

Translation

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

**TÜV NORD**



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

(3) **Certificate Number** TÜV 07 ATEX 345770

(4) for the equipment: Measurement analysis system type UM-... Ex

(5) of the manufacturer: FAFNIR GmbH

(6) Address: Bahrenfelder Str. 19  
22765 Hamburg  
Germany

Order number: 8000345770

Date of issue: 2007-02-26

- (7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this 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. 07203345770.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN 50 014:1997 +A1+A2      EN 50 020:2002**
- (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/IIB**

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

Hanover office, Am TÜV 1, 30519 Hanover, Fon +49 (0)511 986 1455, Fax +49 (0)511 986 1590

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

(13) **SCHEDULE**

(14) **EC-Type Examination Certificate No. TÜV 07 ATEX 345770**

(15) Description of equipment

The measurement analysis system UM-... Ex is used for the supply, display and limit value indication of level sensors equipped with a 4 to 20 mA interface.

The permissible ambient temperature range is 0 °C to +50 °C.

Electrical data

Auxiliary power circuit  
(terminals 20, 21 and 22)

$U = 230 \text{ V AC}, \pm 10 \%, 50 \dots 60 \text{ Hz}, \text{ approx. } 7.5 \text{ VA}$  or  
 $U = 24 \text{ V AC}, \pm 10 \%, 50 \dots 60 \text{ Hz}, \text{ approx. } 7.5 \text{ VA}$  or  
 $U = 24 \text{ V DC}, \pm 20 \%, \text{ approx. } 4.7 \text{ W}$   
 $U_m = 253 \text{ V}$

Sensor circuit  
(terminals 1 and 2)

in type of protection "intrinsic safety" EEx ia IIC  
or EEx ia IIB

Maximum values:  $U_o = 28.4 \text{ V}$   
 $I_o = 99.5 \text{ mA}$   
 $R = 285 \text{ } \Omega$   
 $P_o = 705 \text{ mW}$

Characteristic: linear

$C_i$  negligibly small  
 $L_i$  negligibly small

The permissible maximum values for the outer inductance ( $L_o$ ) and capacitance ( $C_o$ ) must be looked up in the following table:

	EEx ia IIC		EEx ia IIB	
$L_o$	0.68 mH	0.2 mH	2 mH	0.2 mH
$C_o$	59 nF	83 nF	290 nF	570 nF

Output circuit  
(terminals 3 to 17)

$U \leq 250 \text{ V}, I \leq 5 \text{ A}, P \leq 500 \text{ VA}, \cos \varphi \geq 0.7$  or  
 $U \leq 250 \text{ V}, I \leq 0.25 \text{ A}, P \leq 50 \text{ W}$

The sensor circuit is safely galvanically separated from the auxiliary power circuit and output circuit up to an apex value of the voltage of 375 V.

(16) Test documents are listed in the test report No. 07203345770.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

**Translation**  
**1. SUPPLEMENT**

**to Certificate No.** TÜV 07 ATEX 345770

**Equipment:** Measurement analysis system type UM-... Ex

**Manufacturer:** FAFNIR GmbH

**Address:** Bahrenfelder Straße 19  
 22765 Hamburg  
 Germany

**Order number:** 8000401623

**Date of issue:** 2012-01-12

**Amendments:**

In the future, the Measurement analysis system type UM-... Ex may also be manufactured according to the test documents listed in the test report. The modifications refer to the layout of the item.

The permissible ambient temperature range will be -20 °C to +50 °C in the future.

Furthermore the "Electrical data" was changed.

Electrical Data

**Auxiliary power circuit**  
 (terminal 20, 21 und 22)

U = 24/115/230 V a.c., ± 10 %, 50...60 Hz, about 7.5 VA  
 U = 24 V d.c., ± 20 %, about 4.7 W  
 U<sub>m</sub> = 33 V at 24 V d.c. resp. 24 V a.c.  
 U<sub>m</sub> = 130 V at 115 V a.c.  
 U<sub>m</sub> = 253 V at 230 V a.c.

**Sensor circuit**  
 (terminal 1 und 2)

in type of protection "Intrinsic Safety" Ex ia IIC  
 resp. Ex ia IIB

Maximum values: U<sub>o</sub> = 28.4 V  
 I<sub>o</sub> = 99.5 mA  
 R = 285 Ω  
 P<sub>o</sub> = 705 mW

Characteristic line: linear

C<sub>i</sub> negligibly small

L<sub>i</sub> negligibly small

The maximum permissible value pairs of the external inductances (L<sub>o</sub>) and capacitances (C<sub>o</sub>) have to be taken from the following table:

1. Supplement to Certificate No. TÜV 07 ATEX 345770

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	Ex ia IIC		Ex ia IIB	
L <sub>o</sub>	0.68 mH	0.5 mH	5 mH	2 mH
C <sub>o</sub>	59 nF	67 nF	240 nF	290 nF

Aforementioned maximum values are valid at coincidental appearance of concentrated capacitance and inductance.

Output circuit  
(terminal 3 bis 17)

$U \leq 250 \text{ V}$ ,  $I \leq 5 \text{ A}$ ,  $P \leq 100 \text{ VA}$ ,  $\cos \varphi \geq 0.7$  resp.  
 $U \leq 250 \text{ V}$ ,  $I \leq 0,25 \text{ A}$ ,  $P \leq 50 \text{ W}$

The sensor circuit is safely galvanically separated from auxiliary power circuit and output circuit up to a peak crest value of the voltage of 375 V.

Furthermore the equipment was evaluated according to the standards EN 60079-0:2009, EN 60079-11:2007 and EN 60079-26:2007.

All other data apply unchanged for this supplement.

The device will then be labeled as follows:

 II (1) G [Ex ia Ga] IIC

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) Test documents are listed in the test report No. 11 203 091922.

(17) Special conditions for safe use

none

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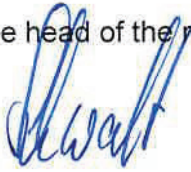
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(18) Essential Health and Safety Requirements

no additional ones

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The head of the notified body

A handwritten signature in blue ink, appearing to read "Schwedt". The signature is stylized and cursive.

Schwedt

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