Certificate no.:
TAE00004W3

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Contactor

with type designation(s)
C320K/1000, C320S/1000

issued to
Schaltbau GmbH
München, Bayern, **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.

Issued at **Hamburg** on **2024-05-28**
This Certificate is valid until **2029-05-27**.
DNV local unit: **Augsburg**

for **DNV**

Approval Engineer: **Harald Amberger**

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.

Bi-directional DC Contactor, Type:	C320K/1000	C320S/1000

Ratings:

Number of poles:	1 x NO
Kind of current:	DC
Utilization category:	DC-1
Impulse withstands voltage Uimp:	10kV
Insulation voltage Ui:	1800V
Operational voltage Ue:	DC1500V (C320K/1000) DC60V (C320S/1000)
Operational current Ie (40°C):	150A (C320K/1000, DC1500V) 330A (C320S/1000, DC48V)
Conventional free air thermal current Ith:	1000A
Control supply voltage Us:	DC24V
Number and kind of contact elements:	4 max. snap-action switches

Further ratings acc. manufacturer documentation.

Application/Limitation

Location Classes:
Temperature: C, Humidity: B, Vibration: A, EMC: A

Operating instruction of the manufacturer to be observed

Type Approval documentation

Tests carried out

IEC 60947-4-1:2018, Environmental tests acc. DNVGL-CG-0339: Edition August 2021

Marking of product

Acc. IEC 60947-4-1 Subclause 6.2

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and 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