



EU RO MR Production Quality Assurance Certificate
No. EMR090225CS

This is to certify that RINA did undertake the examination of the equipment identified below with the criteria for the Production Quality Assurance set-up in the “Rules for Testing and Certification of Marine Materials and Equipment” and the "EU RO Framework Document for the Mutual Recognition of Type Approval"

<i>Description</i>	Computers and programmable logic controllers
<i>Product</i>	mtu NautIQ Master Essential DISTRIBUTED I/O MODULES AND CPU FOR MONITORING AND CONTROL
<i>Manufacturer</i>	SYSTEM CERAMICS SPA
<i>Address</i>	VIA GHIAROLA VECCHIA 73 41042 Fiorano Modenese (MO) ITALY
<i>Reference standards</i>	EU RO MR TR - Computers and Programmable Logic Controllers (PLCs)
<i>Reference documents</i>	-

Issued in **RINA Trieste Marine** on **November 6, 2025**. *This Certificate is valid until* **November 6, 2030**

RINA Services S.p.A.
Luigi Benedetti

This certificate consists of this page and 1 enclosure



ATTACHMENT TO
No. EMR090225CS
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Product:

mtu NautIQ Master Essential
DISTRIBUTED I/O MODULES AND CPU FOR MONITORING AND CONTROL

Manufacturer

SYSTEM CERAMICS SPA

Place of Manufacturer

Via Ghiarola Vecchia 73 - 41042 Fiorano Modenese (MO) - Italy

Technical documentation

Applicant

TEAM ITALIA MARINE S.R.L.
VIA LUIGI EINAUDI 114/B
61032 FANO (PU)
ITALY

Product Information

Distributed I/O Modules and CPU for monitoring and control

Product & Model

Code	Description
OM-125B	16DI+16DO PNP/NPN 3A
OM-125B-WD01	16DI+16DO PNP/NPN 3A watchdog firmware
OM-130B	16DI PNP
OM-140B	16DI NPN
OM-135B	16DI+16DO PNP
OM-145B	16DI+16DO NPN
OM-145B-AL01	16DI+16DO NPN alarm ISA1 firmware
OM-145B-BH01	16DI+16DO NPN servo controller firmware
OM-150B	16DO
OM-180B	16DI+16DO PNP/NPN
OM-180B-SP01	16DI+16DO PNP/NPN + SER
OM-185B	32DI+32DO PNP/NPN
OM-185B-SP01	32DI+32DO PNP/NPN + SER
OM-190B	48DI+16DO PNP/NPN
OM-210B + OM-211A	8AI 0-40V/4-20mA/0-200mV + DC isolator
OM-220B V.2018	4AI T/R
OM-240B V.2018	4AI+4AO T/R+4-20mA
OM-275B	4AO 4-20mA
OM-320B V.2018	8DO 20A
OM-320B-NL01 V.2018	7DO 2A Navigation Lights fw
OM-320B-DM01 V.2018	8DO 20A Dimmer
OM-321C	16DI+16DO PNP/NPN aux module

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Code	Description
OM-405B	2SP RS232/RS422/RS485
OM-430B + OM-400C	Main processor + relay module
OM-961M	Redundant module master
OM-961S	Redundant module slave

Description & Ratings

	OM-125B OM-125B-WD01	OM-135B OM-145B OM-145B-AL01	OM-130B OM-140B	OM-150B
CPU	T89C51CC02 40MHz CPU			
Protocol	Full CAN 2.0 A and B, CANOpen protocol			
Interfaces	RS232			
EEPROM	2Kbyte			
RAM	512 byte			
EPROM FLASHmemor	16 + 2 Kbyte FLASH memory			
Power supply	0.2A 24VDC (18÷32VDC)			
Digital Inputs	16 24V PNP/NPN			
Digital Outputs	16 24V 3A PNP			
Standard Inputs	100Hz	100Hz	100Hz	
Operating Temperature	-20...85 °C			
Size	128×82×56 mm		92×82×56 mm	

	OM-180B (-SP01) OM-185B (-SP01) OM-190B	OM-210B	OM-220B OM-230B OM-240B
CPU	ARM Cortex XMC4500	32 bit, ARM7 60MHz	ARM Cortex XMC4500
Protocol	Full CAN 2.0 A and B, CANOpen protocol		Full CAN 2.0A and 2.0B
Interfaces	RS232/RS485/RS422 multistandard, opto-isolated, serial port (mod. -SP01)		RS232
EEPROM			
RAM			
EPROM FLASHmemor			
Power supply	0.2A 24VDC (18÷32VDC)		
Digital Inputs	16 24V PNP/NPN 32 24V PNP/NPN 48 24V PNP/NPN	Voltage/Curr ent & Frequency Input	INPUT SECTION (OM-220B, OM-240B) Types of configurable inputs: J, K, T, R and S thermocouples
Digital Outputs	16 24V 0.5A PNP 32 24V 0.5A PNP	Output range: 0..5 V, 0..10 V, -5..5 V, -10..10 V	
Standard Inputs	100Hz		
Operating Temperature	-20...85 °C		
Size	128×82×56 mm (mod. OM-180B), 178×82×56 mm (mod. OM-180B-SP01), 200×82×56 mm (mod. OM-185B), 250×82×56 mm (mod. OM-185B-SP01), 200×82×56 mm (mod. OM-190B)		117×82×56 mm

