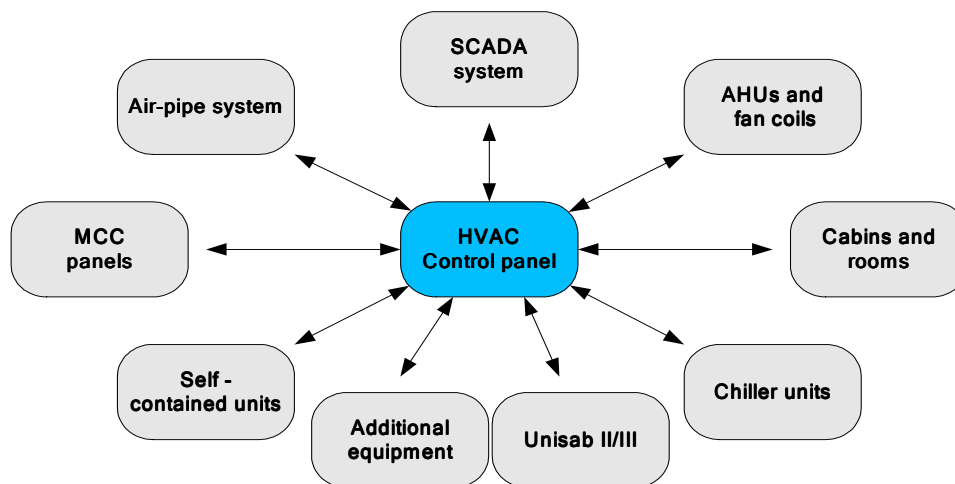




# Marine ventilation control system

Efficient control and monitoring of tailor-made heating, ventilation and air-condition systems for ships and offshore platforms



## Description

The HVAC control system is designed for marine applications on ships and offshore platforms. The concept integrates the control and monitoring of heating, ventilation, and air-condition systems in one comprehensive, easy-to-use HVAC control system. It is fully modular, enabling fulfilment of virtually all customer requests.

**The HVAC control panel** is, as a standard produced according to normal marine requirements. The panels can upon request, comply with the requirements of marine classification societies and supplied with certificates. The control system can be designed either as an integrated solution in one panel or decentralized in several panels at different locations.

**The controller (PLC)** is located in the HVAC control panel and controls all modules connected to the system. The controller is either with a single CPU or with dual redundant CPU controllers, for optimal safety.

**Operation** of the HVAC system is handled from colour touch-screen operator panels or PC, providing:

- Efficient operation from a finger touch-screen display
- Graphic overviews of the system on the colour display

- Operation of connected equipment and setting of modes, limits, and regulation set points

## Advantages

The potential for HVAC integration provides a number of obvious advantages:

