NOKIA

DX 200

BSC3i S10.5

Warnings and Cautions

Site Documents

BSC3018_P

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Contents

List of figures

Summary of changes

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made to previous issues.

Changes for Issue 2-0

Class 1 Laser Product information added.

Power safety and grounding information added.

Changes for Issue 1-1

Minor corrections.

Changes for Issue 1-0

CAX 70268/1 en	8.1.1997	First approved version.

1 About this document

1.1 Introduction

Please exercise great caution whenever you work with the Nokia DX 200 and IPA2800 equipment.

This document details the recommended safety precautions to be followed when working with the equipment described in the user manuals.

Installation, commissioning, integration and maintenance measures concerning the network element may be performed by authorized personnel only. The equipment must be installed and located so that persons other than authorized personnel do not have access to its dangerous or sensitive parts.

1.2 Safety guidelines

The safety guidelines are designed so that:

- *Warnings* alert the reader to dangers which may cause loss of life, physical injury or ill health in any form.
- *Cautions* are used to indicate possible damage to equipment but not danger to personnel.

Note

The word ‘attention’ has been used as a synonym for ‘caution’ in some of the warning labels.

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2 Warnings

Hazardous energy levels

Hazardous energy levels are present within this system. Any person who performs maintenance or commissioning measures on this equipment must be made aware of this and take the following precautions to minimize the risk of an electrical shock:

- Ensure that applicable high voltage safety precautions are implemented before attempting to work on the hardware of the system with the power connected
- Hazardous energy levels can be induced if the equipment is not earthed/grounded correctly. Ensure that all earth/ground connections are secure.

All peripherial devices and measuring and service equipment that are used in conjunction with the network element, or in the exchange room in general, must be powered by an isolating transformer in order to protect the operation and maintenance personnel against the danger of an electric shock.

The risk of accessing hazardous energy levels mainly applies to the power distribution system and the Power Supply units in the cabinets. For this reason, the distributors and Power Supply units are provided with special warning labels attached, described in Figure 1. Elsewhere in the system the risk is virtually nonexistent if the electricity and earth/ground connections are secure and correct, and the equipment is in good condition.

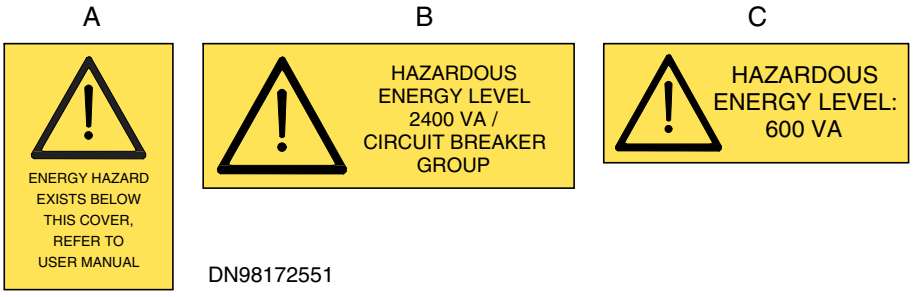

Figure 1. Energy hazard labels

Precautions for lead acid batteries

Lead acid batteries might be used to power this equipment. The fluids contained within the batteries are a health hazard. Follow the precautions listed below whenever you do any maintenance or installation work with the batteries.

- The incorrect disposal of lead acid batteries constitutes a health and environmental hazard. Any attempt to burn the batteries may result in an explosion and/or generation of toxic fumes.
- Should a lead acid battery suffer damage, move it into a well ventilated area and avoid any contact with the corrosive fluid.
- Neutralize any spilled acid with generous amounts of a solution of baking soda and water. Wipe off all traces of soda.
- Ensure that protective full face shields, rubber gloves and aprons are worn and insulated tools are used when working with batteries,
- If a damaged lead acid battery is removed from the equipment, any exposed contacts must be insulated prior to disposal.
- The disposal of lead acid batteries is subject to the control of substances hazardous to health act. Therefore all local regulations concerning their disposal must be observed.

Battery weight

Care must be taken when lifting or moving the batteries to avoid any injuries.

Cabinet weight

Care must be taken when handling the cabinets. Detailed information on the cabinet weight can be found in the *Engineering Description* manual for the network element in question. At least two persons are needed to lift one cabinet.

Plug-in unit weight

Care must be taken when handling heavy plug-in units to avoid any injuries. Heavy units must not be carried by the handle which is meant just for pulling the unit out of the rack.

Sharp edges

Some parts of the equipment may have sharp edges . Whenever you perform any maintenance or installation work at the network element, observe great caution to avoid any injuries. This is especially important when connecting cables, installing or replacing plug-in units, or installing or handling the cabinets. When possible, wear protective gloves when you perform any of these tasks.

