

SYMPHONY™

Product Guide



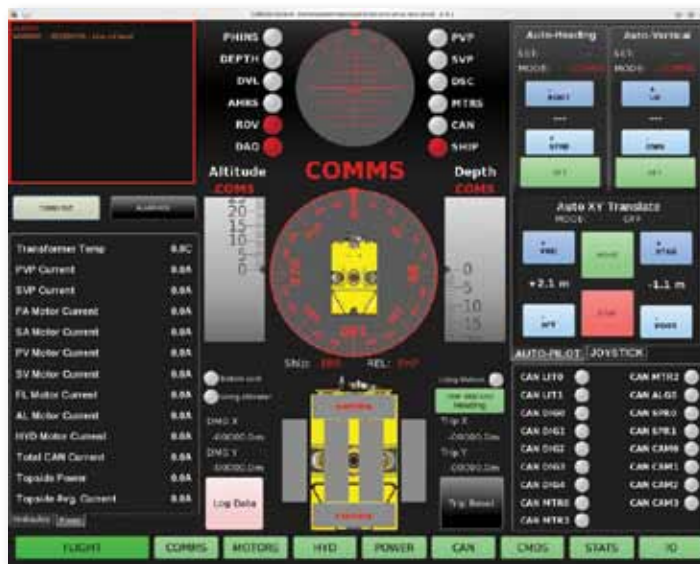
Simplify your system and improve your performance. The Moog SYMPHONY™ topside operator interface unit puts the power of precise ROV and AUV navigation and control at your fingertips.

- Offers operators a complete MUSICIANS control and monitoring interface in a single 4U rackmount package
- Provides discrete analog and digital IO, Human-Machine Interfaces and software controls for a complete ROV control solution – a control van in a single housing
- Integrates fiber optic multiplexer diagnostics and monitoring, media converter interfaces, slip ring diagnostics and MUSICIANS control in a single application
- Offers AUV and ROV specific applications suitable and customizable to any subsea monitoring and control task
- Efficient for new vehicle builds and offers excellent value when retrofitting or upgrading an existing vehicle
- Provides a rich real-time control, configuration, diagnostics, and mission planning environment for operators, technicians and engineers
- When added to MUSICIANS, the SYMPHONY system offers a complete integrated ROV system – topside pilot interface, complete subsea navigation and control, and telemetry between both products

Navigation and Control System Interface



SYMPHONY Flight Screen



SYMPHONY ROV GUI

The Symphony system provides vehicle owners and operators an efficient and powerful means to achieve high-fidelity control, precision navigation and complete operator / vehicle integration. Based on a proven architecture, the SYMPHONY brings all of the major players together: ROV control, AUV mission planning, topside navigation, subsea navigation, vehicle management and operator controls. There are two versions of the Moog SYMPHONY: ROV and AUV.

Intelligent Control:

The Moog SYMPHONY provides the entire backbone for an ROV control suite. It has over 140 programmable digital channels, more than 40 high-resolution analog input channels and interfaces to HMI devices such as joysticks and manipulator controls enabling easy integration of existing and new pilot consoles. The operator software provides standard intuitive graphical devices for communicating vehicle status to the operator and allowing an almost infinite amount of soft control input devices for operator interface customization. The display integrates standard real-time flight graphics such as a compass rose, artificial horizon, heads-up ROV display with modern navigational aids such as a 2D chart plotter and a 3D enhanced reality display. The SYMPHONY orchestrates all of the players in the topside control suite within a single box: operator interfaces, video overlay, fiber optic diagnostics and monitoring, and navigation utilities. The Moog SYMPHONY also provides visual interfaces to common ROV devices such as motors, pumps, valve packs, thrusters, power monitoring, hydraulics, lights and cameras.

Powerful Supervision:

The Moog SYMPHONY also provides a rich AUV interface for planning, conducting and monitoring AUV missions. Working through the subsea MUSICIANS, the SYMPHONY is a complete AUV control system. With mission planning tools such as waypoint design utilities and task editing and vehicle management tools such as diagnostics and configuration utilities, it is a fully capable AUV control system. The SYMPHONY interface also provides operation monitoring functions if the AUV is enabled with communications during the mission.

Customization:

The SYMPHONY software is designed on a flexible architecture to allow flexibility and scalability. The SYMPHONY GUI is fully customizable. From changing the graphical look and feel, to branding it, to adding or subtracting capability, its flexible architecture allows efficient customization.

Navigation and Control System Interface

SYMPHONY™

- Thruster Control (hydraulic, electric)
- Configurable Autonomous States
- Lights (proportional, on/off, strobe)
- Operator Console Integration
- Valve Packs (solenoid, servo)
- Pan and Tilts, Rotors
- Power Monitoring
- Power Distribution
- Motor Control
- Tooling Packages
- Auxiliary Sensors
- Hydraulics
- Cameras (analog, HD, stills)
- Shipboard Power Monitoring

NAVIGATION ●
AUTOPILOTS ●
MISSION PLANNING ●
NAVIGATION SENSOR INTERFACES ●
CONTROL INTERFACES ●
ANCILLARY FUNCTIONS ●

MUSICIANS™

SYMPHONY uses the advanced vehicle navigation and control architecture by GreenSea Systems, Inc. (www.greenseainc.com).



Specifications and information are subject to change without prior notice. *Photo credit to SMD for ROV image on front cover.*
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