



MBC ETH
EASYBUS MANAGEMENT MODULE

This installation manual has been written by the manufacturer and it is considered integrating part of this product.

The information included are intended for the expert technicians who execute the installation and the extraordinary maintenance of the product.

The expert technicians must have specific competences and particular abilities in order to carry out correctly and safely their work.

The constant observance of the information included in this manual guarantees safety of men, energy saving and a longer duration of product operative-life.

In order to avoid wrong handling and the consequent risk of accidents, it is important to read this manual carefully, keeping scrupulously to guidelines according to the supplied information.

CONFORMITY DECLARATION

All the devices of the YACHTICA® system are designed in order to comply the directives:

- **EN 60945 Maritime navigation and radiocommunication equipment and system.**
- **IEC 61000;**
- **IEC 60068;**
- **IEC 60695;**
- **Rules for the Classification of Ship - Part C - Machinery;**
- **Systems and Fire Protection - Ch. 3, Sec. 6, table 1.**

TYPE APPROVAL RINA: N° DIP534725CS

All the devices of the YACHTICA® system are tested and found to comply with the specification of the CE marking.



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DESCRIPTION

The MBC ETH is a module with integrated microcontroller that allows communication between the YACHTICA® system BUS EasyBUS and other devices/computers through an ethernet port or RS-232.

The module is used for the programming of YACHTICA® modules connected in BUS, through the YACHTICA® software Cabot. The module is also the communication interface between the monitoring and/or entertainment systems and the YACHTICA® system.

FEATURES**Ethernet and RS-232 Interface**

The module allows the interfacing of a monitoring and/or entertainment system with the YACHTICA® system using an ethernet port and/or an RS-232, port both optoisolate. Network communication supports a maximum of 2 simultaneous connections.

On board Web server ed FTP server

The module can be set via a browser-accessible web server by typing the IP address of the MBC ETH itself. It is possible to set the general network parameters as well as the time and date.

EasyBUS Communication

The module can communicate with other modules of the YACHTICA® system by connecting it within an EasyBUS network. The module has a removable EasyBUS connector to use for this purpose.

Programming interface for the EasyBUS system

The module can be used to program modules connected to the same EasyBUS network, via the YACHTICA® software Cabot.

Control and monitoring display

Using the display on the front panel you can set all the main parameters of the module and the parameters related to the configuration of the ethernet network.

DIN rail installation

The MBC ETH module can be installed into an electrical switchboard using DIN rail. Once installed and the switchboard closed, the module's front panel, with control buttons and the display, is still accessible.

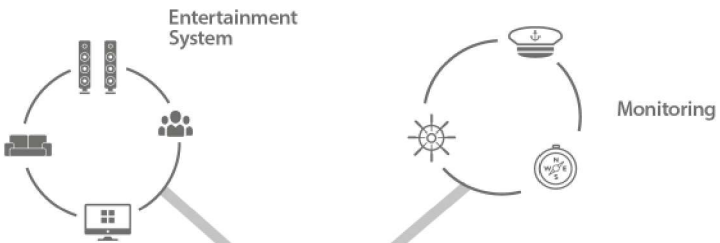
Detachable terminal block

All the terminal block of YACHTICA® modules are detachable, allowing a simple wiring and a quick replacement without the needed to disconnect any cable, with a high level of security and stability of the system.

Tropicalized electronic

All the YACHTICA® modules have a tropicalization treatment in order to prevent a deterioration due to the humidity and sea mist.