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	OM-275B	OM-320B	OM-320B-NL01	OM-320B-DM01
CPU	ARM7 Freescale S08DZ60	144MHz ARM7 Cortex M4		
Protocol	Full CAN 2.0A and 2.0B	Full CAN 2.0 A and B, CANOpen protocol		Full CAN 2.0 A and B, CANOpen protocol
Interfaces				RS232
EEPROM		2Kbyte		2Kbyte
RAM				
EPROM FLASHmemor		2Kbyte		2MB
Power supply	0.2A 24VDC (18÷32VDC)	2Kbyte		2MB
Digital Inputs		8 NPN/PNP optoisolated inputs for wall switches		
Digital Outputs		8 PNP 24V 20A outputs		
Standard Inputs		100Hz		
Operating Temperature		-20...85 °C		
Size	70×85×80 mm	270×75×80mm		

	OM-430B	OM-405B	OM-961M OM-961S
CPU	DSTni-EX 120MHz		
Protocol	2 full CAN 2.0A and 2.0B interfaces	Full CAN 2.0 A and B	
Interfaces	RS232	2 RS232/RS422/RS485	CANbus terminators
EEPROM	1Kbyte		
RAM			
EPROM FLASHmemor	4MB	2MB	
Power supply	24VDC (18÷32VDC) 1A		
Digital Inputs			Dual power supply
Digital Outputs			
Standard Inputs			
Operating Temperature	-20...85 °C		
Size	195×88×56 mm	195×80×50 mm	170×80×50 mm (master unit), 113×80×50 mm (slave unit)

Intended Service

- Power supply system characteristics as per IEC 60092-101, sub-clause 4.8
- Installation in spaces or areas according to the required environmental categories of the RO classing the ship.
- Control, monitoring, alarm, and safety functions provided by computer / PLC based systems subject to classification requirements.

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Restrictions (limitations as outlined by the Technical requirements)

- a) The approval shall cover hardware and firmware only. This excludes firmware, application software, and hardware designed for specific applications subject to classification. Firmware, system software, and application software are subject to additional separate approval, according to UR E22 and the rules of the classing EU RO (FAT and on-board review / tests);
- b) The term PLC is here meant to comprise of elements such as backplanes, power supplies, CPUs, I/O units and bus communication units when these are considered an integral part, or natural extension, of the PLC. Sensors and actuators typically connected to the PLC in a system are not considered part of the PLC and are excluded from the scope of this programme;
- c) The modules are to be mounted inside a protective housing (e.g., a switchboard cabinet) to achieve the IP20 degree of protection

Remaining restrictions to be read on TR

Teslab report:

Test Report n°12A191F dated 07/12/2012

Test Report n°157140 dated 25/08/2015

Test Report n°184082F, n°184083F, 184084F dated 20/06/2018

Test Report n°252042E; n°252043E; n°252044E; n°252045E dated 15/07/2025

Test Report n°252047F, n°252048F dated 05/09/2025

Test Report n°252049F dated 10/09/2025

Manufacturer's documentation

Data Sheet Module List Rev.14EN Sep 2025

C284.01.MSC02.R04 Test Program Sep 2025

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When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- *American Bureau of Shipping (ABS);*
- *Bureau Veritas (BV);*
- *China Classification Society (CCS);*
- *Croatian Register of Shipping (CRS);*
- *DNV;*
- *Indian Register of Shipping (IRS);*
- *Korean Register (KR);*
- *Lloyd's Register Group Ltd. (LR);*
- *Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);*
- *Polish Register of Shipping (PRS);*
- *RINA Services S.p.A. (RINA).*

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).

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Notes:

- 1) Refer to the agreed MR Technical Requirements for additional MR TAC information that may be specifically applicable to certain products - <https://www.euomr.org/technical-requirements> ;
- 2) List of MR TACs issued by the EU ROs can be found by <https://www.euomr.org/links-to-mrcertificates> .
- 3) As per clause 9 of the Terms & Conditions for Mutual Recognition of Type Approval, the manufacturer will be required to agree that it will fulfil the obligations arising out of its quality assurance scheme as approved during production. The manufacturer certifies it has kept the accredited certification body and the EU RO that issued the MR TAC duly informed of any intended design changes or updating of the production quality assurance scheme for its consideration with regard to the validity of the MR TAC. The manufacturer will apply annually for periodical assessment by the EU RO to show that the production under the MR TAC and the quality assurance scheme are being satisfactory maintained;
- 4) The manufacturer should notify the RO issued the EU RO MR Certificate of any modification or changes to the equipment/ Firmware/ Operational System Software Version in order to obtain a valid Certificate.
- 5) MR TACs are valid for a maximum of 5 years as per clause 10 of the Terms & Conditions for Mutual Recognition of Type Approval;
- 6) For more information on the factors affecting the validity of MR TACs, see clause 11, 12 and 13 of the Terms & Conditions of Mutual Recognition of Type Approval.
- 7) For implementation of the amendments to Appendix I of Version 10.0 of the Framework Document by the EU ROs into their internal procedures and MR TAC templates, an application period of 6 months as from 1 July 2019 applies.

**RINA Trieste Marine November 6,
2025**