

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Motor**

with type designation(s)

5GEB22A, 5GEB22D, 5GEB22E, 5GEB20B, 5GEB27A, 5GEB28A, 5GEB29A, 5GEB1150WHA, 5GEB1150WHB, 5GEB1150WVA, 5GEB1150WVB, 5GEB1150WVC & 5GEB1300WVA

Issued to

**GE Transportation
Erie PA, USA**

is found to comply with

DNV GL offshore standards**Application :****Only to be used for drilling applications. Other applications will require special consideration by the purchaser to manage or reduce vibration as the motors' typical vibration exceeds the normal limits of IEC 60034-1 and the DNV GL Offshore Standard.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Enclosure class	IP44, IP56
Insulation class	H
Temp. class (°C)	45
Voltage (V)	690
Power (kW)	857 / 1118
Frequency (Hz)	0 to 153
Speed (RPM)	0 to 3000

Issued at **Houston** on **2018-01-02**This Certificate is valid until **2021-05-05**.for **DNV GL**DNV GL local station: **Certification & Inspection
Services**Approval Engineer: **Sowkarthika Seetharaman****Christian Nilsen
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: **262.1-013321-6**
Certificate No: **TAE00002J8**

Product description

3-phase AC squirrel cage induction motors:

Number of Poles: 6
Frame Size: Locomotive standard
Material:Casing: Steel
Shaft: 4130 or 4340 alloy shaft, ABS Certified
Rotor bars: Copper Chromium Alloy
Insulation class: H

Air cooled AC drilling motor

Ambient air temp.: 45 deg. C (temperature rise of 110°C at 45°C ambient)
Enclosure class: IP44 assembly rating. IP56 optional closed cooling.
Ex-class: Ex e II T3

Model	Type	Power S1	Power S9
5GEB22A	Single-ended shaft extension, air cooled	857 kW	1 044 kW (120 sec on, 90 sec off)
5GEB22D	Single-ended oversized shaft extension, air cooled	857 kW	1 044 kW (120sec on, 90 sec off)
5GEB22E	Single-ended shaft extension, air cooled	857 kW	1 044 kW (120 sec on, 90 sec off)
5GEB20B	Double-ended shaft extension, air cooled	857 kW	16 379 Nm (15 sec on, 195 sec off)
5GEB27A	Double-ended shaft extension, air cooled	1118 kW	1 590 kW (15 sec on, 75 sec off)
5GEB28A	Single-ended shaft extension, air cooled	1118 kW	1 365 kW (60 sec on, 30 sec off)
5GEB29A	Single-ended oversized shaft extension, air cooled	1118 kW	1 365 kW (60 sec on, 30 sec off)

Water Jacket AC Drilling Motor

Ambient air temp.: 55 deg. C (temperature rise of 110°C at 55°C ambient, 38°C cooling water)
Enclosure class: IP56.
Ex-class: Ex de IIB T4

Model	Type	Power S1	Power S9
5GEB1150WHA	Singled-Shaft Extension Foot-Mounted not suitable for radial loads, can be horizontal or vertical mounted	857 kW	1 044 kW (120 sec on, 90 sec off)
5GEB1150WHB	Singled-Shaft Extension Foot-Mounted,suitable for radial loads, can be horizontal or vertical mounted	857 kW	1 044 kW (120 sec on, 90 sec off)
5GEB1150WVA	Double-Shaft Extension Foot-Mounted, not suitable for radial loads, can be horizontal or vertical mounted	857 kW	17 083 Nm (30 sec on, 60 sec off)
5GEB1150WVB	Double-Shaft Extension Foot-Mounted, suitable for radial loads, can be horizontal or vertical mounted	857 kW	17 083 Nm (30 sec on, 60 sec off)
5GEB1150WVC	Double-Shaft Extension Flange-Mounted, not suitable for radial loads, vertical mounted	857 kW	17 083 Nm (30 sec on, 60 sec off)
5GEB1300WVA	Double-Shaft Extension Foot-Mounted, not suitable for radial loads, can be horizontal or vertical mounted	969 kW	17 083 Nm (30 sec on, 60 sec off)

Application/Limitation

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Only to be used for drilling applications. Other applications will require special consideration by the purchaser to manage or reduce vibration as the motors' typical vibration exceeds the normal limits of IEC 60034-1 and the DNV GL Offshore Standard. This statement shall be referred to in DNV GL product certificates:

Ex e motors driven by a power converter are not accepted installed in zone 1 unless the converter and the motor are certified together. The certificate shall state allowed motor-converter combinations.

The information related to Ex-certification from recognised test institution is given as information only. Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

Tests carried out

IP class. Vibration. High Voltage 1 minute. Temperature, Insulation resistance, overspeed. Winding resistance, No load.

Manufacturing Locations:

Motor : GE Transportation, Erie, PA, USA

Final Motor assembly with blower and accessories: Hunt Engine Inc, Houston, Texas

Marking of product

GE Drilling Drives, type designation, technical data including rated voltage, RPM, rated power, ambient temperature, rated current, rated frequency, insulation class, IP class

Separate Nameplate with Ex-marking, maximum current, ratio max/nominal current, Safe stall time or temperature Protection Device maximum temperature.

Periodical assessment

The scope of the assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems/components/materials.

The main elements of the assessment are:

- 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/components/materials used comply with type approved documents and/or referenced system/component/material specifications.
- Review of possible changes in design of systems/components/materials, software version and 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.
- Ensuring that type approved documentation is available.

Assessment to be performed at least every second year.

END OF CERTIFICATE