



Translation

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

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

- (3) **Certificate Number** **TÜV 99 ATEX 1496 X** **Issue:** 03
- (4) for the product: Filling level sensors type VISY-Stick ... and type TORRIX Ex...
- (5) of the manufacturer: **FAFNIR GmbH**
- (6) Address: Schnackenburgallee 149 c
22525 Hamburg
Germany
- Order number: 8003035365
- Date of issue: See date of signature

(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. 22 203 302211.

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

EN IEC 60079-0:2018/AC:2020-02	EN 60079-1:2014/AC:2018-09	EN 60079-11:2012
EN 60079-26:2015	EN 60079-31:2014	

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:

 **See „Type code and Marking“**

TÜV NORD CERT GmbH, Am TÜV 1, 45307 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 deputy of the head of the notified body

(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 99 ATEX 1496 X**

Issue 03

(15) **Description of product:**

The filling level sensors type VISY-Stick ... and type TORRIX Ex... are used for continuous measurement of liquid levels within potentially explosive areas. Floaters are used to detect the fluid levels. These slide on a sensor tube. For interface or water detection, a second float can be mounted on the sensor tube. In addition, the density of the liquid can be determined by means of a density module.

The temperature measuring chain VISY-Stick ... Temp ... is used to measure temperatures at different heights and does not use any floats.

Type code and Marking:

Type VISY-Stick ... (Ex-relevant designations only):

VISY-Stick Sump ...	Environmental sensor (Leakage control)
VISY-Stick Advanced ...	Advanced precision of measurement and temperature sensors
VISY-Stick Flex ...	Flexible sensor tube
VISY-Stick ...	Serial communication
VISY-Stick ... RS485	RS-485 interface
VISY-Stick ... Temp ...	Temperature measuring chain
VISY-Stick ... TLS	TLS interface

Type TORRIX Ex... (Ex-relevant designations only):

TORRIX Ex...	4...20 mA interface (with configuration buttons) optionally with HART protocol
TORRIX Ex C...	4...20 mA interface (without configuration buttons) optionally with HART protocol
TORRIX Ex RS485...	RS-485 interface
TORRIX Ex SC...	Serial communication
TORRIX Ex TAG...	TAG interface (communication in accordance with EN 14116)
TORRIX Ex XT...	RS-485- or 4...20 mA interface optionally with display (Ex i)
TORRIX Exd XT...	RS-485- or 4...20 mA interface optionally with display (Ex d+t+i)
TORRIX Ex...-A	Advanced precision of measurement and temperature sensors
TORRIX Ex... Flex	Flexible sensor tube
TORRIX Ex... PL	With plastic coating against very aggressive media

Schedule to EU-Type Examination Certificate No. TÜV 99 ATEX 1496 X

Issue 03

<ul style="list-style-type: none"> • VISY-Stick ... • VISY-Stick (Flex) Temp • VISY-Stick ... RS485 • VISY-Stick (Flex) Temp RS485 • TORRIX Ex... • TORRIX Ex C... • TORRIX Ex RS485... • TORRIX Ex SC... • TORRIX Ex TAG... • TORRIX Ex XT... 	<ul style="list-style-type: none"> II 1 G Ex ia IIC T6...T1 Ga II 1/2 G Ex ia IIC T6...T1 Ga/Gb II 2 G Ex ia IIC T6...T1 Gb II 2 D Ex ia IIIC TX°C Db (see thermal data)
<ul style="list-style-type: none"> • VISY-Stick Advanced ... • VISY-Stick ... Flex ... • VISY-Stick ... Advanced RS485 • VISY-Stick ... Flex RS485 • TORRIX Ex ...-A • TORRIX Ex ... Flex • TORRIX Ex ... PL • TORRIX Ex C...-A • TORRIX Ex C... Flex • TORRIX Ex C... PL • TORRIX Ex RS485...-A • TORRIX Ex RS485... Flex • TORRIX Ex RS485... PL • TORRIX Ex SC...-A • TORRIX Ex SC... Flex • TORRIX Ex SC... PL • TORRIX Ex TAG...-A • TORRIX Ex TAG... Flex • TORRIX Ex TAG... PL • TORRIX Ex XT...-A • TORRIX Ex XT... Flex • TORRIX Ex XT... PL 	<ul style="list-style-type: none"> II 1 G Ex ia IIB T6...T1 Ga II 1/2 G Ex ia IIB T6...T1 Ga/Gb II 2 G Ex ia IIB T6...T1 Gb II 2 D Ex ia IIIC TX°C Db (see thermal data)
<ul style="list-style-type: none"> • VISY-Stick ... TLS • VISY-Stick (Flex) Temp TLS 	<ul style="list-style-type: none"> II 1 G Ex ia IIC T4...T1 Ga II 1/2 G Ex ia IIC T4...T1 Ga/Gb II 2 G Ex ia IIC T4...T1 Gb II 2 D Ex ia IIIC TX°C Db (see thermal data)
<ul style="list-style-type: none"> • VISY-Stick ... Advanced TLS • VISY-Stick ... Flex TLS 	<ul style="list-style-type: none"> II 1 G Ex ia IIB T4...T1 Ga II 1/2 G Ex ia IIB T4...T1 Ga/Gb II 2 G Ex ia IIB T4...T1 Gb II 2 D Ex ia IIIC TX°C Db (see thermal data)
<ul style="list-style-type: none"> • TORRIX Exd XT... 	<ul style="list-style-type: none"> II 1/2 G Ex ia/db IIC T6...T1 Ga/Gb II 2 G Ex db ia IIC T6...T1 Gb II 2 D Ex ia tb IIIC TX°C Db (see thermal data)
<ul style="list-style-type: none"> • TORRIX Exd ...-A • TORRIX Exd ... Flex • TORRIX Exd ... PL 	<ul style="list-style-type: none"> II 1/2 G Ex ia/db IIB T6...T1 Ga/Gb II 2 G Ex db ia IIB T6...T1 Gb II 2 D Ex ia tb IIIC TX°C Db (see thermal data)

