

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Enclosure for Electrical Equipment**with type designation(s)
KF

Issued to

Gustav Hensel GmbH & Co.KG
Lennestadt, Nordrhein-Westfalen, Germanyis found to comply with
DNV GL 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 GL.****Degree of protection 66/67/69**
Vibration class NAIssued at **Hamburg** on **2020-11-04**for **DNV GL**This Certificate is valid until **2025-11-03**.DNV GL local station: **Essen**Approval Engineer: **Harald Amberger**

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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-016265-7**
Certificate No: **TAE00000EE**
Revision No: **3**

Product description

Cable junction boxes for indoor or outdoor use, with and without terminals, impact resistant, UV-resistant, saltwater proof, halogen free, silicon free, according to IEC 60670-22.

Type : KF xxxx X
Enclosure class : IP 66/67/69
Rated insulation voltage : AC/DC 690V / 1000V
Impact protection class : IK 09
Enclosure material : Polycarbonate (PC 5)

Cable connection box

Type designation	Colour	Rated insulation voltage
KF 0202 G	RAL 7035	690V AC/DC
KF 0200 G	RAL 7035	1000V AC/DC
KF 0202 B	RAL 9011	690V AC/DC
KF 0200 B	RAL 9011	1000V AC/DC
KF 0200 H	RAL 7035	1000V AC/DC
KF 0200 C	RAL 9011	1000V AC/DC
KF 0402 G	RAL 7035	690V AC/DC
KF 0404 G	RAL 7035	690V AC/DC
KF 0400 G	RAL 7035	1000V AC/DC
KF 0402 B	RAL 9011	690V AC/DC
KF 0404 B	RAL 9011	690V AC/DC
KF 0400 B	RAL 9011	1000V AC/DC
KF 0400 H	RAL 7035	1000V AC/DC
KF 0400 C	RAL 9011	1000V AC/DC
KF 0604 G	RAL 7035	690V AC/DC
KF 0606 G	RAL 7035	690V AC/DC
KF 0600 G	RAL 7035	1000V AC/DC
KF 0604 B	RAL 9011	690V AC/DC
KF 0606 B	RAL 9011	690V AC/DC
KF 0600 B	RAL 9011	1000V AC/DC
KF 0600 H	RAL 7035	1000V AC/DC
KF 0600 C	RAL 9011	1000V AC/DC
KF 1006 G	RAL 7035	690V AC/DC
KF 1010 G	RAL 7035	690V AC/DC
KF 1006 B	RAL 9011	690V AC/DC
KF 1010 B	RAL 9011	690V AC/DC
KF 1000 B	RAL 9011	1000V AC/DC
KF 1000 H	RAL 7035	1000V AC/DC
KF 1000 C	RAL 9011	1000V AC/DC
KF 1000 G	RAL 7035	1000V AC/DC
KF 1610 G	RAL 7035	690V AC/DC
KF 1616 G	RAL 7035	690V AC/DC
KF 1600 G	RAL 7035	1000V AC/DC
KF 1610 B	RAL 9011	690V AC/DC
KF 1616 B	RAL 9011	690V AC/DC
KF 1600 B	RAL 9011	1000V AC/DC
KF 1600 H	RAL 7035	1000V AC/DC
KF 1600 C	RAL 9011	1000V AC/DC
KF 2525 G	RAL 7035	690V AC/DC
KF 2500 G	RAL 7035	1000V AC/DC
KF 2525 B	RAL 9011	690V AC/DC

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KF 2500 B	RAL 9011	1000V AC/DC
KF 2500 H	RAL 7035	1000V AC/DC
KF 2500 C	RAL 9011	1000V AC/DC
KF 3500 H	RAL 7035	1000V AC/DC
KF 3500 B	RAL 9011	1000V AC/DC
KF 3500 C	RAL 9011	1000V AC/DC
KF 3500 G	RAL 7035	1000V AC/DC
KF 5000 G	RAL 7035	1000V AC/DC
KF 5000 B	RAL 9011	1000V AC/DC
KF 5000 H	RAL 7035	1000V AC/DC
KF 5000 C	RAL 9011	1000V AC/DC

Application/Limitation

For IP 66/67/69 protection the below cable glands and locknuts must be used.

HENSEL- Type	Cable glands acc. TAE000037X	Locknuts acc. TAE000037X
AKM 12	PERFECT 50.612 PA/FL7035	50.212 PA/FL7035
AKM 16	PERFECT 50.616 PA/FL7035	50.216 PA/FL7035
AKM 20	PERFECT 50.620 PA/FL7035R	50.220 PA/FL7035
AKM 25	PERFECT 50.625 PA/FL7035	50.225 PA/FL7035
AKM 32	PERFECT 50.632 PA/FL7035	50.232 PA/FL7035
AKM 40	PERFECT 50.640 PA/FL7035	50.240 PA/FL7035
AKM 50	PERFECT 50.650 PA/FL7035	50.250 PA/FL7035
AKM 63	PERFECT 50.663 PA/FL7035	50.263 PA/FL7035
ASS 12	PERFECT 50.612 PA/FLSWR	50.212 PA/FLSW
ASS 16	PERFECT 50.616 PA/FLSWR	50.216 PA/FLSW
ASS 20	PERFECT 50.620 PA/FLSWR	50.220 PA/FLSW
ASS 25	PERFECT 50.625 PA/FLSWR	50.225 PA/FLSW
ASS 32	PERFECT 50.632 PA/FLSWR	50.232 PA/FLSW
ASS 40	PERFECT 50.640 PA/FLSWR	50.240 PA/FLSW
ASS 50	PERFECT 50.650 PA/FLSWR	50.250 PA/FLSW
ASS 63	PERFECT 50.663 PA/FLSWR	50.250 PA/FLSW

Type Approval documentation

As per tech.-docs in job [262.1-004143-5](#)

Tests carried out

Tests according to IEC 60670-22: Heat ageing test, Insulation resistance and electric strength test, UV-test, Resistance to heat test and resistance to corrosion test. Glow wire test (IEC 60695-2-11). IP-test (IEC 60529). Mechanical Strength (IK code IEC 62262).

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Marking of product

Hensel – type designation - Size

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