Magelis Smart 8.4 "
User Manual

09/2007

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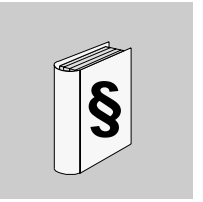
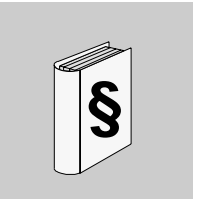


Safety Information



Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation, which, if not avoided, **will result** in death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, **can result** in death, serious injury, or equipment damage.

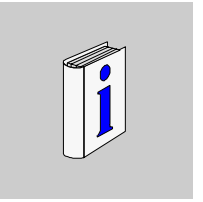
⚠ CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, **can result** in injury or equipment damage.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

About the Book



At a Glance

Document Scope

This manual describes the configuration and usage of the Magelis Smart 8.4 " from the Magelis terminal range.

This computer is designed to operate in an industrial environment and features the very latest technologies.

The Magelis Smart 8.4 " computer is a standalone product.

There are four versions of the Smart 8.4 ".

The product references are:

MPC ST 11 NAJ 00T
- 24 VDC supply plus external AC/DC adaptator for 100...240 VAC
- 8.4 ‘’ SVGA TFT
- ULV Celeron M 600 MHz processor
- Windows® XPe
- 1 GB Compact Flash card
- Dual Ethernet 10/100 base-T

MPC ST 11 NAJ 0•H
- 24 VDC supply plus external AC/DC adaptator for 100...240 VAC
- 8.4 ‘’ SVGA TFT
- ULV Celeron M 600 MHz processor
- Windows® XPe with Vijeo Designer Runtime preinstalled
- 1 GB Compact Flash card
- Dual Ethernet 10/100 base-T

MPC ST 11 NDJ 00T
- 24 VDC
- 8.4 ‘’ SVGA TFT
- ULV Celeron M 600 MHz processor
- Windows® XPe
- 1 GB Compact Flash card
- Dual Ethernet 10/100 base-T

XBT GTW450

- 24 VDC
- 8.4 ‘’ SVGA TFT
- ULV Celeron M 600 MHz processor
- Windows® XPe with Vijeo Designer Runtime preinstalled
- 1 GB Compact Flash card
- Dual Ethernet 10/100 base-T

The characteristics of this terminal are detailed in Characteristics of the Smart 8.4 ‘’ (see *Characteristics of the Smart 8.4 ", p. 30*)

Validity Note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material,

General

The present documentation is intended for qualified technical personnel responsible for the implementation, operation and maintenance of the products described. It contains the information necessary for compliance with the proper use of the products. However, those who wish to make a more "advanced" use of our products may find it necessary to consult our nearest distributor in order to obtain additional information

The contents of this documentation are not contractual and in no way constitutes an extension to, or restriction of, the contractual warranty clauses.

Registered Trademarks

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Microsoft® and Windows® are registered trademarks of Microsoft Corporation.

Intel®, Celeron and Pentium® are registered trademarks of Intel Corporation.

IBM® is a registered trademark of International Business Machines Corporation.

Related Documents

Title of Documentation	Reference Number
Magelis Smart 8.4 '' Installation Guide	35012221
Vijeo Designer Tutorial	35007035
NEMA ICS 1.1	–
NEMA ICS 7.1	–
Read Me	35012220

Product Related Warnings

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- The mains plug on this equipment must be used to disconnect the mains power.
- Remove all power before removing any covers or elements of the system and installing or removing any hardware and cables.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Always use a properly rated voltage sensing device to confirm power is off.

Failure to follow this instruction will result in death or serious injury.

⚠ WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link. *[1]
- Each implementation of a Magelis 8.4'' must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

*[1] For additional information, refer to *NEMA ICS 1.1* (latest edition), *"Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control"* and to *NEMA ICS 7.1* (latest edition), *"Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems".*

User Comments

We welcome your comments about this document. You can reach us by e-mail at techpub@schneider-electric.com

General Overview

I

At a Glance

Subject of this Part

This part provides a general overview of the Magelis Smart 8.4 " product.

What's in this Part?

This part contains the following chapters:

Important Information

1

Additional Safety Information

General

This chapter describes safety aspects which are specific to the operation of the Smart terminal.

What's in this Chapter?

This chapter contains the following topics:

Federal Communications Commission Radio Frequency Interference Statement - For U.S.A.

Equipment Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the Support Service Center or an experienced radio/TV technician for help.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

Use only shielded interface cables when connecting to a computer or peripheral.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference received, including interference that may cause undesired operation.
- This device must accept any interference received, including interference that may cause unwanted operation.

Qualified Personnel

Safety Aspects

Only qualified personnel are authorized to implement, operate or maintain the products. The interference of non-qualified persons or failure to observe the security instructions contained in this manual, or attached to the devices, can endanger the personnel and/or do irreparable damage to the equipment. The following personnel can be designated as "qualified personnel":

- at the application design level, engineering department personnel who are familiar with automation safety concepts (for example, a design engineer),
- at the equipment implementation level, personnel who are familiar with the installation, connection and commissioning of automation equipment (for example, an installation assembly or cabling engineer, or a commissioning technician),
- at the operation level, personnel who are experienced in the use and control of automation and computing equipment (for example, an operator),
- as far as preventive or corrective maintenance is concerned, personnel trained and qualified in regulating or repairing automatic and computing devices (for example an operating technician, or an after-sales service technician, etc.).

Safety Warnings for the UK

Earthing and Wiring

⚠ WARNING

UNGROUNDED EQUIPMENT

- This apparatus must be earthed.
- Use a three-pin plug with a standard three-pin power point.
- Use only three-core extension cords.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

Note: The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if you have any doubt about the effective earthing of the power point, consult a qualified electrician.
Incorrectly wired extension cords are a major cause of fatalities.

