DNV·GL

Certificate No:
TAP00000YW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Safety Valve for Boiler and Pressure Vessel

with type designation(s)
243/253, 443/453, 543/553, 843/853 & 943/953

Issued to
GRISS SA / EMERSON AUTOMATION SOLUTIONS
ARMENTIÈRES, France

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.
K. factor: See page 2

Issued at **Høvik** on **2019-04-09**
This Certificate is valid until **2021-12-31**.
DNV GL local station: **Le Havre**

Approval Engineer: **Sinisa Sedlan**

for **DNV GL**

Marianne Spæren Marveng
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.

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Product description

Pilot operated pressure relief valves. Flanged type or NPT threaded connection type.

ANSI rating class inlet	150	300	600	900	1500	2500
ANSI rating class outlet	150	150	150	300	300	300

Materials:

Body	Carbon steel SA-216 Gr. WCB/WCC
	Stainless steel SA-351 Gr. CF8M
Cap	Carbon steel SA-516 Gr. 70
	Stainless steel SA-240 Gr. 316
Nozzle	Stainless steel AISI 316
Seat	PTFE

Size: Flanged – 1"x2", 1.5"x2", 1.5"x3", 2"x3", 3"x4", 4"x6", 6"x8", 6"x10", 8"x10", 10"x14"
NPT – 1"x2", 1.5"x2"

The valves are also manufactured at:

Emerson Automation Solutions Final Control US LP
3950 Greenbriar Dr
Stafford, TX 77477-3919
United States

Application/Limitation

Valves covered by this certificate may be used with gas, steam or liquid with following design conditions:

Design pressure /temperature : As per pressure-temperature ratings of end connection (refer to ASME B16.5 for flanged ends and ASME B16.34 for threaded ends), dependent on the body material
Continuous service temperature is limited to +190°C by the choice of PTFE seat material

Discharge coefficient : Type 243/443/843/943 - 0,767 for liquid and 0,875 for steam & gas (ASME)
: Type 253/453/853/953 - 0,491 for liquid and 0,627 for air & gas (ASME)

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Valves of austenitic stainless steel shall not be used in direct contact with seawater.

Valves with threaded end connections:

- shall not be installed in systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
- tapered threads: may only be accepted for:
  1) Piping class I where the outside diameter is not more than 33.7 mm
  2) Piping classes II and III where the outside diameter is not more than 60.3 mm.
- parallel threads: shall be allowed for class III, outside diameter not more than 60.3 mm.

Valves covered by this certificate shall not be installed on LNG/LPG applications.

On boilers or steam-heated steam generators safety valves the inside seat diameter is not to be less than 20 mm. Where only one safety valve of ordinary type is fitted, the inside diameter of the valve seat is not to be less than 50 mm

The valves covered by this certificate are not to be considered fire safe, and shall not be installed in systems where fire safe application is required.

Type Approval documentation

Tests carried out
Hydrostatic pressure test

Production Testing
Each valve body shall be subjected to a hydrostatic pressure test at 1.5 times the set pressure (maximum working pressure at room temperature).

Each valve shall be subject to leakage test (at 90% of set pressure) after reset and have set pressure sealed and verified.

Certification
Boiler safety valves shall be delivered with DNV GL product certificate.

For valves installed on equipment other than boilers, DNV GL product certificate is required for sizes greater than 100 mm and design pressure greater than 16 bar. Otherwise, works certificate will be accepted.

Material certificates for valve bodies shall be according to DNV GL Pt.4 Ch.6 Sec.2 Table 3.

Marking of product
For traceability to this type approval the valves are to be marked as a minimum with:

- Manufacturer's name or trade mark
- Design or type designation
- Size (pipe size of valve inlet)
- Set pressure and capacity
- Arrow to indicate direction of flow

Periodical assessment
For retention of the Type Approval, a DNV GL 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 DNVGL-CP-0338.