



Translation

(1) **EC TYPE-EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres - **Directive 94/9/EC**



(3) EC-Type Examination Certificate Number

TÜV 02 ATEX 1795 X

(4) Equipment: Ex immersible magnetic probes type Typ T-20_(/)(F)_.A_____, T-20_(F)_.A_____.V and TK-30_.A_____

(5) Manufacturer: E.L.B. – Füllstandsgeräte Bundschuh GmbH & Co.

(6) Address: An der Hartbrücke 6
D-64625 Bensheim

(7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH & Co. KG, TÜV CERT-Certification Body, notified body number N° 0032 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 N° 02 YEX 133272a.

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

EN 50014:1997

EN 50020:1994

EN 50284:1999

(10) 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.

(11) 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 1 G EEx ia IIC T6 resp. EEx ia IIB T6

II 1/2 G EEx ia IIC T6 resp. EEx ia IIB T6

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TÜV CERT-Certification Body
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Head of the
Certification Body



Hanover, 2002-09-03

TÜV NORD CERT GmbH & Co. KG
legal successor of the notified body of
TÜV Hannover/Sachsen-Anhalt e.V.
German original certificate
issued on 2002-06-26

110902.01



(13)

SCHEDULE

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 02 ATEX 1795 X**

(15) Description of equipment

The Ex immersible magnetic probes type T-20_(/)(F)_.A_. and T-20_(F)_.A_.V are used to capture limits of filling levels.

The type TK-30_.A_. is intended for continuous filling level measurement.

The electrical connection is realized with a connection box or for T-204/0.. and T-205/0... via prefabricated cable with a length up to 10 m.

The types T-204/0... and T-205/0... are intended for the use in areas that require category 1 apparatus.

The marking is for T-204/0.IIC... and T-205/0.IIC... II 1 G EEx ia IIC T6
and for T-204/0.IIB... and T-205/0.IIB... II 1 G EEx ia IIB T6

The intrinsically safe connection of all other types is realized in the area that requires apparatus of category 2. The floater and the guidance of the floater may be erected in areas that require apparatus of category 1.

The markings are for T-20_(F).IIC.... und TK-30_(/).IIC... II 1/2 G EEx ia IIC T6
and for T-20_(F).IIB.... und TK-30_(/).IIB... II 1/2 G EEx ia IIB T6

The maximum permissible ambient temperature in dependence on the temperature class and the input power P_i has to be taken from the correspondent tables.

Electrical data

Immersible probe with punctual detection, types T-20_(/).A_. and T-20_.A_.V

Signal- and supply circuit in type of protection „Intrinsic Safety“ EEx ia IIC/IIB
(terminals resp. prefabricated only for the connection to certified intrinsically safe
cable) circuits with the following maximum values:

$$U_i = 50 \text{ V}$$

$$I_i = 100 \text{ mA}$$

$$P_i = 2.5 \text{ W}$$

The internal capacitance and inductance are negligibly small.

Hazardous explosive areas that require apparatus of category 1

Temperature class	Maximum permissible ambient and media temperature
T6..T1	60°C



Schedule EC-Type Examination Certificate N° TÜV 02 ATEX 1795 X

Hazardous explosive areas that require apparatus of category 2

Temperature class	Maximum permissible ambient and media temperature	
T6	80°C	
T5	95°C	
	maximum permissible media-temperature	ambient-temperature
T4	130°C	100°C
T3...T1	135°C	100°C

Immersible probe with optional overfill function, Type T-20_(/_)F...A..... and T-20_F...A.....V („F contact“)

Signal and supply circuit - (terminals)

in type of protection „Intrinsic Safety“ EEx ia IIC/IIB only for the connection to certified intrinsically safe circuits with the following maximum values:

$$U_i = 24 \text{ V}$$

$$I_i = 100 \text{ mA}$$

$$P_i \text{ see tables below}$$

The internal capacitance and inductance are negligibly small.

Immersible probe with continuous detection, type TK-30...A.....

Signal- and supply circuit- (terminals)

in type of protection „Intrinsic Safety“ EEx ia IIC/IIB only for the connection to certified intrinsically safe circuits with the following maximum values:

$$U_i = 24 \text{ V}$$

$$I_i = 100 \text{ mA}$$

$$P_i \text{ see tables below}$$

The internal capacitance and inductance are negligibly small.

Hazardous explosive areas that require apparatus of category 1

Only for the connection to circuits of the category „ia“ in the case of category 1 applications.