⚠ WARNING

IMPROPER WIRING

Wire the equipment as described below:

- Green and Yellow: Earth
- Blue: Neutral
- Brown: Live
- The Green and Yellow wire must be connected to the terminal in the plug marked by the letter E or by the safety earth symbols colored Green, or Green and Yellow.
- The blue wire must be connected to the terminal which is marked by the letter N or colored Black.
- The brown wire must be connected to the terminal which is marked with the letter L or colored Red.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

⚠ WARNING

INCOMPATIBLE SYSTEM

Do not connect this equipment to an IT power system:

- An IT system is a system having no direct connections between live parts and Earth; the exposed conductive parts of the electrical installation are earthed.
- An IT system is not permitted where the computer is directly connected to public supply systems in the UK.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

Safety Agency Approval

Standards

The Schneider Electric systems are designed to meet the following standards:

- Underwriters Laboratories Inc., UL 508, Industrial Control Equipment
- Canadian Standards Association, Specification C22.2 No. 142 Process Control Equipment
- IEC 61131-2, programmable controllers.

Compliance of Use

European Directives

The products described in the present documentation comply with the European Directives concerning Electromagnetic Compatibility and Low Voltage (CE marking). However, these can only be used correctly if they are used in applications for which they are specifically intended, as specified in the relevant documentation, and in connection with approved third-party products.

As a general rule, correct usage of the products, with no danger to personnel or hardware, consists of complying with all handling, transport and storage recommendations, and all installation, operation and maintenance instructions.

Physical Overview

2

At a Glance

Subject of this Chapter

This chapter provides a physical overview of the products.

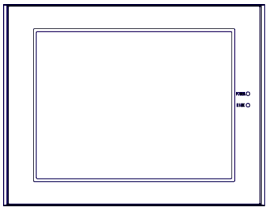
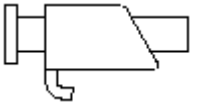
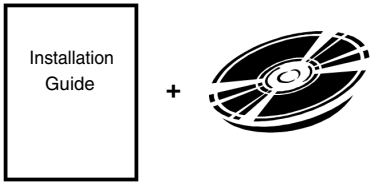
What's in this Chapter?

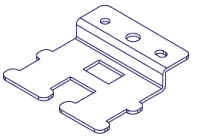
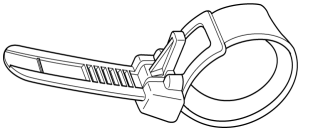
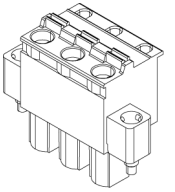
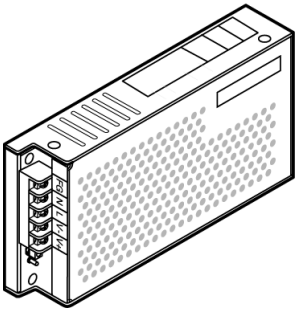
This chapter contains the following topics:

Package Contents

Items

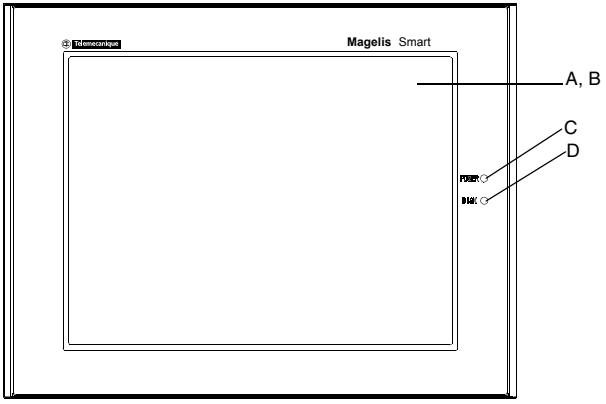
The following items are included in the Smart Magelis package. Before using the unit, please confirm that all items listed here are present. Should you find anything damaged or missing, please contact your local distributor immediately.

Designation	Figure
MPC ST11 ••• •• or XBT GTW450	
Installation Fasteners (4 per set)	
Operating System Restore and Installation Guide Documentation (in a CD-ROM case)	
Installation Gasket (Installed on the main unit)	

Designation	Figure
USB Holder x 2	
USB Cable Clamp x 2	
CF Card	
DC Connector	
Power Supply Unit ABL 1REM24025 (only for MPC ST11•A••••)	

Smart Unit Description

Front View



A Display

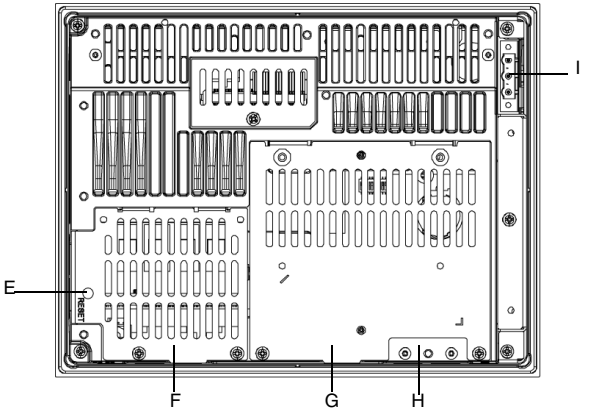
B Touch Panel

C Power LED/RAS Status Lamp
- Green Lit: Normal
- Green Blinking: System is not running (Soft OFF state)
- Orange Lit: System Monitor Error/Touch Panel Error
- Orange/Red Blinking: Backlight Error
- Not Illuminated: Power is Off

D HDD/IDE Access Lamp
- Green Lit: Access to HDD or IDE
- Not Illuminated: No Access to HDD or IDE

Note: Soft OFF: OS is shut down but the power line is still live. This is also called "S5 state". One of the merits of this state is that you can also use the "Wake on LAN" feature.

