DEEPWATER

Technical datasheet

# Polatrak DR-2 dual reference cell

## General

Polatrak DR-2 is a rugged, dual-element reference electrode designed for permanent subsea attachment to provide cathodic protection potential data. A standard DR-2 is designed to operate for 25 years. The DR-2 has a machined black delrin body that houses the electrodes and enhances the impact resistance of the assembled instrument.

## Silver/silver chloride element (Item 1)

| | |
|---|---|
| Material | Sintered Ag/AgCl on silver wire core |
| Dimensions | Ø 0.5" x 0.2" [ Ø 12 mm x 5 mm ] |
| Weight | 0.09 oz [ 2.5 g ] |
| Accuracy | ± 5 mV |

## Zinc block element (Item 2)

| | |
|---|---|
| Material | Zinc (high purity 99.95%) |
| Dimensions | 6" x 5" x 1.5" [ 152 x 127 x 38 mm ] |
| Weight | 8.7 lb [ 4 kg ] |
| Anti-passivation | Embedded carbon steel rods |
| Accuracy | ± 20 mV |

## Electrode housing (Item 3)

| | |
|---|---|
| Material | Black Delrin |
| Dimensions | 18" x 5" x 4" [ 457 x 127 x 102 mm ] |

## Frame (Item 4)

| | |
|---|---|
| Material | ASTM A36 carbon steel |
| Coating | 15 mil [ 380 microns ] marine epoxy |
| Conduit interface | Pipe coupling - 2" NPT |

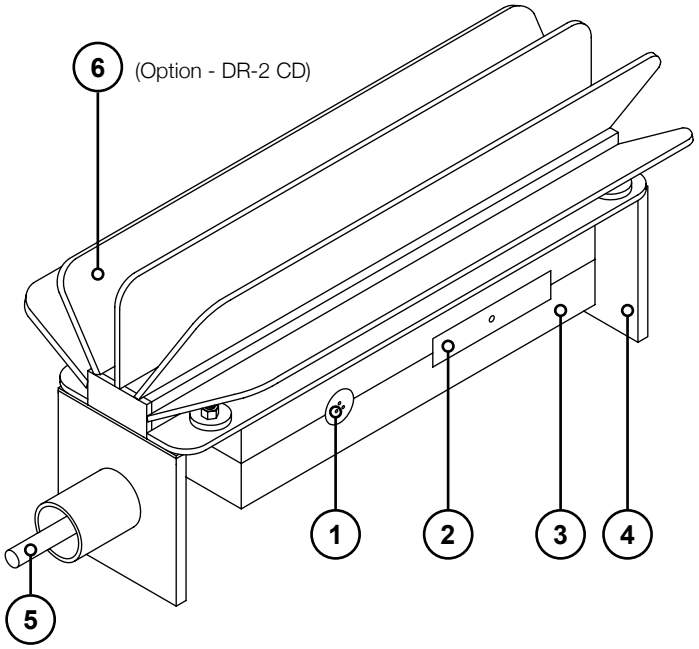
## Overall weights & dimensions*

DR-2

| | |
|---|---|
| Dimensions (W x H x L) | 6" x 6.5" x 27" [ 152 x 165 x 685 mm ] |
| Weight (air) | 49 lb [ 22.5 kg ] |
| Weight (water) | 33 lb [ 15.1 kg ] |

DR-2 CD

| | |
|---|---|
| Dimensions (W x H x L) | 12" x 13" x 27" [ 304 x 330 x 685 mm ] |
| Weight (Air) | 99 lb [ 45 kg ] |
| Weight (Water) | 75 lb [ 33.8 kg ] |




## Cable (Item 5)

| | DR-2 | DR-2 CD |
|---|---|---|
| Type | 2 core armored Polatrak cable | 4 core armoured Polatrak cable |
| Core | 2 x 12 AWG [ 3.3 $mm^2$ ] copper | 4 x 12 AWG [ 3.3 $mm^2$ ] copper |
| Insulation | EPC | EPC |
| Bedding | EPC, drain wire, matrix filler and copper/mylar tape | EPC, drain wire, matrix filler and copper/mylar tape |
| Bedding jacket | Thermoplastic polyurethane | Thermoplastic polyurethane |
| Armor | 2 layer SWA | 2 layer SWA |
| Outer jacket | Black HDPE | Black HDPE |
| OD | 0.560" [ 14 mm ] | 0.875" [ 22 mm ] |
| Min. bend radius | 11" [ 280 mm ] | 15" [ 380 mm ] |

## Current density fins for DR-2 CD (Item 6) - option

| | |
|---|---|
| Description | Polatrak DR-2 CD combines the standard DR-2 dual-element reference electrode with a 10.7 $ft^2$ [ 1 $m^2$ ] current density monitor, providing a compact package giving accurate polarization data from a single instrument. The instrument may be either hard wired to a surface location or read subsea with a SunStation readout (See SunStation technical datasheet). |
| Material | ASTM A36 carbon steel 1/8" [ 3 mm ] sheet |
| Finish | Sandblast |
| Shunt calculation | 1 mV = 10 $mA/m^2$ |

## Mounting

DR-2 and DR-2 CD can be welded to or bolted to a new structure. DR-2 and DR-2 CD can also be bolted to an existing structure (See RetroClamp technical datasheet).

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