Temperature class	Maximum permissible ambient and media temperature	P_i
T6	40°C	165 mW
	50°C	97 mW
	60°C	28 mW
T5	40°C	551 mW
	50°C	483 mW
	60°C	414 mW
T4...T1	40°C	750 mW
	50°C	724 mW
	60°C	655 mW

Hazardous explosive areas that require apparatus category 2

Temperature class	Maximum permissible ambient and media temperature		P _i	
T6	40°C		276 mW	
	50°C		207 mW	
	60°C		138 mW	
	74°C		41 mW	
T5	40°C		724 mW	
	50°C		655 mW	
	60°C		586 mW	
	70°C		517 mW	
	80°C		448 mW	
	90°C		379 mW	
	100°C		310 mW	
T4	40°C		750 mW	
	50°C		724 mW	
	60°C		655 mW	
	70°C		586 mW	
	80°C		517 mW	
	90°C		448 mW	
	100°C		379 mW	
	Maximum permissible			
		media- temperature	ambient- temperature	
		110°C	100°C	310 mW
		120°C	100°C	241 mW
	130°C	100°C	172 mW	
T3...T1	135°C	100°C	137 mW	

(16) Test documents are listed in the test report No.: 02 YEX 133272a.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

Translation
1. SUPPLEMENT
to
EC-TYPE EXAMINATION CERTIFICATE No. TÜV 02 ATEX 1795 X

Equipment: Ex immersible magnetic probes type T-20_(/)(F)_.A_. ,
T-20_(F)_.A_.V, TK-30_.A_. and option lightning
protector type BL-100

Manufacturer: E.L.B.-Füllstandsgeräte Bundschuh GmbH + Co.

Address: An der Hartbrücke 6
D-64625 Bensheim

Amendments:

The immersible magnetic probes of the types

T-20_(/)(F)_.A_. ,
T-20_(F)_.A_.V and
TK-30_.A_.

have been extended by another type for continuous filling level measurement of liquid media and by an optional useable lightning protector type BL-100. The version TK-307/0... is intended for lateral connection e.g. as a bypass indicator and for the use in areas that require apparatus of category 1. The actuation of the reed contacts occurs with a magnet system (floater) which is located inside the area of the liquid medium.

In addition, within the scope of this supplement the existing type key is changed for all types. The changed designations are as follows:

- T-20_(/)(F)... for T-20_(/)(F)_.A_. and T-20_(F)_.A_.V
- TK-30_(/)... for TK-30_.A_.

The electrical connection is realized with a connection box respectively for T-204/0... and T-205/0... via prefabricated cable with a length up to 10 m. The version TK-307/0... can be connected via prefabricated cable or with a connection box.

The types T-204/0..., T-205/0... and TK-307/0... are intended for the use in areas that require category 1 apparatus. The corresponding markings are

Ex II 1 G EEx ia IIC T6 resp. Ex II 1 G EEx ia IIB T6
for gas group IIC for gas group IIB

The intrinsically safe connection of all other types is realized in the area that requires apparatus of category 2. The floater and the guidance of the floater may be erected in areas that require apparatus of category 1. The corresponding markings are

Ex II 1/2 G EEx ia IIC T6 resp. Ex II 1/2 G EEx ia IIB T6
for gas group IIC for gas group IIB

1. Supplement to EC-Type Examination Certificate No. TÜV 02 ATEX 1795 X

The maximum permissible ambient temperature in dependence on the temperature class and the input power P_i has to be taken from the correspondent tables.

Technical data

Immersible probe with punctual detection, type T-20_(/_)...

Signal and supply circuit
(terminals resp.
prefabricated cable)

in type of protection Intrinsic Safety
resp.

EEx ia IIC
EEx ia IIB

only for the connection to certified intrinsically safe circuits.

Maximum values:

$U_i =$	50 V
$I_i =$	100 mA
$P_i =$	2,5 W

The internal capacitance and inductance are negligibly small.

Hazardous explosive areas that require apparatus of category 1.

Temperature class	Maximum permissible media and ambient temperature	P_i
T6 ... T1	60 °C	see above

Hazardous explosive areas that require apparatus of category 2.

Temperature class	Maximum permissible media and ambient temperature		P_i
T6	80 °C		see above
T5	95 °C		
	Maximum permissible		
	media temperature	ambient temperature	
T4	130 °C	100 °C	
T3 ... T1	135 °C	100 °C	

1. Supplement to EC-Type Examination Certificate No. TÜV 02 ATEX 1795 X

Immersible probe with optional overfill function, type T-20_(/_)F... („F contact“)

Signal and supply circuit (terminals)	in type of protection Intrinsic Safety resp.	EEx ia IIC EEx ia IIB
	only for the connection to certified intrinsically safe circuits.	
	Maximum values:	$U_i = 24\text{ V}$ $I_i = 100\text{ mA}$
	The max. input power P_i has to be taken from the following tables (see below).	
	The internal capacitance and inductance are negligibly small.	

Immersible probe with continuous detection, type TK-30_(/_)...

