

Prüf- und Zertifizierungsstelle

ZELM Ex

(1) EC-Type Examination Certificate

(2) Equipment and Protected Systems Intended for Use in Potentially Explosive Atmospheres - Directive 94/9/EC

(3) EC-Type Examination Certificate Number

ZELM 03 ATEX 0186 X

(4) Equipment: Explosion-protected Loop Calibrator Type Ex-mAG 1000*

(5) Manufacturer: ecom instruments GmbH

(6) Address: D-97959 Assamstadt

(7) The design of this equipment and its various approved embodiments are defined in the attachment to this type examination certificate.

(8) The Prüf- und Zertifizierungsstelle ZELM, notified body no. 0820 in accordance with Article 9 of the EC Council Directive dated March 23, 1994 (94/9/EC), certifies that this equipment has been found to conform with the essential health and safety requirements for the design and construction of equipment and protected systems for proper intended use in potentially explosive areas in accordance with Appendix II of the directive.

The results of the test are documented in the confidential test report no. ZELM Ex 0740312240.

(9) The essential health and safety requirements are met by virtue of conformity with

EN50 014: 1997+A1+A2

EN 50.020: 2002

(10) If the certification number is followed by an "X", then this indicates that special conditions exist for the safe operation of the equipment. These special conditions are contained in the attachment to this certificate.

(11) This EC-type examination certificate only refers to the design, checking and testing of the specified equipment or protected system in accordance with directive 94/9/EC. Further requirements contained in this directive may apply with regard to the manufacturing process and the supply of the equipment or protected system. Such requirements are not covered by this certification.

(12) The equipment must be labelled with the following information:



II 2 G Eex ia IIC T4

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Braunschweig, October 31, 2003

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EC-type examination certificates without signature and stamp are not valid.
This EC-Type examination certificate may only be circulated without alteration.
Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex

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ZELM Ex

Attachment

(13)

(14) EC-Type Examination Certificate ZELM 03 ATEX 0186 X

(15) Description of the equipment

The explosion-protected mA calibrator 1000* serves as a compact source and measuring instrument for mobile measurements of current loops (0...24 mA) and DC voltages (up to 50 V) in potentially explosive atmospheres as well as in areas with no increased risk of explosion. The equipment is fitted with a power supply in the form of an integral rechargeable battery. This rechargeable battery is not designed to be replaced.

The Loop Calibrator Type Ex-mAG 1000 L may only be carried in the designated leather case when in the potentially explosive atmosphere.

The housing of the Loop Calibrator Type Ex-mAG 1000 is equipped with an electrostatic conductive housing and must not be carried in a leather case for this reason.

The permitted ambient temperature is -10°C to $+50^{\circ}\text{C}$.

Electrical data

Power supply circuit from an integral battery, EEx ia IIC The internal circuits are intrinsically safe.

Measuring circuit type of ignition protection: intrinsically safe, EEx ia IIC for connection to certified intrinsically safe circuits
Maximum values:

a) Current measuring circuit active
(0...24mA) (characteristic curve linear)

Highest permissible external inductivity $U_0 = 27.6 \text{ V DC}$
 $I_0 = 96.1 \text{ mA}$
 $C_0 = 66 \text{ nF}$
 $L_0 = 2.5 \text{ mH}$

b) Voltage measurement (0...50V)

$U_i = 50 \text{ V DC}$
 $I_i = 24 \text{ mA}$
 $C_i = 20 \text{ nF}$

Effective internal capacitance

The effective internal inductance is negligibly small.

Measurements on non-intrinsically safe circuits

Measurement inputs Maximum values: $U = 50 \text{ V DC}$
 $I = 24 \text{ mA}$

(16) Test report no.

ZELM Ex 0740312240

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Attachment to EC-Type Examination Certificate ZELM 02 ATEX 0120 X

(17) Special conditions

1. The appropriate operating mode or measuring range must be set before connecting the equipment.
2. The equipment contains an integral rechargeable battery. It must be changed only outside the potentially explosive atmosphere using the designated charger, type LG mAG 1000.
3. The equipment labelled with the designation Ex-mAG 1000 L must be carried in the designated leather case when in the potentially explosive atmosphere.
4. The operating instructions must be followed.

(18) Essential health and safety requirements

Met by standards

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