

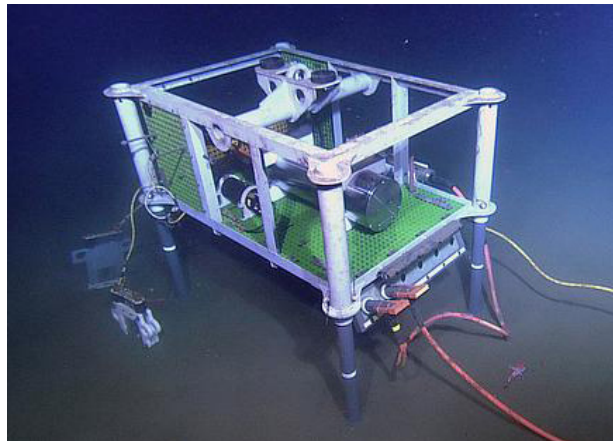
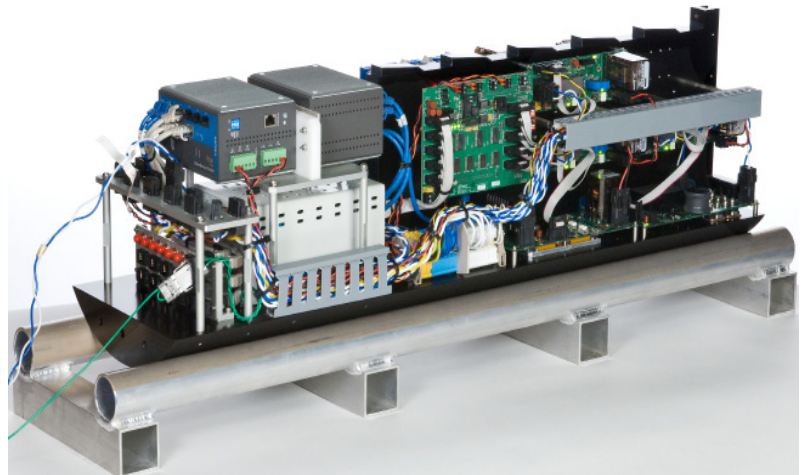
The OceanWorks SIIM-3000SC Subsea Instrument Interface Module (SIIM) provides a software configurable power and communications interface between a wide range of instruments and a subsea node or shore station.

The SIIM-3000SC builds on a proven design successful deployed on several cabled observatory projects. In this latest version, the key development is the ability to reconfigure the both the voltage and communications interface of each science port in software without breaching the SIIM pressure boundary.

Software configuration of instrument ports enables a single design to be used across an observatory providing easy sparing and on deck reconfiguration for new instruments.

APPLICATIONS

- Environmental / Scientific Cabled Observatories
- Oil Field Instrumentation
- Tsunami Warning
- Renewable Energy
- Ocean Bottom Seismic
- Port and Coastal Security



The SIIM-3000SC provides a total of ten instrument interface ports. Eight ports are considered low voltage, low power (12 to 48VDC, 60 to 240W) and two are high power (375VDC at 1875W).

Each of the eight low power instrument ports can supply up to 5A of current at software selectable voltages from 12 to 48VDC. Each low power port is powered from an isolated DCDC converter with a linear regulated output. This provides an efficient, variable supply with a very low noise output.

Each low power port also supports either 100BaseT Ethernet, or EIA232, 485 and 422 serial communications protocols which can be selected in software. When a port is off, all of the power and communications signals are galvanic isolated from the connected instrument.

Line Insulation Monitors (LIM) are included on each low power port.

The LIM will detect if a fault to seawater occurs on connected cables or instrument. If required, the LIM can be taken out of circuit via a software command

Input (from Observatory Node or Shore Station)

- Input is 300VDC to 400VDC at up to 6KW, 375VDC nominal
- Over voltage and transient protected
- Input communications options (select on build)
 - 1000BaseLX SM fiber optic Gigabit Ethernet or*
 - 100BaseT Copper Ethernet*
- Wet-mate or Dry-mate connector systems available

Output (to Instruments)

- Two high power ports with the following features;
 - Dry-mate connectors standard (hybrid and wet-mate connectors optional)*
 - 375VDC at 5A maximum current*
 - Soft start allows user defined periods of 1A, 2A and 5A current limiting*
 - Software selectable current and voltage trips*
 - Short circuit tolerant*
- Eight low power ports with the following features
 - Dry-mate connectors standard (hybrid and wet-mate connectors optional)*
 - Each port features software configured 12, 15, 24 or 48VDC at 5A maximum current*
 - Line Insulation Monitoring (LIM) up to 10M Ω*
 - Isolated DCDC converter per port*
 - Linear regulated, very low noise output*
 - Software selectable current, voltage and LIM trips*
 - Output short circuit tolerant*
 - Communications options (software selectable) -100BaseT Copper Ethernet, or Isolated serial (EIA232, 422 or 485)*
- Supports TTL PPS and NEMA 0183 time code

Communications & Telemetry

- Telnet command interface
- UDP hotel data interface (at selectable rates up to 10Hz) SNTP time stamped
- Per port, voltage, current and LIM telemetry (no LIM on high power ports)

Mechanical

- 1050mm x 332mm dia. (excl. mating connectors)
- 150kg in air weight
- 100% titanium pressure vessel with dual o-ring seals
- Vibration qualified to IEC60068 (Part 2, Section 64, Table A.1 & A.2 Category 2)

Reliability

- 25+ year design life on 10 year maintenance service
- Class ISO8 Clean-room assembly
- 50,000 Hrs MTBF (MIL-HDBK-217) at 25°C

Standard Testing

- Pressure boundary hydro-static test
- 120 hour operational salt water immersion test

Environment

- 3000msw operating depth
- -20°C to +50°C Transport
- -3°C to +20°C Operational

Options

- Custom interfaces, port voltages, communications protocol, cables and connectors can be all be incorporated into a SIIM design if required
- Wet mate instrument ports can be fitted. With the flexibility to change the power supply voltage and communications protocols from Ethernet to Serial in software, a new instrument could be added to an observatory without the need to recover the SIIM platform
- Gigabit 1000BaseLX fiber optics communications can be provided as a dedicated option to specific ports
- Extended burn-in testing