

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Globe Valve

with type designation(s)

ARI - TEMPTROL series, Figure 771-772-773- 774-775 /9900386-9900387-9900388

Issued to

ARI-Armaturen Albert Richter GmbH & Co. KG
SCHLOß HOLTE-STUKENBROCK, Germany

is found to comply with

DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

DNV GL rules for classification – Ships Pt.4 Ch.7 Pressure equipment

DNV GL rules for classification – Ships

DNV GL rules for classification – Yachts

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Temperature range: -20°C up to max.300°C

Max. working press.: PN 16, PN40

Sizes: DN15 - DN100

This Certificate is valid until **2022-04-11**.

Issued at **Hamburg** on **2017-04-12**

DNV GL local station: **Magdeburg**

for **DNV GL**

Approval Engineer: **Peter Gierhan**

Olaf Drews
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.

Product description

TECHNICAL DATA

Materials:

Thermostatic controller:	Brass / X6CrNiTi 18-10
Thermostatic valve:	EN-JL1040 ⁽¹⁾ ; EN-JS1049 ⁽²⁾ 1.0619;1.4408;CC491K
Hand regulating device:	Brass
Ambient temperature:	max. +70°C for indicator unit (DIN EN 14597)
Nominal pressure of valves:	PN 16, PN 20, PN40
Size range:	DN 15 up to DN 100
Outside pressure of sensor:	PN 25, PN40
M.A.W.T.:	0.6025 / EN-GJL-250 ⁽¹⁾ : + 200°C, EN-JS 1020 / EN-GJS-400-18-LT ⁽²⁾ : + 300°C, 1.0619; 1.4408: +300°C, CC491K: + 130°C

⁽¹⁾ Grey Cast Iron

⁽²⁾ Nodular Cast Iron

The temperature regulator TEMPTROL® is a self acting proportional controller for temperature of fluid, gas and vapour media of Fluid Group I pursuant to Pressure Equipment Directive 2014/68/EU. No auxiliary energy is needed.

The temperature regulator is a combination of controller and valve and is working according to the principle liquid expansion by changing temperatures.

- **Thermal closing valves** reduce the flow with rising sensor temperature (heating application).
- **Thermal opening valves** raise the flow with rising sensor temperature (cooling application).
- **Thermal mixing valves** mix 2 flows (inlet A and inlet B to outlet AB)
- **Thermal diverting valves** divert one flow into 2 flows (AB to A and B)
Mixing/diverting valves open inlet A and closes inlet B with rising temperature.
- **Thermal detectors** according to DIN EN 14597 can only be adjusted to the intended value with tools.
- **All Valves** are available in several materials for specific media e.g. heating water, steam, thermal oil, coolant water (other media available on request).

Application/Limitation

Threaded connections, where the threads perform the sealing, may only be used in class III piping systems.

Valves made of Nodular & Grey cast iron shall be used just for class III piping.

The thermal regulating devices are type approved for applications in

- Boiler feed water and condensate systems,
- Cooling water systems and
- Lubrication oil systems

Table 1: Range of application

Item	Dimensions	Pressure a)	Temperature	Material
Thermostatic controller	Size I,II, III	PN16, PN40	-20°C up to 200°C	Brass/X6CrNTi 18-10

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/detector				
Thermostatic valve	DN15 – DN100	PN16, PN40	+200°C	EN-JL1040 ⁽¹⁾
			+300°C	EN-JS1049 ⁽²⁾
			+300°C	1.0619
			+300°C	1.4408
			+130°C	CC491K
Hand regulating device				Brass
Outside pressure of sensor		PN25, PN40		
Sensor Pochet	See data sheet	See data sheet	+130°C up to 250°C	Brass/X6CrNTi 18-10
Type 771 Thermal closing valve b)	DN15 – DN100	See data sheet	Max 130°C Max 150°C	
Type 772 Thermal closing valve b)	DN15 – DN100	See data sheet	Max 250°C Max 300°C	
Type 773 Thermal mixing diverting valve b)	DN15 – DN100	See data sheet	Max 130°C Max 150°C	
Type 774 Thermal mixing diverting valve b)	DN15 – DN100	See data sheet	Max. 300°C	
Type 775 Thermal opening valve b)	DN15 – DN100	See data sheet	Max. 130°C Max. 150°C	

⁽¹⁾ Grey Cast Iron

⁽²⁾ Nodular Cast Iron

- The allowed pressure is depending on the temperature and the material (which itself could be chosen depending on the media inside) given in the data sheet of the manufacturer.
- The applicable thermal controller or thermal detector are given in the data sheet of the manufacturer.

Production Test / Certification

Each valve shall be subject to the following tests:

- Hydraulic test of body to 1,5 times the design pressure.

Valves are subject to final inspection by DNV GL as confirmed by Recognition Certificate MSAR0000AG7.

Each valve is to be supplied with the following material certificates:

- Nominal diameter > 100mm, Product certificate
- Nominal diameter ≤ 100mm, Test report

Type Approval documentation

Tests carried out

Test report No. 120/026/89

TÜV certified acc. to DIN EN 14597 Reg. No. TR910-16/TW911-16

Marking of product

For traceability to this type approval, each item is to be marked with:

- Manufacturers name or trade mark
- Type designation
- Serial No.

Periodical assessment



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A condition for retention of the Type Approval Certificate in its validity period is that periodical assessments are successfully carried out.

The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered. The main scope of the periodical assessment will normally include:

- Verification of the TA applicant's production and quality system w.r.t ensuring continued consistent production of the type approved products at the TA applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the TA documentation and that this is still used as a basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking

END OF CERTIFICATE