

DEEPWATER

TankGard™

Cathodic Protection System for Tanks and Vessels



Typical 2500 BBL tank



FlangeMate™ anodes



Floor-mount anodes for a potable water tank

Product Overview

TankGard impressed current cathodic protection systems were developed by Deepwater in the mid-1980's specifically to address harsh environment upstream process tanks and vessels.

The systems were pioneered in the San Joaquin Valley oilfields of California where produced water was hot and sour, and the systems had a high tendency for scaling and sludging.

Deepwater installed several proto-type systems where all combinations of anodes and reference electrodes were evaluated. The result was a reliable low cost system that has proven to last the 10 year design life. The heart of the system is the innovative FlangeMate anode-mount, this system isolates the ICCP anode from the vessel within the mount, thus eliminating spark hazards from insulated flange or Victaulic mounts.

Polatrak® HP-1Z™ and RT-1Z™ reference electrodes coupled with an IR Free potentially controlled power unit complete the system.

Applications

- Any produced water vessel or tank
- Separators
- Heater treaters
- Surge tanks
- Flotation cells
- Chemelec vessels
- Potable water tanks

Main Benefits

- 10 year life; many of these vessels can only expect less than 1 year from sacrificial anodes.
- Thru-wall or deck-mount anodes available.
- Proven long term performance in oilfield brines with high H₂S and CO₂, up to 200°F.
- Potentially controlled systems automatically adjust.
- Cost effective vessel integrity.

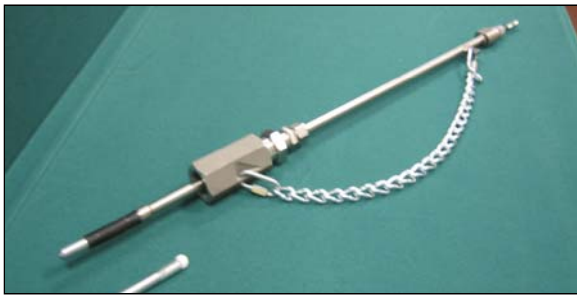
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TANKGARD



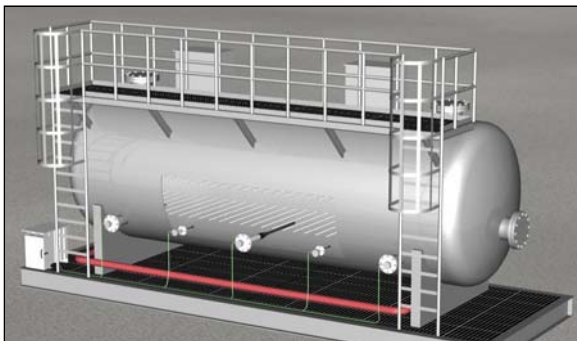
The HP-1Z, pictured with optional conduit (top) and HP-1Z E (bottom) are easily customized to fit any application.



The Polatrak RT-1Z retractable reference electrode, also part of the TankGard system.



The Polatrak RT-1Z in situ.



TankGard on a Chemelec-type vessel

HP-1Z™ Reference Electrode

The Polatrak® HP-1Z is a permanent reference electrode designed to allow positive monitoring and or control of internal cathodic protection systems for tanks and pressure vessels. It is one of the staple innovations of the TankGard™ system.

The HP-1Z E (extended) provides the electrode element on an extension wire inside the vessel. This makes it suitable for a number of applications where the electrode needs to be located in a specific area, or where internal access is limited to the upper areas of the tank or vessel. It is also ideal for monitoring tube-sheets in condensers or exchangers.

This instrument is rated to 3000 PSI, and is therefore suitable for almost any vessel (access through either a 1/2" or 3/4" NPT fitting). The electrode may be wired to a monitoring station or simply read direct at the vessel using a regular multi-meter.

The self bleed zinc electrode provides a rugged +/- 20 mV electrode for just about any environment, and the 3000 PSI pressure rating fits almost any pressure vessel. It can be inserted through any fitting providing a 1/2" or 3/4" NPT access.

HP-1Z Specifications

Pressure Rating	3000 psi
Reference Electrode	Mil. Spec Zinc (Auto Bleed)
Access Required	1/2", 3/4" or 1" NPT
Material	316 SS
Design Life	10 Years
Temperature	80°C Maximum

RT-1Z™ Retractable Electrode

The Polatrak RT-1Z facilitates simple, on-line internal vessel CP monitoring. The instrument may be left in place if on-line monitoring is required, in which case a conduit adapter is available.

This instrument is rated to 150 PSI, and is therefore suitable for most produced water vessels. Access is through a 3/4" or larger full opening ball valve.