

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the LR Type Approval System.

This certificate is issued to:

PRODUCER Onyx Marine Automation S.R.L.
Via Della Giustizia, 10
61032 Fano (PU)
Italy

PLACE OF PRODUCTION System S.P.A.
Via Ghirarola Vecchia, 73
Fiorano Modenese (MO)
Italy

DESCRIPTION Distributed I/O modules and CPU for monitoring and control

TYPES OM-xxxB

xxx: 110, 115, 120, 130, 135, 140, 145, 150, 160, 170, 320

CPU	T89C51CC02 40MHz
Memory	2kbyte EEPROM 512 byte RAM 16+2 kbyte EPROM Flash

xxx: 210

CPU	32bit, 60MHz μ -processor ARM7
Memory	2kbyte EEPROM 16kbyte RAM 128kbyte Flash

Certificate No. 09/20021

Issue Date 19 May 2009

Expiry Date 18 May 2014

Sheet 1 of 2

Jörn Brüggemann
Hamburg Design Support Centre
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

TYPES (cont.)	<p>xxx: 220, 230</p> <p>CPU T89C51CC01 40MHz Memory 2kbyte EEPROM 1280 byte RAM 32kbyte Flash, 2kbyte Bootloader</p> <p>xxx: 410, 420</p> <p>CPU DSTni-EX 120 MHz μ-processor X86 compatible, 24-bits address space Memory 2x 1kbyte EEPROM 2MB RAM 1MB RAM back up, 2MB Flash</p>
APPLICATION	Marine, offshore and industrial applications for use in environmental categories ENV1 and ENV2 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 - 2002.
RATING	Power supply: +24V (18...32V)
ADDITIONAL TESTS	Low Temperature test (0°C/2hrs)
STANDARD	Manufactures Specification.
OTHER CONDITIONS	<p>Final arrangements of the components in dedicated systems are to be in compliance with applicable Lloyd's Register Rules and Regulations and are subject to the Lloyd's Register Plan Approval Process.</p> <p>Type Approval of Products according to Test Specification No. 1 is essentially Type Approval of hardware. Examination of software aspects is restricted to functional operation as demonstrated in the Performance Test.</p>

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. ETS 21194-09 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No.	09/20021
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Sheet	2 of 2

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TYPE APPROVAL CERTIFICATE
No. ELE499006CS001



This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Distributed I/O Modules for monitoring and control
<i>Type</i>	OMxxx Series
<i>Applicant</i>	ONYX MARINE AUTOMATION SRL Via E. Bertini, 45/A 47100 Forli' ITALY
<i>Manufacturer</i>	SYSTEM S.P.A.
<i>Place of manufacture</i>	41042 Fiorano (Mo) ITALY
<i>Reference standards</i>	Rules for the classification of ships.- Part C - Machinery, systems and fire protection. - Ch.3, Sect. 6, Table 1.

Issued in **Genoa** on **August 13, 2007**. This Certificate is valid until **August 13, 2012**

RINA
Valerio Bonanni

This certificate consists of this page and 1 enclosure



Company Information	Additional Company/ Plant Detail	Confirmation Of Type Approval
ONYX MARINE AUTOMATION S.R.L. VIA DELLA GIUSTIZIA NO. 10 FANO (PU) 61032 Italy Tel +39 0543 777399 Fax +39 0543 751529 fsturlese@onyxmarine.com	Email :	This product doesn't have a Confirmation of Type Approval.
>>	Click Here to view more Details	
Product	Monitoring & Control Modules	
Model	OM-xxxB Series	
Intended Service	Shipboard Marine Distributed I/O Modules and CPU for Monitoring and Control Systems	
Description	See attachment	
Ratings	Power supply: +24Vdc (18-32V)	
Service Restrictions	Unit Certification is required for this product. Modules and CPU can not be installed in enclosed spaces subject to generated heat from other equipment. No parts of the modules are to be accessed by the operator during the normal use.	
Comments	Each vessel installation is to be specifically approved through vessel specific drawings showing location, wiring, power supplies, etc. of all devices associated with the system. Software assessment is to be carried out for each vessel installation.	
Notes, Drawing and Documentation	No. C162.MSC09.R05 Data Sheet Onyx Marine Automation - Technical Data OM-xxxB No. C128.MSC01.R01 Test Program dated 20.08.2007 No. C000.USR02.R04 Installation Guide dated 18.05.2008 No. C162.MSC12.R01 Declaration Manufacturers Declaration with reference to EMI tests dated 18.07.2007 No. C162.MSC11.R01 Statement from System Electronics dated 14 August 2009 No. C128.MSC03.R02 Hardware Layout dated 20 February 2009 No. C162.MSC16.R01 Product Reference Table No. 27707A EMC test report for OM-120B dated 16.06.2007 No. R01-07 Environmental test report (without vibration) for OM-120B dated 01.03.2007 No. 092011A-2 Vibration test report for OM-160B dated 18.02.2009 No. 27707B EMC test report for OM-210B dated 16.06.2007 No. R02-07 Environmental test report (without vibration) for OM210-B dated 01.03.2007 No. 27707C EMC test report for OM-220B dated 16.06.2007 No. R03-07 Environmental test report (without vibration) for OM-220B dated 01.03.2007 No. 27707D EMC test report for OM-320B dated 16.06.2007 No. R04-07 Environmental test report (without vibration) for OM-320B dated 01.03.2007 No. 27707E EMC test report for OM-420B dated 16.06.2007 No. 092011A-1 Vibration test report for OM-420B dated 18.02.2009 No. R05-07 Environmental test report (without vibration) for OM-420B dated 01.03.2007 No. 29117 EMC test report Conducted radio frequency interferences for OM-120B, OM-210B, OM-220B, OM-320B and OM-410B dated 26.01.2009	
Term Of Validity	This product/model is covered under Product Design Assessment (PDA) Certificate # 09-	

GE498223-PDA, dated 28/Sep/2009. This PDA Certificate expires 27/Sep/2014. It will remain valid for 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first). It is valid for all vessels contracted on or before the date of the Rules used in this evaluation.

ABS Rules 2009 Steel Vessel Rules 1-1-4/7.7, 4-9-7/13.

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	09-GE498223-PDA	28/SEP/2009	27/SEP/2014