Indian Register of Shipping

CERTIFICATE NO: 2023TAC029

TYPE APPROVAL CERTIFICATE

This is to certify that the product is in accordance with the applicable rules/standards/codes as described below. The product is considered to be suitable for use in marine applications and is retained in the list of approved products.

MANUFACTURER	**Carrier** Fire & Security UK Limited
MANUFACTURING WORKS	Chippenham Drive, Milton Keynes, MK10 0AQ, United Kingdom
REGISTERED OFFICE	Carrier Manufacturing Poland Sp. z o.o. UL, Kolejowa 24, 39-100 Ropczyce, Poland
PRODUCT NAME	OIL MIST DETECTOR
MODEL NO. / TRADE NAME	Graviner Mk7
PRODUCT DESCRIPTION	See ANNEXURE
APPLICABLE RULES/STANDARDS/CODES	IRS Rules and Regulations for the Construction & Classification of Steel Ships
CONDITIONS OF APPROVAL	See ANNEXURE
VALIDITY	The Certificate is valid until 10/01/2028

ISSUE DATE: 06/04/2023

PLACE: MUMBAI

Premjit Panigrahi

Sr. Principal Surveyor

Previous Certificate No : 2018TAC014 dated : 16/03/2018

This Certificate is issued upon the following terms and conditions as laid down in the Society's Regulations:-
Whilst Indian Register of Shipping, a Classification Society, along with its subsidiaries and associates (hereinafter referred to as the Society) and its Board/Committees use their best endeavors to ensure that the functions of the Society are properly carried out, in providing services, information or advice neither the Society nor any of its servants or agents warrants the accuracy of any information or advice supplied. Except as set out herein neither the Society nor any of its servants or agents (on behalf of each of whom the Society has agreed this clause) shall be liable for any loss damage or expense whatever sustained by any person due to any act or omission or error of whatsoever nature and however caused of the Society, its servants or agents or due to any inaccuracy of whatsoever nature and howsoever caused in any information or advice given in any way whatsoever by or on behalf of the Society, even if held to amount to a breach of warranty. Nevertheless, if any person uses services of the Society, or relies on any information or advice given by or on behalf of the Society and suffers loss damage or expenses thereby which is proved to have been due to any negligent act omission or error of the Society, its servants or agents or any negligent inaccuracy in information or advice given by or on behalf of the Society then the Society will pay compensation to such person for his proved loss up to but not exceeding the amount of the fee charged by the Society for that particular service, information or advice.
Any notice of claim for loss, damage or expense, as referred to above ,shall be made in writing to the Society's Head Office within six months of the date when the service, information or advice was first provided, failing which all the rights to any such claim shall be forfeited and the Society shall be relieved and discharged from all liabilities.

ANNEXURE

(TO CERTIFICATE NO. 2023TAC029 DATED 06/04/2023)

PRODUCT DESCRIPTION AND APPLICATION

Application		Installation on Marine Engines
System Components		(1) Oil Mist Detector (P/N 53836-K269) (2) Control Unit (P/N 53836-K270) (3) Internal PCB (P/N 44782-K193)
Operating Voltage		24 Volt DC
Enclosure Rating		IP 65 (Detector & Control Unit) IP 32 (Remote Display Unit)
Operating Temperature		0 - 70° C
Alarm Ranges	Pre-Alarm	0.5 mg/l to 1.2 mg/l (adjustable) Default 0.9 mg/l
	Engine Slow/ Shutdown Alarm	1.3 mg/l to 2.4 mg/l (adjustable) Default 1.8 mg/l
	Back-up Alarm	3.0 mg/l (fixed)

CONDITIONS OF APPROVAL

1. Oil mist detection and alarm systems are to be tested on the test bed and onboard under engine at standstill and engine running at normal operating conditions in accordance with test procedures that are acceptable to IRS.

2. Oil mist detection and alarm information is to be capable of being read from a safe location away from the engine.

3. Alarms and shutdowns for the oil mist detection system are to be in accordance with Pt.5, Ch.22, Sec.3 and the system arrangements are to comply with Pt.5, Ch.22, Sec.2 of our Rules.

4. The 0il mist detector for each engine having two independent outputs for initiating the alarm and shut- down has to satisfy the requirement for independence between alarm and shut-down system.

5. Where oil mist detection equipment includes the use of programmable electronic systems, the arrangements are to be in accordance with the requirements of Section 6.6 & 6.7 of Part 4 Chapter 7 of IRS Main Rules.

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Premjit Panigrahi

Sr. Principal Surveyor