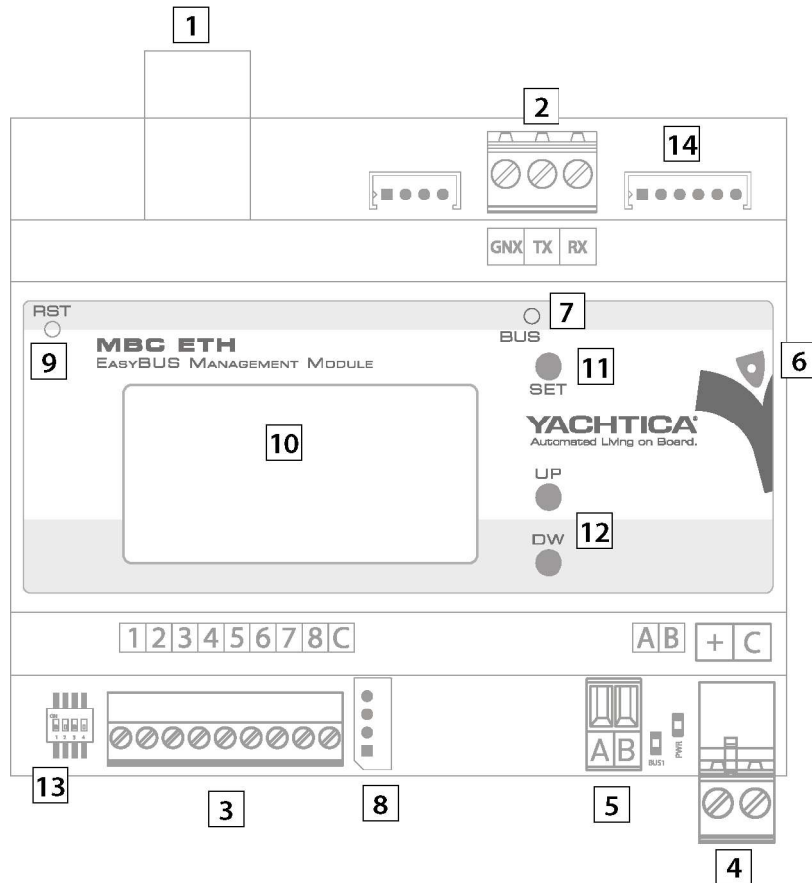
APPLICATION












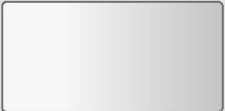



TECHNICAL SPECIFICATIONS


SPECIFICATION	DETAILS
Electronic power supply	11-28V _{DC}
Electronic requirements	0,6W (20mA @24V _{DC} , 40mA @12V _{DC})
Dry contact inputs	8
Default address	32
Working temperature	+5°/+50° C (41°/122° F)
Storage temperature	-40°/+70° C (-40°/+158° F)
Humidity	15%/90% non condensing
IP Protection	IP20
Enclosure	Self-extinguishing UL94-V0
Color	RAL 7024
Dimensions (LxHxD)	106x58x90 mm (6 DIN module spaces)
Weight	200 g
Compliance	CE; EN60945; EN61000-4-2; EN61000-4-3; EN61000-4-4; EN61000-4-5; EN61000-4-6; EN61000-4-8; EN61000-4-11; CISPR 16-1-1; EN 60695-11-5; IEC60068-2; IEC60068-6; IEC60068-30; RINA Rules 2018 Pt. C, Ch. 3, Sec.6.

MODULE DESCRIPTION



#	CONNECTORS, LED, INDICATORS	DESCRIPTION
1		RJ45 Ethernet connector; Ethernet connector. IP default di default: 192.168.1.240
2		3 poles detachable connector; Maximum cable section: 2,5mm ² (12AWG); RS-232 Serial connector; GND: serial port Ground (optoisolated); RX: RS-232 receiving pole. TX: RS-232 transmitting pole.
3		9 poles detachable connector; Maximum cable section: 1,5mm ² (15AWG); 8 dry contact inputs connector; 1-8: inputs; C: common.
4		2 poles detachable connector; Maximum cable section: 2,5mm ² (12AWG); Electronic power supply connector; + : positive 11-28Vdc; C: negative 11-28Vdc. Be sure that all the negative poles of all the power supplies used for electronic are in parallel. NOTE: it is suggested to use a dedicated stabilized power supply for the electronic of all the modules inside a switchboard. It's important that modules installed into different switchboards connected together have negative poles in parallel (the use of YACHTICA® AMP 102D is suggested).
5		2 poles detachable connector; Maximum cable section: 1,5mm ² (15AWG); EasyBUS connector; A: BUS A pole; B: BUS B pole. Be sure that cabling of BUS connector is consistent for all the modules in the network. This avoid bad working of the system.

#	CONNETTORE, LED, INDICATORI VARI	DESCRIZIONE
6		Blu LED, PWR. On if electronic power supply is given.
7		Orange LED, BUS. <i>LED Blinking:</i> the module is connected to other modules in an EasyBUS network and is not the master module. Blinking frequency depends on the address of the module; <i>LED On:</i> the module could be the master of an EasyBUS network or could fail to communicate with the rest of the network ⁽²⁾ .
8		4 poles connector⁽⁹⁾ to manage the module (or the whole system) using the YACHTICA® MBC ETH o ICB 101X modules (not included).
9		Recessed button to reset microcontroller of the module, RST. The outputs will be switched off and the values of outputs and memories will be set to factory values.
10		Programming, monitoring and control display. Control display allows to set some basic parameters of the module and to monitor the outputs status.
11		Setup button, SET. If pressed for 5s put the module in SETTING mode, allowing to set some parameters. If pressed for 5s while it is in setting mode it exit from it. In SETTING mode if short pressed scroll between the settable parameters.
12		Up and Down buttons, UP & DW. Scrolling buttons for display pages if not in SETTING mode. If the module is in SETTING mode they are used to set some internal parameters.
13		DIP switch for the default configuration setting. DIP switch number 4 is not used. 000-: The module works according to the programming within the microcontroller. The following schedules inhibit custom programming on the module. 100-: Sets the form address to the default address of 192.168.1.240. After you set the new IP address, bring this dip to 0 and restart the module to make the changes operational. Other configurations are not used.

