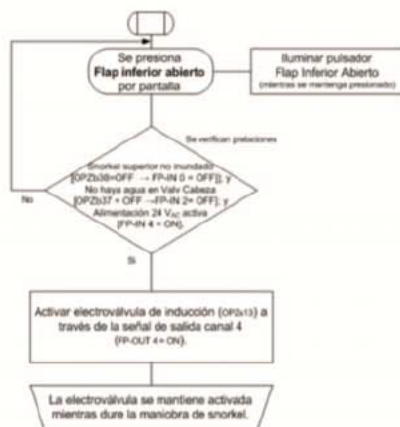


Manufacture processes

Survey of processes under IEC 60848

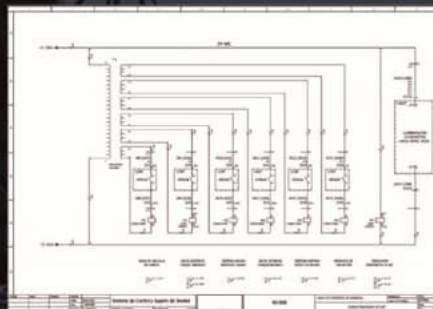
3D Modeling of system

Abrir Flap Inferior

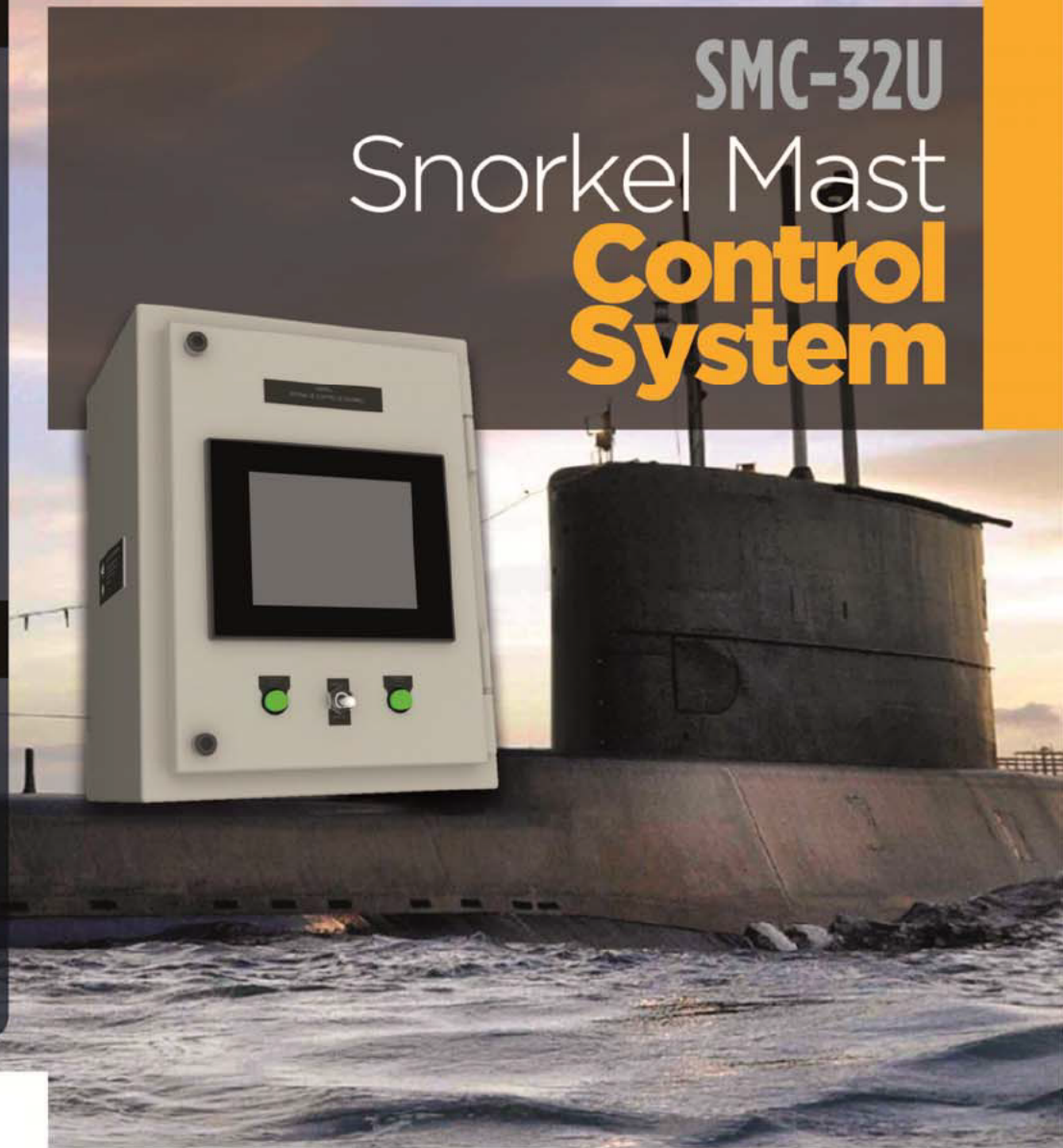


Design and elaboration of standardized electric drawings, according to the standard IEC-60947

Implementation of the system



SMC-32U Snorkel Mast Control System



SMC-32U

Snorkel Mast Control System

Snorkel Mast Control System

It is integrated in a control box, on which the following functions are executed:

- Raising and Lowering the Snorkel mast.
- Opening the lower induction flap valve.
- Check the operation of the head valve.
- Monitoring of liquid level in bilges, tanks and related pipelines.
- Detection of the total displacement of the snorkel mast (raising / lowering).
- Control the operation of the solenoid valves to operate the associated devices.

The snorkel mast is used to allow air intake to the vessel in order to be able to startup the diesel engines, to perform air charges and to regenerate the air inside the submarine.

Through this system, manual raising and lowering procedures are performed, but also autonomous safety processes are carried out without the operator intervention in order to avoid the occurrence of dangerous situations for both the crew and the mechanical components of the submarine.

- Induction valve closure when the Snorkel bilge is flooded.
- Automatic mast lowering if the depth of the submarine exceeds 25 meters or the emergency stop signal is received.
- Closing the head valve, if water is detected for more than four (4) seconds.

Complementarily, the system allows to supervise a set of signals, such as: Voltage 220VDC and 24VAC, Depth greater than 25 meters, Water in the induction drain, Snorkel bilge levels (upper and lower), Head valve (presence of water and open).

Technical specifications

Supply Voltage	100V-240V AC @ 60Hz / 90V-300V DC
Power Consumption	Between 120W and 960W max*
Operating temperature	-20°C to 55°C
Storage temperature	-40°C to 85°C
Encapsulation of equipment	Housing made of polycarbonate, aluminum or steel *
Protection grade	IP-65
Monitoring and control equipment	Controller with real-time processing and reprogrammable logic gate array FPGA (Field Programmable Gate Array).
User interface	Touch screen between 6" and 12" *
Connectivity	Remote 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.

General characteristics



Modular

system, which allows to select the variable type to monitor (analog, digital), adapting to the sensors arranged in place.



Self-managed

system, with BIST (Built-in Self Test).

User Interface

The system has a touch screen panel that allows the operator interaction, as well as to verify a history of the events occurred according to the maneuvers performed.



Typical configuration of the System

