

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Temperature Switch**

with type designation(s)

ATHf-SE-2, ATHs-SE-2, ATHf-SE-20, ATHs-SE-20, ATHf-SE-70, ATHs-SE-70

Issued to

JUMO GmbH & Co. KG
Fulda, Germany

is found to comply with

DNV GL rules for classification – Ships**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	B
Humidity	B
Vibration	B
EMC	Not relevant
Enclosure	B

This Certificate is valid until **2022-01-24**.Issued at **Hamburg** on **2017-01-25**DNV GL local station: **Magdeburg**for **DNV GL**Approval Engineer: **Dariusz Lesniewski**

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.

Product description

Temperature Switch: (Monitor)	ATH.-SE-2 (.= f or s)
Safety Temperature Switch: (Monitor / Limiter)	ATH.-SE-20 ATH.-SE-70
Temperature ranges:	0°C to 100°C up to 20°C to 500°C (ATH.-SE-2) 30°C to 110°C up to 20°C to 500°C (ATH.-SE-20/-70)
ATHs-...	Sensor with protecting sleeve
ATHf-...	Sensor with capillary tube and protecting sleeve
Protecting sleeve length:	100 mm up to 200 mm
Capillary tube length:	2 m
Output:	1 n/c - or c/o - contact
Rating:	6 A, 250 V AC or 10 A, 250 V AC
Degree of protection:	IP 54
Time constant with protecting sleeve:	$z\ 0.5 = 30\ s$, $z\ 0.9 = 88\ s$
ATH.-SE-2:	Temperature monitor TW with 1 c/o - contact
ATH.-SE-20:	Safety temperature monitor STW(STB) with 1 c/o - contact
ATH.-SE-70:	Safety temperature limiter STB with 1 n/c - contact

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

Drawings:	Parts List:
68.261-F03.00.00-11	68.261-F03-11
68.261-F03.02.00-3 h	68.261-F03.02-12
68.261-F04.00.00-12	68.261-F04-13
68.262-F03.00.00-10	68.262-F03-10
68.262-F03.02.00-3 e	68.262-F03.02-11
68.262-F04.00.00-11	68.262-F04-11
68.266-F03.00.00-10	68.266-F03-12
68.266-F03.02.00-3 g	68.266-F03.02-13
68.266-F04.00.00-11	68.266-F04-14
Data Sheet:	603031, issue 2011-09-05/00073230
Report:	Jumo-Thermostate, ATH dated 10.04.1981
DIN CERTCO Certificate TW892 dated 2013-01-14 (DIN EN 14597:2012-09)	
DIN CERTCO Certificate STW(STB)894S dated 2013-01-14 (DIN EN 14597:2012-09)	
DIN CERTCO Certificate STB89S dated 2013-01-14 (DIN EN 14597:2012-09)	
A-10511 retention survey report, DNV Essen 2012-02-02	
Type Approval Assessment Report issued at Magdeburg on 2016-11-27	

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
- charge number

Periodical assessment

Job Id: **262.1-004092-3**
Certificate No: **TAA000010T**

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