Rear View



E: Reset Switch

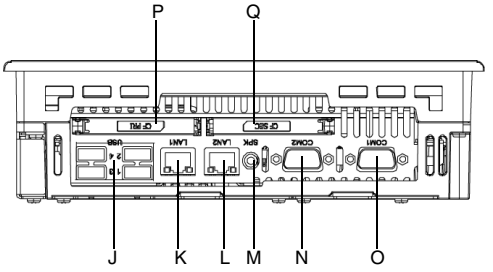
F: Memory Slot Cover

G: IDE Cover

H: USB Holder Attachment Area

I: Power Plug

Bottom View



J: USB Host Interface

K: Ethernet Interface (LAN1)

L: Ethernet Interface (LAN2)

M: Speaker Output Interface

N: Serial Interface (COM2)

O: Serial Interface (COM1)

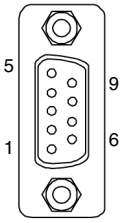
P: Primary CF Card Interface

Q: Secondary CF Card Interface

Interface Specification

Serial Interfaces

COM 1 and COM 2: These interfaces are used to connect an RS-232C (serial) cable. A SUB-D 9 pin plug connector is used.

Pin Arrangement	Pin No.	RS-232C		
		Signal Name	**Direction**	**Meaning**
	1	CD	Input	Carrier Detect
	2	RXD	Input	Receive Data
	3	TXD	Output	Send Data
	4	DTR	Output	Data Terminal Ready
	5	SG	–	Signal Ground
	6	DSR	Input	Data Set Ready
	7	RTS	Output	Request to Send
	8	CTS	Input	Send Possible
	9	RI	Input	Called status display/+ 5V
	Shell	FG	–	Frame Ground (Common with SG)

Characteristics

3

At a Glance

Subject of this Chapter

This chapter gives the product characteristics.

What's in this Chapter?

This chapter contains the following topics:

Characteristics of the Smart 8.4 "

Introduction

The characteristics of the Smart 8.4 " are given below.

Product Characteristics

Element	Characteristics
Processor	ULV Celeron M 600 MHz, secondary memory cache 512 KB (Fan less)
RAM	SODIMM: 256MB expandable to max 1GB (1 slot)
Video Processor	Intel 855GME / ICH4 (VRAM: 8/16/32 or larger, share main memory)
Main Storage	CF card x 1
Ethernet TCP/IP link	• 10/100base-T/GB x 1 (RJ45 interface) • 10/100base-T x 1 (RJ45 interface)
USB ports	4 x USB 2.0 (Bottom side)
COM 1 and COM 2 serial ports	RS232C (D-SUB 9 pin male)
CF Card Slot	2 Slots (one for system use)
Audio port	Speaker out (mini-jack connector)
Dimensions (WxHxD)	230 x 177 x 65 mm (9.05 x 6.97 x 2.56 in.)
Weight	3.5 Kg (7.71 lb)

Note: If you encounter problem using a USB high speed device (webcam, memory key...), plug it into USB port #2 and let USB port #1 empty.

Display Characteristics

Element	Characteristics
Graphics	8.4'' TFT (800x600 SVGA)
Nb of colors	262,144 colors
Brightness	200 cd/m2
Brightness Control	4 level of adjustment
View angle	Vertical 100°, horizontal 120° maximum
Touch sensitive screen	Analog resistive film, resolution 1,024x1,024, USB interface
Backlight's life span	CFL > 50,000 h at ambient temperature 25 °C (77 °F)

Power Supply

Element	Characteristics
Supply voltage	24 VDC (19.2V to 28.8V)
Consumption	40W (max.)
Short dips	5 ms max.

Operating Systems

The Smart product is delivered with a Compact Flash card. This card contains the pre-installed operating system according to the reference of the product ordered.

The product works with the Microsoft Windows XPe operating system.

Reference	Characteristics
MPC ST11 NAJ 00T	Smart with 8.4 " SVGA TFTdisplay, DC supply bundle with external AC/DC adaptator, Compact Flash 1 GB with Windows XPe pre-installed
MPC ST11 NAJ 00H	Smart with 8.4 " SVGA TFTdisplay, DC supply bundle with external AC/DC adaptator, Compact Flash 1 GB with Windows XPe and Vijeo Designer Run Time pre-installed
MPC ST11 NDJ 00T	Smart with 8.4 " SVGA TFTdisplay, DC supply bundle, Compact Flash 1 GB with Windows XPe pre-installed
MPC ST11 NAJ 09H	Smart with 8.4 " SVGA TFTdisplay, DC supply bundle with external AC/DC adaptator, Compact Flash 1 GB with Windows XPe and Vijeo Designer Run Time pre-installed (DEMO PRODUCT)
XBT GTW450	Smart with 8.4 " SVGA TFTdisplay, DC supply bundle, Compact Flash 1 GB with Windows XPe and Vijeo Designer Run Time pre-installed

Environmental characteristics

Characteristics The environmental characteristics of the 8.4 " Smart are as follows:

Characteristics	Value	Standards
Degree of Protection	• IP 65/NEMA4 for the front panel. • IP 20 for the rest of the product	–
Pollution Degree	For use in Pollution Degree 2 environment	–
Surrounding air temperature during operation	0 ... 50 °C (32 ... 122 °F)	EN 61131-2, UL compliant
Storage temperature	–20 ... 60 °C (–4 .... + 140 °F)	IEC 68-2-2 tests Bb and Ab, IEC 68-2-14 tests Na and EN 61131-2 compliant
Operating altitude	0 ... 2000 m (0 ... 6561.5 ft)	–
Vibration (in operation)	3.5 mm amplitude from 5 to 9 Hz, 1 g amplitude from 9 to 150 Hz	IEC 68-2-6 Fc test and EN61131-2 compliant
Shock Resistance (in operation)	15 g over 11 ms	IEC 68-2-27 Ea test and EN 61131-2 compliant
Humidity	10...90 % RH (Wet bulb temperature: 29 °C (84.2 °F) max. - no condensation)	–
Immunity to interference	High frequency interference	EN 61131, IEC 1000-4-3/6 level 3
	Electromagnetic waves	Class A/EN 55022/55011
	Safety of personnel and property	EN 61131-2, UL/CSA and IEC 529/IEC 950

