



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 PRE 14.0004X** Page 1 of 4 [Certificate history:](#)
Status: **Current** Issue No: 3 [Issue 2 \(2016-11-11\)](#)
[Issue 1 \(2014-06-13\)](#)
[Issue 0 \(2014-04-04\)](#)
Date of Issue: 2020-04-23
Applicant: **Sentech AS**
Olaf Helsets vei 5G
Oslo 0694
Norway
Equipment: **Profile Meter (PM) / HT Profile Meter (HTPM) , Water Cut Meter (WCM) / HT Water Cut Meter (HTWCM)**
Optional accessory: Barrier unit: Type Ex-BU-001
Type of Protection: **Ex ia, Ex ec, Ex nA**
Marking: Ex ia IIB T4 Ga -40°C ≤ Ta ≤ 60°C
Ex ia / [Ex ia] IIB T4...T2 Ga
Ex ec nA [ia IIB Ga] IIB Gc T4 -20°C ≤ Ta ≤ 60°C

Approved for issue on behalf of the IECEx
Certification Body:

Asle Kaastad

Position:

Certification Manager

Signature:
(for printed version)

Date:

2020-04-23

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:

DNV GL Presafe AS
Veritasveien 3
1363 Høvik
Norway





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Manufacturer: **Sentech AS**
Olaf Helsets vei 5G
Oslo 0694
Norway

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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

IEC 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
Edition:5.0

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:

[NO/PRE/ExTR14.0004/00](#)
[NO/PRE/ExTR14.0004/03](#)

[NO/PRE/ExTR14.0004/01](#)

[NO/PRE/ExTR14.0004/02](#)

Quality Assessment Report:

[NO/NEM/QAR13.0007/05](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Types Profile Meter and Water Cut Meter for measurement of water content in oil/gas vessels and pipelines.

The function of the **Profile Meter (PM) and High Temperature Profile Meter (HTPM)** is to measure the content of gas, oil and water in vessels. The Profile Meter comprises a power and signal connection compartment and a sensor unit located inside the vessel. The two sections are separated at the vessel mounting flange and pressure seal section. The signal communication is either RS485 or 4-20mA

Type **Water Cut Meter (WCM) and High Temperature Water Cut Meter (HTWCM)** for detection of water content in pipelines. The apparatus comprises a pipe section with flanges and with ceramic insert containing water and temperature sensor and a stainless steel enclosure containing the electronic boards and display. The signal communication is either RS485 or 4-20mA.

Type Ex-BU-001:

Ex barrier unit type of protection code Ex ec nA [ja IIB Ga] IIB Gc T4 -20°C ≤ Ta ≤ 60°C :

Comprises a stainless steel enclosure containing the intrinsic safety barriers providing power and signal connection to the profile meters and water cut meters covered by this certificate.

The intrinsic safety barriers and output parameters of the Ex-BU-001 are the same as mentioned under Intrinsic Safety Parameters below in the Attachment .

Further information and data in the Attachment to this CoC

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Ambient temperature range is -20°C ≤ Ta ≤ 60°C for Ex barrier unit.
Ambient temperature range is -40°C ≤ Ta ≤ 60°C for all Profile meters and water cut meters.
Process temperature range is -40°C to 125°C for PM and WCM types and -40°C to 225°C for HTPM and HTWCM.
2. All external power and signal connection shall be carried out according to the instructions and specifications in " Instructions Profile meter & Water Cut meter " Document number 48030-MA-001, dated 25.09.2019, revision 04 and .High temperature Profile meter & High Temperature Water Cut meter " Document number 480001-MA-Ex-703, dated 25.09.2019, revision 02 contains date for intrinsic safe connections.
The barrier unit Ex-BU-001 , with instruction 30003-MA-Ex-001, dated 25.09.2019, Rev.01, Instructions for Barrier Unit.
The separate "SR22 -Serial Resistor" unit with 2 * 22 ohm resistors shall be used with the isolator safety barriers KFD0-SD2-Ex1.10100 .
All circuits shall be supplied using isolator safety barriers providing galvanic separation from the supply circuits as specified in the mentioned manual.
3. The sensor part contains detail of the external surface made of Titanium metal. Hazard related to impact and friction by foreign objects shall be observed.
4. The ratio L/R for cable connection of the power supply from safety barriers shall not exceed 82 μH/Ω



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

HT-versions for process temperature up to 225°C was added. Updated to IEC 60079-26: 2014.

