

Type Approval Certificate Extension

This is to certify that Certificate No. 95/20024 (E3) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

| | |
|----------------------------|--|
| PRODUCER | Schaller Automation Industrielle Automationstechnik GmbH & Co. KG |
| PLACE OF PRODUCTION | Industriering 14 66440 Blieskastel Germany |
| DESCRIPTION | Oil Mist Detectors for Diesel Engines |
| TYPES | VN 115/93, VN 116/93 and VN 215/93 |
| APPLICATION | Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV4 as defined in Lloyd's Register's Type Approval System, Test Specification No. 1 - 2002. |
| DESIGN CODE | Manufacturer's specification IACS UR M67 2005 / Rev. 1 October 2006 |
| OTHER CONDITIONS | The suitability of the installation of the Oil Mist Detector is to be demonstrated for each type of engine. |

"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 attached Design Appraisal Document No. ETS 23976-10 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 95/20024 (E3) to which this extension should be attached.

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|------------------------|------------------|
| Certificate No. | 95/20024 (E4) |
| Issue Date | 16 November 2010 |
| Expiry Date | 04 July 2015 |
| Sheet | 1 of 1 |


Jörn Brüggemann
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Marine Design Appraisal Document

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Date
16 November 2010
Quote this reference on all future communications
HPC 1022090/23976-10/ML/JB/hu

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002
ISSUED TO: SCHALLER AUTOMATION
INDUSTRIELLE AUTOMATIONSTECHNIK GMBH & CO. KG
FOR: OIL MIST DETECTORS FOR DIESEL ENGINES
TYPE APPROVAL CERTIFICATE NO. 95/20024 (E4)**

The additional undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

| | | |
|-------------------|--|------------|
| Form 2502 | Request for Marine Services | 08.10.2010 |
| Form 6606 | Request for Quotation | 22.06.2010 |
| QS-760HH | Certificate ISO 9001:2000 | 12.09.2008 |
| HPC1022090 | Works Inspection | 20.10.2010 |
| Unnumbered | Declaration of Conformity | 25.07.2007 |
| 10980 Version 2.2 | Operation Manual VN115/93, VN116/93 and VN215/93 | 05.2009 |

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.



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FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Oil Mist Detectors

| Producer / Licence No. | Item Description | Technical Details | Category / Additional Tests | Remarks | Cert. No. |
|---|---|--|---|---|----------------------|
| <p>Schaller Automation Industrielle Automationstechnik GmbH & Co. KG Industriering 14 66440 Blieskastel Germany</p> | <p>Oil Mist Detectors for Diesel Engines</p> <p>Model VN 115/93 for centre of engine mounting For medium and high speed diesel engines with auto. Compensation for long term drift.</p> <p>Model VN 116/93 generally as above but with high oil mist location to left or right hand engine side.</p> <p>Model VN 215/93 for centre of engine mounting. For low speed or high power medium speed diesel engines. High oil mist alarm with engine compartment identification.</p> | <p>Power supply (Vdc): 24 (A): ≤3</p> <p>Operation: sampling all connections simultaneously, optical detection system.</p> <p>Number of inputs: ≤10</p> <p>Sample time: Continuous</p> <p>Accuracy (%): ±5</p> <p>Range (mg/l): 0 to 10</p> <p>Alarm adjustable from 0.12 to 7.2 mg/l, i.e. 0.5% to 25% opacity</p> <p>Outputs: 1 potential free N.O. alarm contact 1 potential free N.O. pre-alarm contact 1 potential free N.C. equipment alarm contact</p> <p>Contact rating (V ac/dc) ≤60 (A ac/dc) ≤1 (VA) 125 (W) 60</p> <p>Optional RS 485 serial data link</p> <p>Alarm adjustable from 0.16 to 7.9mg/l, i.e. 0.7% to 28% opacity (otherwise as Model VN115/93)</p> <p>Alarm adjustable from 0.16 to 7.9mg/l, i.e. 0.7% to 28% opacity Compartment with highest opacity identified (otherwise as Model VN115/93)</p> | <p>ENV1 ENV2 ENV4 (2002) Enclosure IP44</p> | <p>Expires: 04 July 2015</p> <p>Manufacturer's specification IACS UR M67 2005 / Rev.1 October 2006</p> <p>The suitability of the installation of the Oil Mist Detector is to be demonstrated for each type of engine.</p> | <p>95/20024 (E4)</p> |