Certificate No:
TAE00004CR

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
Lead Acid Accumulators, System "BAE SECURA OPzV" block batteries / cells, Lead Acid Accumulators, System "BAE SECURA PVV solar" block batteries / cells

Issued to
BAE Batterien GmbH
Berlin, **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 **2021-09-09**
This Certificate is valid until **2026-09-08**.
DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Maik Gagern**

for **DNV**

Arne Schaarmann
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

Valve Regulated Lead Acid accumulators (VRLA) with gelled electrolyte.

OPzV in accordance with DIN 40744, 2015-09 / DIN 40742, 2015-09
PVV solar following DIN 40744, 2015-09 / DIN 40742, 2015-09

Lead Acid accumulators, System "BAE SECURA OPzV"
Cells / Block batteries: 100 Ah (C10) up to 3250 Ah (C10) / 50 Ah (C10) up to 900 Ah (C10)
In accordance with:
DIN 40742: 2015-09
DIN 40744: 2015-09
IEC 60896-21: 2004
IEC 60896-22: 2004
IEC 61427-1: 2013
IEC 61427-2: 2015
IEC 62485-2: 2010
EN 50272-2: 2001
BS 6290-4: 1997
DIN 43539-5: 1984-08

Lead Acid Accumulators, System "BAE SECURA PVV solar"
Cells / Block batteries: 140 (C100) up to 4940 Ah (C100) / 70 up to 420 Ah (C100)
In accordance with:
IEC 60896-21: 2004
IEC 60896-22: 2004
IEC 61427: 2002-04
IEC 62485-2: 2010-06
EN 50272-2: 2001
BS 6290-4: 1997
DIN 43539-5: 1984-08
Following:
DIN 40742: 2015-09
DIN 40744: 2015-09

Application/Limitation

The single cells or block batteries can be combined to batteries with the desired voltage.
Application: In particular the batteries are suitable to supply stationary electrical installations and for storage of renewable solar energy. At sufficient capacity also suitable for electrical starting of combustion engines occasional.

For charging conditions manufacturer's instruction shall be considered.

Type Approval documentation

Tests carried out

DNV Class Guidelines DNV-CG-0339, Edition 2021-08
IEC 60896-21: 2004
IEC 60896-22: 2004

Marking of product

Maker, Type of Cell or Block Battery, Capacity

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.
The main elements of the survey are:
• Inspection on factory samples, selected at random from the production line
• 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