#	CONNETTORE, LED, INDICATORI VARI	DESCRIZIONE
14		6 poles connector; 5 dry contact outputs connector; 1-5: outputs; C: common.

⁽⁹⁾ Contact YACHTICA® to receive the dedicated interface cable to be used.

DISPLAY DESCRIPTION

INTRODUCTION

The module is equipped with a top board with a display and buttons for the setting and the management of some parameters without the needed of YACHTICA® software Cabot. Following the description of each screen with its features.

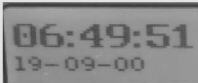


Use UP and DW buttons to scroll between the pages if the module is not in SETTING mode.

To enter in SETTING mode of the page displayed and set its parameters, keep pressed the SET button for 5 seconds. The first parameter will blink and it will be possible to use UP & DW buttons to choose the desired value. Once the value is set, press shortly SET buttons to pass to the next parameter.

To exit from SETTING mode keep press the SET button for 5 seconds or wait for 10 seconds until the blinking parameter stops.

PAGE 1: Control screen

From this screen it is possible to control the date and time, as well as the main parameters of the network. In SETUP mode, you can set the address of the module. There are also some warning symbols on the screen.

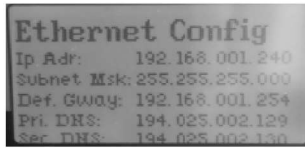
#	LABEL, ICON	DESCRIPTION
1		Clock and Date. Clock and date settings.
2		Address module, ADR. Address of the module. The value can be set between 1 and MAX-1. If the module is in SETUP mode, use the UP and DW buttons to select the desired address. It is suggested to assign to this module the highest address within the network where it is installed. By default, the value is 32.
3		Max net address, MAX. Higher address of the modules inside the net (add 1 to this address is suggested). If the module is in SETTING mode, use UP & DW buttons to select the max value desired. The default value is 33. NOTE: a module cannot communicate with other modules of the same net if its address is higher than the MAX of the others (see Cabot manual).

PAGE 2: Ethernet Configuration

From this page it is possible to set the general parameters of the module in order to connect it within an ethernet network.

Keep pressed SET button for 5 seconds to enter in SETTING mode of the first output. Use UP & DW buttons to choose between the two mode. Press shortly SET button to scroll to the next outputs.

Keep pressed SET button for 5 second or wait for 10 seconds to exit from SETTING mode.

#	LABEL, ICON	DESCRIPTION
1		Network settings. Setting the general parameters of the ethernet network to which the MBC ETH is connected.

PAGE 3: Module information

This page shows the hardware and software version of the module.

#	LABEL, ICON	DESCRIPTION
1		HARDWARE & SOFTWARE VERSION. Product hardware and software version.

INSTALLATION

Important notes

The following information are intended for the expert technicians who execute the installation and the extraordinary maintenance of the product. The installation and the maintenance of the module must be executed by qualified technicians, respecting the Norm of the installation country.

The expert technicians must have specific competences and particular abilities in order to carry out correctly and safely their work.

The constant observance of the information included in this manual guarantees safety of men, energy saving and a longer duration of product operative-life. Keep this manual and notes included.

In order to avoid wrong handling and the consequent risk of accidents, it is important to read this manual carefully, keeping scrupulously to guidelines according to the supplied information.

Electrical tension may cause shock and severe burns. Be sure to turn off the electrical supply before carrying out any type of work on the connectors. Omission of observation of these safety measures may cause death or severe lesions to people as well as great material damages.

Before preceeding with the use of the modules, make sure that electric installation, carried out by a qualified technician in conformity with the Technical Norms, corresponding to the class of homologation of the electrical system, is provided with the devices prescribed for the protection against direct and indirect contacts and electrical surcharges.

The modules of the YACHTICA® must be exclusively used in connection with other modules and external components which are conformed to the Norms comparative to the product.

