DNV·GL

Certificate No:
TAA00000RW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Liquid Level Monitoring Relay

with type designation(s)
CM-ENS.xxx

Issued to
ABB Stotz-Kontakt GmbH
HEIDELBERG, 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	**A**
EMC	**B**
Enclosure	**IP 50 (housing) / IP 20 (terminals)**

This Certificate is valid until **2021-10-31**.

Issued at **Hamburg** on **2016-11-01**

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

Duy Nam Le
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.

Job Id: **262.1-023465-1**
Certificate No: **TAA00000RW**

Product description

CM	**ENS**	·	**x**	**x**	**x**
I	II		III	IV	V

I **CM Range**

II **Liquid level monitoring relay**

III **Functions:**
1 = Drain, adjustable sensitivity range 5 to 100 kΩ, 1c/o
2 = Fill and drain, adjustable sensitivity range 0.1 to 1000 kΩ, 1c/o
3 = Fill and drain, ON/OFF delay, adjustable sensitivity range 0.1 to 1000 kΩ, 2c/o

IV **Power supply range:**
1 = 24 - 240 Vac/dc (Switch mode power supply)
3 = 110V..130V AC / 220V..240V AC (Transformer with center tapping)

V **Connection technology**:
P = Push-In connection
S = Screw connection

Other features:

- 3 LEDs for the indication of operational states
- DIN Rail mounting
- 22,5 mm housing width

Firmware versions:

- CM-ENS.11 : 1SVR730850S0100_C
- CM-ENS.21 : 1SVR730850S0200_C
- CM-ENS.31 : 1SVR730850S0300_C
- CM-ENS.13 : 1SVR730850S2100_C
- CM-ENS.23 : 1SVR730850S2200_C

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. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test Report : paconsult No. 16-7941, dated 07th September 2016.
Test Report : EMV Rhein-Neckar No. 3808-311, dated 22nd August 2016.
Test Report : UL No. 4786989550, dated 31st August 2015 (IEC 60947-5-1:2003 + A1:2009).
Data Sheets: 2CDC 112 228 D0201 Rev. A, 2CDC 112 229 D0201 Rev. A, 2CDC 112 230 D0201 Rev. A.
Circuit Diagrams: 1SVR730850F0000 (D), 1SVR730854F0000 (D), 1SVR730852F0000 (D).
Circuit Diagrams: 1SVR730851F0001 (A2), 1SVR730853F0001 (A2).
Software (Firmware) Documentation.
Type Approval Assessment Report issued at Augsburg on 2016-10-27.

Tests carried out

Applicable tests according to Class Guidance DNVGL-CG-0339, November 2015.

Marking of product

The products to be marked with:
- model name
- manufacturer name
- serial number

Periodical assessment

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 dring the validity period and at renewal of this certificate.

END OF CERTIFICATE