Confirmation of Product Type Approval

Company Name: PRES-VAC ENGINEERING A/S

Address: SVANEVANG 3-5 Denmark

Product: Valve, High Velocity Pressure-Vacuum Relief

Model(s): Type 4100 - PV-ECO/PV-VOC Pressure/Vacuum Valve

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	20-2010516-PDA	06-AUG-2020	05-AUG-2025
Manufacturing Assessment (MA)	20-4270354	11-MAY-2020	10-MAY-2025
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3

Intended Service
Marine and Offshore Applications -Device to prevent the passage of flames which is approved for apparatus group IIB and is intended for venting of inerted and non-inerted cargo tanks in tankers during cargo loading, ballasting and discharging operations.

Description
PV-ECO/PV-VOC valve comprises a pressure unit and a vacuum unit.

Valve can be delivered with or without integrated gas-freeing cover and/or resilient seal.

Pressure and vacuum units can also be delivered as separate devices.

Ratings
Pressure Valve:

Size, Max. Pipe length, Min. pipe size, Outlet diameter, Min. setting, Apparatus group, Max. Ice cap thickness:

PV-ECO-39, 13 m, DN 50, 39 mm, 50 kPa, IIB/(MESG >= 0.65 mm), 24 mm

PV-ECO-39, 50 m, DN 80, 39 mm, 50 kPa, IIB/(MESG >= 0.65 mm), 24 mm

PV-ECO-53, 13 m, DN 50, 53 mm, 05 kPa, IIB/(MESG >= 0.65 mm), 20 mm

PV-ECO-53, 50 m, DN 80, 53 mm, 05 kPa, IIB/(MESG >= 0.65 mm), 20 mm

PV-ECO-55, 16 m, DN 80, 55 mm, 50 kPa, IIB/(MESG >= 0.65 mm), 21 mm

PV-ECO-55, 50 m, DN 100, 55 mm, 50 kPa, IIB/(MESG >= 0.65 mm), 21 mm

PV-ECO-66, 16 m, DN 80, 66 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 15 mm

PV-ECO-66, 50 m, DN 100, 66 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 15 mm

PV-ECO-80, 19 m, DN 100, 80 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 25 mm

PV-ECO-80, 38 m, DN 125, 80 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 25 mm

PV-ECO-98, 17 m, DN 125, 98 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 25 mm

PV-ECO-98, 32 m, DN 150, 98 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 25 mm

PV-ECO-98, 50 m, DN 150, 98 mm, 14 kPa, IIB/(MESG >= 0.65 mm), 25 mm

PV-VOC-106, 4 m, DN 125, 106 mm, 5 kPa, IIB/(MESG >= 0.65 mm), 21 mm

PV-VOC-106, 23 m, DN 200, 106 mm, 14 kPa, IIB/(MESG >= 0.65 mm), 21 mm

PV-VOC-107, 19 m, DN 200, 107 mm, 34 kPa, IIB/(MESG >= 0.65 mm), 15 mm

PV-VOC-122, 4 m, DN 150, 122 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 15 mm

PV-VOC-122, 12 m, DN 200, 122 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 15 mm

PV-VOC-122, 17 m, DN 200, 122 mm, 14 kPa, IIB/(MESG >= 0.65 mm), 15 mm

PV-VOC-150, 4 m, DN 200, 150 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 35 mm

PV-VOC-174, 4 m, DN 250, 174 mm, 10 kPa, IIB/(MESG >= 0.65 mm), 23.5 mm

PV-VOC-204, 11 m, DN 300, 204 mm, 05 kPa, IIB/(MESG >= 0.65 mm), 50 mm

Vacuum valve:

Size, Nominal setting, Inlet diameter, Apparatus group, Max. Ice cap thickness:

PV-ECO-VAC-95, -3,5 kPa, 95 mm, IIB/(MESG >= 0.65 mm), 0 mm

PV-ECO-VAC-116, -3,5 kPa, 116 mm, IIB/(MESG >= 0.65 mm), 0 mm

PV-ECO-VAC-150, -3,5 kPa, 150 mm, IIB/(MESG >= 0.65 mm), 0 mm

PV-VOC-VAC-180, -3,5 kPa, 180 mm, IIB/(MESG >= 0.65 mm), 0 mm

PV-VOC-VAC-215, -3,5 kPa, 215 mm, IIB/(MESG >= 0.65 mm), 0 mm

PV-VOC-VAC-248, -3,5 kPa, 248 mm, IIB/(MESG >= 0.65 mm), 0 mm

PV-VOC-VAC-315, -3,5 kPa, 315 mm, IIB/(MESG >= 0.65 mm), 0 mm

Service Restrictions

1. Maintenance and application suitability to be in accordance with the Product Review Document (PRD) and the Instruction Manual and is the responsibility of the user.

2. Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this

product.

2. The pressure / vacuum settings, venting capacity / pressure drop calculations (for the determination of the allowable loading, discharge and gas freeing rates) and details of the arrangement / location of the high velocity pressure valve, vacuum valve and gas freeing covers are subject to a specific approval for each application.

3. Each finished device shall be visually and dimensionally checked to ensure that the device complies with this International Standard, including the specification information in Annex E and the markings in Clause 12 of ISO 15364.

4. Each finished device shall be leakage tested using air to verify the maximum leakage rate specified in the instruction manual, in accordance with Clause 10 of ISO 15364.

5. A copy of the instruction manual is to be kept on board, including the information of section 4.3 of the annex of IMO MSC/Circ.677 and Clause 11 of ISO 15364.

6. The connected flange is to comply with recognized standard and suitable for the intended service.

Notes, Drawings and Documentation
Drawing No. 4100, PV valve, Revision: 2, Pages: -

Drawing No. 4100, PV valve, Revision: 6, Pages: 2

Drawing No. 4100-5, Vacuum valve, Revision: 3, Pages: 2

Drawing No. 4100-5, Vacuum valve, Revision: 1, Pages: -

Drawing No. Correspondence, Plan Approval Request Form, Revision: -, Pages: 1

Drawing No. Correspondence, PDA Application-Revalidation-15-LD1432949-1-PDA, Revision: -, Pages: 1

Drawing No. Design declaration letter, Design declaration letter, Revision: n/a, Pages: n/a

Certificate of confirmity-Non hazardous product

No objection letter IB20_2_0079_EN ISO 16852_2016

1199-241 Instruction Manual for PV-ECO & PV-VOC 4100 Rev9

Drawing No. Overview table of expansion of PV valve type 4100, PV Valve Type 4100, Revision: -, Pages: 1

Drawing No. Overview table of expansion of PV valve type 4100, PV Valve Type 4100, Revision: 1, Pages: 1

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 05/Aug/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

2020 ABS Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 5C-1-7/11.3, 5C-1-7/11.9, 5C-1-7/11.11.2 , 5C-1-7/15.1,5C-9-8/3.6, 5C-9-8/5.

2020 ABS Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3.

International Standards
IMO MSC/Circ. 677 (30 Dec 1994) as amended by IMO MSC/Circ.1009 (08 Jul 2001)

MSC.1/Circ.1324 (10 Jun 2009)

ISO 15364:2016

EN ISO 16852:2016

API 2000 - Venting Atmospheric and Low-pressure Storage Tanks, Seventh Edition, March 2014

SOLAS Regulation II-2/4.5.3.3 74/78 (Consolidated Edition 2014)

EU-MED Standards
NA

National Standards
NA

Government Standards
NA

Other Standards
NA

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 20-Aug-2020 3:17

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the “Intended Service” details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that;

whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.