

# 1 EU-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** FM08ATEX0060X

4 **Equipment or protective system:** Type-WLS Water Level Sensor  
(Type Reference and Name) Type-NL Multi-spot Thermometer

5 **Name of Applicant:** Senmatic A/S

6 **Address of Applicant:** Industrivej 8  
DK-5471 Sonderso  
Denmark

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26<sup>th</sup> February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3032389EC dated 15<sup>th</sup> July 2010

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012+A11:2013, EN 60079-11:2012 and EN 60079-26:2015

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, 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 or protective system shall include:



II 1 G Ex ia IIC T4/T6 WLS Modbus version  
II 1 G Ex ia IIB T4 WLS HART version  
II 1 G Ex ia IIC T\* Type NL Multispot thermometer

\* See Description

**Damien McArdle**  
Certification Manager, FM Approvals Europe Ltd.

Issue date: 28<sup>th</sup> February 2020

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440  
T: +353 (0) 1761 4200 E-mail: [atex@fmaprovals.com](mailto:atex@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)

F ATEX 020 (Mar/2019)

Page 1 of 6

# SCHEDULE

to EU-Type Examination Certificate No. FM08ATEX0060X

## 13 Description of Equipment or Protective System:

The Type WLS can consist of two types of sensors; a water level sensor and a multi spot temperature sensor. The Type WLS is configurable with respect to dimensions, number of sensors and positioning of sensors to suit a broad range of applications.

The water level sensor is placed at the end of a flexible stainless-steel tube and up to 16 RTDs can be integrated in the length of the tube. The vertical position of the sensors and the length of the water level sensing device are variable and can be specified by the user within the limits set out in the datasheet.

There are two versions of the level sensing device:

Type WLS HART version using HART communication technology and being a 2 wire device.

Type WLS MODBUS version utilizing ModBus communication protocol and being a 4 wire device.

If the WLS is ordered without the capacitive level sensor, up to 20 RTDs can be ordered in the flexible tube. The Type NL sensors are available as: NLI, NLV, or NL-Cryo depending on the specific application.

### **Type-WLSa1bcdefg1hi1 Water Level Sensor**

a = overall length in mm;

b = Connection: Stainless steel welded or threaded flange connection

c = Level sensor; 0, 1, 2, 3, 4, 5, 6, A, B, C, D, E, F or G

d = anchor weight 0, 1, 2, or 3

e = number of conductors 3 or 5

f = number of elements

g = tolerance class 0, 1, 2, 3, 4 or 5

h = temperature range 1

i = lead out (total length) 1

### WLS HART:

Temperature Class: T4

Operating temperature range above flange: -10°C to 70°C

Operating temperature range below flange: 0°C to 120°C

Ambient temperature range above flange: -50°C to 70°C

Ambient temperature range below flange: -50°C to 120°C

### WLS ModBus:

Temperature Class: T4 below the mounting flange / T6 above the mounting flange

Operating temperature range above flange: -50°C to 70°C

Operating temperature range below flange: 0°C to 120°C

Ambient temperature range above flange: -50°C to 70°C

Ambient temperature range below flange: -50°C to 120°C

### **Type-NLI ab1defghij Multi-spot thermometer**

a = overall length in mm;

b = Sheath Diameter 1 or 2

d = Flange Connection Type: Stainless steel welded or threaded flange connection

e = Number of conductors 3, 4 or 5

f = number of spots

g = sensing element 1, 2, 3 or 4

h = tolerance class

i = temperature range 0, 1 or 4

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

# SCHEDULE

to EU-Type Examination Certificate No. FM08ATEX0060X

j = cable lead out (total length)

Type-NLI (temperature range 0, 1 or 4):

Temperature Class: T4

Ambient temperature range above flange: -50°C to 70°C

Ambient temperature range below flange: -50°C to 130°C

**Type-NLI ab1defghij Multi-spot thermometer**

a = overall length in mm;

b = Sheath Diameter 1 or 3/4

d = Flange Connection Type: Stainless steel welded or threaded flange connection

e = Number of conductors 3, 4 or 5

f = number of spots

g = sensing element

h = tolerance class

i = temperature range 2 or 3

j = cable lead out (total length)

