

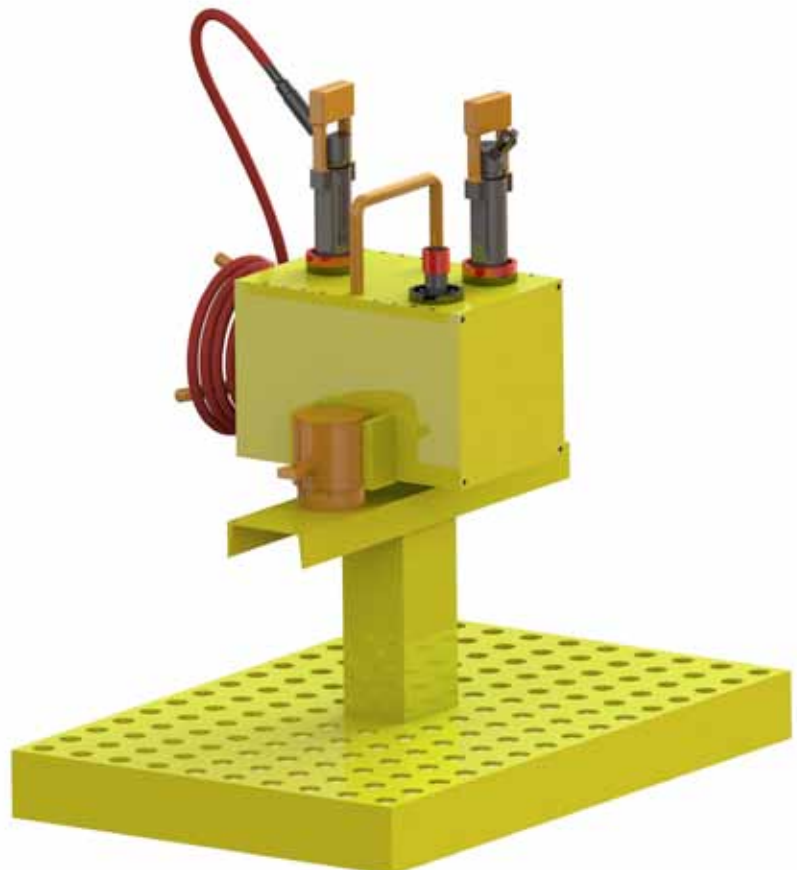


A VIPER SUBSEA PRODUCT

**CLASS LEADING PRODUCTS  
PROVEN TO MEET THE MOST  
DEMANDING INDUSTRY  
SPECIFICATIONS, DELIVERED  
ON TIME, EVERY TIME.**



**INTRODUCING  
THE V-SLIM SUBSEA  
DEPLOYED LINE  
INSULATION MONITOR**





# THE V-SLIM IS IDEALLY SUITED TO IDENTIFYING AND LOCATING LINE INSULATION FAULTS IN SUBSEA ELECTRICAL DISTRIBUTION SYSTEMS

## The IR Problem

When electrical failures occur in subsea cables or connectors it is often difficult to diagnose the cause of the fault, or the fault location. The most common failure arising from the subsea environment is the failure of insulation as a result of water ingress. Such a failure may result in short circuits between conductors and/or current flow from the live conductor(s) to earth.

These types of failure can eventually lead to total loss of subsea electrical control and hence to an unplanned shutdown of production from one or more wells. Current solutions to the problem rely heavily on intervention to disconnect subsea equipment, cables and connectors and to replace with new until the fault is found or removed. Such intervention is a very inefficient, time consuming and an expensive way of fault finding.

## The Solution

The V-SLIM will provide a simple and convenient, diver/ROV deployable method of fault-finding and locating electrical problems in the subsea environment. The product is ideally suited to identifying faults within the subsea electrical distribution network (connectors, electrical jumpers and electrical distribution units), where the faults typically cannot be identified from topsides. V-SLIM will immediately detect the presence of an earth leakage fault, and also provide a measurement of the insulation integrity, and loop resistance of any connected circuit. It also measures the voltage and the value of any flowing current (normal current as well

as the leakage current). Importantly, the unit can identify whether any earth leakage problem is 'upstream' or 'downstream' of the unit – thus helping to pinpoint the location of any problem.

## Key Benefits

- Reduced ROV mobilisations and duration of marine operation
- Reduced mobilisation of capital spares
- Avoid unplanned interventions by monitoring and trending electrical system integrity

## Key Features

- Measures voltage and current (normal and leakage) and can identify whether earth leakage problem is 'upstream' or 'downstream' of the unit.
- Provides insulation resistance and loop resistance measurement of connected circuit.
- Able to operate in circuit with system powered or isolated e.g. during commissioning
- Can be left deployed, gathering integrity data for trending and failure prediction.
- Can be connected to one cable or bulkhead connector or, more usually, plugged between two halves of a connector pair.
- Compatible with existing subsea control systems.

## Communications Options

- Dedicated downline from surface
- Hardware interface to ROV
- Acoustic communications to surface or ROV
- High speed wireless to ROV

## LINE INSULATION MONITOR FULL PRODUCT SPECIFICATION

### Maximum Line Voltage:

1000 Vrms (50 / 60 Hz, single phase operation)

### Maximum Input Current:

15 Amps peak and 5 Amps continuous

### Internal Power Supply:

24 Vdc

### Battery Life:

Minimum 6 months

### Data Storage:

Non volatile memory

### Deployment Depth:

3000 metres (9842 ft)

### Operating Temperature:

-5°C to +40°C (23°F to 104°F)

### Design Life:

Minimum 15 years

### Connector Types:

A range available to suit industry standard connectors

