

Translation

(1) **EC-Type-Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**

(3) **Certificate Number** **TÜV 12 ATEX 087812**

(4) for the equipment: System sensor family Mini

(5) of the manufacturer: NIVUS GmbH

(6) Address: Im Täle 2
75031 Eppingen
Germany

Order number: 8000391048

Date of issue: 2012-02-17

(7) The design of this equipment or protective system and any acceptable variation thereto are specified in the schedule to this EC-Type-Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, notified body No. 0044 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), 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 the confidential report No. 12 203 087812.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2009

EN 60079-11:2007

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.

(10) This EC-type-examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:

 **II 2 G Ex ib IIB T4 Gb**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body


Schwedt

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(13) **SCHEDULE**

(14) **EC-Type-Examination Certificate No. TÜV 12 ATEX 087812**

(15) Description of equipment

In conjunction with the belonging measuring transducers, the system sensor family Mini is used for measurement of the flow speed and the flow level in partly or fully filled pipes and channels via supersonic technology.

The system sensor family Mini consists of the following components:

- Electronic box Mini type EBM,
- Correlation sensor Mini type CSM and
- Distance sensor Mini type DSM or filling level sensor type OCL-LM

The permissible ambient temperature range of the system is -20 °C ... 40 °C.

Electrical data

Signal and supply circuit in type of protection Intrinsic Safety Ex ib IIB
 (Connection wires (pig tail): only for connection to a certified intrinsically safe circuit
 red [+], blue [GND] Maximum values:
 $U_i = 10.5 \text{ V}$
 $I_i = 640 \text{ mA}$
 The connection to the following measuring transducers is permissible:
 type OCP-... according to TÜV 00 ATEX 1572 or
 type PCP-E... according to TÜV 03 ATEX 2268
 The effective internal capacitance and inductance of the electronics are negligibly small.
 The capacitances and inductances of the connected cable have to be taken into account.

Interface RS485 in type of protection Intrinsic Safety Ex ib IIB
 (Connection wires (pig tail): Maximum values:
 white [RxTx+] $U_o = 6 \text{ V}$
 green [RxTx-] $I_o = 154 \text{ mA}$
 blue: GND) $P_o = 230 \text{ mW}$
 Characteristic line: linear
 The effective internal capacitance and inductance of the electronics are negligibly small.

	Ex ib	IIB
max. permissible external inductance	9.5 mH	1 mH
max. permissible external capacitance	5.1 µF	13 µF

Schedule EC-Type Examination Certificate No. TÜV 12 ATEX 087812

At connection of the interface RS485 to belonging measuring transducers with active intrinsically safe circuits, the rules for interconnection of intrinsically safe circuits have to be taken into account.

Maximum values:

$$U_i = 12.06 \text{ V}$$

$$I_i = 176 \text{ mA}$$

The interconnection of the electronic box Mini type EBM with the sensors

- Correlation sensor Mini type CSM and
- Distance sensor Mini type DSM (or filling level sensor type OCL-LM)

via a cable of the manufacturer with a length of 10 m is permissible.

(16) The test documents are listed in the test report No. 12 203 087812

(17) Special conditions for safe use

None

(18) Essential Health and Safety Requirements

no additional ones

Translation
1. SUPPLEMENT

to Certificate No.	TÜV 12 ATEX 087812
Equipment:	System sensor family Mini
Manufacturer:	NIVUS GmbH
Address:	Im Täle 2 75031 Eppingen
Order number:	8000426406
Date of issue:	2014-04-30

In the future, the "System sensor family Mini" may also be manufactured and operated according to the documents listed in the test report.

The changes refer to

- a new sensor type CSM-V1D0 with integrated pressure sensor and,
- the electrical data.

A standard update was performed.

Electrical data

Signal and supply circuit in type of protection Intrinsic Safety Ex ib IIB
(Connection wires (pig tail): only for connection to a certified intrinsically safe circuit
red [+], blue [GND])
Maximum values:
 $U_i = 10.5 \text{ V}$
 $I_i = 640 \text{ mA}$
 $P_i = 6.72 \text{ W}$
The connection to the following measuring transducers is permissible:
type OCP-... according to TÜV 00 ATEX 1572 or
type PCP-E... according to TÜV 03 ATEX 2268
The effective internal capacitance and inductance of the electronics are negligibly small.
The capacitances and inductances of the connected cable have to be taken into account.

Interface RS485 in type of protection Intrinsic Safety Ex ib IIB
(Connection wires (pig tail):
white [RxTx+]
green [RxTx-]
blue: GND)
Maximum values:
 $U_o = 6 \text{ V}$
 $I_o = 81.9 \text{ mA}$
Angle current: 50 mA
Angle voltage: 4 V
 $P_o = 200 \text{ mW}$
Characteristic line: angular
The effective internal capacitance and inductance of the electronics are negligibly small.

	Ex ib	IIB
max. permissible external inductance	10 mH	1 mH
max. permissible external capacitance	3.8 μF	11.2 μF

1. Supplement to Certificate No. TÜV 12 ATEX 087812

At connection of the interface RS485 to belonging measuring transducers with active intrinsically safe circuits, the rules for interconnection of intrinsically safe circuits have to be taken into account.

Maximum values:

$$U_i = 12.06 \text{ V}$$

$$I_i = 176 \text{ mA}$$

$$P_i = 531 \text{ mW}$$

The interconnection of the electronic box Mini type EBM with the sensors

- Correlation sensor Mini type CSM-V100 or CSM-V1D0 and
- Distance sensor Mini type DSM (or filling level sensor type OCL-LM)

via a cable of the manufacturer with a length of 15 m is permissible.

All other data apply unchanged for this supplement.

The equipment incl. of this supplement meets the requirements of these standards:

EN 60079-0:2012

EN 60079-11:2012

(16) The test documents are listed in the test report No. 14 203 129937.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

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