Type-NLI (temperature range 2 or 3):

Temperature Class: T2

Ambient temperature range above flange: -50°C to 70°C

Ambient temperature range below flange: -50°C to 250°C

**Type-NLV a11def1h1 Multi-spot thermometer**

a = Overall length in mm;

d = Flange Connection Type: Stainless steel welded or threaded flange connection

e = Number of conductors 3, or 4

f = number of spots

h = tolerance class

Type-NLV:

Temperature Class: T4

Ambient temperature range above flange: -50°C to 70°C

Ambient temperature range below flange: -50°C to 130°C

**Type-NL-Cryo ab1def11j Multi-spot thermometer**

a = overall length in mm;

b = Sheath Diameter 1 or 2

d = Flange Connection Type: Stainless steel welded or threaded flange connection

e = Number of conductors 3 wire, 4 wire, or common return

f = number of spots

j = cable lead out (total length)

Type-NL-Cryo:

Temperature Class T5

Ambient temperature range above flange: -50°C to 70°C

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

# SCHEDULE

to EU-Type Examination Certificate No. FM08ATEX0060X

Ambient temperature range below flange: -200°C to 95°C

## Electrical Parameters:

<b>WLS Modbus</b>	<b>Ui</b>	<b>Ii</b>	<b>Pi</b>	<b>Li</b>	<b>Ci</b>
main supply and communication	7.2V	250 mA	700 mW	130 µH	0
temperature elements with a common return (up to 16 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
temperature elements 3-wire (up to 16 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
temperature elements 4-wire (up to 16 elements)	7.2V	400 mA	700 mW	40 µH	500 nF

<b>WLS HART version</b>	<b>Ui</b>	<b>Ii</b>	<b>Pi</b>	<b>Li</b>	<b>Ci</b>
WLS main supply	28V	100 mA	700 mW	2.5 mH	20 nF
temperature elements with a common return (up to 16 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
temperature elements 3-wire (up to 16 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
temperature elements 4-wire (up to 16 elements)	7.2V	400 mA	700 mW	40 µH	500 nF

<b>NL Sensors</b>	<b>Ui</b>	<b>Ii</b>	<b>Pi</b>	<b>Li</b>	<b>Ci</b>
temperature elements with a common return (up to 20 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
temperature elements 3-wire (up to 20 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
temperature elements 4-wire (up to 20 elements)	7.2V	400 mA	700 mW	40 µH	500 nF
Pt100 Average or Cu 90. 48 average with common return (up to 5 elements)	7.2V	400 mA	700 mW	40 µH	500 nF

## 14 **Specific Conditions of Use:**

1. The WLS and the RTDs are intrinsically safe circuits. At connection facilities the requirements in clause 6.2.1 in EN 60079-11 for separation between intrinsically safe circuits and possibly non-intrinsically safe circuits shall be strictly followed.
2. The WLS and the RTDs are two separate intrinsically safe circuits. They must not be interconnected and the requirements for separation listed in clause 6.2.1 in EN 60079-11 shall be followed.
3. Terminating and connecting the WLS cable and the wires from the RTDs, requirements in the local installation codes shall be followed.
4. When connecting either the WLS or RTDs to the junction box, adequate strain relief shall be provided.

## 15 **Essential Health and Safety Requirements:**

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440  
T: +353 (0) 1761 4200 E-mail: [atex@fmapprovals.com](mailto:atex@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# SCHEDULE

