DNV·GL

Certificate No:
TAA00001FU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Direct Acting Control Valve

with type designation(s)
Series 28,
Series 40,
Series 2/449-05-.012(-.182)-HA

Issued to
GSR Ventiltechnik GmbH & Co. KG
Vlotho-Exter, Germany

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.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
Series 28	**B**	**B**	**B**	**NA**	**B**
Series 40	**B**	**B**	**B**	**NA**	**B**
Series 2/449-05-.012(-.182)-HA	**D**	**B**	**B**	**NA**	**C**

Issued at **Hamburg** on **2017-11-17**
This Certificate is valid until **2022-11-16**.
DNV GL local station: **Essen**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

Joannis Papanuskas
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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Job Id: **262.1-026005-1**
Certificate No: **TAA00001FU**

Product description

Series 28: **2/2 Way**
Series 40: **2/2 Way**
Series 2/449-05-.012(-.182)-HA: **3/2 Way**

Type of control: Pilot operated
Construction: Diaphragm design, Piston design

Connection: Series 28: Flanged acc. to EN 1092-1 Form B1/B2
Series 40: Threaded G1/4 - G3 DIN ISO 228/1 (BSP)
Series 2/449-05-.012(-.182)-HA: Flange

Pressure range: Series 28: 0,3 - 16 bar
Series 40: 0,3 - 20 bar
Series 2/449-05-.012(-.182)-HA: 7 – 40 bar

Body material: Series 28: Cast iron EN-GJL-250
Series 40: Brass 2.0402
Series 2/449-05-.012(-.182)-HA: Brass 2.0402

Medium: Clean, neutral, gaseous and liquid media
Electrical connection: Plug / Cable
Supply voltage: AC~ 24V, 42V, 110V, 230V DC= 12V, 24V, 110V, 205V

Protection class: IP65 acc. to DIN EN 60529
Duty factor: 100% ED-VDE 0580
Power-consumption: 1182 = 6.8 Watt, 0182 = 14.5/10.5 VA
1032 = 11 Watt, 0032 = 24/15 VA
1012 = 18.5 Watt, 0012 = 35/24 VA
1148 = 10 Watt, 0148 = 9 VA
1178 = 5.2 Watt, 0178 = 5.3 VA

Information only:
Explosion proof acc. to Certificate:
Series 28: acc. to 2014/34/EG(ATEX)
Series 40: acc. to 2014/34/EG(ATEX)

Application/Limitation

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

Type Approval documentation

See ANNEX

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
- 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 andcontrol routines
- Ensuring that systems, software versions, components and/or materials used comply with type proved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/orperformance, 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

ANNEX

Type Approval documentation
(hidden)