

REMOTE ELECTRODE KIT FOR DEEP C METER 3000 AD OPERATION MANUAL



Enable remote electrode surveys with Deep C Meter

Use topside or TMS electrodes

Compatible with Polatrak SURVEY software

1. Introduction

The Deep C Meter 3000 AD comes equipped with a ROV-II CP stab probe. When paired with an EFG upgrade kit, it is capable of both contact and field gradient measurements.

The remote electrode kit, (REK) complements an upgraded Deep C Meter 3000 AD with EFG to allow for “remote electrode”, “close interval”, or “third electrode” surveys of subsea pipelines.

Requirements

1. Remote Electrode Kit
2. Polatrak Survey Software
3. Deep C Meter 3000 AD
4. ROV-II
5. EFG
6. Suitable ROV including at least one available copper conductor signal wire connecting the ROV to the TMS; or to topsides, depending on the use case. Without this connection, remote electrode surveys cannot be performed.

2. Kit Contents



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13813 FM 529 Rd, Houston, TX 77041 | US +1 (713) 983 7117 | Email: sales@stoprust.com

1. Topside Electrode on Reel – Twin electrode CP probe suitable for remote variance measurements. The use of this remote electrode requires copper conductors (typically twisted pair) from the ROV to the topside operator. This electrode can be attached to a typical tow fish, or augmented with the weight module, depending on the use case.



2. Tether Management System (TMS) Mounted Probe – Twin electrode CP probe suitable for remote variance measurements when attached to the tether management system (TMS) of an ROV. The use of this probe requires copper conductors from the ROV to the TMS.



3. Remote Electrode Adapter Cable – This cable has the appropriate connector for the TMS electrode on one end and the remote reel on the other and is used to adapt the remote electrode of choice to the topside or TMS MUX. Choose the appropriate connector for your application and cut the cable to the desired length.



Remote Electrode Kit

4. Y-Splice for Adapting the Remote Electrode and ROV-II to the Deep C Meter – These cables are used to connect various electrodes through the ROV, TMS or topsides MUX system.



5. Remote Electrode Weight Module

This weight module can be used in lieu of a tow fish for over-boarding the remote electrode if needed.



6. ROV Adapter Open-ended Whip

Connect Y-splice to ROV-MUX for remote electrode connection.



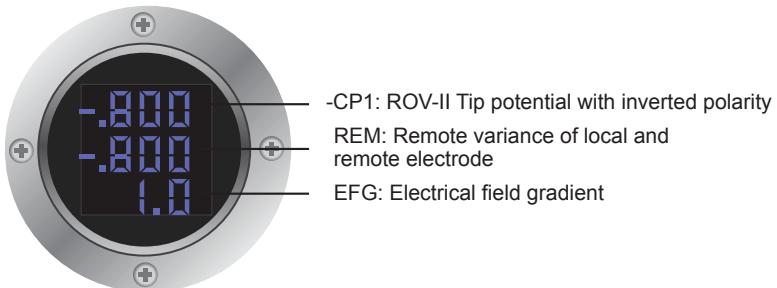
Polatrak Survey

3. Survey Scenarios

3.1 Software

In all cases, use the included Polatrak survey software in remote probe mode - see Section 8.2 from the 'Survey Subsea CP Survey Software Operations Manual' for more information.

When the REK is installed, the Deep C meter display shows the following data:

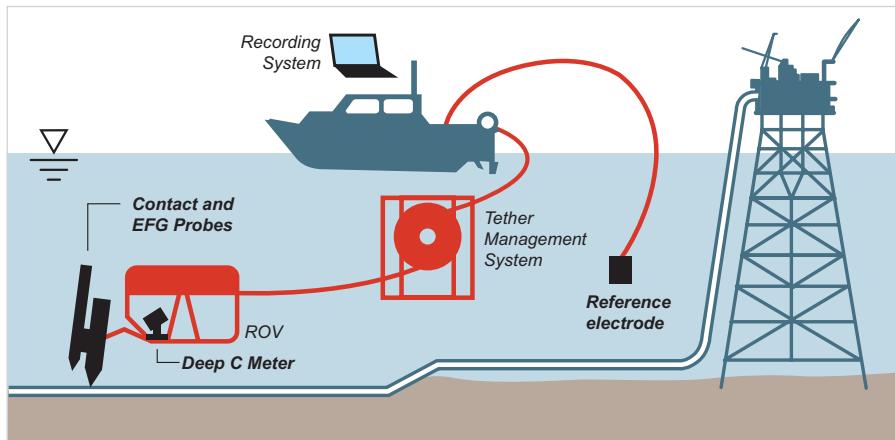


3.2 Scenarios

Two survey scenarios are outlined below:

1. Overboard Weighted Remote Electrode

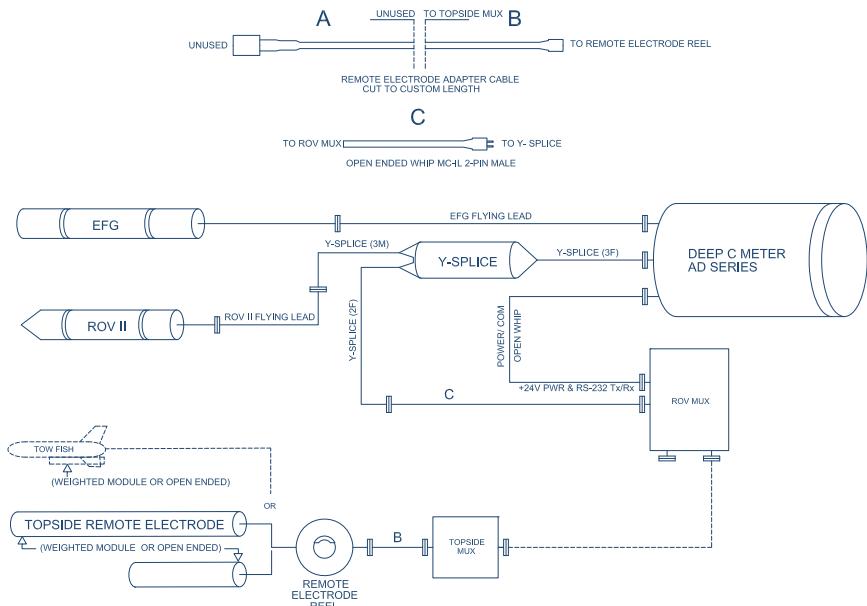
The images below show the scenario for an overboard weighted remote and details of the wiring diagram.



Remote Electrode Kit

Remote Electrode Kit Block Diagram - Overboard

Please refer to page 10 for a full-sized diagram

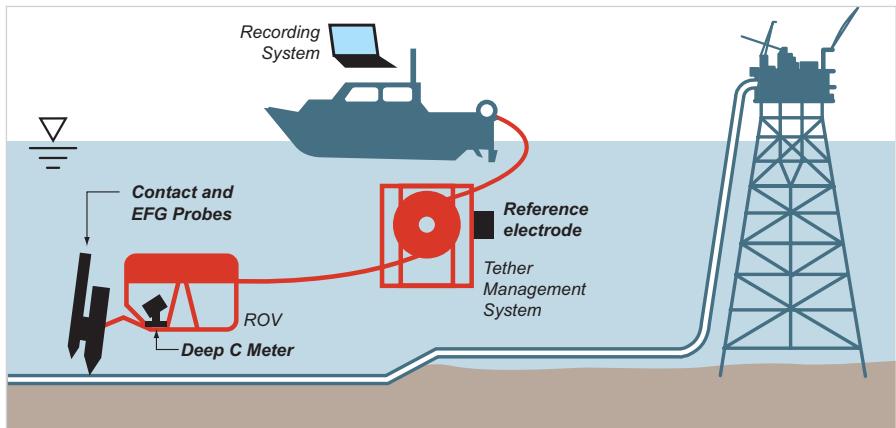


The wiring diagram for the remote electrode integration shown above, is described below:

- Select the correct plug and cut the remote electrode adapter cable to the desired length.
The open-end whip provides the interface with the twisted pair copper conductors, which pass through to the ROV.
- The ROV adapter open-end whip is spliced into the ROV MUX and attached to the Y-splice.
- The ROV-II is similarly attached to the harness.
- The single end of the Y-splice is plugged into the Deep C Meter at the ROV-II port.
- A copper signal wire now connects the remote electrode to the Deep C Meter.
- Secure the remote electrode reel in such a way that the trailing electrode will not foul or otherwise cause issues with the survey vessel.
- All other connections are identical to the typical Deep C Meter use case.