Signal and supply circuit (terminals resp. prefabricated cable)	in type of protection Intrinsic Safety resp.	EEx ia IIC EEx ia IIB
	only for the connection to certified intrinsically safe circuits.	
	Maximum values:	$U_i = 24\text{ V}$ $I_i = 100\text{ mA}$
	The max. input power P_i has to be taken from the following tables (see below).	
	The internal capacitance and inductance are negligibly small.	

Hazardous explosive areas that require apparatus of category 1.

Only for the connection to circuits of the category „ia“ in the case of category 1 applications.

Temperature class	Maximum permissible media and ambient temperature	P_i
T6	40 °C	165 mW
	50 °C	97 mW
	60 °C	28 mW
T5	40 °C	551 mW
	50 °C	483 mW
	60 °C	414 mW

1. Supplement to EC-Type Examination Certificate No. TÜV 02 ATEX 1795 X

T4 ... T1	40 °C	750 mW
	50 °C	724 mW
	60 °C	655 mW

Hazardous explosive areas that require apparatus category 2.

Temperature class	Maximum permissible media and ambient temperature		P_i
T6	40 °C		276 mW
	50 °C		207mW
	60 °C		138 mW
	74 °C		41 mW
T5	40 °C		724 mW
	50 °C		655 mW
	60 °C		586 mW
	70 °C		517 mW
	80 °C		448 mW
	90 °C		379 mW
	100 °C		310 mW
T4	40 °C		750 mW
	50 °C		724 mW
	60 °C		655 mW
	70 °C		586 mW
	80 °C		517 mW
	90 °C		448 mW
	100 °C		379 mW
	Maximum permissible		
	media temperature	ambient temperature	
	110 °C	100 °C	310 mW
	120 °C	100 °C	241 mW
130 °C	100 °C	172 mW	
T3 ... T1	135 °C	100 °C	137 mW

All other data apply unchanged for this supplement.

1. Supplement to EC-Type Examination Certificate No. TÜV 02 ATEX 1795 X

Notes for the erection:

Requires the erection a protective measure against atmospheric electricity then the lightning protector type BL-100 is suited.

The equipment including this changes meets the requirements of

EN 1127-1:1997

EN 50 014:1997+A1+A2

EN 50 020:2002

EN 50 284:1999

(16) The test documents are listed in the test report N° 05 YEX 552476.

(17) Special conditions for safe use

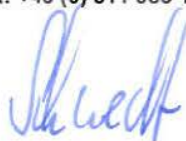
All data apply unchanged for this supplement.

(18) Essential Health and Safety Requirements

All data apply unchanged for this supplement.

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Hannover, 2005-10-27



Head of the
Certification Body

The maximum permissible ambient temperature in dependence on the temperature class and the input power P_i has to be taken from the correspondent tables.

Technical data

Immersible probe with punctual detection, type T-20_(I_)...

Signal and supply circuit..... in type of protection Intrinsic Safety Ex ia IIC
(terminals resp. resp. Ex ia IIB
prefabricated cable)

only for the connection to certified intrinsically safe circuits with the maximum values:

$$U_i = 50 \text{ V}$$

$$I_i = 100 \text{ mA}$$

$$P_i = 2.5 \text{ W}$$

The internal capacitance and inductance are negligibly small.

For hazardous explosive areas that require apparatus of category 1 the following table must be applied.

Temperature class	Maximum permissible media and ambient temperature	P_i
T6 ... T1	60 °C	see above

For hazardous explosive areas that require apparatus of category 2 the following table must be applied.

Temperature class	Maximum permissible media and ambient temperature		P_i
T6	80 °C		see above
T5	95 °C		
	Maximum permissible		
	media temperature	ambient temperature	
T4	130 °C	100 °C	
T3 ... T1	135 °C	100 °C	

Immersible probe with optional overfill function, type T-20_(/_.)F... („F contact“)

Signal and supply circuit..... in type of protection Intrinsic Safety Ex ia IIC
(terminals) resp. Ex ia IIB

only for the connection to certified intrinsically safe circuits with the maximum values:

$$U_i = 24 \text{ V}$$

$$I_i = 100 \text{ mA}$$

The max. input power P_i has to be taken from the following tables (see below).

The internal capacitance and inductance are negligibly small.

Immersible probe with continuous detection, type TK-30_(/_)...

Signal and supply circuit..... in type of protection Intrinsic Safety Ex ia IIC
(terminals resp. resp. Ex ia IIB
prefabricated cable)

only for the connection to certified intrinsically safe circuits with the maximum values:

$$U_i = 24 \text{ V}$$

$$I_i = 100 \text{ mA}$$

The max. input power P_i has to be taken from the following tables (see below).

