



Certificate No:
TAA00003BH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Actuator

with type designation(s)
Actuator series DV400, DV600, DV1000

Issued to

Valpes
Moirans, Isere, France

is found to comply with
DNV 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.

Liocation classes:

| | |
|--------------------|----------------------------------|
| Temperature | D |
| Humidity | B |
| Vibration | B |
| EMC | A |
| Enclosure | B / D / IP68 down to 10 m |

Issued at **Høvik** on **2023-10-18**

for **DNV**

This Certificate is valid until **2028-10-17**.

DNV local unit: **France CMC**

Approval Engineer: **Ståle Sneen**

Frederik Tore Elter
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.



Form code: TA 251

Revision: 2022-12

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Product description

Electric quarter-turn actuators to operate ball valves or butterfly valves.

| DV Range: | Operating torque: | Power supply: |
|---------------|-------------------|--|
| DV400 series | 400 Nm max | Tested and approved for 230 V AC 50 Hz and 24 V DC nominal voltage |
| DV600 series | 600 Nm max | |
| DV1000 series | 1000 Nm max | |

Codification / type designation is **DVaaa.bcd.eff.g**, where:

| Torque | |
|--------------------|--|
| aaa = 400 | 400 Nm |
| 600 | 600 Nm |
| 1000 | 1000 Nm |
| Mounting and drive | |
| b = A | Star 36 F10/F12 |
| D | Special |
| Travel time | |
| c = 0 | Standard |
| 3 | Long operating time |
| Voltage | |
| d = A | 100 V to 240 V 50 Hz / 60 Hz and 100 V to 300 V DC |
| B | 24 V to 48 V 50 Hz / 60 Hz and 24 V to 72 V DC |
| Duty cycle | |
| e = G | 50% |
| Version | |
| ff = 00 | 3-modulating points + ON-OFF mode |
| 11 | 4-wire control |
| P7 | Positioning version |
| S6 | BBPR version |
| F3 | 3 position version |
| PS | BBPR & POSI version |
| Option | |
| g = T | Counter clockwise closing |
| L | Application with vibrations |
| M | Marine coating |

DV has an optional Bluetooth interface for the following functions:

- Actuator status
- Actuator setup
- Wireless local control
- Weekly scheduler

DV radio transceiver technical data:

Wireless transceiver: 2.4 GHz Bluetooth LE (2.4-2.4835 GHz)

Modulation: GFSK

TX power: 3 dBm (2 mW)

PCB antenna gain: <2.3 dBi

Declared conformity with EN 300 328 V1.7.1, EN 301 489-1 V1.9.2 and EN 301 489-17 V2.2.1.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, 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 rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

Use of radio frequency bands

The applied frequency band 2400.0-2483.5 MHz is defined by ITU-R Radio Regulations (2020) as an ISM-band.

The type approval does not cover the different administrations requirements for use of the radio frequency bands. Any use of the radio frequency band shall be in line with the requirements of the administration concerned.

Type Approval documentation

| DNV No. | Doc. No. | Rev. / Date | Description |
|---------|--------------------------|-----------------|---|
| 7 | DSBA3802 | - / 2023-07-03 | Installation and operation manual DV400-1000 MQ |
| 9 | RCE-EMIESS23B037VAL-01 | 0 / 2023-06-21 | Test report EMC EMITECH Chassieu |
| 4 | RCL-ENVESS23A975VAL-01/A | 01 / 2023-07-13 | Test report dry heat EMITECH Bourgoin |
| 5 | RCL-ENVESS23A975VAL-02/A | 01 / 2023-07-13 | Test report damp heat EMITECH Bourgoin |
| 8 | RCL-ENVESS23A975VAL-03/A | 00 / 2023-07-24 | Test report salt spray EMITECH Bourgoin |
| 1 | RME-ENVESS23A975VAL-01/A | 01 / 2023-07-13 | Test report vibration EMITECH Bourgoin |
| 10 | - | - / 2023-06-07 | Test report Valpes - Witnessed by DNV |
| 18 | - | - / - | Technical File VT+ Test Bench |

Type approval initial assessment report for Valpes, DNV France CMC 2023-06-07

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE