DNV·GL

Certificate No:
MRA000001K

EU RO MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

This Certificate is issued to

Exor International S.p.A.

San Giovanni Lupatoto VR, Italy

for
Monitors, Terminals

with type designation(s)
eX705, eX707, eX710, eX715, eX721

The product is found to comply with
EU RO Mutual Recognition Technical Requirements for Display Monitors, Video Screens, Terminals
EU RO Mutual Recognition Technical Requirements for Computers and Programmable Logic Controllers

Intended service
Application of the control, monitoring and safety systems which are subject for approval of the individual RO classing the vessel.

This Certificate is valid until **2022-12-18**.

Issued at **Hamburg** on **2017-12-19**
DNV GL local station: **Venice** for **DNV GL**

Approval Engineer: **Marco Rinkel**

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.

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Product description

Power supply voltage 24 Vdc

Model name	Description
eX705	- 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: 15 cm - Steering Compass Safe Distance: 10 cm
eX707	- 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: 85 cm - Steering Compass Safe Distance: 40 cm
eX710	- 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: 115 cm - Steering Compass Safe Distance: 75 cm
eX715	- 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: 180 cm - Steering Compass Safe Distance: 130 cm
eX721	- 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: 220 cm - Steering Compass Safe Distance: 130 cm

MODEL NAME:

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

BRANDING:
EXOR

700 Series Part number:
EX7aaX5PZ, where:
EX7aa = 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)

OPTIONAL MODULES with brand EXOR	
Module name	Description
PLCM01	CAN Interface - DB9 CAN connector
PLCM05	CODESYS Module - designed to activate the CoDeSys run-time in the HMI
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	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)

Manufactured by

EXOR INTERNATIONAL SPA
San Giovanni Lupatoto VR, Italy

Application/Limitation

This approval covers hardware 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 RO (FAT and on-board review / tests).
Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.
Required protection according to the Recognised Organisation's Rules shall be provided upon installation on board.
The touch functionality is not covered by this certificate.

Type Approval documentation

See ANNEX

Marking of product

Model name and part number: As listed under Product description
Serial number: Unique for each delievered item

Other Conditions

The units have been verified for compliance with EU Mutual Recognition Technical Requirements for Display Monitors, Video Screens and Terminals version 0.3, dated 2016-04-01.

EU Mutual Recognition Technical Requirements for Computers and programmable logic controllers (PLC) version 0.3, dated 2016-04-01 have additionally been verified.

Environmental test parameters
Temperature: -255°C and 55°C
Vibration: ±1 mm / 0,7 g
EMC: All locations including bridge and open deck
Enclosure: front side –IP66,
back side – IP20

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 annually and at renewal of this certificate.

END OF CERTIFICATE

ANNEX

Type Approval documentation

Title	Drw No	Rev
ALUMINIUM ENCLOSURE FOR 10'' eTOP610	COPERT4661	1
eTOP721 ALL. FRAME	CORNICE4812	3
eTOP610 ALL. FRAME	CORNICE4660	5
eTOP621 ALL. ENCLOSURE	COPERT4813	1
eTOP715 ALL. ENCLOSURE	COPERT4827	2
eTOP715 ALL. FRAME	CORNICE4826	2
eX705 TECH. NOTE	PTN0589	1.0
eX707 TECH. NOTE	PTN0590	1.1
eX710 TECH. NOTE	PTN0591	1.1
eX715 TECH. NOTE	PTN0592	1.1
eX721 TECH. NOTE	PTN0593	1.1
INSTALLATION GUIDE E7xx	MANEX7xxU001	2.0
INSTALLATION GUIDE EX705	MANEX705U001	2.0
PRESSOFUSED COVER eTOP504 page 1	COPERT4241	1
PRESSOFUSED COVER eTOP504 page 2	COPERT4241	1
PRESSOFUSED COVER eTOP507	COPERT4346	3
PRESSOFUSED FRAME eTOP507	CORNICE4348	4
PRESSOFUSED FRAME eTOP605	CORNICE4787	1
TEST REPORT E16248401	E16248401	1.0
TEST REPORT E16252001	E16252001	1.0
TEST REPORT E16252201	E16252201	1.0
TEST REPORT E16253201	E16253201	1.0
TEST REPORT E16253501	E16253501	1.0
TEST REPORT R16200901	R16200901	1.0
TEST REPORT R16210601	R16210601	1.0
TEST REPORT R16210801	R16210801	1.0
TEST REPORT R16221801	R16221801	1.0
TEST REPORT R16222601	R16222601	1.0
TEST REPORT R17012301	R17012301	1.0
TEST REPORT R17012401	R17012401	1.0
TEST REPORT R17012501	R17012501	1.0
TEST REPORT R17012601	R17012601	1.0
TEST REPORT R17012701	R17012701	1.0
TEST REPORT R17020501	R17020501	1.0
TEST REPORT R17022401	R17022401	1.0
TEST REPORT R17044701	R17044701	1.0
TEST REPORT S16254201	S16254201	1.0
TEST REPORT S16254301	S16254301	1.0
TEST REPORT S16254401	S16254401	1.0
TEST REPORT S16254501	S16254401	1.0
TEST REPORT S16254601	S16254601	1.0
TEST REPORT V16247301	V16247301	1.0
TEST REPORT V16247701	V16247701	1.0
TEST REPORT V16251301	V16251301	1.0
TEST REPORT V16251801	V16251801	1.0
TEST REPORT V16253001	V16253001	1.0
TEST REPORT S16163402	S16163402	1.0
TEST REPORT S16163401	S16163401	1.0
TEST REPORT V16247601	V16247601	1.0
TEST REPORT V16251901	V16251901	1.0
TEST REPORT V16252101	V16252101	1.0

TEST REPORT V16253102	V16253102	1.0
TEST REPORT V16253401	V16253401	1.0
TEST REPORT E13048801	E13048801	1.0
TEST REPORT V13052501	V13052501	1.0
TEST REPORT R12160801	R12160801	1.0
TEST REPORT S13062001	S13062001	1.0
TEST REPORT S12010301	S12010301	1.0
TEST REPORT R13068104	R13068104	1.0