Do not use the module if, upon visual inspection, it shows deterioration of the enclosing box or if the screening wraps of the feeding cables show any wear and tear or damage.

The YACHTICA® system may not be used to carry out safety and accident prevention functions since it does not have the redundancy requirements lawfully requested.

The installer must verify the correct installation and operation of the product.
It is prohibited to use the product for improper purposes or purposes different from those provided

V.Y.C. Srl shall not be held liable for any damage of any sort or kind in case of module used or installed incorrectly.

It is prohibited to tamper or to modify the product.

Before starting

Place the module inside a switchboard and follow carefully the following wiring diagrams. The module can be installed on DIN rail.

Always switch off the electronic and outputs power supply before carrying out any type of electrical connection on the module.

NOTE: use a dedicated stabilized power supply for electronic modules installed into a switchboard. If into an EasyBUS network more than one power supply is used (for instance, one power supply for each switchboard containing YACHTICA® modules) be sure that all the negative poles of all the power supplies are in parallel (it is suggested to use YACHTICA® AMP 102D).

The module is intended for internal use. Install it in dry place in order to respect the specifications described in the TECHNICAL SPECIFICATIONS paragraph of this manual.

Addressing

Each YACHTICA® module placed into an EasyBUS network must have a unic address. The default address for all YACHTICA® modules is 32 and Max Address 33. Before connect the BUS connectors of more modules in the same net, be sure that they have a different address. It is possible to address the module using the display.

It is possible to change the address of a module using the YACHTICA® programming software Cabot.

NOTE: a madule cannot communicate with other modules in the same net if its Address is upper than the Max Address of the others (see Cabot manual).

WIRING DIAGRAMS

Shown below different wiring diagrams that can be used when installing a MBC ETH module.

NOTE: all the YACHTICA® modules installed in an EasyBUS network must have the negative pole of electronic power supply in parallel. If this specification is not verified unexpected behaviour of the system can happen.

NOTE: it is not possible to wire an EasyBUS network in a ring. If this specification is not verified unexpected behaviour of the system can happen.

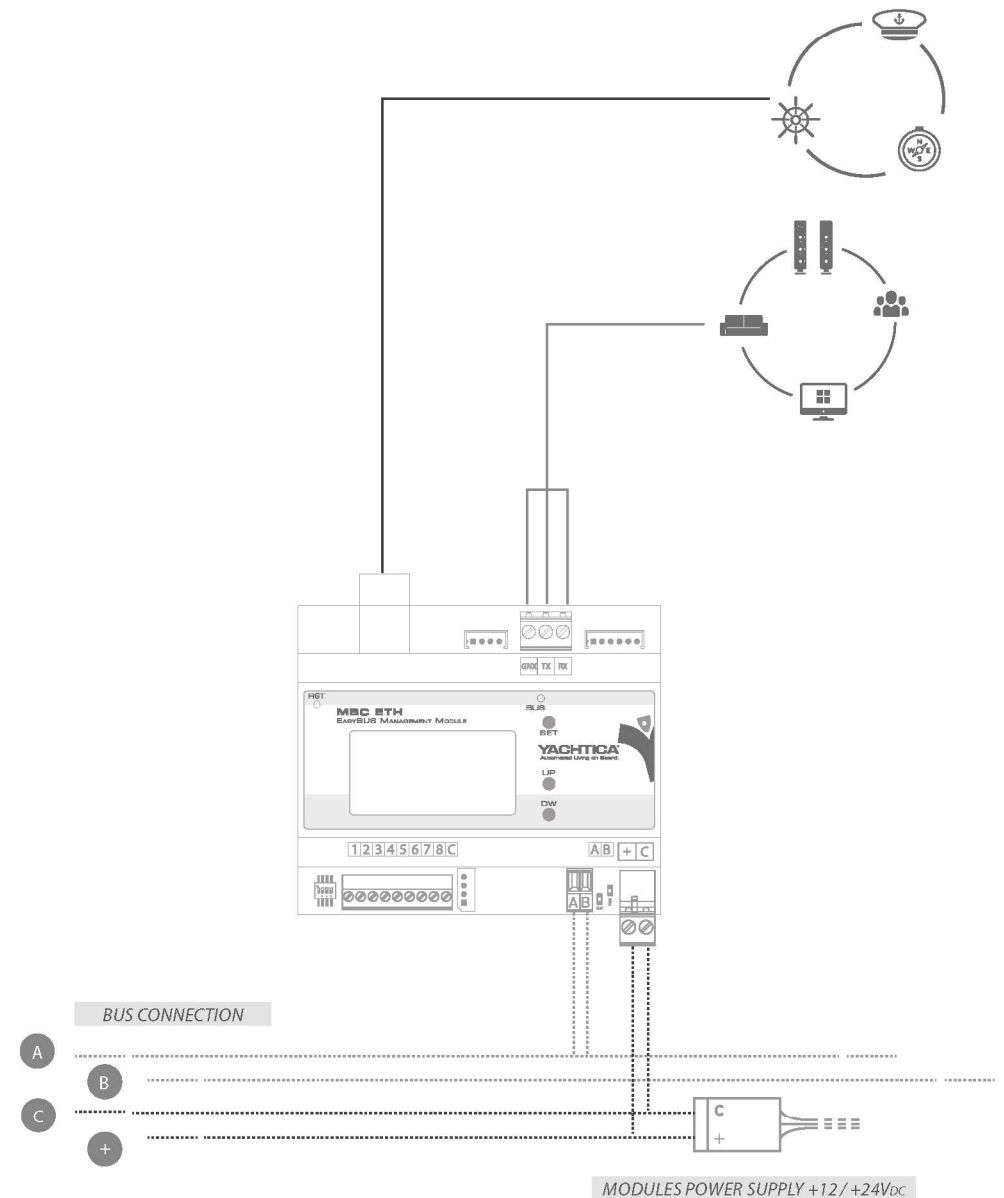
To link different switchboards with YACHTICA® modules inside it is suggested to use AMP 102D module.