The cabinet doors are provided with warning stickers of the type shown below:

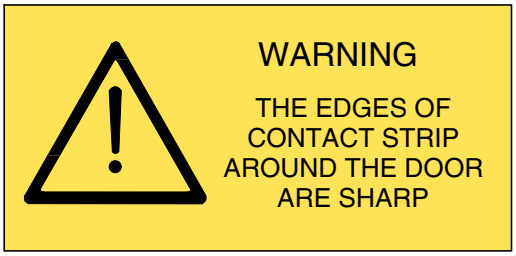

Figure 2. Cabinet door warning label.

3 Cautions

Storage and transportation

During storage and transportation , the units of the Nokia network elements must remain in their original packaging in order to avoid mechanical damage, to maintain traceability and to ensure protection against static electricity. Handle the equipment with care. Do not drop any components of the equipment or packaging containing them.

To ensure the proper functioning of the network element up to the end of its design life, make sure that the transportation, storage and operation conditions are compliant with the manufacturers recommendations. For the recommended temperature, humidity, mechanical stress and air pressure values during storage, transportation and operation, please refer to the *Site Requirements*.

The SECMO plug-in unit

Any attempt to open the casing of the SECMO plug-in unit will cause the deletion of all data stored in its memory circuits. If you encounter any defects in the functioning of the SECMO, please contact the manufacturer. The warranty on the SECMO unit is void if any of the screws in its casing have been unscrewed.

Plug-in units containing Class 1 Laser Products

Appropriate precautions must be taken when dealing with plug-in units which include Class 1 Laser Products. These are either marked with a white label inside the unit, or in the case the unit incorporates connectors, a printed label on the front plate of the plug-in unit (see figure below).

Avoid looking directly at the beam if the laser is exposed.

Figure 3. Class 1 Laser Product text

The warranty of the manufacturer

Any warranties that Nokia may have given to the customer are void if the customer fails to comply with the conditions and terms stated by Nokia. Neither shall Nokia not be liable for any damages whatsoever arising out of an accident or any kind of misuse of the software or hardware.

Note

Note especially that Nokia is not liable for any damages if failure of the equipment has resulted from hardware configuration changes made without a permission by Nokia.

Electromagnetic interference (EMI)

The Nokia network elements are compliant with the EMC directive 89/336/EEC, and they are tested to meet the requirements of EN 300 386-2 (harmonized product family standard). They are also tested to meet the requirements set in FCC Rules Title 47, Part 15, Subpart B, Unintentional Radiators, 1999. The exchanges are designed to withstand electromagnetic interference occurring in a normal industrial environment. The emission of electromagnetic interference does not exceed the corresponding limits.

The Nokia network elements endure electromagnetic interference occurring in normal installation sites. Efficient protection against EMI can only be guaranteed, however, when the network element is operated with the cabinet doors properly closed.

For more information, see the *Site Requirements* for the network element.

Fire safety

During normal operation and when unattended, the cabinet doors of the network element must be kept closed also to ensure efficient protection against fire propagation.

Use of photographic flash

The light of a flash may penetrate the protective covers of EPROM circuits and disturb their functioning, or even cause damage in them. For this reason, an exchange in operation should not be photographed using a flash.

Installation and maintenance

The instructions in the *Installation Manual* must be strictly followed when installing or maintaining this equipment. Failure to follow the instructions may be dangerous to the installation personnel, cause serious damage to the equipment or malfunction of the equipment - possibly after a considerable period of time .

Equipment traceability and identification

The plug-in units are delivered complete with product identification labels which are permanently attached to them and designed to last throughout the design life of the network element. Ensure that product identification labels are in their places.

3.1 Power feed and grounding

The grounding/earthing of the Nokia DX 200 and IPA2800 network elemnts must be arranged following strictly the instructions given in the user manuals in order to protect the equipment against damaging overvoltages and the installation and maintenance personnel against hazardous energy levels.

All peripherial devices and measuring and service equipment that are used in conjunction with the network elements, or in the exchange room in general, must be powered by an isolating transformer in order to prevent connecting the mains supply grounding to the exchange equipment, and thus causing malfunction or damage in the equipment.

Power supply grounding rules in DX200 M92-mechanics network elements (BSC2A, BSC2i ANSI and TCSM2A)

This equipment has a connection between the earthed conductor of the d.c. supply circuit and the earthing conductor.

This equipment shall be connected directly to the d.c. supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the d.c. supply system earthing electrode conductor is connected.

This equipment shall be located in the same immediate area (such as, adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same d.c. supply circuit and the earthing conductor, and also the point of earthing of the d.c. system. The d.c. system shall not be earthed elsewhere.

The d.c. supply source is to be located within the same premises as this equipment.

Switching or disconnecting devices shall not be in the earthed circuit conductor between the d.c. source and the point of the connection of the earthing electrode conductor.

For more information about the grounding of the network elements, see the *Installation Manual* and *Site Requirements* for the network element in question.