Certification

The Schneider Electric systems are designed to meet the following standards:

- Underwriters Laboratories Inc., UL508, Industrial Control Equipment
- Canadian Standards Association, Specification C22.2 No.142 Process Control Equipment
- CE marking
- Safety IEC 61131-2
- EMI: EN55011 (Group 1, Class A) / EN61000-3-2, EN61000-3-3
- EMS: EN61000-6-2
- NEMA4x/1

Dimensions/Assembly

4

At a Glance

Subject of this Chapter

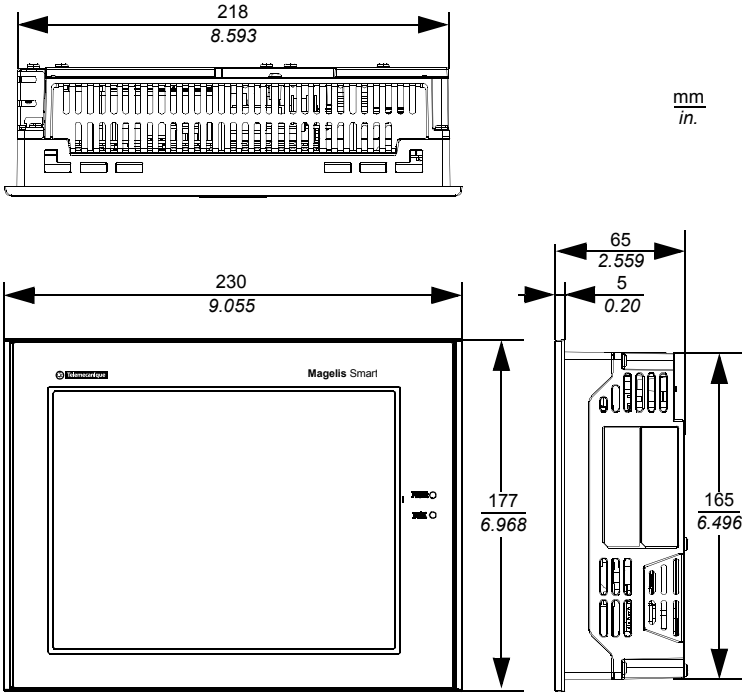
This chapter concerns the dimensions and the panel mounting of products.

What's in this Chapter?

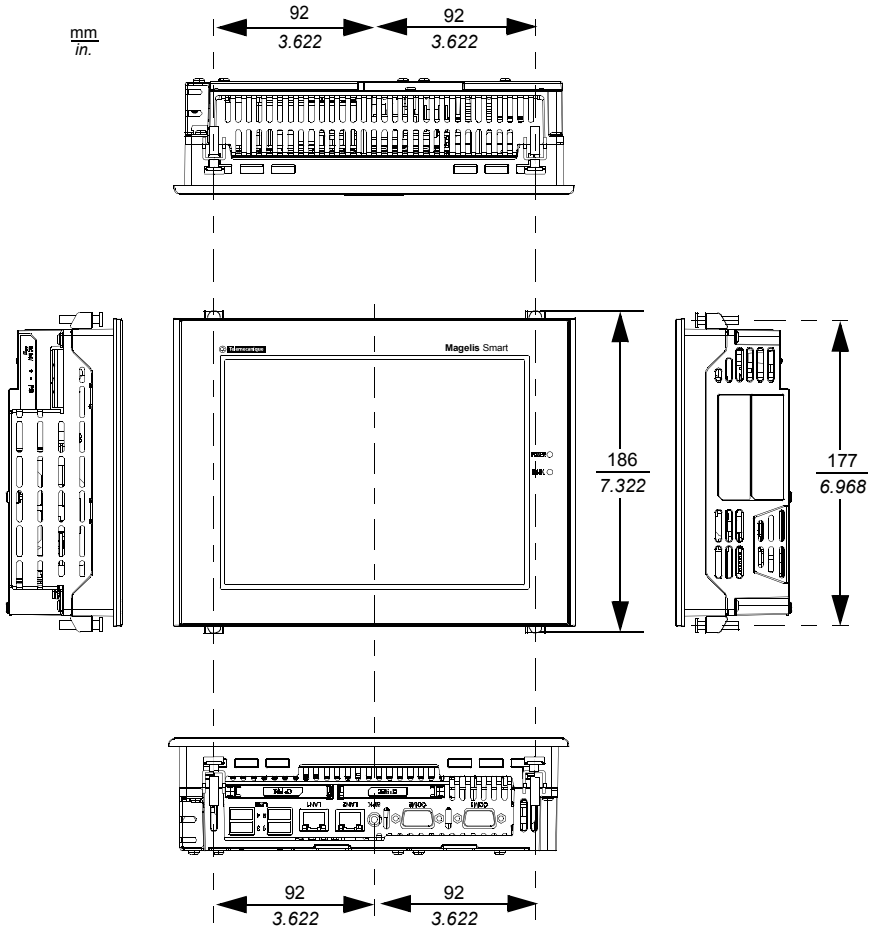
This chapter contains the following topics:

Dimensions

Dimensions of the Smart Unit



Dimensions with Installation Fasteners



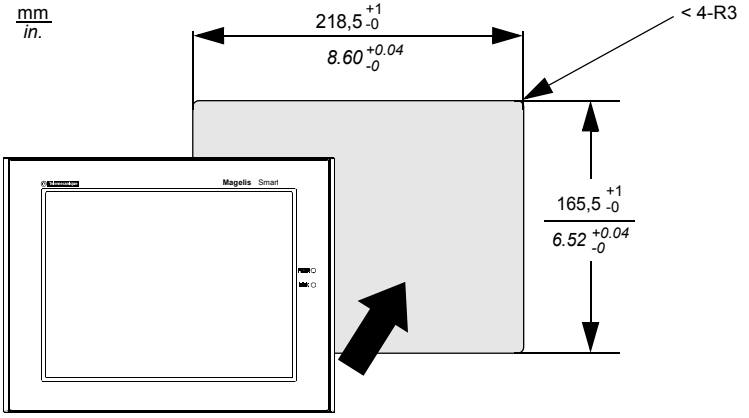
Creating a Panel Cut for Cabinet Installation

Overview

For cabinet installation, it is necessary for the correct sized opening to be cut in the installation panel. The installation gasket and installation fasteners are required when installing the Smart unit.

