

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Solenoid Valve**with type designation(s)
Solenoid valves 551-553

Issued to

ASCO SAS
Luce, France

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

| | |
|--------------------|------------|
| Temperature | C |
| Humidity | B |
| Vibration | B |
| EMC | N/A |
| Enclosure | B |

This Certificate is valid until **2021-07-17**.Issued at **Høvik** on **2017-02-24**for **DNV GL**DNV GL local station: **Paris CMC / VMC**Approval Engineer: **Nils Jarem**

Odd Magne Nesvåg
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.

Job Id: **262.1-022154-3**
Certificate No: **TAA00000J0**
Revision No: **2**

Product description

Solenoid valves.

Codification :

| PREFIX (OPERATOR) (1)&(2) | THREAD TYPE (3) | SERIAL PRODUCT NAME (4) | SPOOL VALVE BASE CODE (5) | OVERRIDE (6) | OPTION (7) | VOLTAGE (8) | TPL (9) |
|---------------------------------|-----------------------|----------------------------------|---------------------------------------|-----------------|---------------|----------------|------------|
| SCX | 8 | 551 | A482 | MO | SL | 24/DC | .20897 |
| PVX | G | 553 | A484 | MI | * | | |
| NFX | | | A491 | MH | | | |
| WSNFX | | | A493 | MS | | | |
| NFISX | | | A497 | * | | | |
| WSNFISX | | | A498 | | | | |
| WSCRX | | | A409 | | | | |
| WSCRISX | | | A410 | | | | |
| | | | A413 | | | | |
| | | | A414 | | | | |
| | | | A421 | | | | |
| | | | A422 | | | | |

* Means empty field. For information on the nomenclature, refer to doc no. 517673 rev D.

Place of manufacture

ASCO SAS
53 rue de Beauce,
BP 30017
28111 Luce
France

ASCO VALVE (Shanghai) Co. Limited
No. 480, Xin Miao N°.3 Road, Xia Qiao Town, Song J, Shanghai

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Intrinsically safe Ex versions WSCRISX, NFISX or WSNFISX must only be powered from suitable Ex barriers.

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Type Approval documentation

| | Document : | Version : |
|---------------|----------------------|----------------|
| Data sheets: | 80114GB | 2016/R01 |
| | 80093GB | 2016/R01 |
| | 517673 | D / 2016-10-17 |
| Test reports: | NPD-100444 E 0003 | 2016-07-05 |
| | NPD100444-QTR-517673 | 2016-07-07 |
| | NPD-100444 E 0004 | 2016-07-11 |
| Drawings: | 517938 | 2016-03-07 |
| | 518073 | 2016-03-07 |

Type approval initial assessment report, DNV GL Paris 2016-07-08.

Type approval initial assessment report, DNV GL Shanghai 2017-02-22

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE