



Safety instructions

**Ex-IT 700\*\***



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## 1. Application

The Ex-IT 700 is a portable Windows CE terminal for industrial use in explosion-endangered areas of Zones 2 and 1 and fire-damp-endangered underground mining.

## 2. Safety references

This operating manual contains information and safety recommendations which must be complied with in order to guarantee safe functioning of the unit under the conditions described.

Please read these operating instructions very carefully before using the unit !

In case of doubt (for example due to mistakes in the translation) the German operating instructions are assumed to be valid.

## 3. Malfunctioning and inadmissible operation

As soon as one suspects that the safety of the equipment is endangered, it must be taken out of service and immediately removed from the Ex-area. Precautions must be taken to prevent its unintentional reuse. We recommend that the unit be returned to the manufacturer for checking.

For example, the safety of the unit could be endangered when:

- damage to the housing is visible.
- the unit was subjected to improper strain.
- the unit was incorrectly stored.
- the unit was damaged in transit.
- the lettering on the unit is unreadable.
- malfunctioning occurs.
- the permissible limiting values were exceeded.

## 4. Safety regulations

In order to exclude incorrect operation of the unit, its use assumes that the user is aware of and complies with the usual safety regulations.

- the unit may not be opened in the Ex-area.
- the accumulator may only be charged with the LG Ex-IT 700 outside the Ex-area.
- only the AM Ex-IT 700 accumulator pack approved by the manufacturer may be used.
- It must be ensured that the unit is not taken into Zone 0.
- avoid the use in aggressive acids and alkalis.
- only the accessories specified may be used.
- the taking of spare accumulator packs into the Ex-area is not allowed.

## 5. Ex-Data



EG-Type-approval

test certificate-no.: ZELM 02 ATEX 0084

Ex-Designation: II 2 G EEx ia IIC T4

Approved for Zone 1, equipment group II, gas group C explosions-endangered gases, vapours or fog, temperature class T4.

EG-Type approval

test certificate-no.: IBExU 02 ATEX 1073 X

Ex-Designation: I M2 EEx ia I

Approved for use in firedamp-endangered underground mining, equipment group I, category M2.

Following equipment combinations and their appropriate identification can be used:

Variation	Scanner	W-LAN	Memory
Ex-IT 700			
Ex-IT 700 S	X		
Ex-IT 700 R		X	
Ex-IT 700 M			X
Ex-IT 700 SR	X	X	
Ex-IT 700 SM	X		X
Ex-IT 700 RM		X	X

## 6. Technical Data

Ambient temperature Ta: -5 ... +50°C

Storage temperature: -20 ... +70°C

Accupack: AM Ex-IT 700

Charging unit: LG Ex-IT 700

Operating life: approx. 10 hours  
(Standard version)

Dimensions: 195 x 90 x 40 mm

Weight: approx. 650g

CE-Designation: 0102

## 7. Commissioning

See enclosed original operating instructions. Before commissioning the equipment, please read the safety and operating instructions very thoroughly.

Charge the accumulator fully before commissioning the equipment for the first time!

### 7.1 Backup battery

The backup battery is not needed due to the Ex-stipulations. The power supply is taken over by the built-in Ex-accu. However, the backup function is guaranteed, so that the AM Ex-IT 700 has sufficient residual capacity to store the data for at least 3 days when the display of the unit is switched off.

In addition, the data can be saved by the use of so-called flash-discs which guarantee that no data is lost even by loss of supply voltage. Applications which were started from a flash-disc must possibly have to be restarted.

## **7.2 Changing the accumulator of the Ex-IT 700**

Before changing the accumulator, it is important to ensure that the saving of documentation, data, access settings and software is carried out. ecom Instruments GmbH accept no responsibility for the loss of data or the consequences thereof.

