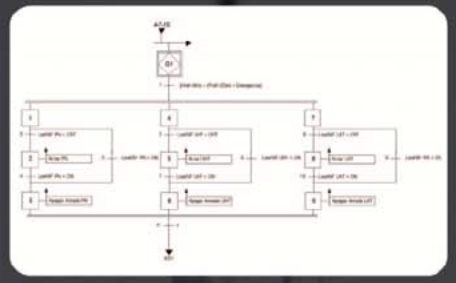
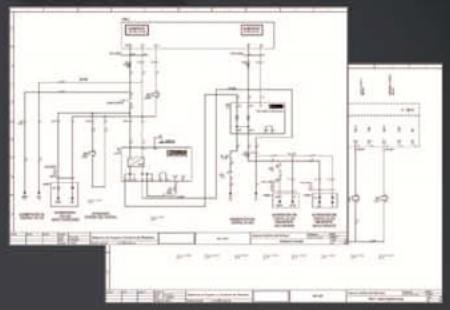
Manufacture processes

Survey of processes under IEC 60848



Elaboration of standardized electric drawings, according to the standard IEC-60947



3D modeling of system

Additional Hardware:
Lap Counter for Whip Antenna

Counting up and down for the second stage of the whip antenna.

Implementation of the system

Interconnection with the masts board

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HMC-17U
Control System
Hoistables Masts

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HMC-17U Control System Hoistables Masts

Control System Hoistables Masts

The Masts Control System allows to command the processes of raising and lowering the masts of the submarine:

- Antennas: Combined (UHF), HF, ESM and Radar
- Navigation and attack Periscopes.

The system has a graphic touch screen panel, on which it allows the raising and lowering of the masts, as well as the activation of automatic functions of lowering by particular navigation or emergency conditions.

This system can be integrated with other equipment of the Submarine, to exchange data between different instruments, which allows to optimize the integral management of the information.

The control processes are managed in real time, using state-of-the-art programmable automation controllers (PAC), guaranteeing the execution of deterministic applications, granting a high reliability to the system.

The components used in the system are commercial (COTS), which guarantees a high level of availability and maintainability of the system.

Technical specifications:

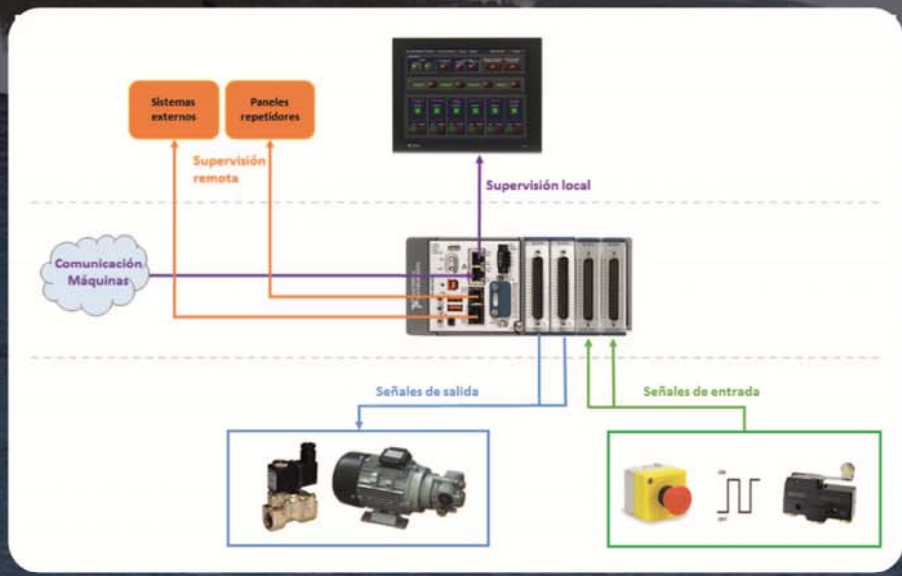
Supply Voltage	100V-240V AC @ 60Hz / 90V-300V DC
Operating temperature	-20°C to 60°C
Storage temperature	-30°C to 70°C
Protection grade	IP-65
Monitoring and control equipment	Built-in controller with real-time processing and reprogrammable logic gate array FPGA (Field Programmable Gate Array)
User interface	Touch screen between 15" and 19"
Connectivity	Communication via serial port (RS-422 / RS-485) with built-in NMEA-0183 protocol, or via a network (Ethernet) port.
Others	Light and audible indicators as required.

**Optional according to requirement or choice.*

User Interface

- It allows to visualize the variables monitored and operating the raising and lowering processes of the masts.
- It presents graphical indicators to verify the maneuvers realized in the diverse sections and tanks of the ship.
- Provides a history of alarms and events.
- Adapts the system to night mode.

System Architecture



General characteristics

Configurable
allowing to monitor and control digital variables of different equipment.

Self-managed
System, with BIST (Built-in Self Test).

Scalable (upgradable)
allowing to integrate the monitoring of new signals through the placement of additional modules and / or the use the input / output channels reserved.