Panel Cut Dimensions

The dimensions of the opening required to install the terminal are shown below:



Precautions

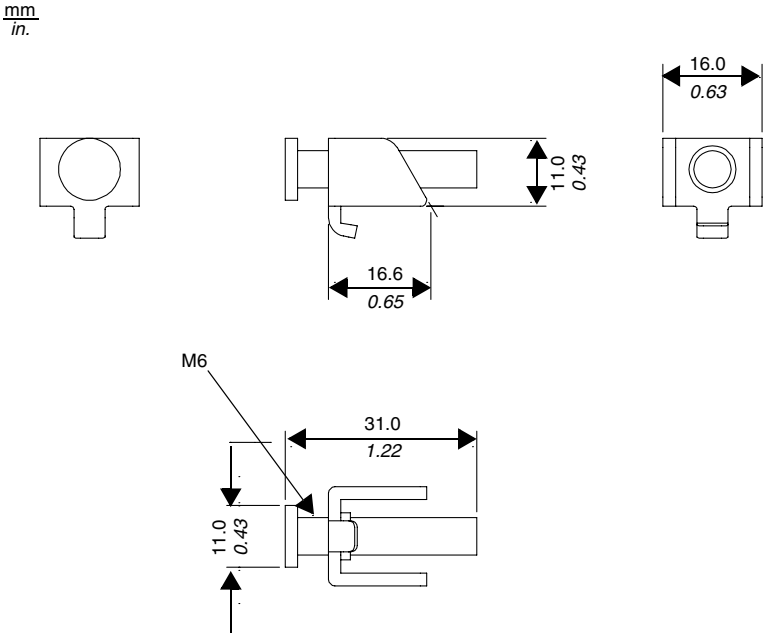
Note:

- Ensure the thickness of the installation panel is from 1.6 to 10 mm (0.06 to 0.39 in).
- All panel surfaces used should be strengthened. Due consideration should be given to the product's weight, especially if high levels of vibration are expected and the product's installation surface can move. Metal reinforcing strips can be attached to the inside of the panel near the panel cut, to increase the strength of the panel.
- Ensure all installation tolerances are maintained to prevent the unit from falling out of its installation panel.

Panel Mounting

Installation Fasteners

The product is designed to be mounted in a cabinet with the attachments described below:



Installing the 8.4 " Smart

Installation Location

⚠ CAUTION

EQUIPMENT MALFUNCTION

- Avoid placing the Smart terminal next to other devices that might cause overheating
- Keep the Smart terminal away from arc-generating devices such as magnetic switches and non-fused breakers.
- Avoid using the Smart terminal in environments where corrosive gases are present
- To ensure the reliability, operability and ventilation of the terminal, be sure to install it in locations that are more than 50 mm (1.97 in.) away from adjacent structures or equipment. Also, consider the need for installing or removing expansion boards, or connectors when designing the placement and installation of your product.

Failure to follow this instruction can result in injury or equipment damage.

Vibration and Shocks

Extra care should be taken with respect to the specification concerning vibration levels when installing the terminal, otherwise it could be damaged. If the Smart terminal is moved, for example, whilst it is installed in a rack equipped with caster wheels, the unit can receive excessive vibration or jolting.

Note: The screw installation fasteners are required for NEMA4 protection.

Precaution

⚠ CAUTION

LOSS OF SEAL

The gasket helps maintain the protection ratings (IP65, IP20) of the unit, and provides additional protection from vibration. It is strongly recommended that the installation gasket is used, since it absorbs vibration in addition to repelling water. Install the gaskets delivered with your Magelis terminal product.

Failure to follow this instruction can result in injury or equipment damage.

Installation Gasket

The installation gasket plays an important role in the installation of any Magelis terminal. Pay particular attention to the following:

- Before mounting the Smart terminal into a cabinet or panel, check that the installation gasket is attached to the unit.
- A gasket which has been used for a long period of time may be scratched or dirty, and may have lost much of its water resistance. Change the gasket at least once a year, or when scratches or dirt become visible.
- The corresponding gasket is provided in the maintenance kit ref: MPC YK 10 MNT KIT.
- The gasket is flexible but not elastic, do not stretch it unnecessarily, as doing so could tear the gasket.
- When pushing the gasket into the installation groove and around the corners of the unit, ensure that the gasket's seam is not placed in a corner. Placing the seam here could cause the gasket to tear.

Even if the Smart's Installation Gasket is not needed to prevent water from entering the unit, the gasket also acts as a vibration absorber and should always be attached.

Precaution

⚠ CAUTION

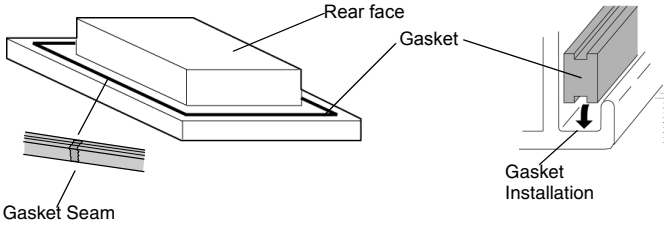
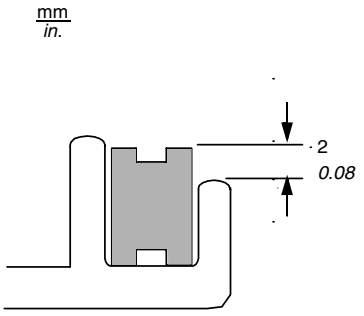
RISK OF EQUIPMENT DAMAGE