- the accumulator module may only be changed outside the Ex-area.
- the taking of spare accumulator modules into the Ex-area is not allowed
- after the saving of the data has been carried out, remove the 2 safety screws holding the strap on the top side.
- in the opening which is now visible, use a screwdriver to lever the accumulator compartment of the AM Ex-IT 700 upwards.
- carefully remove the connector of the unit.
- attach the plug to the new accumulator of the AM Ex-IT 700.
- carefully replace the accumulator into the housing shell.
- replace the safety screws of the strap holder.

- visually check the correctness of the assembly.
- only charge the accumulator with the LG Ex-IT 700 charger.
- press the >ON/OFF-button < twice to initiate the set-up procedure.

## **7.3 Charging procedure**

Take care of the accumulator of the Ex-IT 700 by always keeping it fully charged.

Open the charging socket and attach the charger, close the charging socket again after charging is finished as well as before entering the Ex-area.

## **7.4 Accessories**

### **7.4.1 Headset**

Only the headsets approved by ecom may be used.

## 7.4.2 Data transmission

### 7.4.2.1 Ex-IT 700 S, M, SM

Data transmission takes place over a standard IrDA-interface. Hardware and software from other companies can be used. The corresponding conditions are to be complied with.

### 7.4.2.2 Ex-IT 700 R, SR, RM

Data transmission takes place over a standard IrDA-interface or the built-in W-LAN card direct to a network. Hardware and software from other companies can be used. The corresponding conditions are to be complied with.

## 7.4.3 Equipment configuration

No changes to the equipment can be made from the user side. The allocation of the CF-slots may only be carried out by the manufacturer.

## 8. Repairs

Should repairs be necessary, then the conditions of ELEX V must be complied with. We recommend that repairs be carried out in the manufacturer's factory as it is necessary for the unit to be checked for technical and safety reasons.

## 9. Cleaning and maintenance

The unit should only be cleaned with a moist cloth or sponge. Detergents or abrasive materials should not be used.

We recommend that the function and accuracy of the unit be checked every two years by the manufacturer.

## 10. Guarantee & liability

For this product, ecom Instruments GmbH guarantees the function and material for a period of two years under normal operating and maintenance conditions.

The guarantee does not apply to products which are improperly used, modified, neglected, damaged in accidents or exposed to abnormal operating conditions.

Claims under the guarantee can be made by returning the defective equipment to the factory. We reserve the right to repair, renew the settings or exchange the device.

The above-mentioned guarantee conditions are the sole and only right of the purchaser to compensation, are exclusively valid and replace all other contract or legal warranty obligations. ecom Instruments GmbH accepts no responsibility for special, direct, indirect, accompanying or consequential

damage as well as losses including the loss of data which may arise through the use or acquisition of the equipment independent of whether it was caused by violation of the warranty obligation, lawful or unlawful action, action in good faith or any other action.

If in certain countries the limitation of a legal guarantee as well as the exclusion or limitation of accompanying or consequential damage is not permissible, it may be that the above-mentioned limitations and exclusions are not valid for every purchaser. Should any such clauses of these guarantee terms be declared null and void or not realisable by a competent court, then the effectiveness or enforceability of any of the other conditions of these guarantee terms will be unaffected by the court decision.

## 11. Declaration of EC-conformity

We **ecom Instruments GmbH**,  
**Industriestraße 2, D-97959 Assamstadt**

declare under our sole responsibility that the product

**Ex-IT 700 \*\***

to which this declaration relates is in accordance with the provision of the following directives

**94/9/EG**                      Equipment and protective systems in explosion-endangered areas

and is in conformity with the following standards or other normative documents

**EN 50014:1997**              Electrical equipment for explosion-endangered areas

**EN 50020:1994**              Electrical equipment for explosion-endangered areas  
Intrinsic safety "i"

**EN 60950**                      Safety of information technology installations

**ETS 300 826**

**ETS 300 328**

All standards mentioned in the attached original operating instructions were complied with.