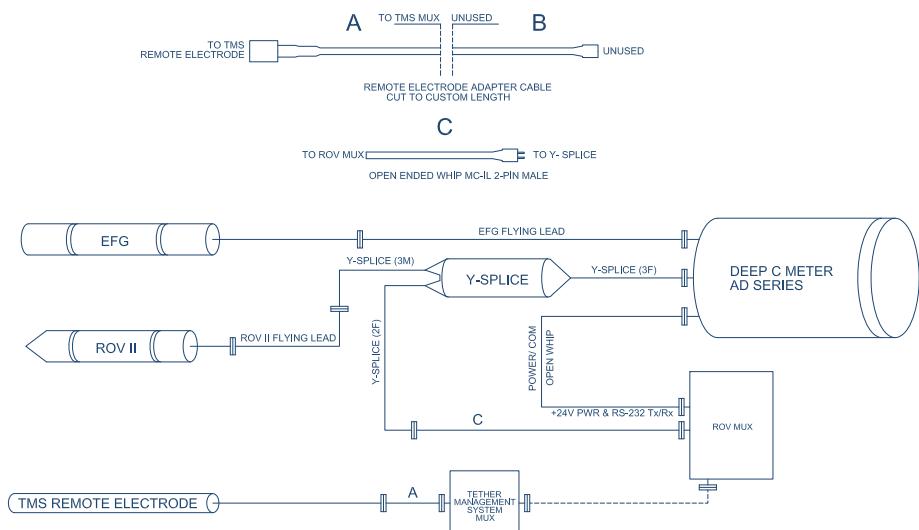
Remote Electrode Kit

2. TMS Mounted Remote



Remote Electrode Kit Block Diagram - TMS

Please refer to page 11 for a full-sized diagram



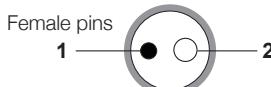
The wiring diagram for the TMS mounted electrode integration shown on Page 7, is described below:

- a. Select the correct plug and cut the remote electrode adapter cable to the desired length.
The open-ended whip provides the interface with the TMS MUX twisted pair copper conductors, which must pass through to the ROV.
- b. The ROV adapter open-end whip is spliced into the ROV MUX and attached to the Y-splice.
- c. The ROV-II is similarly attached to the Y-splice.
- d. The single end of the Y-splice is plugged into the Deep C Meter at the ROV-II port.
- e. A copper signal wire now connects the remote electrode to the Deep C Meter.

3.3 Pin-Outs

The pin-out requirements are as shown in the table below:

