IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx FME 08.0007X**	Page 1 of 8
Status:	**Current**	Issue No: 11
Date of Issue:	2020-02-25	

Applicant:
Senmatic A/S
Industrivej 8
DK-5471 Søndersø
Denmark

Equipment:
Type-WLS Water Level Sensor & Type-NL Multi-spot Thermometer

Optional accessory:

Type of Protection:
Intrinsic Safety 'i'

Marking:

Ex ia IIC T4/T6 WLS Modbus version

Ex ia IIB T4 WLS HART version

Ex ia IIC T* Type NL Multispot Thermometer

* See Equipment Section.

Approved for issue on behalf of the IECEx
Certification Body:

Nicholas Ludlam

Position:

Certification Manager

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

FM Approvals Ltd
Voyager Place
Maidenhead
Berkshire
SL6 2PJ
United Kingdom

FM Approvals
Member of the FM Global Group

IECEx Certificate of Conformity

Manufacturer: **Senmatic A/S**
Industrivej 8
DK-5471 Søndersø
Denmark

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011
Edition:6.0

Explosive atmospheres - Part 0: General requirements

IEC 60079-11:2011
Edition:6.0

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

IEC 60079-26:2014-10
Edition:3.0

Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

This Certificate **does not** indicate compliance with safety and performance requirements
other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/FME/ExTR10.0001/00	GB/FME/ExTR10.0001/01	GB/FME/ExTR10.0001/02
GB/FME/ExTR10.0001/03	GB/FME/ExTR10.0001/04	GB/FME/ExTR10.0001/05
GB/FME/ExTR10.0001/06	GB/FME/ExTR10.0001/07	GB/FME/ExTR10.0001/08
GB/FME/ExTR10.0001/09	GB/FME/ExTR10.0001/10	

Quality Assessment Report:

SE/SP/QAR12.0001/05

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

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.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. 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 IEC 60079-11 shall be followed.
2. Terminating and connecting the WLS cable and the wires from the RTDs, requirements in the local installation code shall be followed.
3. When connecting either the WLS or the RTDs to the unction box, adequate strain relief for the wiring shall be provided.
4. At connection facilities of the NL sensors the requirements in clause 6.2.1 in IEC 60079-11 for separation between intrinsically safe circuits and possibly non-intrinsically safe circuits shall be strictly followed.
5. In the NL sensors, terminating and connecting the wires from the RTDs, requirements in the local installation codes shall be followed.

Equipment (continued):

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

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 ¾

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 ab1def111j 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

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

Electrical Parameters:

WLS Modbus

	Ui	Ii	Pi	Li	Ci
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

WLS HART version

	Ui	Ii	Pi	Li	Ci
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

NL Sensors

	Ui	Ii	Pi	Li	Ci
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

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Minor changes to the Listings, and minor drawing change not affecting safety.

Rewording of Specific Condition #3.