ecom instruments GmbH

Assamstadt, 29.05.02

Rolf Nied  
Managing Director



## 12. EC type approval



Prüf- und Zertifizierungsstelle

ZELM Ex



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

(Titelblattsatz)

- (2) Equipment and PROTECTO Systems Interactive Inc in  
Protective Equipment Group - Directive 90/269
- (3) EC-TYPE-EXAMINATION CERTIFICATE number:  
**ZELM 02 ATEX 0084**
- (4) Equipment: **Protecto PC type Ex-1 FM**
- (5) Manufacturer: **Protecto Instruments GmbH**
- (6) Address: **U-47000 Hammelburg**
- (7) The equipment and any applicable similar models are specified in Part A of this certificate and the documents listed in Part B.
- (8) The Prüf- und Zertifizierungsstelle ZELM (1) is notified under the 93/47 EC in accordance with Article 9 of the Council Directive (93/47/EEC) of 23 October 1993, certifies that this equipment 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 ZELM/02/0084/12/03
- (9) Compliance with the Essential Health and Safety Requirements has been assessed by sample tests with:  
**EN 50 516: 1997-01-02 EN 50 520: 1994**
- (10) Where sign "D" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule D-Tex certificate.
- (11) The EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive (93/47). Further requirements of the Directive apply to the manufacturing process and supply of this equipment in protective systems. These are not covered by this Certificate.
- (12) The marking of the equipment shall include the following:



0 2 D 88a in EC 14

Zertifizierungsstelle ZELM Ex



Hammelburg, May 6, 2003

*[Signature]*  
Thor-Ing. Manfred Jahn

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Prüf- und Zertifizierungsstelle

ZELM Ex



### SCHEDULE

#### (14) EC-TYPE-EXAMINATION CERTIFICATE ZELM 02 ATEX 0084

##### (14) Description of equipment

The Protecto PC type Ex-1 FM is used to receive data transmission in the hazardous area. Its functionality is LAN-net for wireless communication, a barcode scanner or additional memory may be integrated.  
An INTRINSIC ICA interface enables communication to other equipment by infrared signals on short distances.  
Additionally the following function is used for receipt and playback of spoken and audio signals. The equipment must be charged with the appropriate charging set outside of the hazardous area (14).

##### Electrical data

Supply voltage: type of protection intrinsic safety Ex ia IIC to III from the built-in battery.  
The internal circuits are intrinsically safe.

##### Weather-related

type of protection intrinsic safety Ex ia IIC.  
For connection to the appropriate EECM location (14).

maximum ambient temperature: -5 °C to +55 °C

##### References

The instruction manual has to be considered.  
Changing of the equipment with the appropriate charging set type LC Ex-1 FM and a change of the battery must be done outside of the hazardous area.  
Only hardware listed by the instruction manual are to be used.

##### (14) Report No.

ZELM 02 0084/12/03

##### (17) Special conditions for affixing

not applicable

##### (18) Essential Health and Safety Requirements

not applicable

Zertifizierungsstelle ZELM Ex



Hammelburg, May 6, 2003

*[Signature]*  
Thor-Ing. Manfred Jahn

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(1) This examination certificate addresses equipment and similar models under the conditions that only be considered when identical. Changes or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM (1) in the case of requests for Declaration and approval.

Print: see Zertifizierungsstelle ZELM (1) / Hammelburg 01-13019 Hammelburg

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Print: see Zertifizierungsstelle ZELM (1) / Hammelburg 01-13019 Hammelburg



## 12. Mining certificate

IBExU Institute for Safety Technology GmbH  
An Institute of the TU Bergakademie Freiberg




