



MANUFACTURERS OF SPECIALIST TEST EQUIPMENT

# Surface Display Pro'

## Operating Instructions

English Version 05/23



Please read carefully before use



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**Attention!** Misuse or failure to comply with the guidelines outlined in this manual may impair the safety provided by the equipment.



This symbol denotes important information on potential hazards. Please read these sections with particular care.

# Description

The Buckleys Surface Display Pro' Unit (SDU) has been designed to provide a remote method of verifying the corrosion potential voltage readings of the Buckleys BathyCorrometer® Pro'.

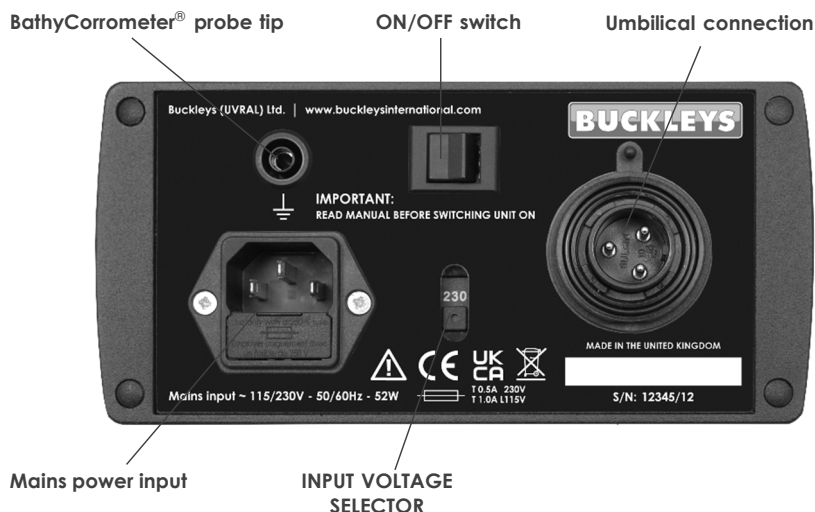
The SDU (typically aboard a vessel or on a platform) is connected to the BathyCorrometer® Pro' (used by a diver subsea) via a robust, two-core, water resistant umbilical cable of suitable length (supplied separately).

Using a 4-20mA signal, the voltage reading on the BathyCorrometer® Pro' is mirrored on the Surface Display Pro', allowing quick and easy verification.

**Note:** The voltage is now displayed as a negative voltage rather than positive as with early SDUs and Roxby/Buckleys BathyCorrometer®s. This has been changed to bring the readings in line with those widely used in the industry.

**Note:** Using the surface display unit with a different BathyCorrometer® Pro' than the one it was configured for may cause spurious readings. See certificate supplied separately.

The Surface Display Pro' is fully compatible with the BathyCorrometer® Mk5, however it is not suitable for use with older Roxby unit or early Buckleys BCMs.



# Technical data

Input voltage: 115/230VAC @ 50/60Hz  
Power consumption: 8VA  
Display: 3.5 digit red LED  
Accuracy: +/- 0.1% of reading +/- 1 digit  
Temperature stability: 100 ppm/°C  
Storage temperature: -10°C to +60°C  
Operating temperature: 0°C to +50°C  
Dimensions (L x H x D): 189mm x 37mm x 138mm  
Weight: 1.6 kg  
Humidity: Maximum 80% non-condensing

## Safety Precautions

Under normal operation the Buckleys Surface Display Pro' Unit should present little or no risk to the user. However, as with any mains-powered device, it is advisable to take a few basic precautions to minimize any risk still further;

- Under no circumstances should the case of the SDU be opened.
- If the unit should become faulty and/or cease to function, it should be returned to the supplier for repair by trained and qualified technicians.
- Only trained personnel should use the unit.



**Before connecting the mains supply and switching on always check the position of the INPUT VOLTAGE SELECTOR. Applying the wrong voltage may cause damage to the unit. The Surface Display Pro' will only operate with a 115V or 230V mains supply. This will read 120V or 240V on the selector itself.**

# Unpacking

Check that the following items are in the received package:

## Quantity Item

1	Surface Display Pro'
1	Calibration lead (BCM to SDU)
1	Mains power lead
1	Probe lead (4mm plug to clip)
1	Manual

If any of these items are missing please contact your supplier immediately. The packaging should be retained for the future to be used if the unit needs to be sent back for repair, or needs to be stored.

# Operation

Buckleys' Surface Display Pro' (SDU) provides a surface readout of the corrosion potential voltage reading being taken by a diver operated BathyCorrometer® Pro'. To use the Surface Display Unit, follow the steps below.