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Excerpts or changes shall be allowed by the TÜV NORD CERT GmbH

Electrical data:

VISY-Stick ...; VISY-Stick (Flex) Temp; TORRIX Ex SC...; VISY-Stick Advanced ...;
VISY-Stick ... Flex ...; TORRIX Ex SC...-A; TORRIX Ex SC... Flex and TORRIX Ex SC... PL:

Signal and power supply
 (Terminals +, -, A, B) or (M12-Plug)

In type of protection intrinsic safety Ex ia IIC/IIB/IIIC
 Only for connection to certified intrinsically safe circuits.
 Maximum values:
 $U_i = 15 \text{ V}$
 $I_i = 60 \text{ mA}$
 $P_i = 100 \text{ mW}$
 Effective internal capacitance $C_i = 10 \text{ nF}$
 Effective internal inductance $L_i = 100 \text{ }\mu\text{H}$

VISY-Stick ... RS485; VISY-Stick (Flex) Temp RS485; TORRIX Ex...; TORRIX Ex C...;
TORRIX Ex RS485...; TORRIX Ex TAG...; TORRIX Ex XT...; VISY-Stick ... Advanced RS485;
VISY-Stick ... Flex RS485; TORRIX Ex ...-A; TORRIX Ex ... Flex; TORRIX Ex ... PL;
TORRIX Ex C...-A; TORRIX Ex C... Flex; TORRIX Ex C... PL; TORRIX Ex RS485...-A;
TORRIX Ex RS485... Flex; TORRIX Ex RS485... PL; TORRIX Ex TAG...-A;
TORRIX Ex TAG... Flex; TORRIX Ex TAG... PL; TORRIX Ex XT...-A; TORRIX Ex XT... Flex
and TORRIX Ex XT... PL:

Signal and power supply
 (Terminals +, -, A, B resp. +, -) or
 (M12-Plug)

In type of protection intrinsic safety Ex ia IIC/IIB/IIIC
 Only for connection to certified intrinsically safe circuits.
 Maximum values:
 $U_i = 30 \text{ V}$
 $I_i = 200 \text{ mA at } T_a \leq +70 \text{ }^\circ\text{C}$
 $I_i = 100 \text{ mA at } T_a \leq +85 \text{ }^\circ\text{C}$
 $P_i = 1 \text{ W}$
 Effective internal capacitance $C_i = 10 \text{ nF}$
 Effective internal inductance $L_i = 20 \text{ }\mu\text{H}$

VISY-Stick ... TLS; VISY-Stick (Flex) Temp TLS; VISY-Stick ... Advanced TLS and
VISY-Stick ... Flex TLS:

Signal and power supply
 (Terminals +, -) or (M12-Plug)

In type of protection intrinsic safety Ex ia IIC/IIB/IIIC
 Only for connection to certified intrinsically safe circuits.
 Maximum values:
 $U_i = 13 \text{ V}$
 $I_i = 200 \text{ mA}$
 $P_i = 625 \text{ mW}$
 Effective internal capacitance $C_i = 20 \text{ nF}$
 Effective internal inductance $L_i = 410 \text{ }\mu\text{H}$

Schedule to EU-Type Examination Certificate No. TÜV 99 ATEX 1496 X

Issue 03

TORRIX Exd XT...; TORRIX Exd ...-A; TORRIX Exd ... Flex and TORRIX Exd ... PL:

