Certificate No:
TAA0000334

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Solenoid Valve

with type designation(s)
6013/6014

Issued to
Bürkert Werke GmbH & Co. KG
Ingelfingen, **Germany**

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.

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**--**
Enclosure	**B (IP65 with cable plug)**

Issued at **Hamburg** on **2022-03-25**
This Certificate is valid until **2027-03-24**.
DNV local station: **Augsburg**

Approval Engineer: **Holger Jansen**

for **DNV**

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.

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.

Product description

Type 6013 – Direct-acting 2/2-way plunger valve

Material:	Body:	Brass
		Stainless steel
	Coil:	Polyamide
		Epoxy
	Seal:	FKM
		EPDM
		NBR
		PTFE/Graphite
Duty cycle:		100 % continuous rating
Operating voltage:		12/24/48/110/115/120/230/240Vdc/ac - 50Hz/60Hz
		Circuit function: NC or NO
Medium Temperature:		FKM -10°C … +100°C (PA Coil); -10°C … 120°C (Epoxy Coil)
		PTFE/Graphite: - 40°C …+180°C (Epoxy Coil)
		FKM - 10°C …+100°C (ac), (dc)
Medium Pressure Range:		0...12bar, 0…25bar (DN 2.0mm)
		0...10bar, 0…16bar (DN 2.5mm)
		0 ... 6bar, 0…14bar (DN 3.0mm)
		0…1,5bar, 0…6bar (DN 4.0mm)
		0...0.5bar, 0…2.5bar (DN 6.0mm)
Port connection:		G/NPT/RC ⅛, ¼, ⅜, Manifold
Explosion protection:		EPS 18 ATEX 1 232 X

Type 6014 – Direct-acting 3/2-way plunger valve

Material:	Body:	Brass
		Stainless steel
	Coil:	Polyamide
		Epoxy
	Seal:	FKM
		EPDM
		NBR
		PTFE/Graphite
Duty cycle:		100 % continuous rating
Operating voltage:		12/24/48/110/115/120/230/240Vdc/ac - 50Hz/60Hz
Circuit function:		NC, NO or flow direction
Medium Temperature:		FKM -10°C … +100°C (PA Coil); -10°C … 120°C (Epoxy Coil)
		PTFE/Graphite: - 40°C …+180°C (Epoxy Coil)
		FKM - 10°C …+100°C(ac), (dc)
Medium Pressure Range:		0...7bar, 0…16bar (DN 1.5mm)
		0...10bar (DN 2.0mm)
		0 ... 6bar (DN 2.5mm)
Port connection:		G/NPT/RC ⅛, ¼, Manifold
Explosion protection:		EPS 18 ATEX 1 232 X

Application/Limitation

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.

The suitability with regard to materials for use in the respective application system has to be evaluated based on the requirements for Piping Systems DNV Pt.4, Ch.6.

Cable connectors used for marine application shall have flame retardant properties in accordance with UL94 5VA, 5VB, V0 or V1. Alternatively glow wire test @960°C according to IEC 60695-2-11 may be accepted for the connectors.

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.

Type Approval documentation

Tests carried out

Applicable tests according to DNV CG-0339, August 2021

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Date and place of production

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