For particular wiring ask for YACHTICA® assistance.

CAUTION: verify carefully that the terminal blocks are fully insert in their position and that the wires are fully insert in their position and screwed correctly. Any wrong wiring, considering the high rate of currents running in the module, could cause an excessive overheating. It is suggested to protect the power input section in order to avoid any loop of current due to wrong wiring in the field, not monitored by the module itself.

CAUTION: the terminal block are tested and certified for use with flexible or rigid cord. The component builder does not contemplate the use of tips whose use is the responsibility of the installer. In this case it is recommended the utmost attention in the crimping that must be uniform on all 4 sides to avoid the creation of contact tips.

SCHEME 1



TROUBLESHOOTING

REPAIR AND WARRANTY POLICIES

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Module does not switch on	The module doesn't receive power supply on the electronic power supply connector	Check that dedicated power supply is working properly, providing right output voltage according to the specifications written in this manual.
	Positive and negative cabling poles inverted	Check that dedicated power supply positive and negative poles are connected in the right way.
The module has the BUS LED always on but its address is not the lowest used in the network	The modules has address higher than the MAX ADR of the module with lowest address in the network	Check the MAX ADR value of the module with lowest address in the network. Set the address of the module according to that value.
	Communication BUS card damaged	Communication BUS card needs to be replaced (ask help to YACHTICA® technicians).
	Problem on the BUS cable	Check the cabling of all the BUS chains connected to the same loop of the module. Short circuit or inversion on A-B poles can be present.
IP address of the module is not reachable	The module does not have the IP address you are selecting	If you do not know the IP address of the module, set the dups in configuration 100- to set the default address to 192.168.1.240. Then set the desired address.
	Cable issue	Verify that the ethernet cable is not damaged

Merchandise returns

No V.Y.C. Srl merchandise may be returned for credit, exchange or service without prior authorization from V.Y.C. Srl. To obtain warranty service for V.Y.C. Srl products, contact V.Y.C. Srl or an authorized dealer. Request for an RMA (Return Merchandise Authorization) and fill it in properly all the fields, before returning the module. Shipments arriving freight collect or without RMA number shall be subject to refusal.

Return freight charges following repair of items under warranty shall be paid by V.Y.C. Srl, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser. V.Y.C. Srl will provide repairing costs in case the merchandise is not under warranty.

V.Y.C. Srl limited warranty

V.Y.C. Srl warrants YACHTICA® products to be free from manufacturing defects in materials and workmanship under normal use for a period of 2 years from the date of purchase.

This warranty extends to products purchased directly from V.Y.C. Srl or an authorized YACHTICA® dealer.

V.Y.C. Srl shall not be liable to honor the terms of warranty if the product has been used in any application other than that for which it was intended or if it has been subject to misuse, accidental damage, modification or improper installation procedures

Furthermore, this warranty does not cover any products that has had the warranty void label altered, defaced or removed.

V.Y.C. Srl shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, V.Y.C. Srl makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty.

This warranty statement supersedes all previous warranties.



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