User Manual
MS31

MARBLE
Full Control!

Safety Instructions

Important

Before starting with installation of the MS31, please read the important information below.

Qualification

The installation of the product can only be performed by a certified installation company otherwise the warranty becomes void.

Disclaimer:

Marble Automation will not be responsible for any damage or loss of profit resulting from the use of this equipment.

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1. Introduction

Application

The application for this system is mostly on cargo ships up to 100 metres of length and workboats like tugs. There are also existing ships with Manned Machinery Spaces which are to be converted to Unmanned Machinery Spaces notation.

This system is also needed when an existing alarm system is to be certified for Unmanned Machinery Spaces notation. (MS-AUT) It is also used in combination with the Marble MS10B alarm unit.

The MS31 system consists of a main unit and several extensions. The communication between the main unit and the extensions is via the Modbus RTU protocol.

Ships with two separate engine rooms should use two independent systems.

Technical specifications

Description	Specification
Supply voltage	18-30 V DC
Power consumption	2,7 Watt
Communication	Modbus RS485
Inputs	Alarm horn, fire, reset timer
Outputs	Reset timer alarm, engineer alarm
VDR output	NMEA 0183 over RS485
Extensions	MS2006
Environmental	According DNVGL-GC-0339

2. Main Panel

Front
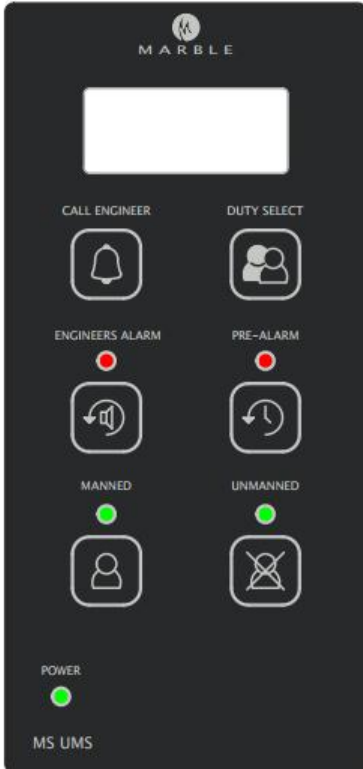
Button and LED "MANNED"

Pressing this button will switch the system to the "Manned" mode. The LED indicates the selected mode.

Button and LED "UNMANNED"

Pressing this button will switch the system to the "Unmanned" mode. The LED indicates the selected mode.

Button and LED "ENGINEERS ALARM"

The LED will indicate an ongoing Engineers alarm. Pressing the button will cancel the engineers alarm.

Button and LED "PRE-ALARM"

The LED will give an indication that the 25/27 minute timer, running in Manned Mode, will soon expire. Pressing the button will set the timer to zero.

Button "CALL ENGINEER"

Pressing this button will activate the Engineer alarm, forcing the engineer to go to the engine room.

Button "DUTY SELECT"

In Unmanned Mode, pressing this button will advance the number of the engineer on duty.

Multi-functional display

The graphic display is used to display information about the status of the system.

In Manned mode it will display that the timer is active and it will show the value of the timer.

In Unmanned mode it will display the engineer on duty number.

When the "Bridge Acknowledge" Option is set, the display will also show the "Ack at bridge " message when the unmanned button is pressed.

In Manned and in Unmanned mode the display indicates if a slave is missing and is also showing the missing slaves number.

3. Working principle

Manned Mode

The Manned Mode can be switched on by pressing the manned button on the MS31 unit, the button on the extension at the entrance of the engine room or automatic when an alarm from the main alarm system is reset.

When the system is in Manned Mode a timer will start. This timer, if not reset, will generate an alarm after 27 minutes. This alarm is connected to the main alarm system and will return an alarm signal to the MS31 main unit. This will start a 3 (5) minute timer.

