



Certificate No:
TAA000038J

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and monitoring of offshore gangways

with type designation(s)
15m Docking gangway, 12m Docking gangway

Issued to

Undertun Industri AS
SKODJE, Norway

is found to comply with
DNV standard DNV-ST-0358 – Offshore gangways

Application :

Product(s) approved by this certificate is/are accepted for installation on all 12m and 15m Docking offshore gangways certified by DNV.

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

Issued at **Høvik** on **2023-03-16**

This Certificate is valid until **2028-03-15**.

DNV local unit: **Mid-North Norway FiS**

Approval Engineer: **Zdravko Korunek**

for **DNV**

Per Esvall
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.



Form code: TA 251

Revision: 2022-12

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Product description

Control system comprising of electrical, hydraulic, control and monitoring systems for 15m Docking offshore gangway.

The control system functionality is as per I020 *Instruction manual – 15m gangway docking SN270* section: *Functional description*.

Software revision (at the time of issuance of the Type Approval Certificate).

12m Docking gangway

PLC: C632F5CA Ver 1.0

HMI: 080220231359 Ver 1.0

MAC PLC: 7C 16 0D FE CC 11

MAC HMI: 7C 16 0D 4E C4 53

The current software numbers and versions are listed in document *Software overview - Docking gangway 12m*.

15m Docking gangway

PLC: 2603688D Ver 1.0

HMI: 270120231217 Ver 1.0

MAC PLC: 7C 16 0D 05 8F 1B

MAC HMI: 7C 16 0D 4E 7B 57

The current software numbers and versions are listed in document *Software overview - Docking gangway 15m*.

Application/Limitation

The Type Approval covers the control system design/topology required to implement the functionality, redundancy and safety requirements as per I020 *Instruction manual – 15m gangway docking SN270* and pertinent/relevant requirements as per DNV-ST-0358 sections 5 and 6.

When the Type approved software is revised (affecting all future deliveries), the updated software version documentation shall be submitted to DNV for evaluation. If the changes are judged to affect functionality for which rule requirements apply, a new functional/failure test may be required. The Type approval certificate may have to be renewed to identify the new software version.

All changes in software shall be recorded as long as the system is in use on board. Documentation of major changes shall be forwarded to DNV for evaluation and approval before implemented on board. Software and hardware change handling shall be as per DNV-RU-SHIP Pt4. Ch9. Sec 1.5.

The Type Approval is not covering the following:

- Component design and certification; the components for the hydraulic, electrical and control and monitoring systems shall be delivered with appropriate certification as per DNV-ST-0358 tables 2-2, sec 5.14, 5.15 and 5.17.

Type Approval documentation

Certification

This Type Approval covers design(s) only, i.e. the Type Approval is not valid for the final product, but may be used as basis for obtaining a product certificate.

A DNV Product Certificate (form code CMC 231) will be issued for the fully assembled 12m or 15m Docking gangway upon successful completion of the onboard testing scope.

If a DNV Product Certificate is required, the following shall apply:

- The manufacturing survey shall be followed-up by a DNV Surveyor
- Complete functional and failure testing as per DNV-ST-0358 sec 7 and type approved test procedures/safety diagrams shall be performed for each delivery of a fully assembled offshore gangway in the presence and to the satisfaction of a DNV Surveyor.
- The DNV PC shall be issued only for the fully assembled offshore gangway upon successful completion of the onboard testing scope.

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

End of certificate