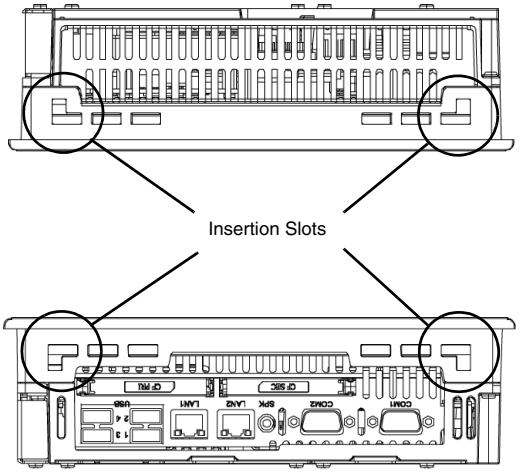
Do not exert more than 0.5 Nm (4.42 in-lb) of torque when tightening the screws. Tightening the screws with excessive force can damage the plastic case.

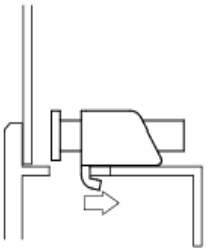
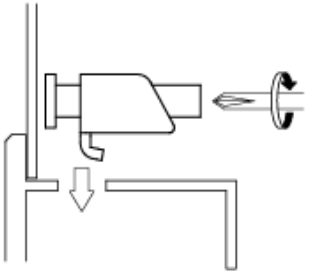
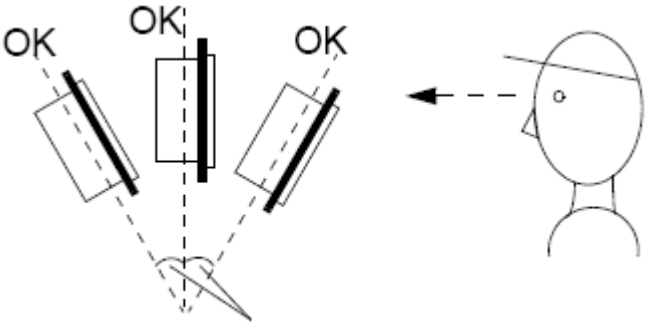
Failure to follow this instruction can result in injury or equipment damage.

Installing the Smart Unit

Follow the steps given below when installing the Smart terminal:

Step	Action
1	Place the unit face down on a soft, dry surface and attach the gasket to the rear side of the display face, in the plastic bezel's groove (see picture below). 
2	Check that the gasket is correctly attached to the unit. The upper surface of the gasket should protrude evenly approximately 2 mm (0.08 in.) out of the groove. Note: The terminal's bezel has a part attached to it. To prevent the installation gasket from contacting this part, be sure to press the installation gasket completely into its groove. 

Step	Action
3	Insert each installation fastener securely into the slot's recess at the top and bottom of the unit. 
4	Attach and Secure the Rear Installation Attachments  Note: ● Excessive torque may damage the Smart unit. ● To ensure a high degree of moisture resistance, the torque should be 0.5 Nm (4.42 in-lb). ● Insert each of the fasteners as shown below. Be sure to pull the fastener back until it is flush with the rear of the attachment hole. ● The corresponding installation attachments can be purchased as spare parts with the maintenance kit ref.: MPC YK 10 MNT KIT.

Step	Action
5	Insert each of the fasteners. Pull the fastener back until it is flush with the rear of the attachment hole. 
6	Use a screw driver to tighten each of the fastener screws and secure the terminal in place. 
7	Ensure that the panel's viewing angle is tilted no more than 30 degrees from parallel to the operator (i.e. operator is directly in front).  Must be 30 degrees or less

Implementation

II

At a Glance

Subject of this Part

This part describes the implementation of the product.

What's in this Part?

This part contains the following chapters:

Getting Started

5

First Power-up

Seal Removal

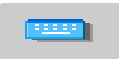
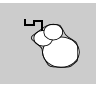
Note: Before the first power-up, please read the "LIMITED USE LICENSE AGREEMENT" carefully, then remove the seal.

License Agreement

On first power-up of your MPC••, it is necessary to customize and parameterize your system, see the Installation Guide.

Some Useful Tools

A selection of program icons are displayed on the launch bar which can be used to launch some useful programs.

Icon	Usage
	This is the virtual keyboard. Click on it, and a graphical keyboard is displayed. It is useful when you do not want to connect, or cannot connect a keyboard to the unit.
	This is the virtual mouse button selector. It allows the user to associate the next "click" to a "right click". For instance, this tool permits the use of context sensitive menus.
	Configuration Panel / Brightness: This link allows the user to change the brightness of the screen (useful for dark areas).
	EWF Manager: EWF state indicator. It is located on the state bar of the Windows® taskbar. It's role is to indicate the current EWF state of the machine. (Administrator only).

EWF Manager Enhanced Write Filter

Description :

The Magelis Smart operating system, Windows® XPe , is installed on a memory cartridge. This cartridge is a rewritable "Compact flash" card and this media offers a relatively restricted number of writings compared to a hard disk drive.

To resolve this limitation, the operating system stores its temporary data in dynamic memory (RAM).

All these operations are managed by the Enhanced Write Filter (EWF). The EWF manager can be temporarily inhibited.

The data affected by this behavior are configuration files such as: registry, software and users manager.

When the EWF is enabled, all operating system modifications will be lost after the Magelis Smart is restarted.

The following types of modifications can be lost:
- new applications installation
- new peripheral installation
- new user creation
- network configuration: IP address, operating mode...
- Operating System customization: background picture, screen saver...

Validation/ Inhibition of EWF Manager

In the Magelis Smart, a utility program allows the enabling or disabling of the EWF manager.This tool is located in the following directory: `C:\Program files\Change EWF State\ChangeEWFstate.exe`

Any changes will be restored after restarting of the terminal.

