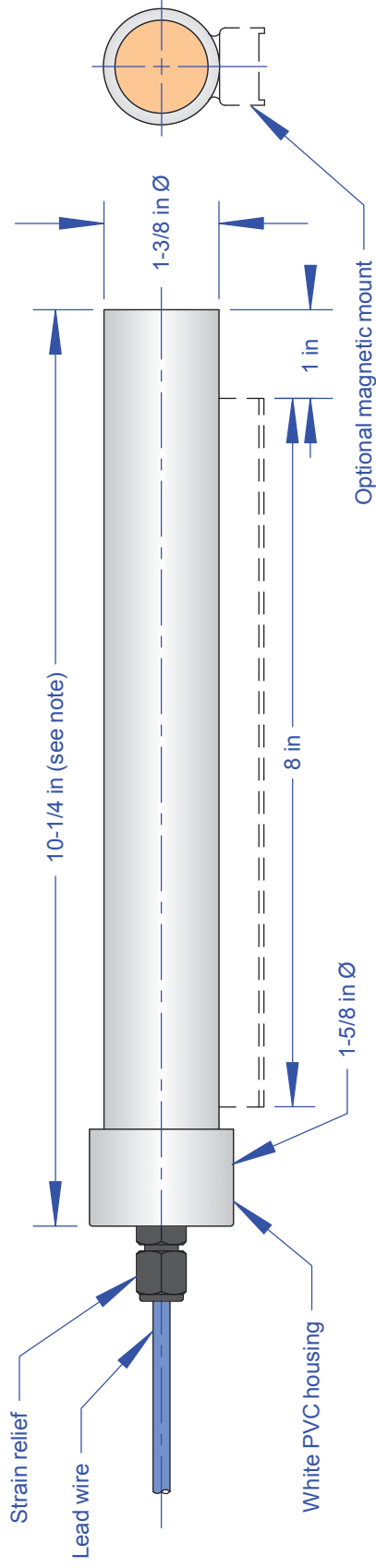
The **Model IR** is designed for long term installation in an aqueous environment. It can be directly suspended by its lead wire, cemented directly to 3/4 inch PVC conduit or securely attached to a steel structure with the optional magnetic mount. Antifreeze protection is also available for those situations where the electrode may be exposed to temperatures down to -30F (-35C).

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*I Series
Immersion
Reference
Electrodes*





Specify as EDI Model IRzz-xxx-yy where

zz = option codes: M, A, or S

xxx = element type: AGG or CUG

yy = termination: LWnnn or CWnnn

Option Codes

M = Magnetic mount

A - Antifreeze protection to -30F (-35C)

S = 3/4 in IPS socket end

Element Types

AGG = Saturated gelled silver/silver chloride

CUG = Saturated gelled copper/copper sulfate

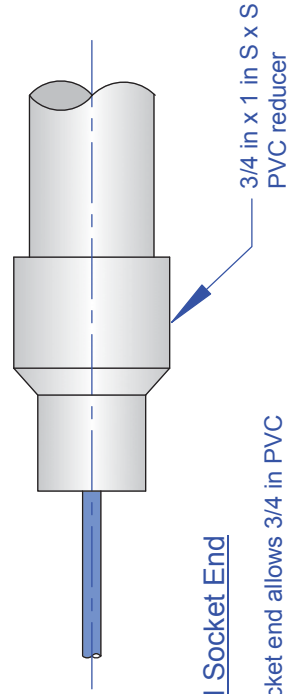
Termination Types

LWnnn = nnn ft #12 AWG RHW/USE lead wire

CWnnn = nnn ft custom wire as specified by customer

Optional Socket End

Note: socket end allows 3/4 in PVC pipe or conduit to be directly cemented to reference electrode.



Note: Model IR has a design life of 25 years.

An extended life version, Model IR40 with a 40 yr design life is available on special order. The overall length of the IR40 is 14-1/4 inches. All other dimensions and features remain the same as the Model IR.



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Permanent Immersion Reference



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Usage Instructions

Model IR - Permanent Immersion Reference Electrode

Installation – Immersion electrodes can be suspended in the electrolyte by the lead wire. Electrodes can be obtained with an optional magnetic mount for attaching to a steel structure or an optional socket end fitting for fastening to a PVC conduit. Potential measurements should be made using a voltmeter with an input impedance in excess of 10 megohms. Use of meters or data loggers with a lower input impedance may result in measurement errors.

Calibration - Reference electrodes are calibrated by measuring their potential against a second reference electrode of the same type while both electrodes are immersed in a beaker of potable water. The second electrode should be one which has been set aside specifically for calibration purposes. Alternatively, the electrode can be compared against a newly purchased field grade or laboratory reference which can be used as a standard.

Potentials of all EDI reference electrodes are within 5mV of each other at time of shipment. As reference electrodes age, their reference potential can shift to +/-20mV of their original value. If a larger shift is noted or if the potential is not stable, then the electrode should not be placed back in service. However, reference electrodes can often be rejuvenated by soaking them in the appropriate saturated salt solution*.

* *Saturated salt solutions should be prepared using technical or laboratory grade chemicals in distilled or, preferably, deionized water. Add sufficient salt so that there is extra undissolved salt present in the solution. Use potassium chloride salt (KCl) with Ag/AgCl elements and copper sulfate salt (CuSO₄) with Cu/CuSO₄ elements.*

Conditions to avoid

- 1) Exposure to temperatures in excess of 130°F or below 20°F which may damage the electrode.
- 2) Exposure to electrolytes containing over 500 ppm chlorides (Cu/CuSO₄ references only), sulfides or other halides (Cu/CuSO₄ and Ag/AgCl references)

Storage - Permanent reference electrodes may be stored for up to six months with the vinyl protective cap in place. The cap prevents the membrane from drying out. They should be stored indoors in a location not subject to large temperature variations. For long term storage, it is preferable to keep the uncapped reference immersed in the appropriate saturated salt solution or keep the capped reference immersed in water. If the electrodes cannot be stored immersed, then the cap should be removed every six months and the membrane moistened with the appropriate saturated salt solution.