



Translation

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

TUV NORD

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 99 ATEX 1517 X **issue:** 00

(4) for the product: Flow sensors type FCS-**-NAEX0(-H1141)/(A)(L**)/(D**) (xM)

(5) of the manufacturer: **Hans Turck GmbH & Co. KG**

(6) Address: Witzlebenstraße 7
45472 Mülheim an der Ruhr
Germany

Order number: 8003006089

Date of issue: 2019-08-19

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential ATEX Assessment Report No. 19 203 245394.

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

EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-26:2015

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. 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 product shall include the following:

II 1 G Ex ia IIC T6...T3 Ga II 1 D Ex ia IIIC TX °C Da
II 1/2 G Ex ia IIC T6...T3 Ga/Gb TX °C: See thermal data

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

Roder

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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 99 ATEX 1517 X issue 00**

(15) **Description of product**

The flow sensors type FCS-**-NAEX0(-H1141)/(A)(L**)/(D**) (xM) are used for flow monitoring of liquid or gaseous media.

Range of permissible process pressure in an explosive atmosphere 0.8 up to 1.1 bar absolute

Type code

FCS... NAEX0-H1141-...	Sensor with plug-in contact
FCS... NAEX0-	Sensor with fixed cable, standard devices
FCS... NAEX0-Dxx	Sensor with fixed cable for extended temperature range
FCS... NAEX0	Special devices that differ in design, material or cable length of the standard devices
FCS-GL3/4A4-NAEX0/(D024)	Sensor with cable entry and connection compartment with terminals.

The sensors are available in various housing types, e.g all standard flange types. As thread forms G, NPT and metric threads are available.

The information “...” are not relevant for the use in an explosive atmosphere.

To simplify and reduce the information relevant to explosion protection, the sensors are arranged in the following four device groups.

Device group 1	Probes made of stainless steel (e.g. 1.4571) and Titanium with one measuring pin
Device group 2	Probes made of stainless steel (e.g. 1.4571) and titanium with two measuring pins and probes made of special alloys with one measuring pin
Device group 3	Probes made of brass MS58 (CuZn40Pb2) with one measuring pin
Device group 4	Probes made of stainless steel (e.g. 1.4571) with one long measuring pin and Probes made of special alloys with one long measuring pin

Special alloys: Nickel-copper alloys, e.g. Monel 2.4360
 Nickel-molybdenum alloys, such as Hastelloy

Schedule to EU-Type Examination Certificate No. TÜV 99 ATEX 1517 X issue 00

Electrical data

Sensor circuit
(Cable tail resp. plug resp.
Terminals)

In type of protection intrinsic safety Ex ia IIC/IIIC
Only for the connection to certified intrinsically safe circuits.
Maximum values:
 $U_i = 13.65 \text{ V}$
 $I_i = 200 \text{ mA}$
 $P_i = 690 \text{ mW}$

Effective internal capacitance Capacitance of the permanently connected cable C_c
Effective internal inductance Inductance of the permanently connected cable L_c

For the connected cable the following applies:

$$C_c \leq 200 \text{ pF/m}$$

$$L_c \leq 1 \text{ } \mu\text{H/m}$$

Thermal data

When the flow sensors type FCS-**-NAEX0(-H1141)/(A)(L**)/(D**) (xM) are operated in hazardous areas for EPL Ga or EPL Ga/Gb applications, the permissible temperature range in the area of the housing and at the sensor depending on the temperature class and the device group can be found in the following table:

Device group	T6	T5	T4	T3
1	-20°C ... +40°C	-20°C ... +55°C	-20°C ... +85°C	-20°C ... +85°C
2	-20°C ... +35°C	-20°C ... +50°C	-20°C ... +85°C	-20°C ... +85°C
3	-20°C ... +55°C	-20°C ... +70°C	-20°C ... +85°C	-20°C ... +85°C
4			-20°C ... +70°C	-20°C ... +85°C

When the flow sensors type FCS-**-NAEX0(-H1141)/(A)(L**)/D100/(D**) (xM) are operated in hazardous areas for EPL Ga or EPL Ga/Gb applications, the permissible temperature range in the area of the housing and at the sensor depending on the temperature class and the device group is shown in the following table:

Device group	T6	T5	T4	T3
1	-20°C ... +40°C	-20°C ... +55°C	-20°C ... +90°C	-20°C ... +120°C
2	-20°C ... +35°C	-20°C ... +50°C	-20°C ... +85°C	-20°C ... +120°C
3	-20°C ... +55°C	-20°C ... +70°C	-20°C ... +105°C	-20°C ... +120°C

When the flow sensors type FCS-**-NAEX0(-H1141)/(A)(L**)/(D**) (xM) and FCS-**-NAEX0(-H1141)/(A)(L**)/D100/(D**) (xM) are operated in hazardous areas for EPL Da applications, the permissible temperature range in the area of the housing as well as at the sensor depending on the maximum surface temperature and the device group is shown in the following table:

Device group	Ambient temperature range	TX °C
1	-20°C ... +85°C	T125 °C
2	-20°C ... +85°C	T130 °C
3	-20°C ... +85°C	T110 °C
4	-20°C ... +85°C	T145 °C

(16) Drawings and documents are listed in the ATEX Assessment Report No. 19 203 245394

Schedule to EU-Type Examination Certificate No. TÜV 99 ATEX 1517 X issue 00

(17) Specific Conditions for Use

1. Metallic process connection parts must be included in the local equipotential bonding.
2. For equipment in the titanium housing, it must be ensured that there are no particles in the media flow that could cause an ignition hazard due to impact or friction.
3. For EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the flow sensor type FCS...-NAEX0-... have to be secured effectively against these dangers.
4. For EPL Ga/Gb applications the medium tangent materials of the flow sensor type FCS...-NAEX0-... have to be resistant to the media.
5. For EPL Ga/Gb applications the whole device flow sensor type FCS...-NAEX0-... shall be mounted in a way that allows an installation that results in a sufficient tight joint (IP66 or IP67) or a flameproof joint (IEC 60079-1) in the direction of the less endangered area.

(18) Essential Health and Safety Requirements

No additional ones

- End of Certificate -