V-SUPPLY®
A VIPER INNOVATION

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2016

AWARD WINNING PRODUCTS AND SERVICES TAKING OUT COST AND INCREASING OPERATING EFFICIENCY

INTRODUCING
THE V-SUPPLY ELECTRICAL POWER MODULE

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V-SUPPLY IS UNIQUE IN ENABLING SUBSEA ELECTRICAL CIRCUITS TO BE TESTED WITH NO WIRING DISCONNECTS.

V-SUPPLY is an Electrical Power Module which, as well as providing a stable and reliable source of electrical power to subsea equipment, it incorporates state-of-the-art monitoring technology.

The development of the V-SUPPLY has been driven by a growing obsolescence issue that is being faced by a number of operators and the need for more advanced condition monitoring of subsea electrical systems. The V-SUPPLY includes unique patented features that enable external IR, alarm, TDR, umbilical discharge, live line voltage and loop continuity tests to be carried out, with no wiring disconnects required. This will deliver cost savings for operators as it greatly simplifies the testing, reduces the risk of human error in the test circuits and avoids having to disturb old wiring harnesses that are easily damaged.

V-SUPPLY incorporates the V-LIM line integrity monitoring functionality, and also the proprietary Insulation Resistance recovery technique of V-LIFE, which can be easily activated through a software licence.

V-SUPPLY is designed to be compatible with both brownfield installations and new greenfield developments and offers a touch screen display as a user interface. Optional electrical supply conditioning provides precise voltage control and variable frequency of output supply. With administrator rights, the onshore engineer can remotely change the subsea supplies and monitor parameters such as transient faults and harmonic distortion.

Advantages

- Unique patented features enable external IR, alarm, TDR, umbilical discharge, live line voltage and loop continuity tests, with no wiring disconnects.
- Improved reporting and data logging of electrical events with network enabled access for data recovery and control
- Incorporates V-LIFE technology, which can be enabled through a software licence
- Incorporates V-IR technology, allowing for upgrade of the subsea system to include V-SLIMs for distributed fault finding

Key Features

- 110 or 230V AC Input Voltage
- 0-690V AC Adjustable Output Voltage[1]
- 50Hz, 60Hz and 400Hz[2]
- Supply Conditioning – cleaning of harmonics (optional)
- Advanced Patented testing technology
- V-LIFE Ready
- V-IR Ready
- Advanced condition monitoring
- Multiple measurement parameters
  - Line Insulation Resistance
  - Line Insulation Capacitance
  - Line Voltage, Current & Frequency
  - Power Factor and Real RMS Power
  - Current Harmonics
  - Voltage Harmonics
- Remote Access and Control (Ethernet and RS485 Modbus)
- Human Machine Interface (HMI) Touch Panel Display

Applications

- Integration into new installations
- Brownfield retrofit/upgrades
- Low Insulation Resistance (IR) umbilical systems
  - Improved measurement
  - IR recovery with V-LIFE
- V-IR network integrity monitoring

[1] Factory build dependant
[2] Supply conditioner required

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V-SUPPLY
PRODUCT SPECIFICATION

Electrical

Systems
Single Phase (IT) Ungrounded

Maximum Line Voltage
Up to 690V AC

Maximum Line Current
10A continuous

Power
Maximum: 2.5kVA

Input Voltage
110V or 230V AC 50/60Hz

Output Voltage
Selectable 230V to 690V AC

Output Frequency
Programmable 50/60/400Hz[2]

Interfaces
100/10 BaseT Ethernet
RS485
USB
HMI Interface Touch Screen

Protocols
HTTP (Ethernet)

Current Loop
Output 4-20mA@ ±1%
Measurement : Voltage, Current, Power and IR

Status and Alarm Outputs
2x Single Pole Changeover
260V AC, 6A
Fault Alarm, LIM Alarm and Output Status