Remote Electrodes



TMS Remote

1. Remote electrode
2. Remote electrode



Topside Remote Reel

1. Remote electrode
2. Remote electrode

Y-Splice



1. Male: ROV-II ref-1
2. Female: ROV-II Tip
3. Female: Remote

Deep C Meter



1. ROV-II ref-1
2. ROV-II tip
3. Unused

ROV-II



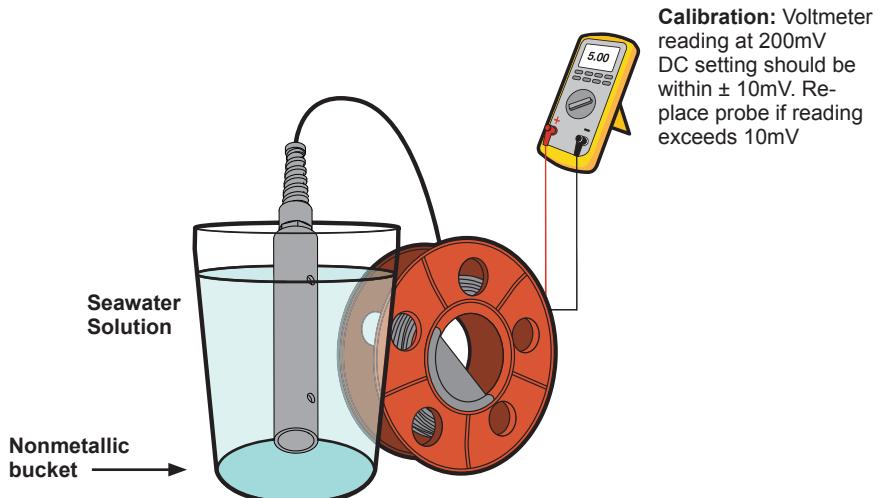
1. Remote electrode
2. Remote electrode

ROV MUX

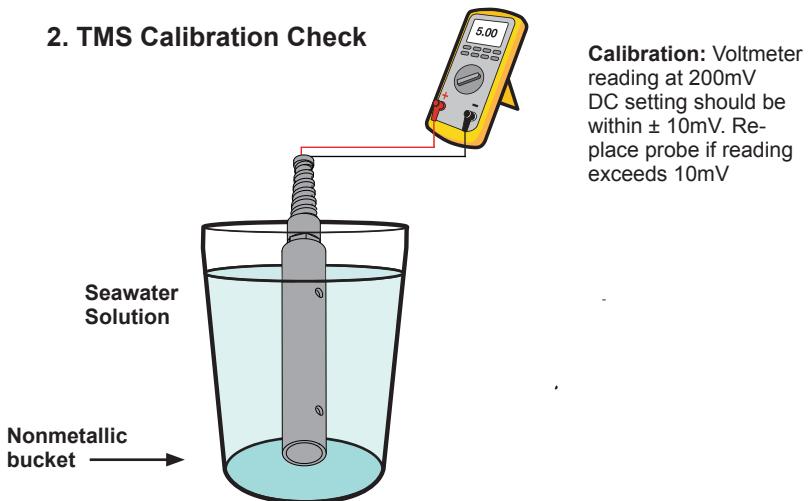
3.4 Calibration Checks

Calibration checks need to be performed for both the TMS and topside reeled options as shown below in the following sections. Follow the procedures in the ROV-II and EFG manuals to run the calibration checks.

