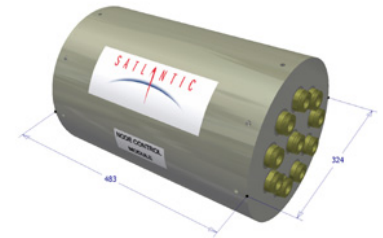




SATLANTIC'S NODE CONTROL MODULE (NCM)

Satlantic's Node Control Module (NCM) is a state-of-the-art underwater sensor interfacing tool for Cabled Observatories and other real time acquisition applications. The NCM provides an underwater hub for power distribution and networking. It connects directly to scientific packages or can distribute power and networking to remote scientific suites using the Satlantic **Scientific Instrument Interface Module (SIIM)**. The NCM allows for cost effective data collection from complex sensor arrays and is available in shallow water diver serviceable and deep-water deployable systems. The NCM can be installed in trawl resistant enclosures and can be made available with ROV mated connectors for remote connection of external devices.

Designed for easy control and monitoring, the NCM interfaces directly into Satlantic's **Data Acquisition and Control Network (DACNet)** ocean observatory operating system. The NCM is scalable for various applications, but typically is configured for 400VDC input for power distribution of up to 4800W. Higher voltage inputs are possible for custom applications. Primary communications interface options include 100BASE-FX, 1000BASE-SX/LS/LH fiber optic network interfaces, and 10/100/1000BASE-TX copper network interfaces. The system may be modified for proprietary sensor interfaces, such as 100Mbps CameraLink for high-resolution digital video. Please contact Satlantic to discuss your specific applications.



Node Controller Module

The NCM power system has network addressable power switching for up to eight ports. Each can be preset at the factory, but typically are designed to supply 48 and 400VDC up to 10A each, allowing for the use of high power devices such as underwater lights and bottom mounted winch systems. Power channels are isolated and fault protected from thermal, overcurrent, and ground faults. Power channel isolation prevents faults on one channel from affecting other channels on the NCM. The DACNet interface provides remote monitoring and control of each power channel, either automatically or manually for full system control.

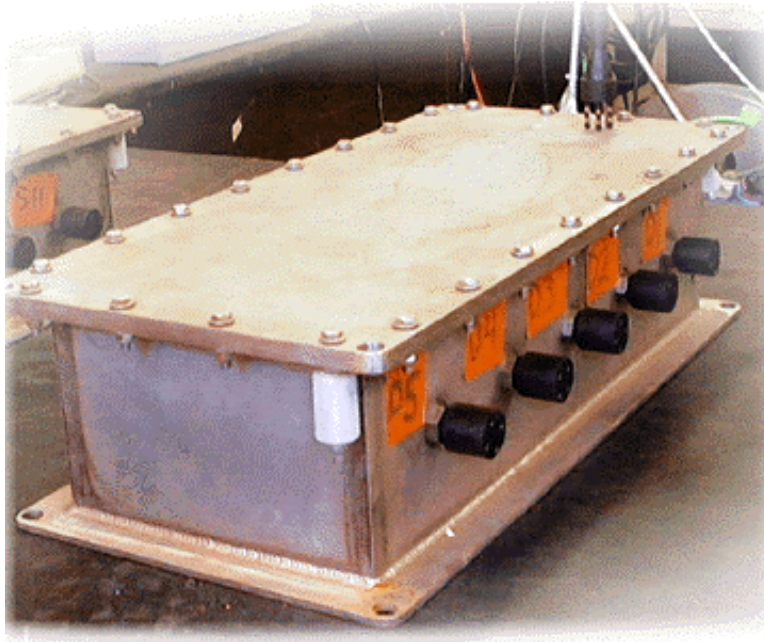
The NCM communications system provides managed network switches using SNMP for primary communications and allows for optional local sensor inputs of EIA232/422/485 or 10/100BASE-TX. SNMP management of the communications system enables automated or manual adjustments to network operation. Both the SNMP Manager and DACNet will alert the system operator of fault conditions by email and through the main DACNet GUI. An optional Linux based industrial computer system can be installed in the NCM as a Network Time Server if a time reference is required for the underwater array.

The NCM system is highly modular and is easy scalable, thus providing a highly flexible solution for underwater sensor networking. Combined with the SIIM and DACNet, these products provide the user with the full capabilities of Satlantic's Ocean Observatory System representing the most reliable, cost effective, commercial-off-the-shelf solution to ocean monitoring programs.



NCM Specifications

Depth Ratings	Shallow: 50m or Deep: 300m
Pressure Case	Titanium or Stainless Steel
System Interface	
Input Power	250-425VDC up to 12A
Primary Comms:	Ethernet 100BASE-FX, 1000BASE-SX/LS/LH fiber or 10/100/1000BASE-TX copper
Interface:	Application dependant
Instrument Interface	
Output Ports:	8 (typical)
Output Power:	48 and 400VDC up to 10A
Communications:	Ethernet 10/100BASE-TX
Interface:	SEA CON MINO-8-CCPL or Subconn BH-8-FS



NCM Shallow Module
Bonne Bay Ocean Observatory