

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Enclosure for Electrical Equipment**

with type designation(s)
8146/-, 8146/1, 8146/2, 8146/5

issued to

R. STAHL Schaltgeräte GmbH
Waldenburg, 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.

Type	Degree of protection	Vibration class
8146/-	See page 2	A
8146/1	See page 2	A
8146/2	See page 2	A
8146/5	See page 2	A

Issued at **Høvik** on **2024-09-15**

This Certificate is valid until **2029-09-14**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Maik Gagern**

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 USD 300 000.



Product description

Empty Enclosures for Electrical Equipment

Type 8146/

Ingress protection

IP66 for sealing material D0075

IP64 for sealing material D0121 and enclosure with hinges made of D0014 with O ring made of D0187

IP64 for earth assemblies with gaskets D0097, D0187 and D0216.

Ambient temp.

-60 °C ... +100 °C (for gasket D0075, D0097, D0216)

-50 °C ... +100 °C (for earth assemblies with gasket D0187)

-20 °C ... +60 °C (for gasket D0121)

Electrical Explosion Protection: *

 II 2G

Ex eb IIC Gb

 II 2D

Ex tb IIIC Db

Terminal boxes

Types 8146/1 and 8146/2

Ingress protection

IP66 for sealing material D0075

IP64 for sealing material D0121 and enclosure with hinges made of D0014 with O ring made of D0187

IP64 for earth assemblies with gaskets D0097, D0187 and D0216.

Ambient temp.

-60 °C ... +100 °C depending on the gasket of empty enclosure, the maximum ambient temperature range and power dissipations of the built-in components

Electrical Explosion Protection: *

 II 2G

Ex db eb ia mb op pr IIC T6...T4 Gb

 II 2D

Ex tb IIIC T80 °C...T130 °C Db

Control and distribution boxes

Type 8146/5

Ingress protection

IP66 for sealing material D0075

IP64 for sealing material D0121 and enclosure with hinges made of D0014 with O ring made of D0187

IP64 for earth assemblies with gaskets D0097, D0187 and D0216.

Ambient temp.

-60 °C ... +100 °C depending on the gasket of empty enclosure, the maximum ambient temperature range and power dissipations of the built-in components

Electrical Explosion Protection: *

 II 2G

Ex db eb ia [ia Ga] ib [ib] mb op pr [op is Ga] q IIC T6...T4 Gb

 II 2D

Ex [ia Da] [ib] [op is Da] tb IIIC T80 °C...T130 °C Db

Application/Limitation

Installed components have to be in compliance with the operating instructions of the manufacturer and with special conditions and requirements given in the IECEx Certificates of Conformity IECEx PTB 06.0044U (8146/), IECEx PTB 06.0046 (8146/1 and /2) or IECEx PTB 06.0090 (8146/5).

Type approval applies only to the empty enclosure. Final test after fitting with components might be necessary.

Type Approval documentation

Tests carried out

DNV Class Guideline DNV-CG-0339, Edition 2021-08

Marking of product

Maker's trademark

Type designation

Electrical explosion protection: Type of protection and marking according to the applicable Certificate of Conformity

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.

General Remarks

*Note: All details about electrical explosion protection mentioned in this certificate are for information only. For relevant binding information the applicable IECEx Certificate of Conformity issued by a recognised Authority shall be observed.

END OF CERTIFICATE