



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAS00001FU
Revision No:
1

This is to certify:

that the **Bottom Penetration for Echo Sounder, Sonar or Log**

with type designation(s)
SB-200-ECHO

issued to

Skipper Electronics AS
Oslo, Norway

is found to comply with
DNV rules for classification – Ships

Application:

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

Issued at **Høvik** on **2023-12-01**

for **DNV**

This Certificate is valid until **2028-06-29**.

DNV local unit: **Oslo Maritime and CAP**

Approval Engineer: **Sarah Miller**

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

Retractable gate valve arrangement (herein referred to as 'Assembly' in the certificate) with bottom penetration consisting of gate valve, pipe as intermediate element and flanged connection welded to the hull'

Material of bottom flanges, intermediate pipe, and top flanges are:

- AISI 316L / 1.4404 EN10028-7
- AISI 316 / 1.4401 EN10028-7

Application/Limitation

Products covered by this certificate may be used as installation for Echo sounder.

Products covered by this certificate are evaluated for a internal design pressure of 3.3 bar (equivalent to 33 meter of water).

Mounting to hull is to be approved in each case.

Gate valves shall be purchased with a DNV product certificate. Design review of valves are out of scope of this certificate. Design pressure of valves shall be minimum 3.3 bar.

The whole assembly shall be subject to hydrostatic test at 5 bar.

Valve bodies, pipes, and flanges shall be delivered with a works certificate (equivalent to type 3.1 material certificate) issued by an approved manufacturer of DNV

Assembly as covered by this certificate shall be delivered with a DNV product certificate.

Type Approval documentation

Assembly drawings: SB-200-Rev.-00

Operation and Installation Manual: SB-200-ECHO, doc no. DM-BSB200-SA Rev. 1003A

Drawing SB-4300 revision 0 – Bottom flange for Nortek VM-ADCP

Drawing SB-4310 revision 1 – GA drawing

Drawing SB-4310 revision 1 - Gate valve 200mm for Nortek VM-ADCP

DNV's burst test report CPN-06-00837 dated 2006-05-27

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- Manufacturer's name or trade-mark
- Pressure class
- Size

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.