If the alarm and the timer are reset, the timer will start again from zero. If this alarm is not accepted, the Engineer Alarm will be set. This Engineer Alarm will generate an alarm on all the extensions and can only be reset on the main MS31 unit.

The Engineer Alarm can also be activated by the button on the main MS31 unit.

Unmanned Mode

The Unmanned Mode can be switched on by pressing the unmanned button on the MS31 unit, the button on the extension at the entrance of the engine room.

When the system is in Unmanned Mode the incoming alarm will be relayed to the officer on duty extension and the mess extension.

Incoming alarm

When an alarm from the main alarm system occurs, generated by the Horn output of the connected alarm system, regardless if the system is in Manned or Unmanned Mode, the 3 (5) minutes timer will start. If the alarm is not accepted within the 3 (5) minutes the Engineers Alarm will be triggered.

Engineers Alarm

The Engineers Alarm can also be triggered manual by pushing the button on the MS31 unit.

With the Engineers Alarm the LED "Engineer Alarm" on the MS31 unit and on all extensions will light up. Also the buzzers of the extension will go of.

This situation can only be reset on the MS31 unit.

4. UMS extension

Common

The MS31 main unit and the MS2006 extension units together make a complete installation. This installation is configurable. The MS31 and the extensions communicate with a two wire RS485 Modbus connection.

The Modbus connection to the MS2006 is monitored. If an extension fails, this will be indicated at the MS31 main unit.

Entrance engine room extension
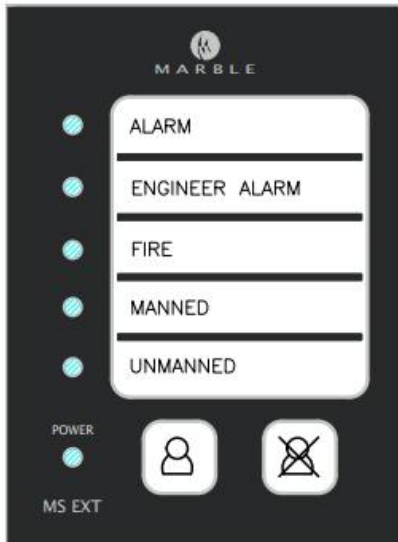
The LED "Alarm" will indicate an unaccepted alarm from the main alarm system.

The LED "Engineer alarm" indicates an ongoing Engineer Alarm which can only be reset at the MS31 unit.

The LED "Fire" indicates a fire alarm from the main alarm system.

The LED "Manned" indicate the Manned mode of the UMS system.

The LED "Unmanned" indicate the Unmanned mode of the UMS system.

The two buttons are used to change the Manned/Unmanned Mode.

Mess, Bridge and Cabin extension

The LED "Alarm" will indicate an unaccepted alarm from the main alarm system.

The LED "Engineer alarm" indicates an ongoing Engineer Alarm which can only be reset at the MS31 unit.

The LED "Fire" indicates a fire alarm from the main alarm system.

The LED "On Duty" indicates that the UMS system is set to the Unmanned Mode and that the internal buzzer will operate when an alarm occurs.

The Mess extension(s) is always on duty. The Cabin extension can be selected for On Duty on the MS31 main unit.

The left button is to silence the internal buzzer except when the Engineer Alarm is active. Then the buzzer will have to be silenced at the MS31 main unit.

The right button is the Lamp Test button to check the working of the LED's.

5. Maintenance

The MS31 unit is maintenance free. It is permitted to clean the front of the MS31 unit with a damp cloth.

6. Troubleshooting

Symptom	Possible cause	Test and remedies
Green LED is not flashing	Power supply is not connected	Check if power supply is connected
Green light gives a steady light	Error in processor	Turn of the power supply for a few seconds and connect again
Green LED is not flashing (2)	Processor is broken	Contact Marble Automation for possible solution
Display indicates slave # failure.	One of the extensions is not responding	Contact the installer to check the installation