

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 04 ATEX 0200

(4) Unit **Explosion-protected PDA Type i.roc 6* -Ex / Type i.roc 6*N -Ex**

(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 0160412277.

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

EN 50 014: 1997+A1+A2

EN 50 020: 2002

EN 50 281-1-1:1998

(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 unit 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
	II 2 D	T 95°C IP65

Zertifizierungsstelle **ZELM Ex**

Signature

Dipl.-Ing. Harald Zelm

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Prüf- und Zertifizierungsstelle

ZELM Ex

Attachment

(13)

(14)

EC-Type Examination Certificate ZELM 04 ATEX 0200

(15) Description of the unit

The explosion-protected PDA (Personal Digital Assistant) is used for mobile data management in potentially explosive atmospheres. Other accessories such as additional memory can be integrated into the unit. The asterisk (*) in the type designation is replaced with a two-digit number. This number is used to specify unit models that do not represent a safety-relevant variation of the device. Data communication with other devices is performed exclusively by means of a wireless connection via integrated Bluetooth / WLAN and IrDa interfaces.

In potentially explosive atmospheres, the approved unit may be operated for the purpose of exchanging data only in conjunction with other devices.

The unit is fitted with a power supply in the form of an integral rechargeable battery. This rechargeable battery is not designed to be replaced.

In potentially explosive atmospheres, the explosion-protected PDA Type i.roc 6*N -Ex may only be cleaned using a damp cloth. The housing of the explosion-protected PDA Type i.roc 6* -Ex is electrostatically conductive. Consequently, the usually required warnings are not necessary in this instance.

The permitted ambient temperature is -10 °C to +50 °C.

Electrical Data

Power supply circuit

from an internal rechargeable battery, EEx ia IIC The internal circuits are intrinsically safe.

WLAN output

Tx power: 15 dBm (31.6 mW)

Bluetooth output

Tx power: 1 mW (Class II)

Note:

The operating instructions must be followed. In particular, the following instructions are to be adhered to:

- The unit must not be opened within the potentially explosive area.
- Charging must be performed outside the potentially explosive area using the designated charger Type LG x10.
- In potentially explosive atmospheres, the explosion-protected PDA Type i.roc 6*N -Ex may only be cleaned using a damp cloth. All instructions printed on the device must be adhered to.

(16) Test report no.

ZELM Ex 0160412277

(17) Special conditions

Not applicable

(18) Essential health and safety requirements

Satisfied by compliance with the relevant standards

Zertifizierungsstelle **ZELM Ex**

Braunschweig, 29.03.2004

Signature

Dipl.-Ing. Harald Zelm

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Prüf- und Zertifizierungsstelle

ZELM Ex

1. Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to the EC-Type Examination Certificate

ZELM 04 ATEX 0200

Equipment: **Explosion-protected PDA type i.roc 6*-Ex and/or type i.roc 6*N- Ex**
Manufacturer: **ecom Instruments GmbH**
Address: **D-97959 Assamstadt**

Description of the addition

The first addition to the EC-type examination certificate relates to the internal circuit layout and the designation.

The technical data and the information provided on the EC-type examination certificate remain unchanged.

The explosion-protected PDA type i.roc 6* -Ex and/or type i.roc 6*N -Ex may now be manufactured subject to compliance with this modification.

The equipment must now be labelled with the following information:



II 2 G EEx Ia IIC T4
II 2 D T 99°C IP65

Test report no.

ZELM Ex 1080412323

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

Zertifizierungsstelle **ZELM Ex**

Braunschweig, October 25, 2003

Dipl.-Ing. Harald Zelm

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Prüf- und Zertifizierungsstelle

ZELM Ex

2. Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to the EC-Type Examination Certificate

ZELM 04 ATEX 0200

Equipment: Explosion-protected PDA type i.roc 6*-Ex and/or type i.roc 6*N-Ex
Manufacturer: ecom Instruments GmbH
Address: D-97959 Assamstadt

Description of the addition

This 2nd addition to the EC-type examination certificate relates to the integration of an LED scanner.