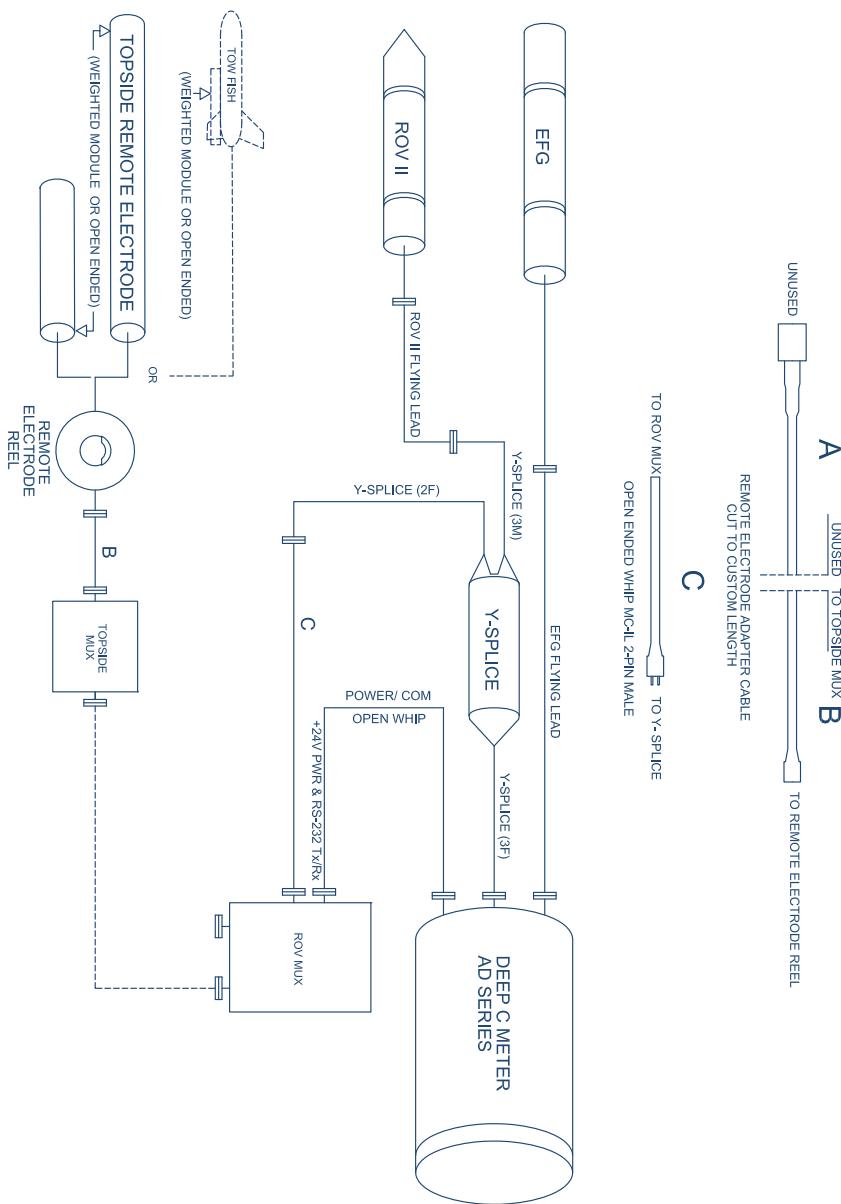
1. Topside Reeled Calibration Check



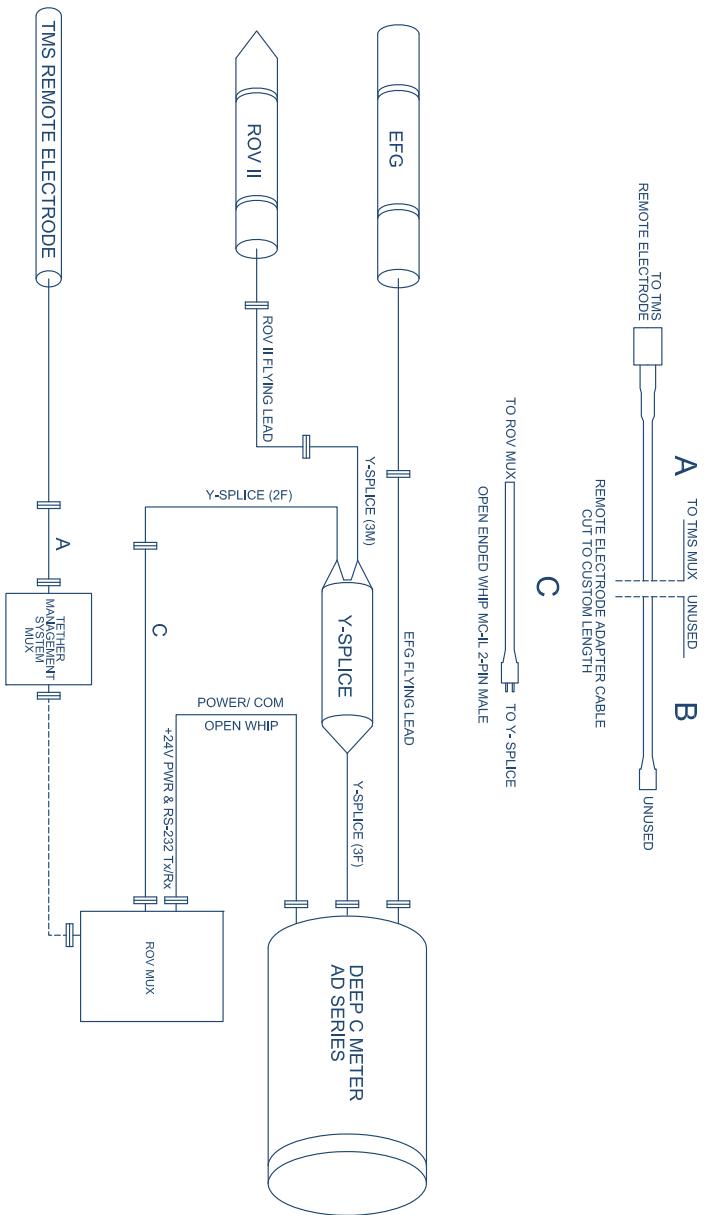
2. TMS Calibration Check



Remote Electrode Kit Block Diagram - Overboard



Remote Electrode Kit Block Diagram - TMS



NOTES