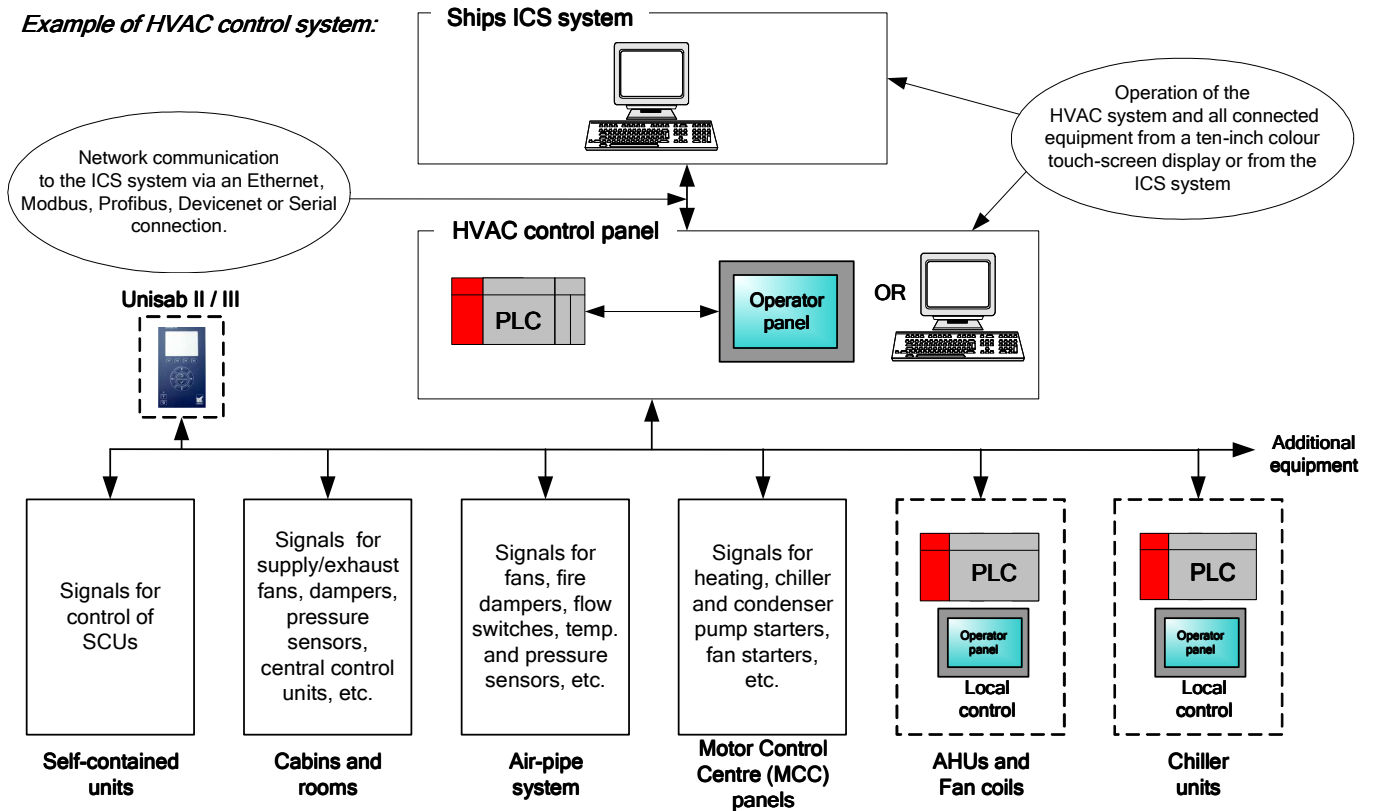
- The well-proven control system secures optimal functionality and reliability
- Operation of all connected equipment can be handled either locally or centralized
- Integration with main alarm system is possible by means of several standard communication protocols

## Additional benefits

Customers who let Johnson Controls Marine handle the automation of their HVAC system also enjoy several additional benefits:

- Johnson Controls has built up significant know-how for meeting customer demands within the business as to functionality, safety, and documentation
- Marine approved components
- Johnson Controls Marine global service network
- A single supplier can handle all needs

**Example of HVAC control system:**



**AHU control and Fan coils**

The HVAC control system either regulates the AHUs/Fan coils or interfaces with locally placed controllers.

The AHU/Fan coils control options are:

- Cooler regulation, with DX expansion or Chiller water motor valves
- Fan control
- Pre-heat regulation, with water, hot oil, steam or electric heat
- Re-heat regulation, with water, hot oil, steam or electric heat
- Humidity regulation
- Enthalpy regulation
- Damper control
- Filter and thermostatic freeze protection

**Cabin and room control**

All rooms and cabins can be controlled from the HVAC control system, featuring:

- Damper control
- Exhaust and supply fan control
- Differential pressure control
- Re-heat and temperature control

**Chiller unit control**

The HVAC control system can interface with locally placed chiller controllers. It is also possible to control the chiller units directly from the HVAC system

**Air-pipe system control**

The air-pipe system is controlled from the HVAC control system, featuring:

- Damper control
- Fire-damper monitoring, including communication to ESD and F&G systems
- Fan control
- Pressure and temperature monitoring
- Flow-switch protection
- Gas monitoring system

**Motor Control Centre (MCC) panels**

Motor starters can be placed in local panels or in a common Motor Control Centre (MCC). The HVAC system controls the starters through:

- Hard-wired I/O
- Network communication to I/O modules

## Self-contained units

It is also possible to integrate the control and monitoring of self-contained units (SCUs) featuring:

- Start / stop control
- Alarm-system integration

## Unisab II/III control (Compressor control)

It is also possible to integrate the control and monitoring of Unisab II/III featuring :

(Connection to Unisab by Profibus / Ethernet / Modbus / Hardware)

- Start / stop control
- Monitoring of all status values, alarms and warnings
- Operation of connected equipment and setting of modes, limits and regulation set points

## Additional equipment

Additional control systems can easily be integrated into the HVAC control system via hardwired I/O or through several standard protocols.