The technical data and designation as well as the information provided on the EC-type examination certificate remain unchanged.

The explosion-protected PDA type i.roc 6* -Ex and/or type i.roc 6*N -Ex may now be manufactured subject to compliance with this modification.

Test report no. ZELM Ex

1110412328

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

Prüf- und Zertifizierungsstelle

ZELM Ex

3. Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to the EC-Type Examination

Certificate ZELM 04 ATEX 0200

Equipment: **Explosion-protected PDA type i.roc 6*-Ex and/or i.roc 6*N-Ex**
Manufacturer: **ecom instruments GmbH**
Address: **Industriestr. 2 D-97959 Assamstadt**

Description of the addition

The third addition to the EC-type examination certificate relates specifically to the internal layout without significant changes to the printed circuit board layout. In addition, the equipment may be alternatively fitted with an additional RFID reader and a pistol grip (with button) or with a handle (corresponds to pistol grip, however, without button).

The ignition protection type/designation is as follows:

II 2G	EEx ia	II C T4
II 2D	T99°C	IP 65

The technical data and designation as well as the information provided on the EC-type examination certificate remain unchanged.

Test report no. ZELM Ex

0970512407

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

ZELM certifying body

Braunschweig, July 15,
2005

Prüf- und Zertifizierungsstelle

ZELM Ex

4. Addition

(Addition in accordance with EC Directive 94/9 Appendix III Item 6)

to the EC-Type Examination

Certificate ZELM 04 ATEX 0200

Equipment: **Explosion-protected PDA type i.roc 6*-Ex or i.roc 6*N-Ex**
Manufacturer: **ecom instruments GmbH**
Address: **Industriestr. 2, D-97959 Assamstadt**

Description of the addition

The fourth addition to the EC-type examination certificate relates to expanding the explosion-protected PDA by the type i.roc 62. -Ex, which differs from the previous model particularly in its internal layout. This device can be equipped with the previously approved accessories and also, as an alternative, with an additional HART modem.

These possible, approved accessories are listed in the safety instructions.

The designation/ignition protection type for this version is as follows:

II (1)2 G EEx ia IIC T4
II (1)2 D T99°C IP 65

This version of the explosion-protected PDA type i.roc 62. -Ex may also be used with an additional HART modem as an alternative. Measurements on intrinsically safe HART circuits conducted in areas that require Category 1 are approved subject to compliance with the following connection values.

Electrical data:

HART modem

In ignition protection type: intrinsically safe, EEx ia IIC

Maximum values: $U_o = 1.4 \text{ V}$
 $P_o = 0 \text{ W}$
 $I_o = 0 \text{ mA}$
maximum permissible external capacitance $C_o = 1000 \text{ }\mu\text{F}$
maximum permissible external inductance $L_o = 1000 \text{ mH}$

or

for the connection of certified intrinsically safe circuits with the following maximum values:

$U_i = 30 \text{ V}$
 $I_i = 333.3 \text{ mA}$
 $P_i = 1 \text{ W}$

The effective internal inductance L_i and capacitance C_i are negligibly small or measurements are not on intrinsically safe circuits

Measurement inputs

Maximum values

$U_m = 30 \text{ VDC}$
 $I = 333.3 \text{ mA}$

All other electrical data and the type of designation as well as the information provided on the EC-type examination certificate remain unchanged.

Prüf- und Zertifizierungsstelle

ZELM Ex

Fourth Addition to the EC-type examination certificate ZELM 04 ATEX0200

Test report no.

ZELM Ex 0340612459

Special conditions

Not applicable

Essential health and safety requirements

The essential health and safety requirements are met by virtue of conformity with the standards listed in the EC-type examination certificate.

