

1 EU - Type Examination Certificate

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: ExVeritas 17ATEX0301X Issue: 2

4 Equipment: Liquid Vertical Continuous Sensor, Flameproof (LVCS FP) Float Switch,
Flameproof (F/S FP) Liquid Vertical Continuous Sensor with integrated
display, Flameproof (LVCSi FP)

5 Manufacturer: Deeter Electronics Ltd

6 Address: Deeter House, Valley Road, Hughenden Valley, High Wycombe, Bucks,
HP14 4LW, UK

7 This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 ExVeritas, Notified Body number 2804 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the Directive

9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with the following Standards and section 16 of this certificate:


BS EN IEC 60079-0: 2018 BS EN 60079-1:2014 BS EN 60079-26:2015
BS EN 60079-31:2014

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design, construction, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment shall include the following:

 II 1/2G (or 2G) Ex db IIC T* Ga/Gb (or Gb) -55°C ≤ T_{amb} ≤ +85°C

 II 2 D Ex tb IIIC T* Db -40°C ≤ T_{amb} ≤ +85°C

On behalf of ExVeritas



Peter Lauritzen
Managing Director

Schedule

13 Description of Equipment or Protective System

The LVCS FP (Liquid Vertical Continuous Sensor) and F/S FP (Float Switch) are liquid level sensors with either a continuous analogue or switching output. The equipment comprises of a flameproof, component certified instrument housing with stainless steel level guide which is threaded into the housing. The level guide consists of either an 8mm or 12mm stainless steel tube which contains the sensing electronics. The instrument housing is used for termination and mounting of optional PCB's, depending on the communication and I/O's required. The level guides can be various lengths and are mounted with up to seven stainless steel floats, each containing a magnetic ring. The equipment can be supplied with an optional threaded adaptor or equivalent gas tight seal for mounting across a boundary of two hazardous area zones.

When connected to process temperatures above 85°C, the instrument housing must be sufficiently cooled to keep it below 80°C, as detailed in the manufacturer's instructions.

The following temperature classes are applicable based on the process temperature which the equipment is connected to:

Model	Level guide length (mm)	Sensing device	Input/Output Options	Process Temperature and associated temperature class	Cable Entry sizes
LVCS	100 to 6000	Reed switch or Hall effect	Optional PCB's for various input/outputs	≤85°C (T5) (T100°C) ≤125°C (T4) (T135°C) ≤180°C (T3) (T200°C)	M20 x 1.5 or ½" NPT
F/S	60 to 6000	Reed switch	Between 1 to 7 I/O float switches, direct output	≤85°C (T5) (T100°C) ≤125°C (T4) (T135°C) ≤190°C (T3) (T200°C)	M20 x 1.5 or ½" NPT

The following ratings are applicable:

- 0 to 2v output. 5 to 25vdc input @ 25mA
- 0 to 4 v output. 7 to 25Vdc input @ 25mA
- 0 to 10v output. 14 to 28vdc input @ 35mA
- 8 to 28vdc input @30mA Multi interface 4-20mA, voltage output
- 0-50VDC 0-240V AC 1Amp (F/S FP reed switch only)

13.1 Details of changes

The following changes are incorporated in Issue 1 of the certificate:

- Update to the latest edition of EN 60079-0 as detailed on page 1 of the certificate.
- Inclusion of the LVCSi range of vertical liquid level sensors with integrated display and optional temperature sensor.

Model	Level guide length (mm)	Sensing device	Input/Output Options	Process Temperature and associated temperature class	Cable Entry sizes
LVCSi	100 to 6000	Reed switch or Hall effect. Optional temperature sensor	Optional PCB's for various input/outputs	≤85°C (T5) (T100°C) ≤125°C (T4) (T135°C) ≤180°C (T3) (T200°C)	2 off M20 x 1.5 or 2 off ½" NPT

10-30Vdc @ 100mA

The marking of the LVCSi range shall include the following:

 II 1/2G (or 2G) Ex db IIC T* Ga/Gb (or Gb) -40°C ≤ T_{amb} ≤+85°C

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Issue 2


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 II 2 D Ex tb IIIC T* Db $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$

13.2 Details of changes

- Transfer of the certificate from ExVeritas UK, Notified Body number 2585 to ExVeritas Denmark, Notified Body number 2804. Certificate number remains unchanged.

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R1288/A/1	14/12/2017	0	Initial issue of the Prime Certificate
R2757/A/1	24/09/2020	1	Issue of the first variation.
EXV4121A	15/09/2022	2	Issue of the second variation.

14.2 Compliance Drawings:

Number	Date	Issue	Description
D 600779	29/11/2017	2	LVCS FP all versions Sheet 1 of 2
D 600779_2	29/11/2017	3	LVCS FP all versions Sheet 2 of 2
D 600781	29/11/2017	2	F/S FP all versions Sheet 1 of 2
D 600781_2	29/11/2017	3	F/S FP all versions Sheet 2 of 2
Dwg 950553	11/8/2017	2	Adaptor 1/2" NPT Long thread to 12mm Sheet 1 of 2
Dwg 950568	11/8/2017	2	Adaptor 1/2" NPT long thread to 8mm Sheet 1 of 2
D600850	11 th March 2020	Rev 1	LVCSi FP all versions (Sheets 1 to 2)
-	17/09/2020	-	LVCSi FP manual

15 Conditions of Certification

15.1 Special Conditions for Safe Use

- When intended to be operating with process temperatures above 85°C, the sensor head shall be sufficiently cooled to keep it below 80°C. See installation manual for details.
- The LVCSi may be operated with process temperatures down to -55°C, when used at temperatures below -40°C, the sensor head shall be kept at a temperature of at least -40°C. See installation manual for details.
- Refer to manual for cable entry thread size and type.

15.2 Conditions for Use

- The LVCS FP and F/S FP range of sensors are subject to a routine tests on production in accordance with clause 16 of EN/IEC 60079-1 to a pressure of at least 57.2 Bar.
- The level guide assembly of the LVCSi FP shall be subject to a routine over pressure test in accordance with clause 16 of EN/IEC 60079-1 to a pressure of at least 17.2 Bar.
- The equipment covered under this certificate incorporates previously certified components, it is therefore the responsibility of the manufacturer to monitor the status of the certification of these components and inform ExVeritas of any changes that may affect the explosion safety design of their products.

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Schedule

16 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform the Notified Body of any modifications to the design of the product described by this schedule.

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