



# MACCS

Alarm and monitoring system

## PRESENTATION

► **MACCS** is a safety device used for monitoring digital inputs and analog inputs, as well as the controlling of various equipment.

► Its modular design allows a maximum of 64 inputs / outputs. Its user interface consists of a 7" color touch screen, enables a clear and precise display of all alarms and controls.

► The MACCS product range has been designed and approved to provide the following features:

- Bilge alarm monitoring
- Technical alarm monitoring
- Tanks level measurement
- Analog sensor measurement
- Control of different pieces of equipment: lighting, pumps, valves, fans, etc.

► MACCS is fully configurable from the user-friendly touch screen setup menu.



## FUNCTIONAL CHARACTERISTICS

### Display

- The display is provided by a flush a 7" color touchscreen (MACCS\_HMI) which can be supplemented by 2 other screens if necessary (for the 24VDC version only).

### Equipment

- **MACCS** is a modular system with up to 64 inputs/outputs, composed of a CPU module (**MACCS\_CPU**) with 8 digital inputs and up to 7 expansion modules (up to 2 if the power supply is 12VDC). Allowing the capacity of each product to be extended according to the needs of the ship, through additional digital/analog inputs and digital outputs.

### MACCS\_8AI

- 8 analog inputs :
  - Input 0/10VDC or 4/20mA (2 or 3 wires).
  - Time delay from 0 to 180s in 1 second increments.
  - 4 x alarm thresholds per channel.
  - Calibration with 21 values.

### MACCS\_CPU

- Centralized processor insuring the processing of inputs and outputs.
- Management of 2 power supplies (main / emergency) with configurable alarm thresholds.
- 24VDC output to feed MACCS\_HMI.
- 2 x RS485 ports to communicate with external equipment (NMEA or MODBUS RTU, other protocols on request)
- 8 monitored digital inputs and 1 configurable digital input (special functions including acknowledgement).
- 5 integrated outputs (1 x 24VDC + 4 x digital).

### MACCS\_8DO

- 8 digital outputs :
  - Breaking capacity 1A@24VDC.
  - Contacts N.O. and N.C provided.
  - Time delay from 0 to 180s in 1 second increments.
  - Operation in mode Maintained or Impulse.
  - Emergency manual activation by micro switches.

### MACCS\_HMI

- High resolution 7" or 10" color touch screen.
- Luminous indicators and integrated quick function buttons.
- Light dimmer
- Multilanguage display (French, English, Spanish).
- Protected menu of 1st level settings: channel assignment, input / output types, time delay.

### MACCS\_8DI

- 8 digital inputs :
  - Monitored or not.
  - Configurable N.O./N.C.
  - Time delay from 0 to 180s in 1 second increments.
  - Individual inhibition per channel.



## APPROVALS

- Bureau Veritas
- MMF





## MECHANICAL CHARACTERISTICS

### Dimensions (LxIxH) and weights

- ▶ MACCS\_HMI: 176 x 135 x 29 + 5 mm 1.0 Kg
- ▶ MACCS\_CPU: 168 x 133 x 40 mm 0.5 Kg
- ▶ MACCS\_8XX: 51.5 x 133 x 33 mm 0.2 Kg

### Mounting

- ▶ MACCS\_HMI: Built-in mounting in console / cabinet
- ▶ MACCS\_CPU: Symmetrical DIN rail mounting
- ▶ MACCS\_8XX: Symmetrical DIN rail mounting

