Certificate No:
TAP00002Y1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure-Vacuum Relief Valve

with type designation(s)
VQ SUB-PA2, VQ SUB-PA3, VQ SUB-PA4, VQ SUB-PA6

Issued to
Ventiq AS
GJERDSVIKA, Norway, Norway

is found to comply with
DNV rules for classification – Ships Pt.5 Ch.5 Oil tankers
DNV rules for classification – Ships Pt.5 Ch.6 Chemical tankers

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.
Design: **In-line breather valves**
Sizes: **See page 2**

Issued at **Høvik** on **2024-10-21**
This Certificate is valid until **2029-10-20**.
DNV local station: **Norway NB**

Approval Engineer: **Per Ola Nymoen**

for **DNV**

Bosman van der Merwe
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

In-line pressure/vacuum breather valves in one compact body, designed and tested according to ISO 15364:2021 with the following material of construction:

Body	:	AISI 316L
Body cover	:	AISI 316
Pressure fixture	:	AISI 316
Test lever arrangement	:	AISI 316
Pressure fixture sealing	:	AISI 316
Gaskets/o-rings	:	NBR

Materials are delivered according to EN 10028-2 and EN 10088-3.

Application/Limitation

Breather valves covered by this certificate may be used as in-line devices to protect cargo tanks from overpressure. Valve also include flange for optional connection of vacuum valves. Vacuum valve is not covered by this type approval.

Sizes and setting pressure:

Type designation	Nominal flange size inlet [mm]	Nominal flange size outlet [mm]	Diameter outlet pressure fixture [mm]	Pset, pressure at which the valve opens fully [kPa]	Pmax, maximum pressure drop over valve [kPa]	Maximum rated pressure [kPa]	Max ice thickness [mm]
VQ SUB-PA2	DN65	DN65	74	20	24	233	3
VQ SUB-PA3	DN80	DN80	83	20	27	233	2.5
VQ SUB-PA4	DN100	DN100	96	20	27	233	2
VQ SUB-PA6	DN150	DN150	136	20	25.5	233	2.5

These breather valves do not include flame arrestors. To prevent the passage of flame, cargo tanks shall have flame arresting elements tested and approved according to IMO MSC/Circ.677 as amended by MSC.1/Circ. 1324. See DNV-RU-SHIP Pt.5 Ch.5 Sec.5 [2.2.12] and DNV-RU-SHIP Pt.5 Ch.6 Sec.9 [2.3.9].

Installation on board of vessels with class notation of “Tanker for oil” or “Tanker for oil Products” is to comply with DNV-RU-SHIP Pt.5 Ch.5 Sec.5.

Installation on board of vessels with class notation of “Tanker for Chemicals” is to comply with DNV-RU-SHIP Pt.5 Ch.6 Sec.9.

Products covered by this certificate shall not be used as an end-of-line device.

Cargo tanks connected to the combined pressure-vacuum main vent line must carry the same type of cargo.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

A copy of the instruction manual shall be kept on board, and is to include:

- Installation instructions;
- Operating instructions;
- Maintenance requirements, including cleaning;
- A copy of the laboratory report;
- Flow test data, including flow rates under both positive and negative pressures, operating sensitivity, flow resistance and velocity should be provided.

Maximum discharge rate to be established according to the latest revision of MSC/Circ. 731.

Sizing and location to be in accordance with the latest revision of MSC/Circ. 731.

Production testing

Each finished device shall be visually and dimensionally checked as well as pneumatically leakage tested at 75% of the nominal setting according to ISO 15364:2021 [6.1] & [10]. According to the instruction manual, acceptance criteria is to be as per ISO15364:2021 Annex J.

Type Approval documentation

Tests carried out

Corrosion test, ice test, hydraulic pressure test and flow test.

Marking of product

Minimum marking requirements shall be as outlined in the design standard ISO 15364:2021 [12].

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

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.

To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com.