to EU-Type Examination Certificate No. FM08ATEX0060X

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

## 16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

## 17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

## 18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
15 <sup>th</sup> July 2010	Original Issue.
19 <sup>th</sup> October 2012	<u>Supplement 1:</u> Report Reference: 3032389rev111125 dated 08 <sup>th</sup> October 2012. Description of the Change: Addition of welded and threaded flange connections were added to Models WLS and NLI.
17 <sup>th</sup> December 2012	<u>Supplement 2:</u> Report Reference: 3032389rev120508 dated 04 <sup>th</sup> December 2012. Description of the Change: Update to labels.
16 <sup>th</sup> May 2013	<u>Supplement 3:</u> Report Reference: 3032389rev130110 dated 02 <sup>nd</sup> May 2013. Description of the Change: Update to Installation guide.
31 <sup>st</sup> May 2013	<u>Supplement 4:</u> Report Reference: 3032389rev130517 dated 22 <sup>nd</sup> May 2013 Description of the Change: Minor changes to the drawing not affecting compliance.
06 <sup>th</sup> June 2014	<u>Supplement 5:</u> Report Reference: 3032393rev140425 dated 29 <sup>th</sup> May 2014 Description of the Change: Addition of drawings.
25 <sup>th</sup> October 2016	<u>Supplement 6:</u> Report Reference: RR206384 dated 17 <sup>th</sup> October 2016 Description of the Change: Standards updated to the latest editions. Certificate updated to the EU Directive and template.
10 <sup>th</sup> March 2017	<u>Supplement 7:</u> Report Reference: RR208552 dated 07 <sup>th</sup> March 2017 Description of the Change: Minor design changes and drawing changes.
27 <sup>th</sup> April 2018	<u>Supplement 8:</u> Report Reference: RR212922 dated 29 <sup>th</sup> March 2018

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

# SCHEDULE



to EU-Type Examination Certificate No. FM08ATEX0060X

	Description of the Change: Update to documentation. Protective transformer and potting material updates. Minor corrections and updates to certificate content.
26 <sup>th</sup> March 2019	<u>Supplement 9:</u> Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.
16 <sup>th</sup> May 2013	<u>Supplement 10:</u> Report Reference: RR220848 dated 27 <sup>th</sup> November 2019 Description of the Change: Documentation update related to new encapsulation material.
28 <sup>th</sup> February 2020	<u>Supplement 11:</u> Report Reference: RR221866 dated 19 <sup>th</sup> February 2020. Description of the Change: Minor changes to the Listings, and minor drawing change not affecting safety. Re-wording of Specific Condition 4.

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440  
T: +353 (0) 1761 4200 E-mail: [atex@fmapprovals.com](mailto:atex@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# Blueprint Report

## Senmatic AS (119856)

Class No 3610

Original Project I.D. 3032389

Certificate I.D. FM08ATEX0060X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
103-1087	7	Label drawing NLI	RR212922
103-1092	6	Label drawing NLV	RR208552
103-1093	6	Label drawing NLI High Temp	RR208552
103-1094	6	Label Drawing NL Cryo	RR208552
103-1500	12	ATEX_IEC FM label HART	120508
103-1600	7	ATEX_IEC FM label Modbus	120508
103-450	9	Installation and zero calibration guide	01/10/13
103-706	1	NLI Label ATEX/IECEX	120508
103-707	2	NLI Label ATEX/IECEX	120508
104-2156-03	7-Nov-06	Board Layout Oscillator - WLS	3032389
104-2290-03	C	Board Layout Raptor WLS	3032389
104-2335-02	A	Board Layout Oscillator - Raptor	3032389
104-256	3	WLS Schematic and layout	3032389
108-044-1	1	Schematic Oscillator Raptor	3032389
108-067	3	Schematic Transmitter Raptor	3032389
311-061-1 BOM	1	WLS Transmitter Lead. PCB BOM	RR212922
311-062-1 BOM	1	WLS Oscillator BOM	RR212922
311-099 BOM	1	WLS HF Oscillator BOM	RR212922
311-124 BOM	1	WLS ModBus Transmitter Lead BOM	RR212922
800-9020 -FM	10	Control Drawing	5/17/13
800-NLI-EX	5	Type NLI and NLUS	RR221866
800-WLS-EX	5	Type WLS	RR220848
IDT 17170-9	C	DESCRIPTION OF CLASS INSULATION SYSTEM / DT17170-9	RR212922
IDT 17725-9	D	DESCRIPTION OF CLASS INSULATION SYSTEM / DT17725-9	RR212922
S17170-9	1	TRANSFORMER SPECIFICATION	RR212922
S17725-9	A	Tranformer construction	RR212922

**Electronic Drawing**

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)

Yes (pdf)