Emergency shutdown (ESD)
Optional. Operator Configurable
24V DC max +10%

Measurement

Line Voltage (True RMS)
Up to 690V @ ±0.1%

Line Current (True RMS)
Up to 15A @ ±0.1%

Insulation Resistance
1kΩ to 1GΩ

Current and Voltage Harmonics
Up to 40th harmonic @ ±5%

Insulation Capacitance
0.1µF to 150µF

Power Factor
-1 to +1

Data Storage
6 months

Mechanical

Operating Temperature Range
-10°C to +40°C (14°F to 131°F)

Storage Temperature Range
-40°C to +85°C (40°F to 185°F)

Relative Humidity
0% to 85%

Design Life
Minimum 15 years operation

Weight
65kg

Dimensions
Height 4U(177mm)
Depth 580mm
Width 19"(483mm)

Mounting
19" Rack Mounting (IEC 297-1)

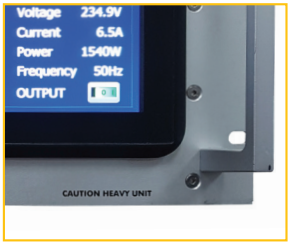
Standards

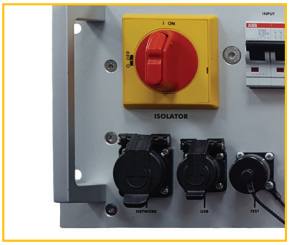
Safety
BS EN 61010-1

EMC
BS EN 61326-1

Power Supplies
IEC 61558-1

[2] Supply conditioner required





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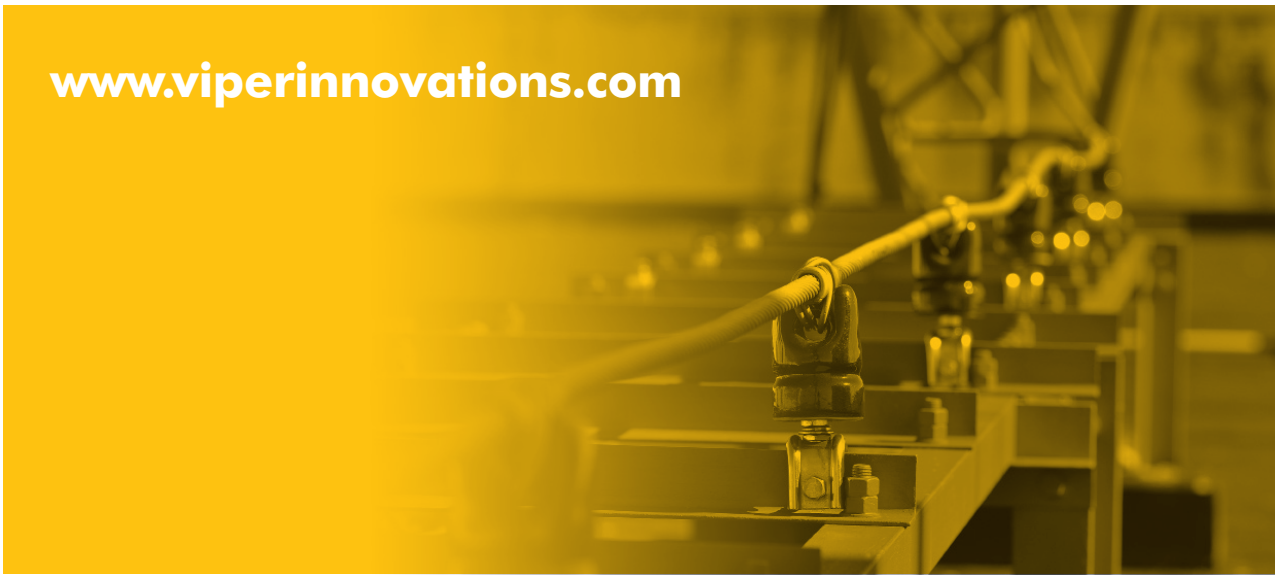

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