EWF States:

EWF State	Meaning
ENABLED	EWF activated. Normal behavior.
DISABLED	EWF inhibited. Operator customizations will be restored after restarting. These include: ● new application installation ● new peripheral installation ● new user creation ● network configuration: IP address, operating mode etc. ● Operating System customization: background picture, screen saver etc.

Note: To customize your terminal, the EWF must be disabled, but once changes have been made, the EWF manager must be reenabled.

Main Power Connection

6

At a Glance

Subject of this Chapter

This chapter describes the connection of the terminal to the mains power supply.

What's in this Chapter?

This chapter contains the following topics:

DC Version Wiring

Precaution

⚠ WARNING

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

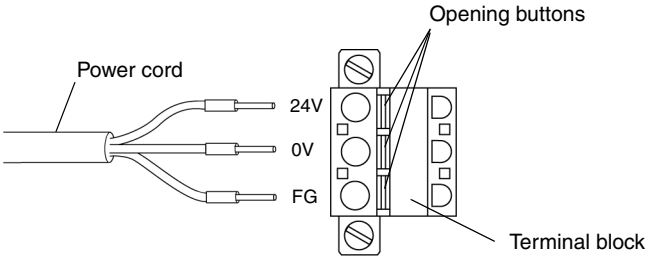
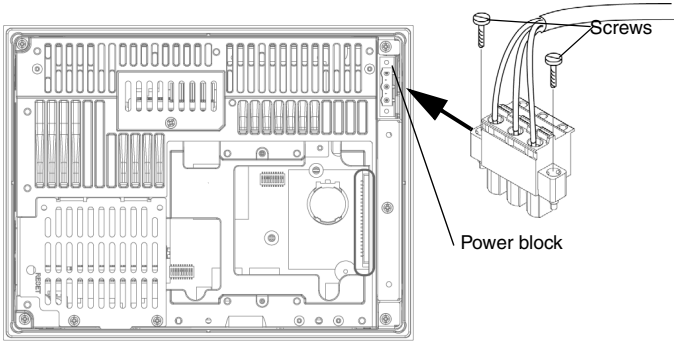
To avoid an electric shock when connecting the Smart unit's power cord to the power connector, first ensure that the power cord is disconnected from the power supply source.

- The power terminal block on this equipment must be used to disconnect the main power.
- To avoid the dangers of fire, electric hazards and equipment damage, be sure to use only the specified voltage when operating the Smart 8.4 ". This unit is designed to use 24 V DC input.
- Always use a properly rated voltage sensing device to confirm power is OFF.
- Replace and secure all covers or elements of the system before applying power to the unit.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

How to Wire the Terminal Block

When connecting the wires, be sure to follow the procedures given below. The procedure presents how to wire the cable cord on the terminal block, and then how to install the terminal block on the Smart Terminal's power block.

Step	Action
1	Confirm that the power cord is disconnected from the power supply
2	Remove the wire's external covering. Push the opening button by a small and flat screw driver to open the desired pin hole. Insert each pin terminal into its each hole. Release the opening button to clamp the pin place. 
3	Place the terminal block in the power block and tighten the screws: 

Note:

- The torque required to tighten these screws is 0.5 to 0.6 N•m (4.4 to 5.3 lb-in).
- Do not solder the wirer itself.
- If the wire's end strands are not twisted correctly, the end strands may either short against each other, or against an electrode.
- **Protection fuse**: The 24 VDC mains supply modules for the Smart are fitted with a protection fuse as standard. This fuse, fitted in series with the 24 VDC input, is located inside the module but cannot be accessed.

Possible Connections

Connection to a 24 V DC Smart supplied by a non-grounded safety DC network:

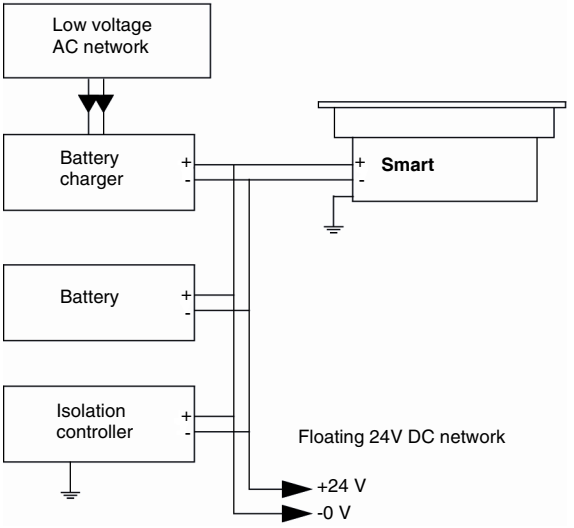
The 0 V and mechanical ground are connected internally.

Specific connection measures are to be taken for specific applications that use a floating network installation. These depending on the chosen mode of installation.

For this, the 24 V DC input of the DC Smart supply is isolated from the outputs and mechanical ground:

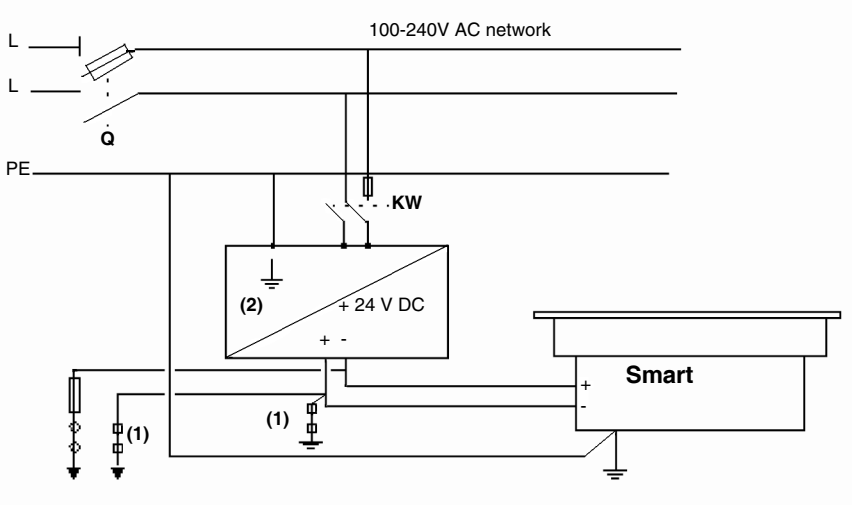
- Primary/Secondary dielectric strength: 1000V AC
- Primary/Ground dielectric strength: 1000V AC