Signal and power supply
(Terminals +, -, A, B) For connection to non-intrinsically safe circuits with the following values:

$$U = 12 V_{d.c.} \dots 50 V_{d.c.}; I = 4 \text{ mA} \dots 20 \text{ mA}$$

$$U_m = 253 \text{ V}$$

Heating circuit
(Terminals -, +) For connection to non-intrinsically safe circuits with the following values:

$$U = 24 V_{d.c.} \pm 10 \%$$

$$I = 160 \text{ mA}$$

Thermal data:

VISY-Stick ...; VISY-Stick (Flex) Temp; TORRIX Ex SC...; VISY-Stick Advanced ...;

VISY-Stick ... Flex ...; TORRIX Ex SC...-A; TORRIX Ex SC... Flex and TORRIX Ex SC... PL:

For EPL Ga or EPL Ga/Gb or EPL Gb, the permissible temperature range depending on the variant and the temperature class can be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	-40 °C ... +50 °C	-40 °C ... +75 °C
T5	-40 °C ... +65 °C	-40 °C ... +90 °C
T4	-40 °C ... +85 °C	-40 °C ... +125 °C
T3	-40 °C ... +85 °C	-40 °C ... +190 °C
T2	-40 °C ... +85 °C	-40 °C ... +285 °C
T1	-40 °C ... +85 °C	-40 °C ... +435 °C

For EPL Db applications, the permissible ambient temperature range depending on the permissible surface temperature can be taken from the following table:

Maximum surface temperature		Ambient temperature range T_a
Dust layer $\leq 5 \text{ mm}$ $T_5 X^\circ\text{C}$	With total immersion $T X^\circ\text{C}$	
$X^\circ\text{C} = T_a + 30^\circ\text{C}$	$X^\circ\text{C} = 135^\circ\text{C}$	-40 °C ... +85 °C

The equipment is suitable for dusts with an ignition temperature of more than 190 °C under a dust layer of 5 mm (glow temperature).

VISY-Stick ... RS485; VISY-Stick (Flex) Temp RS485; TORRIX Ex ...; TORRIX Ex C...; TORRIX Ex RS485...; TORRIX Ex TAG...; TORRIX Ex XT...; VISY-Stick ... Advanced RS485; VISY-Stick ... Flex RS485; TORRIX Ex ...-A; TORRIX Ex ... Flex; TORRIX Ex ... PL; TORRIX Ex C...-A; TORRIX Ex C... Flex; TORRIX Ex C... PL; TORRIX Ex RS485...-A; TORRIX Ex RS485... Flex; TORRIX Ex RS485... PL; TORRIX Ex TAG...-A; TORRIX Ex TAG... Flex; TORRIX Ex TAG... PL; TORRIX Ex XT...-A; TORRIX Ex XT... Flex and TORRIX Ex XT... PL;

For EPL Ga or EPL Ga/Gb or EPL Gb, the permissible temperature range depending on the variant and the temperature class can be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	$I_i \leq 100 \text{ mA}$: -40 °C ... +40 °C $I_i \leq 200 \text{ mA}$: -40 °C ... +25 °C	-40 °C ... +75 °C
T5	$I_i \leq 100 \text{ mA}$: -40 °C ... +55 °C $I_i \leq 200 \text{ mA}$: -40 °C ... +40 °C	-40 °C ... +90 °C
T4	$I_i \leq 100 \text{ mA}$: -40 °C ... +85 °C $I_i \leq 200 \text{ mA}$: -40 °C ... +70 °C	-40 °C ... +125 °C
T3	$I_i \leq 100 \text{ mA}$: -40 °C ... +85 °C $I_i \leq 200 \text{ mA}$: -40 °C ... +70 °C	-40 °C ... +190 °C
T2	$I_i \leq 100 \text{ mA}$: -40 °C ... +85 °C $I_i \leq 200 \text{ mA}$: -40 °C ... +70 °C	-40 °C ... +285 °C
T1	$I_i \leq 100 \text{ mA}$: -40 °C ... +85 °C $I_i \leq 200 \text{ mA}$: -40 °C ... +70 °C	-40 °C ... +435 °C

For EPL Db applications, the permissible ambient temperature range depending on the permissible surface temperature can be taken from the following table:

Maximum surface temperature		Ambient temperature range T_a
Dust layer $\leq 5 \text{ mm}$ $T_5 X^\circ\text{C}$	With total immersion $T X^\circ\text{C}$	
$I_i \leq 100 \text{ mA}$: $X^\circ\text{C} = T_a + 40^\circ\text{C}$	Observe EN 60079-14	-40 °C ... +85 °C
$I_i \leq 200 \text{ mA}$: $X^\circ\text{C} = T_a + 55^\circ\text{C}$	Observe EN 60079-14	-40 °C ... +70 °C

The equipment is suitable for dusts with an ignition temperature of more than 200 °C under a dust layer of 5 mm (glow temperature).

