



Lloyd's
Register

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	DEIF A/S
PLACE OF PRODUCTION	Frisenborgvej 33 7800 Skive Denmark
DESCRIPTION	Engine control unit and diesel-generator control unit
TYPE	ECU 110 GCU 111, GCU 112, GCU 113
APPLICATION	Marine applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2013.
DESIGN CODE	Manufacturer's specification
OTHER CONDITIONS	ECU 110 and GCU 1xx are providing start/stop function for diesel engine and may be used as redundant diesel safety system to provide design diversity unless a software conformity assessment has been carried out.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. HTS/ETS 32204-15 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No.	15/20074
Issue Date	31 July 2015
Expiry Date	30 July 2020
Sheet	1 of 1



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Part 2

Power Distribution Systems / Protective Devices

Producer/Licence No.	Type	Standard	Rating	Category/ Additional Tests	Remarks	Cert. No.
<p>Deif A/S Friesenborgvej 33 7800 Skive Denmark</p>	<p>Engine control unit and diesel-generator control unit</p> <p>Types ECU 110</p> <p>GCU 111, GCU 112, GCU 113</p>	<p>Manufacturer's specification</p>	<p>Power supply (VDC): 24</p> <p>Inputs: Tacho: 10...10000Hz RMI: 0...2500 Ohm Transd.: 4...20mA Relay outputs: Relay outputs: 3 x 30VAC/DC 2A 2 x 250VAC/30VDC 2A 2 x 30VAC/DC 8A Power supply (VDC): 24 Input voltage (VAC): 50...480 Input current (A): 1 or 5 Input frequency (Hz): 30 - 70 Relay outputs: 3 x 30VAC/DC 2A 2 x 250VAC/30VDC 2A 2 x 30VAC/DC 8A</p>	<p>ENV1, ENV2, ENV3 (2013)</p>	<p>Expires: 30 July 2020</p> <p>ECU 110 and GCU 1xx are providing start/ stop function for diesel engine and may be used as redundant diesel safety system to provide design diversity unless a software conformity assessment has been carried out.</p>	<p>15/20074</p>