



Certificate no.:
TAA00003GX

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Programmable Controller**

with type designation(s)
X90 Series

issued to

B&R Industrial Automation GmbH
Eggelsberg, Oberösterreich, Austria

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.

Location classes:

Temperature	D
Humidity	B
Vibration	B
EMC	B*
Enclosure	B

* see Application/Limitation

Issued at **Hamburg** on **2025-02-20**

This Certificate is valid until **2030-02-19**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Heinz Scheffler**

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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 USD 300 000.

Product description

X90 mobile control system

The X90 mobile controllers comprehensive set of standardized components for implementing flexible automation concepts.

X90CP154.60-00M controller contains:

- ARM Cortex A9-650
- 256 MB DDR3 RAM
- 32 kB FRAM
- 4 GB flash memory
- 1 POWERLINK to M12
- 1 Ethernet 10/100BASE-T to M12
- 3 CAN on CMC header
- 1 LIN on CMC header
- 1 RS232 on CMC header
- 60 multifunction I/O
- 1 sensor power supply
- die-cast aluminum housing
- service access window
- LED status indicators

X90CP154.60-S1M controller contains:

- SafeLOGIC mobile integrated
- ARM Cortex A9-650
- 512 MB DDR3 RAM
- 32 kB FRAM
- 4 GB flash memory
- 1 POWERLINK to M12
- 1 Ethernet 10/100BASE-T to M12
- 3 CAN on CMC header
- 1 LIN on CMC header
- 1 RS232 on CMC header
- 60 multifunction I/O
- 1 sensor power supply
- die-cast aluminum housing
- service access window
- LED status indicators

Application/Limitation

Location class EMC B: On DC-power supply lines the following Line filter X90AC-MFLT-00 is to be used.

The manual and data sheets are observed before installation!

Approval conditions

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 in the computer.

Type Approval documentation

Documents: TAA00003GX Document List, Rev. 0, dated 19-02-2025

Test Reports: 80236294-00 Rev_0; 80236293-00 Rev_0, No. 20230906-01_IP

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number
- supply voltage.

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