Minor changes of Controller card V2.

Change of manufacturer's name

Annex:

[ANNEX TO IECEx PRE 14.0004X-iss3.pdf](#)

ANNEX to Certificate of Conformity.

Types Profile Meter and Water Cut Meter for measurement of water content in oil/gas vessels and pipelines.

The function of the **Profile Meter (PM)** and **High Temperature Profile Meter (HTPM)** is to measure the content of gas, oil and water in vessels. The Profile Meter comprises a power and signal connection compartment and a sensor unit located inside the vessel. The two sections are separated at the vessel mounting flange and pressure seal section. The signal communication is either RS485 or 4-20mA

Type **Water Cut Meter (WCM)** and **High Temperature Water Cut Meter (HTWCM)** for detection of water content in pipelines. The apparatus comprises a pipe section with flanges and with ceramic insert containing water and temperature sensor and a stainless-steel enclosure containing the electronic boards and display. The signal communication is either RS485 or 4-20mA.

Type **Ex-BU-001**;

Ex barrier unit type of protection code Ex ec nA [ia IIB Ga] IIB Gc T4 $-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$:

Comprises a stainless steel enclosure containing the intrinsic safety barriers providing power and signal connection to the profile meters and water cut meters covered by this certificate.

The intrinsic safety barriers and output parameters of the Ex-BU-001 are the same as mentioned under Intrinsic Safety Parameters below:

Intrinsic Safety Parameters.

The Profile Meter (PM) and Water Cut Meter (WCM) is to be installed and connected according to the Instructions for Profile Meter & Water Cut Meter, document no: 48030-MA-001, dated 25.09.2019, revision 04.

The High Temperature Profile Meter (HTPM) and High Temperature Water Cut Meter (HTWCM) is to be installed and connected according to the Instructions for Profile Meter & Water Cut Meter, document no: 480001-MA-Ex-703, dated 25.09.2019, revision 02.

The following safety input parameters are for information only and need to be considered by the installation of the equipment when the information in the document 48030-MA-Ex-001 and Specific Conditions for Safe Use are observed.

Power supply (J1)

Supply from two safety barriers (KFDO-SD2-Ex1.10100) connected in parallel and an additional Serial Resistor unit $2 \times 22\Omega$ [Ex ia Ga] IIB. This assembly unit is also part of Ex-BU-001 barrier unit

Maximum input voltage.	Ui:	17V
Maximum input current.	Ii:	407mA
Maximum input power.	Pi:	1,728W
Maximum internal capacitance.	Ci:	Negligible
Maximum internal inductance.	Li:	Negligible

RS485 (J2/J5).

A diode safety barrier with galvanic isolation and the safety parameters following apply.

The following input parameters for the RS485 connection of the PM/ HTPM and WCM / HTWCM are derived for the specific isolator diode safety barrier GM, D1061S D1061S-77 or alternatives with the same safety specifications:

Maximum input voltage.	Ui:	3,7V
Maximum input current.	Ii:	225mA
Maximum input power.	Pi:	206mW
Maximum internal capacitance.	Ci:	Negligible
Maximum internal inductance.	Li:	Negligible

4-20mA (J3)

A diode safety barrier with galvanic isolation and the safety parameters following apply.

The following input parameters for the 4-20mA connection of the PM/ HTPM and WCM / HTWCM are derived for the specific isolator diode safety barrier MTL 5541/42 or MTL 5041/42GM, or alternatives with the same safety specifications:

Maximum input voltage.	Ui:	28V
Maximum input current.	Ii:	93mA
Maximum input power.	Pi:	0,66W
Maximum internal capacitance.	Ci:	Negligible
Maximum internal inductance.	Li:	Negligible