The internal capacitance and inductance are negligibly small.

For hazardous explosive areas that require apparatus of category 1 the following table must be applied.

Only for the connection to circuits of the category „ia“ in the case of category 1 applications.

Temperature class	Maximum permissible media and ambient temperature	P_i
T6	40 °C	165 mW
	50 °C	97 mW
	60 °C	28 mW
T5	40 °C	551 mW
	50 °C	483 mW
	60 °C	414 mW
T4 ... T1	40 °C	750 mW
	50 °C	724 mW
	60 °C	655 mW

2. Supplement to Certificate No. TÜV 02 ATEX 1795 X

For hazardous explosive areas that require apparatus of category 2 the following table must be applied.

Temperature class	Maximum permissible media and ambient temperature		P _i
T6	40 °C		276 mW
	50 °C		207 mW
	60 °C		138 mW
	74 °C		41 mW
T5	40 °C		724 mW
	50 °C		655 mW
	60 °C		586 mW
	70 °C		517 mW
	80 °C		448 mW
	90 °C		379 mW
	100 °C		310 mW
T4	40 °C		750 mW
	50 °C		724 mW
	60 °C		655 mW
	70 °C		586 mW
	80 °C		517 mW
	90 °C		448 mW
	100 °C		379 mW
	Maximum permissible		
media temperature	ambient temperature		
110 °C	100 °C	310 mW	

2. Supplement to Certificate No. TÜV 02 ATEX 1795 X

	120 °C	100 °C	241 mW
	130 °C	100 °C	172 mW
T3 ... T1	135 °C	100 °C	137 mW

All other data apply unchanged for this supplement.

Notes for the erection:

Requires the erection a protective measure against atmospheric electricity then the lightning protector type BL-100 is suited.

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

EN 60079-0:2006

EN 60079-11:2007

EN 60079-26:2007

(16) The test documents are listed in the test report No. 09 203 555208.

(17) Special conditions for safe use


no additional ones

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited 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 certification body



Schwedt

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Technical Data

For devices with measuring converter TK-101:

Maximum permissible range of the ambient temperature: - 20 °C to +60 °C

Signal- and supply circuit..... in type of protection intrinsic safety Ex ia IIC
(terminals „+“ and „-“) resp. Ex ia IIB

only to be connected to certified intrinsically safe circuits with the maximum values:

$U_i = 28 \text{ V}$
 $I_i = 93 \text{ mA}$
 $P_i = 660 \text{ mW}$

The internal capacitance C_i and inductance L_i are negligibly small.

All other information remain unchanged for this supplement.

Errichterhinweis:

If the erection requires a protective measure against atmospheric electricity then the lightning protector type BL-100 is suitable.

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

EN 60079-0:2006

EN 60079-11:2007

EN 60079-26:2007

(16) The test documents are listed in the test report No. 11 203 390582.

(17) Special conditions for safe use

no additional ones

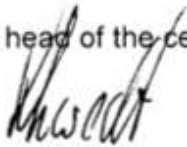
3. Supplement to Certificate No. TÜV 02 ATEX 1795 X

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited 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 certification body

A handwritten signature in black ink, appearing to read "Schwedt".

Schwedt

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Translation

4. SUPPLEMENT

to Certificate No. TÜV 02 ATEX 1795 X

Equipment: Ex immersible magnetic probes type T-20_(/_(F))...,
TK-30_(/_(F))...and option lightning protector type BL-100

Manufacturer: E.L.B.-Füllstandsgeräte Bundschuh GmbH + Co.

Address: An der Hartbrücke 6
64625 Bensheim
Germany



Order number: 8000393902

Date of issue: 2011-03-29



Amendments:

The standards used for assessment had been updated and the marking had been adjusted accordingly.

For devices which are intended for the use in areas which require category 1 apparatus, the marking is as follows:

 II 1 G Ex ia IIC T6 Ga bzw.  II 1 G Ex ia IIB T6 Ga
for gas group IIC for gas group IIB

For devices which are intended to be connected in areas which require category 2 apparatus and their floater and the guidance of the floater may be erected in areas that require apparatus of category 1, the marking is as follows:

 II 1/2 G Ex ia IIC T6 Ga/Gb bzw.  II 1/2 G Ex ia IIB T6 Ga/Gb
for gas group IIC for gas group IIB

The technical data and all other details apply unchanged for this 4th supplement.

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

EN 60079-0:2009

EN 60079-11:2007

EN 60079-26:2007

(16) The test documents are listed in the test report No. 11 203 080352.

(17) Special conditions for safe use

no additional ones

4. Supplement to Certificate No. TÜV 02 ATEX 1795 X

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited 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 certification body

A handwritten signature in black ink, appearing to read "Schwedt".

Schwedt

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