Certificate No: LR21152158TA
Issue Date: 22/04/2021
Expiry Date: 21/04/2026

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.

Manufacturer **SANDFIRDEN TECHNICS B.V.**

Address Haventerrein 1, Den Oever, 1779 GS, Netherlands

Type Internal Combustion Engines

Description Reciprocating, non-reversible, high speed, 8-cylinder, Vee-type, gas fuelled only engine, 4 SCSA, pre-mix supply through common manifold, exhaust gas turbocharging, charge air cooling, spark ignition and electronically controlled

Trade Name SGI 16M (P96 Series)

Application Prime movers for auxiliary power generation services, including electric propulsion.

Specified Standard Lloyd's Register Rules and Regulations for Classification of Ships, July 2020.
Lloyd's Register Rules and Regulations for Classification of Ships Using Gas or other Low-flashpoint Fuels, July 2020.
LR Type Approval Specification No. 4, March 2019.

Ratings

Output (MCR)	235 kW	300 kW
Speed at MCR	1500 rpm	1800 rpm
Max. firing pressure	109 bar	

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Matthijs Breel

Lead Specialist Propulsion Systems and
Deputy to Lloyd's Register EMEA
A member of the Lloyd's Register group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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Mean indicated pressure 12.8 bar

Other Conditions

- Approval of this engine type is subject to maintaining Type Approval of the ancillaries listed on the Machinery General Design Appraisal with GA. Reg. No. ROT.20.M.026.
- Approval for this engine type is issued for operation on Natural Gas / Methane only.
- Gas engine to be installed in a ESD-machinery space or in a 'gas-safe' machinery space at the condition of the implementation of a ventilation hood that covers the gas engine and any ancillary gas-supply equipment, components or piping.
- Minimum air speed at ventilation fans is 0.18 m/sec. Installed ventilation capacity in hood is to be redundant (2x 100 per cent). Ventilation hood system is to be separate from machinery space ventilation.
- Acceptance of ventilation hood for the pre-mix, spark-ignited SGI 16 gas engine for installation in a 'gas-safe' machinery space, as defined in IMO IGF Code, remains to the discretion of the relevant Flag Authority.
- Acceptance of the pre-mix, spark-ignited SGI 16 gas engine for installation in a ESD machinery space is conditional upon the ventilation arrangement of the machinery space and the ventilation air speed and direction of (fresh) air achieved at gas engine and it's gas supply.
- The SGI 16M gas engine is not acceptable for Emergency application.
- The SGI 16M gas engine to be fitted with a Closed-Crankcase-Ventilation (CCV) system.
- Gas Valve Unit (GVU) is excluded from this Type Approval certificate.

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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 RTS-TA-PRJ11093985/MB and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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