- Ensure that the SDU has been calibrated before use. In general, it is best to calibrate the SDU and BathyCorrometer® Pro' before the commencement of each corrosion survey.
- Connect the SDU to the BathyCorrometer® Pro' using the two core, water resistant cable that is to be used during the survey (supplied separately). Connect the SDU to the mains power lead ensuring that the mains input voltage selector on the rear of the SDU is set correctly. Switch on the mains power supply.
- Before beginning a corrosion survey it is a good idea to carry out a final check of the SDU and BathyCorrometer® Pro'. This can be done using a zinc test block immersed in a standard salinity solution (3‰ at 25°C). When the BathyCorrometer®'s steel tip is held against the test block in the saline solution the meter reading (approx. 1.00 - 1.08V) should be repeated on the SDU. If this is not the case the calibration procedure should be repeated.

When you are satisfied that all the checks have been made and passed, the BCM and SDU are ready for use.

# Calibration

**Note:** It is important to ensure that the BCM, its half-cell and electronics are calibrated correctly prior to commencing a corrosion survey. Guidelines on how to do this can be found in the BCM Operating Instructions manual.

The SDU has been designed so that calibration with a BCM can be easily carried out without the need for specialist equipment; procedure as follows:

- Using the calibration leads supplied, connect the 4 – 20mA input on the rear of the SDU to the bulkhead socket in the BathyCorrometer® Pro' handle. Connect the 4mm 'Probe' socket on the rear of the SDU to the BathyCorrometer®'s probe tip using the lead supplied.
- Plug the supplied mains power lead into the SDU checking that the mains input voltage selector is in the correct position, do not connect the mains supply at this stage.
- Use a small flat-bladed screwdriver to gently prize off the SDU display cover (using the slot on its lower edge) to expose the LED modules and the trim adjustments.



Set the calibration switch on the rear of the SDU to '0'. The SDU and BCM should now display the same reading (close to zero). If the readings differ, adjust the 'Zero adjust potentiometer' control until both readings are the same.

Now set the calibration switch to position '1'. The readings on the SDU and the BathyCorrometer® should again display the same reading - if different, adjust the 'Span adjust potentiometer' control until the two readings are aligned.

Repeat these steps until no further adjustment is required. Replace the cover on the meter and bezel on the case (if it was removed) and remove all connecting leads. The Surface Display Pro' is now ready for use.

**Note:** All other controls are factory set and should not be adjusted. Adjustment of the other controls will cause the Surface Display Pro' to produce an incorrect readout.

## Maintenance

The Buckleys Surface Display Pro' has been designed so that no maintenance is required by the user.

The Surface Display Pro' should be inspected from time to time to check that the case, calibration leads and mains cable have not been damaged. If damage is found the unit must not be used and it must be returned to the manufacturer for repair.

## Disposal information

Producer registration number: WEE/HJ0051TQ



This Product must be disposed of in accordance with UK WEEE Producer Responsibility Regulations, or in accordance with your local WEEE guidance.

For further information on UK WEEE regulations click on:

<http://www.gov.uk/government/collections/producer-responsibility-regulations>

# EC Declaration of conformity

We:

**Buckleys (UVRAL) Ltd**

As sole manufacturer of the apparatus listed below,  
declare that the product:

**Surface Display Pro' Unit®**

Is manufactured in conformity with  
European directives:

**2014/30/EU**

**2014/35/EU**

**2015/863/EU**

**2011/65/EU (RoHS)**

Date: 01/07/2021

Authorised by:



**J P Hoveman**

CEO, Buckleys (UVRAL) Ltd.



# UKCA Declaration of conformity

We:

**Buckleys (UVRAL) Ltd**

As sole manufacturer of the apparatus listed below,  
declare that the product:

**Surface Display Pro' Unit®**

Is manufactured in conformity with  
the following UK legislation

**Electronic Compatibility Regulations 2016  
The Electrical Equipment (Safety) Regulations 2016  
Restriction of the Use of Certain Hazardous Substances in Electrical and  
Electronic Equipment Regulations 2012**

Date: 01/07/2021

Authorised by:



**J P Hoveman**

CEO, Buckleys (UVRAL) Ltd.



## Contact details

**Manufacturer:** Buckleys (UVRAL) Ltd

**Address:** Buckleys House  
Unit G, Concept Court  
Shearway Business Park  
Shearway Road  
Folkestone  
Kent CT19 4RG, UK

**Tel:** +44 (0)1303 278888

**Website:** [www.buckleysinternational.com](http://www.buckleysinternational.com)

## Distributor details



# Product registration

**Thank you for choosing a Buckleys product, we are sure it will provide you with many years of reliable service.**

Please register this product via Buckleys' website and download the Warranty Registration Certificate.



## **Register your product in 5 minutes**

Once your product is registered, you will receive the following benefits:

- **FREE** annual service & calibration reminders by email
- **Latest** industry news relating to your product
- Be the **first** to hear about our new products

## **We strive to improve the quality of our products and service.**

Registering your product helps us monitor overall quality of our products, service and dealer network. Additionally, if we ever need to contact you regarding your product, we are able to do so immediately.

We will also send you annual service/calibration reminders by email to help ensure your product is always in perfect working order.

To register your product, simply visit:

**[www.buckleysinternational.com/registration](http://www.buckleysinternational.com/registration)**

...Complete the online form and click on SUBMIT.