Schedule to EU-Type Examination Certificate No. TÜV 99 ATEX 1496 X Issue 03

VISY-Stick ... TLS; VISY-Stick (Flex) Temp TLS; VISY-Stick ... Advanced TLS and VISY-Stick ... Flex TLS:

For EPL Ga or EPL Ga/Gb or EPL Gb, the permissible temperature range can be taken from the following tables, depending on the variant and the temperature class:

Temperature class	Ambient temperature range	Medium temperature range
T4	-40 °C ... +75 °C	-40 °C ... +125 °C
T3	-40 °C ... +85 °C	-40 °C ... +190 °C
T2	-40 °C ... +85 °C	-40 °C ... +285 °C
T1	-40 °C ... +85 °C	-40 °C ... +435 °C

For EPL Db applications, the permissible ambient temperature range depending on the permissible surface temperature can be taken from the following table:

Maximum surface temperature		Ambient temperature range T_a
Dust layer ≤ 5 mm $T_5 X^\circ C$	With total immersion $T X^\circ C$	
$X^\circ C = 135^\circ C$	$X^\circ C = 135^\circ C$	-40 °C ... +77 °C
$X^\circ C = T_a + 110^\circ C$	Observe EN 60079-14	-40 °C ... +85 °C

The equipment is suitable for dusts with an ignition temperature of more than 270 °C under a dust layer of 5 mm (glow temperature).

TORRIX Exd XT...; TORRIX Exd ...-A; TORRIX Exd ... Flex and TORRIX Exd ... PL:

For EPL EPL Ga/Gb or EPL Gb, the permissible temperature range can be taken from the following tables, depending on the variant and the temperature class:

Temperature class	Ambient temperature range	Medium temperature range
T6	-55 °C ... +50 °C	-55 °C ... +75 °C
T5	-55 °C ... +65 °C	-55 °C ... +90 °C
T4	-55 °C ... +85 °C	-55 °C ... +125 °C
T3	-55 °C ... +85 °C	-55 °C ... +190 °C
T2	-55 °C ... +85 °C	-55 °C ... +285 °C
T1	-55 °C ... +85 °C	-55 °C ... +435 °C

For EPL Db applications, the permissible ambient temperature range depending on the permissible surface temperature can be taken from the following table:

Maximum surface temperature		Ambient temperature range T_a
Dust layer ≤ 5 mm $T_5 X^\circ C$	With total immersion $T X^\circ C$	
$X^\circ C = T_a + 30^\circ C$	Observe EN 60079-14	-55 °C ... +85 °C

The equipment is suitable for dusts with an ignition temperature of more than 190 °C under a dust layer of 5 mm (glow temperature).

- (16) Drawings and documents are listed in the ATEX Assessment Report No. 22 203 302211

(17) Specific Conditions for Use:

1. The permissible temperature range depending on temperature classes resp. on the maximum surface temperature is to be taken from the operating instructions.
2. A reverse heat flow from the process, e.g. by heat dissipation from components of the system, beyond the permissible ambient temperature of the filling level sensor is not permissible. This can be avoided, for example, by suitable thermal insulation of these components or by mounting the pressure transmitter at a greater distance (cooling distance).
3. The medium tangent materials of the filling level sensor have to be resistant to the media.
4. For the uses in potentially explosive gas atmospheres and when using plastic floats, the filling level sensors have to be installed and used in such a way, that electrostatic charging from operation, maintenance and cleaning is excluded.
For the uses in potentially explosive dust atmospheres and when using plastic floats process-related electrostatic charges, e.g. due to passing media have to be excluded.
5. When using titanium floats or the Sump Environmental Sensor, the ignition hazard caused by impact or friction has to be excluded.
6. For EPL Ga/Gb applications the whole device filling level type VISY-Stick ... resp. type TORRIX Ex has to be mounted in a way that allows an installation that results in a sufficiently tight joint (IP66 or IP67) or a flameproof joint (IEC 60079-1) in the direction of the less endangered area.
7. In case of hazards due to pendulum or swinging, the corresponding parts of the level sensor type VISY-Stick ... resp. type TORRIX Ex... have to be effectively secured against these hazards.
8. The cable glands for the filling level sensors type TORRIX Exd XT...; TORRIX Exd ...-A; TORRIX Exd ... Flex and TORRIX Exd ... PL have to be separately assessed and certified in accordance with EN 60079-0; EN 60079-1 and EN 60079-31. In the end-use application the degree of protection min. IP6X shall be maintained in accordance with EN 60079-0 and in compliance with EN 60529.
9. The flameproof joints at type TORRIX Exd... are not intended to be repaired.

(18) Essential Health and Safety Requirements:

No additional ones.

- End of EU-Type Examination Certificate -