## ELECTRICAL CHARACTERISTICS

### Main power supply

- ▶ 9 - 32 VDC

### Emergency power supply

- ▶ 9 - 32 VDC

### Power supply switchover

- ▶ Automatic with alarms

### Power supply protection

- ▶ By diode and fuse

### Max. consumption @ 12VDC

- ▶ MACCS\_HMI : 0.5A
- ▶ MACCS\_CPU : 0.25A
- ▶ MACCS\_8DI : 0.22A
- ▶ MACCS\_8AI : 0.5A
- ▶ MACCS\_8DO : 0.22A

### Max. consumption @ 24VDC

- ▶ MACCS\_HMI : 0.3A
- ▶ MACCS\_CPU : 0.2 A
- ▶ MACCS\_8DI : 0.11A
- ▶ MACCS\_8AI : 0.3A
- ▶ MACCS\_8DO : 0.1A

### Connections

- ▶ Coded pluggable terminal blocks
- ▶ Max.section cable  
1,5mm<sup>2</sup> (power supplies)  
1mm<sup>2</sup> (inputs-outputs)

### Output capacity

- ▶ Power supply output (CPU) : 1.5A
- ▶ 24VDC outputs (CPU and HMI) : 0.5A
- ▶ Digital outputs (CPU and \_8DO) : 1A @24VDC

## REFERENCES & OPTIONS

- ▶ MACCS\_HMI
- ▶ MACCS\_HMI\_10P
- ▶ MACCS\_CPU
- ▶ MACCS\_8DI
- ▶ MACCS\_8AI
- ▶ MACCS\_8DO

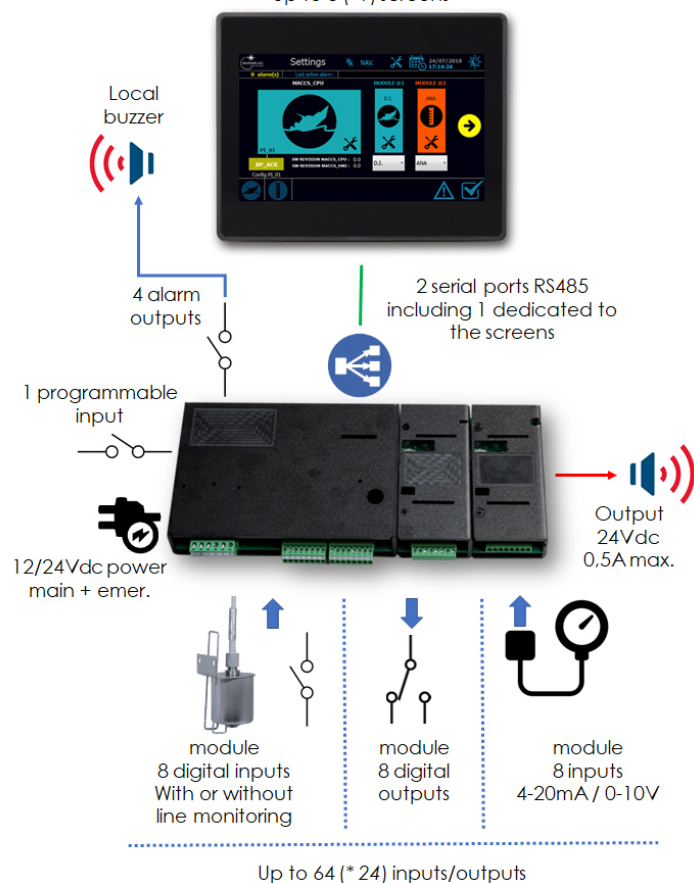
Optional references are available to enable a quick and complete installation:  
(audible and luminous devices, bilge sensors, fire detectors (not approved), level...)

**Please contact us**

- 7" color touch screen interface
- 10" color touch screen interface
- Processor module
- 8 digital inputs expansion module.
- 8 analog inputs expansion module
- 8 digital outputs expansion module.

## CONNECTION OVERVIEW

7" touchscreen  
Up to 3 (\*1) screens



(\*1) dimensioning with 12Vdc power supply

## ENVIRONMENTAL CONDITIONS



### Temperature limits

- ▶ +5°C to 55°C (functioning)
- ▶ 0°C to 70°C (storage)



### Humidity

- ▶ 95% Humidity max.



### Ingress protection rating

- ▶ MACCS\_HMI: IP66      MACCS\_8XX : IP20
- ▶ MACCS\_CPU: IP20



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