### (1) EC – TYPE EXAMINATION CERTIFICATE

- (2) Equipment and protective systems intended for use according to certain regulations in potentially explosive atmospheres – Directive 94/9/EC
- (3) EC Type examination certificate number: **IBExU02ATEX 1073 X**
- (4) Equipment or protective system: Pocket-PC Ex-IT 700\*\*
- (5) Manufacturer: ecom instruments GmbH
- (6) Address: Industriestrasse 2  
D-97959 Assamstadt
- (7) The type of design of this equipment or protective system as well as the various permissible versions are specified in the appendix to this type examination certificate.
- (8) IBExU, Institute for Safety Technology, as NOTIFIED BODY AUTHORITY no. 0637 according to Article 9 of the Directive of the Council of the European Union dated March 23rd, 1994 (94/9/EC), hereby certifies the fulfillment of the Essential Health and Safety Requirements relating to the design and the construction of equipment and protective systems intended for use according to certain regulations in potentially explosive atmospheres in line with Appendix II of the Directive.

The examination and test results are recorded in the confidential report IB-02-3-230 dated 24.05.2002.

- (9) The Essential Health and Safety Requirements are fulfilled on account of compatibility with EN 50014:1997+A1+A2 and EN 50020:1994.
- (10) Should the sign "X" appear at the end of the certification number, attention is drawn to special conditions for the safe use of the equipment or protective system which can be found in the appendix to this EC-type examination certificate (see 17).
- (11) This EC TYPE EXAMINATION CERTIFICATE only refers to the design and construction of this specified equipment or protective system. The additional requirements of this Directive which are valid for the manufacture and supply of this equipment or protective system are not covered by this certificate.
- (12) The marking of the equipment must contain the following details:

 **I M2 EEx ia I**  
-5°C < Ta < +50°C

IBExU Institute for Safety Technology  
Fuchsmühlenweg 7 - D-09599 Freiberg  
Tel: 03731 3805-0 - Fax: 03731 23650

Certification authority Explosion Protection Freiberg, 2002.05.24  
The person in charge page 1/3

IBExU Institute for Safety Technology GmbH  
An institute of the TU Bergakademie Freiberg

(13)

### Appendix

(14) to the EC TYPE EXAMINATION CERTIFICATE IBExU02ATEX 1073 X

#### (15) Description of the equipment or protective system

The pocket PC is a portable intrinsically safe apparatus for use in potentially explosive areas of Group I with intrinsically safe electrical circuits of category M2. It is intended for data management and can, as an alternative, be fitted with WLAN card, bar-code scanner or additional memory. An additional IrDA interfaces enables infrared signal transmission. Furthermore, a special headset can be attached. The accumulator is charged outside the potentially explosive area using a special charger.

#### Electrical data and characteristics

Type designation:	Ex-IT 700**
Protective rating of housing:	IP54
Power supply:	Lithium-Ion Polymer accumulator AM Ex-IT 700
Headset connection:	Ignition protection type EEx ia IIC, only for ecom headset

#### Technical safety instruction

The charging and replacement of the accumulator must be done outside the potentially explosive area. Only ecom headsets are to be used, see EC Type Examination Certificate ZELM02ATEX0084.

Further details are specified in the test details (see appendix).

#### (16) Test report

The substantiation of the explosion protection is described in detail in the confidential test report IB-02-3-230 dated 24.05.2002.

#### (17) Special conditions

The display is to be protected against impact damage. In the case of damage to the display, the Pocket-PC is to be withdrawn from use immediately.

#### (18) Essential Health and Safety Requirements

Assured by compliance with the standards (see [9])

On behalf of Freiberg, 27.05.2002

(Dr. Lösch) page 2/3

**Appendix**

**to the EC TYPE EXAMINATION CERTIFICATE IBExU02ATEX 1073 X**

**Test documentation**

Serial-no.	Signed on:
(1) Description of Pocket-PC Ex IT 700**	14.05.02
(2) 600 G 8000 Identification	06.05.02
(3) 600 G 9000 Back view of housing	08.04.02
(4) 600 G 9100 General view of housing	08.04.02
(5) 600 G 9800 Carrying strap	29.04.02



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