Zertifizierungsstelle **ZELM ex**

Braunschweig, July 12, 2006

Dipl.-Ing. Harald Zelm

Translation

Prüf- und Zertifizierungsstelle (Test and Certification Body)

ZELM Ex

5. Addition

(addition in accordance with EC Directive 94/9 Annex III Clause 6)
**to the EC type-examination certificate
ZELM 04 ATEX 0200**

Device: Explosion-proof PDA, Type i.roc 6*-Ex and i.roc 6*N-Ex
Manufacturer: ecom Instruments GmbH
Address: Industriestr. 2, D-97959 Assamstadt

Description of the addition

The fifth addition to the EC type-examination certificate concerns the examination of an additional device head (laser scanner) for all device types as well as the internal design. Permissible features are listed in the safety notes.

The addition also concerns the extension of the permissible ambient temperature range, however, only for the explosion-proof PDA, Type i.roc 62.-Ex.

The permissible ambient temperature range for the

explosion-proof PDA, Type i.roc 62.-Ex,

will in future be from -20°C to +50°C.

The technical data and identification as well as the information provided in the EC type-examination certificate remain unchanged.

Test Report No.
ZELM Ex 1550612512

Special conditions
Not applicable

Fundamental safety and health requirements

The fundamental safety and health requirements remain fulfilled through compliance with the standards listed in the EC type-examination certificate.

Certification Body ZELM Ex

Braunschweig, 11.04.2007

((Signature, stamp: Test and Certification Body ZELM Ex))
Dipl.-Ing. Harald Zelm

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Prüf- und Zertifizierungsstelle (Test and Certification Body) ZELM Ex * Siekgraben 56 * D-38124 Braunschweig, Germany

Prüf- und Zertifizierungsstelle (Test and Certification Body) ZELM Ex

6th Supplement

(Amendment in accordance with EC directive 94/9, appendix III number 6)
to EC-Type Examination Certificate

ZELM 04 ATEX 0200

Description of the supplement

The 6th supplement to the EC-Type Examination Certificate concerns modifications of the constructional layout of the device and the associated device heads. The technical data and the designation as well as the information provided in the EC-Type Examination Certificate remain unaffected.

Test report No.
ZELM Ex 0790712562

Special conditions
not applicable

Fundamental health and safety requirements

The fundamental health and safety requirements are fulfilled through compliance with the standards specified in the EC-Type Examination Certificate.

Certification body **ZELM Ex**

Brunswick, 17.09.2007

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Braunschweig

Translation

7th Amendment

(Amendment in accordance with EC directive 94/9, appendix III number 6) **ZELM ex**

to EC type approval test certificate

ZELM 04 ATEX 0200

Device: Explosion-shielded PDA type i.roc 6* -Ex & type i.roc 6*N -Ex
Manufacturer: ecom instruments GmbH
Address: D-97959 Assamstadt

Description of the amendment

The 7th amendment to the EC type approval test certificate concerns modifications made to the constructional layout of the explosion-shielded PDA (type i.roc 62. -Ex), the associated device heads, accessories and a harmonisation of the designation (excluding this model). Other versions of the device are not affected by this amendment.

The technical data and the information provided in the EC type approval test certificate remain unaffected.

Ignition protection class / designation:

 II (1)2G Ex ia IIC T4
II (1)2D T99°C IP65

The permissible ambient temperature range of this model is unchanged:
-20 °C to +50 °C

The safety precautions in the manual are to be observed, particularly with regard to the correct designation, the applicable ambient temperature range and the permitted accessories.

Test report No.

ZELM Ex 1680812706

Basic health and safety requirements

Furthermore, the basic health and safety requirements are met by virtue of conformance with:

EN 60079-0:2006 EN 50020 :2002 EN 50281-1-1 :1998

Brunswick, 30.06.09

ZELM EX

Certification body

Zertifizierungsstelle (Certification Body) ZELM ex

Dipl.-Ing. Harald Zelm

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(Test and Certification Body) ZELM ex

ZELM EX

Prüf- und Zertifizierungsstelle

Siekgraben 56 D-38124 Braunschweig