

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA000013Z
 Revision No:
6

This is to certify:

That the Peripheral Equipment

with type designation(s)

eX705, eX707/G/M, eX710/G/M, eX712/M, eX715/M, eX715MG, eX721/M, eXware703, eXware705, eXware707/M, eXware707Q

Issued to

Exor International S.p.A.
San Giovanni Lupatoto VR, VR, Italy

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
eX705	C	B	A	B	C / IP66 (front), IP20 (rear)
eX707/G/M	C	B	A	B	C / IP66 (front), IP20 (rear)
eX710/G/M	C	B	A	B	C / IP66 (front), IP20 (rear)
eX712/M	C	B	A	B	C / IP66 (front), IP20 (rear)
eX715/M	C	B	A	B	C / IP66 (front), IP20 (rear)
eX715MG	D	B	A	B	C / IP66 (front), IP20 (rear)
eX721/M	C	B	A	B	C / IP66 (front), IP20 (rear)
eXware703	C	B	A	B	A / IP20
eXware705	C	B	A	B	C / IP67
eXware707/M	C	B	A	B	A / IP20
eXware707Q	C	B	A	B	A / IP20

Issued at **Hamburg** on **2022-11-10**

This Certificate is valid until **2023-06-19**.

DNV local station: **Venice**

for **DNV**

Approval Engineer: **Holger Jansen**

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Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Power supply voltage 24 Vdc

Model name	Description
eX705	<ul style="list-style-type: none"> - 5" TFT color display, resolution 800x480 pixel, 64K colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 2 Ethernet ports - SD Card slot - 1 Plug-in module slot for system expansion - Standard Compass Safe Distance: Standard: 15 cm, Steering: 10 cm
eX707 eX707M	<ul style="list-style-type: none"> - 7" TFT color display, resolution 800x480 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 85 cm, Steering: 40 cm
eX707G	<ul style="list-style-type: none"> - 7" TFT color display, resolution 800x480 pixel, 16M colors, high brightness - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 30 cm, Steering: 20 cm
eX710 eX710M	<ul style="list-style-type: none"> - 10.1" TFT color display, resolution 1280x800 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 115 cm, Steering: 75 cm
eX710G	<ul style="list-style-type: none"> - 10.1" TFT color display, resolution 1280x800 pixel, 16M colors, high brightness - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 30 cm, Steering: 10 cm
eX712 eX712M	<ul style="list-style-type: none"> - 12.3" TFT color display, resolution 1920x720 pixel, 16M colors - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 40 cm, Steering: 10 cm
eX715 eX715M	<ul style="list-style-type: none"> - 15.6" TFT color display, resolution 1366x768 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 180 cm, Steering: 130 cm
eX715MG	<ul style="list-style-type: none"> - 15.6" TFT color display, resolution 1920x1080 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 85 cm, Steering: 60 cm

Model name	Description
eX721 eX721M	- 21.5" TFT color display, resolution 1920x1080 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 220 cm, Steering: 130 cm

Model name	Description
eXware703	- 2 Ethernet ports - SD Card slot - 1 Plug-in module slot for system expansion - Standard Compass Safe Distance: Standard: 35 cm, Steering: 25 cm
eXware705	- 2 Ethernet ports - 2 CAN Port - 1 Serial Port - 1 USB Port - Standard Compass Safe Distance: Standard: 20 cm, Steering: 15 cm
eXware707 eXware707M	- 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 40 cm, Steering: 30 cm
eXware707Q	- 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 35 cm, Steering: 25 cm

MODEL NAME:

Model name can be followed by 1 or 2 or 3 characters.

BRANDING:

EXOR

ex700 Series Part number:

EX7aaX5PZ, where:

EX7aa(a)=Model Name

X = one or two digit - any letter or number (brand)

5 = one digit - fixed for front glass

P = one digit - fixed only P for conformal coating machine

Z = one digit - any letter or number (customization)

eXware700 Series Part number:

EXW7aaX0PZ, where:

EXW7aa(a)=Model Name "eXware7aa(a)"

X = one or two digit - any letter or number (brand)

0 = one digit - fixed for "No Display"

P = one digit - fixed only P for conformal coating machine or 0 for no conformal coating

Z = one digit - any letter or number (customization)

OPTIONAL MODULES with brand EXOR	
Module name	Description
PLCM01	CAN Interface - DB9 CAN connector
PLCM05	Plug-in Extender Module
PLCM09	Compact 2G/3G wireless communication Module with the following I/O: - 2 Digital Inputs - 2 Digital Outputs (SSR) with optical isolation
PLIO03	Multifunction I/O Module - 20 Digital Inputs configurable as counter/encoder channels - 12 Digital Outputs - 8 Analog Inputs configurable for voltage, current or temperature measurement - 1 PT100 input for cold junction compensation of thermocouples - 4 Analog Outputs configurable for voltage or current
PLIO06	Compact I/O Module - 8 Digital Inputs - 6 Digital Outputs - 1 Relay Output

MODULE NAME

Module name can be followed by 1 or 2 or 3 or 4 or 5 characters

Part number:

PLaannXYPZ, where:

PLaann = Module name

X = one or two digits - any letter or number (brand)

Y = one digit - any letter or number

P = one digit - fixed only P for conformal coating

Z = one digit - any letter or number (customization)

Application/Limitation

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed.

Type Approval documentation

See ANNEX

Marking of product

Model name and part number: As listed under Product description

Serial number: Unique for each delivered item

Optionally labelled with EXOR or CORVINA Trademark

Tests carried out

Applicable tests according to Class Guidelines DNV-CG-0339, November 2021.

For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE



Job Id: 262.1-023796-7
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ANNEX

Type Approval documentation
(hidden)