Power supply grounding rules in DX200 M98-mechanics network elements (MSCi, Compact MSCi, Transit MSCi, HLRi, SRRi, 2G-SGSN)

This equipment is designed to permit the connection of the earthed conductor of the d.c. supply circuit to the earthing conductor at the equipment. If this connection is made, all of the following conditions must be met:

- this equipment shall be connected directly to the d.c. supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the d.c. supply system earthing electrode conductor is connected.
- this equipment shall be located in the same immediate area (such as, adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same d.c. supply circuit and the earthing conductor, and also the point of earthing of the d.c. system. The d.c. system shall not be earthed elsewhere.
- the d.c. supply source is to be located within the same premises as this equipment.
- switching or disconnecting devices shall not be in the earthed circuit conductor between the d.c. source and the point of connection of the earthing electrode conductor.

For more information about the grounding of the network elements, see *Installing the i-series Network Elements* and *Installation Site Requirements for i-series Network Elements*.

Power supply grounding rules in IPA2800-mechanics network elements (ATM Module, MGW and RNC)

This equipment is designed to permit the connection of the earthed conductor of the d.c. supply circuit to the earthing conductor at the equipment. If this connection is made, all of the following conditions must be met:

- this equipment shall be connected directly to the d.c. supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the d.c. supply system earthing electrode conductor is connected.
- this equipment shall be located in the same immediate area (such as, adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same d.c. supply circuit and the earthing conductor, and also the point of earthing of the d.c. system. The d.c. system shall not be earthed elsewhere.
- the d.c. supply source is to be located within the same premises as this equipment.
- switching or disconnecting devices shall not be in the earthed circuit conductor between the d.c. source and the point of connection of the earthing electrode conductor.

For more information about the grounding of the network elements, see the *Hardware Installation Manual* for the network element in question and the *Installation Site Requirements for Nokia IPA2800 Network Elements*.

The label warning for power feeding and grounding is attached on top of the rack (see the figure below).

Figure 4. Power feed and grounding label.

3.2 ESD and handling of electrostatic sensitive units

An Electrostatic sensitive device is an electronic component that may be permanently damaged by electrostatic charges encountered in routine handling, testing and transportation.

Electrostatic discharge protection

Electrostatic discharge (ESD) is caused by a direct contact or electrostatic field. If a charged body approaches an electrically conducting surface, the acquired potential is discharged. An equalizing current can then flow in the associated circuitry and generate permanently damaging voltages by induction. The human body should be earthed at the same potential as the component or equipment being handled. An ESD hand strap creates an equipotential electrical connection between the object and the person. The hand strap should be worn as shown in Figure 5 . Connect the cord of the hand strap to the earth stud in the door hinge support beam of the DX 200 rack. The earth stud is marked with the label of the type shown in Figure 6 .

Note

Always wear a close-fitting, properly grounded ESD handstrap around your uncovered wrist when handling the plug-in units!

For more details see the *Installation Manual*.

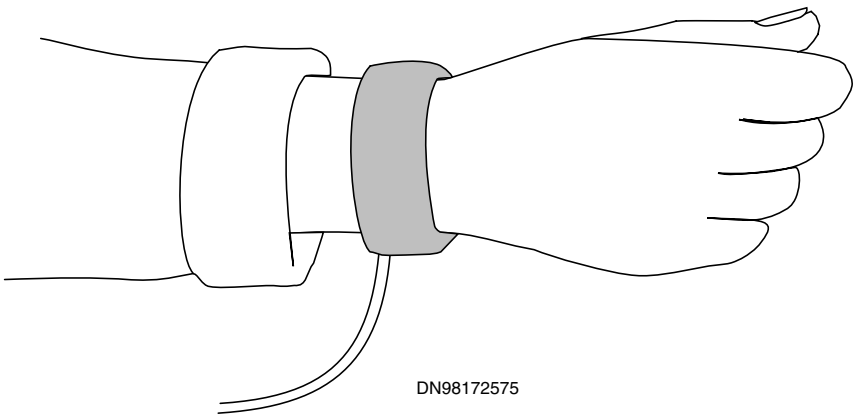

Figure 5. Hand strap

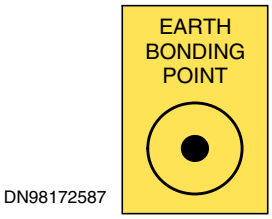

Figure 6. Earth bonding point label.

Electrostatic sensitive devices are labelled in one of the two following ways:

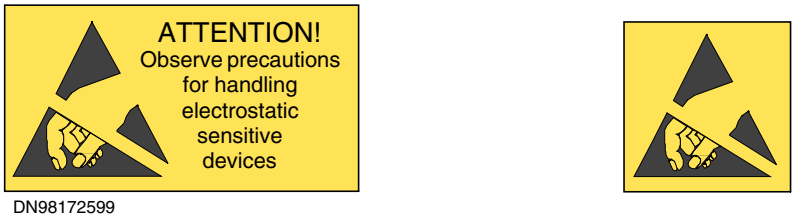

Figure 7. Signs for electrostatic sensitive devices