


DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

- [2] **EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**
- [3] EC-Type Examination Certificate Number: **DNV 14 ATEX 4532X**
- [4] Equipment or Protective System: **Liquid level transmitters and switches
Types: HFS, FLX and VFS.**
- [5] Applicant – Manufacturer or Authorized representative: **SHRIDHAN AUTOMATION PVT.LTD**
- [6] Address: **B54,KSSIDC Industrial Estate,Kumbalgodu, Mysore
Road , Bangalore-560074,India**
- [7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential reports listed in section 14.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2012 and EN 60079-1:2007
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.
- [12] The marking of the equipment or protective system shall include the following:

 **II 2 G Ex d IIC T4 Gb -20 °C ≤tamb ≤+ 50 °C**

Høvik, 2014-10-12
for Det Norske Veritas AS

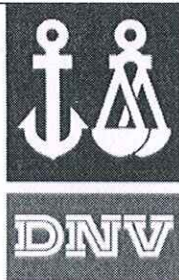

Bjørn Spongsveen
Certification Manager



Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

The digitally signed and electronically distributed document is the original and valid certificate. Ref.: www.dnv.com/digitalsignatures

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No.: DNV 14 ATEX 4532X

Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2014-3403 2014-3404	2014-10-12

[15] **Description of Equipment or Protective System**

HFS- Horizontal Float Switch:

The equipment is used to monitor the liquid level inside a vessel and consists of a cast stainless steel enclosure. Inside this enclosure is a micro switch based switching mechanism with an integral magnet. The enclosure body supports an external float that also contains an integral magnet. The float unit activates the switch via the interaction of the two magnets. The maximum rated current when the switch is closed is 5A.

FLX- Magnetic Float Operated Level Transmitter- & VFS- Vertical mounting magnetic float level switches:
The FLX and the VFS are liquid level sensors comprising of an ATEX certified ex d enclosure and a stainless steel guide welded/threaded to the enclosure. This level guide consists of 12mm stainless tube containing serially connected reed switches which are encapsulated. A hollow steel float containing a magnet is used to help vary the Voltage across these reed switches, and is transmitted to the transmitter in the enclosure and the change in voltage reflects the level of the liquid in the vessel.

The equipment may be used with a maximum liquid temperature of 100°C.

Type Identification

HFS, FLX and VFS

Electrical Data

HFS : 250V AC , 5A

FLX: 12 to 36V DC, 4-20mA

VFS: 240V AC, 3A, SPST

250V AC, 1.5A SPDT

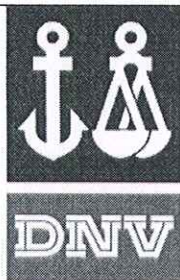
Degrees of protection (IP Code)

VFS,FLX: IP 66

HFS: IP 65

[16] **Project No.:** PRJC-395345-2012-PRC-IND

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Descriptive Documents

Number	Title	Rev.	Date
SAPL-ATEX- HFS-GA-01	Horizontal Mounting Type Magnetic Float Switch	01	19-06-2014
SAPL-ATEX- HFS-BOM-04	Horizontal Mounting Type Magnetic Float Switch	01	19-06-2014
SAPL-ATEX- HFS-Exp-02	Horizontal Mounting Type Magnetic Float Switch	01	19-06-2014
SAPL-ATEX- HFS-parts-02	Horizontal Mounting Type Magnetic Float Switch	01	19-06-2014
SAPL-ATEX- FLX-GA-01	Magnetic Float Operated Level Transmitter	01	23-06-2014
SAPL-ATEX- FLX-BOM-01	Magnetic Float Operated Level Transmitter	01	23-06-2014
SAPL-ATEX- FLX-Exp-01	Magnetic Float Operated Level Transmitter	01	23-06-2014
SAPL-ATEX- FLX-Exp-02	Magnetic Float Operated Level Transmitter	00	23-06-2014
SAPL-ATEX- FLX-parts-01	Magnetic Float Operated Level Transmitter	01	23-06-2014
SAPL-ATEX- FLX-parts-02	Magnetic Float Operated Level Transmitter	01	23-06-2014
SAPL-ATEX- VFS-GA-01	Vertical Mounting Type Magnetic Float level Switch	01	23-06-2014
SAPL-ATEX- VFS-BOM-01	Vertical Mounting Type Magnetic Float level Switch	01	23-06-2014
SAPL-ATEX- VFS-Exp-01	Vertical Mounting Type Magnetic Float level Switch	01	23-06-2014
SAPL-ATEX- VFS-Exp-02	Vertical Mounting Type Magnetic Float level Switch	01	23-06-2014
SAPL-ATEX- VFS-parts-01	Vertical Mounting Type Magnetic Float level Switch	01	23-06-2014
SAPL-ATEX- VFS-parts-02	Vertical Mounting Type Magnetic Float level Switch	01	23-06-2014

Routine test

The flameproof enclosure shall be subjected to a routine pressure test of 13 Bar for HFS and 11.82 Bar for FLX/VFS.

[17] Specific Conditions for Safe Use

The equipment can be used with a maximum liquid temperature of 100°C.

Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN/IEC 60079-1.

[18] Essential Health and Safety Requirements

See part 9 of this certificate

END OF CERTIFICATE

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300,000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.