Connection to a 24 V DC Smart using a floating DC network:



Circuit Diagram

Connection to a 24 V DC Smart using a ground referenced network:



Q : General isolator
KM : Line contactor or circuit breaker: General isolator
(1) : Isolation strip for detecting grounding faults
(2) : Possibility of using a TSX SUP 1101 process supply (see Schneider automation product catalogue).

Grounding Cautions

Overview

Note: When the FG terminal is connected, be sure the wire is grounded. Not grounding the terminal unit will result in excess noise and vibration.

When using the strand wire, if the conductor's end is not twisted correctly, the end wires may either short against each other or against an electrode.

When using a long grounding wire, replace the thin wire with a thicker wire and place it in a duct. Please refer to the table below for maximum line lengths for the thickness of wire.

Wire Thickness	Maximum Line Length
2mm^2 (0.08 in.^{2})	30 m (98.42 ft)
–	60 m (196.9 ft) round trip.
1.5 mm^2 (0.06 in.^{2})	20 m (65.62 ft)
–	40 m (131.23 ft) round trip.

Precaution

⚠ WARNING

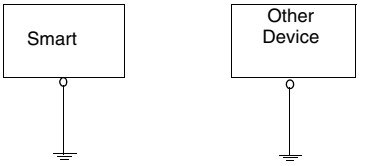
RISK OF EQUIPMENT DAMAGE AND UNINTENDED EQUIPMENT OPERATION

Do not use common grounding except the authorized configuration shown below, since it can lead to electrostatic damage and unintended equipment operation.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

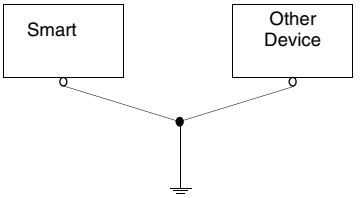
Dedicated Ground

Connect the Frame Ground (FG) to a dedicated ground.



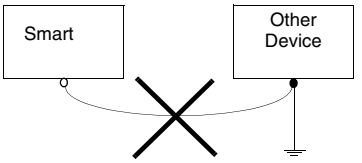
Shared Ground Allowed

If a dedicated ground is not possible, use a shared ground, as shown below.



Shared Ground not Allowed

When connecting an external device to a Smart with the SG terminal, ensure that no short-circuit loop is created when you set up the system.



Procedure

When grounding, follow the procedures given below:

Step	Action
1	Check that the grounding resistance is 100 Ω or less.
2	The SG and FG terminals are connected internally in the terminal.
3	When connecting the SG line to another device, ensure that the design of the system/connection does not produce a grounding loop.
4	The grounding wire should have a cross-sectional area of 2 mm^2 (14 AWG). Create the connection point as close to the Smart as possible and make the wire as short as possible. When using a long grounding wire, replace it with a thicker wire and place it in a duct.
5	If the equipment does not function properly when grounded, disconnect the ground wire from the FG terminal.

AC Version Wiring

Precaution

⚠ WARNING

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

To avoid an electric shock when connecting the AC/DC power cords to the power supply unit or the DC power cord to the Smart's terminal block, first ensure that the AC power cord is disconnected from the AC power supply source.

- The power terminal block on this equipment must be used to disconnect the main power.
- To avoid the dangers of fire, electric hazards and equipment damage, be sure to use only the specified voltage when operating the Smart 8.4 ". This unit is designed to use 100...240 VAC through an AC/DC power supply unit.
- Always use a properly rated voltage sensing device to confirm power is OFF.
- Replace and secure all covers or elements of the system before applying power to the unit.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

Introduction

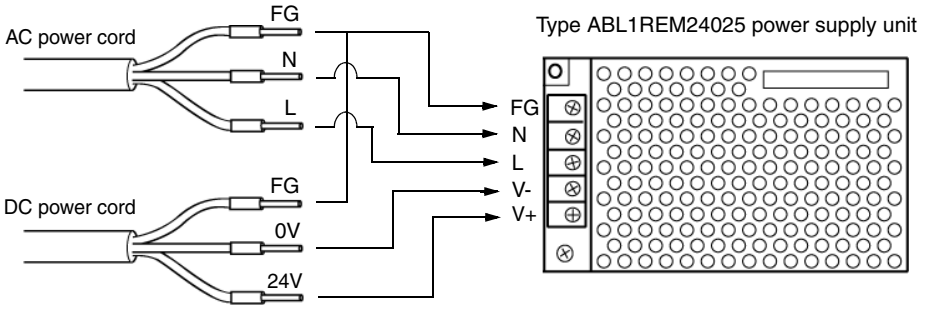
The Smart 8.4 " versions whose references are MPCST11NAJ00T and MPCST11NAJ0*H, are provided with an AC/DC power supply unit type ABL1REM24025. Consequently, in order to connect safely your Smart terminal, you have to observe the following steps.

How to Wire the Terminal Block

Refer to the relevant procedure in *How to Wire the Terminal Block, p. 60*

How to Wire the AC/DC Power Supply Unit

After having connected the terminal block, observe the following procedure to connect the AC/DC power supply unit:

Step	Action
1	Confirm that the power cords are disconnected from any power supply
2	Connect the AC and DC power cords as shown below:  Note: On the other end, the DC power cord is connected to the terminal connector.

Connecting I/O Signal Lines

Precautions

I/O signal lines must be wired separately from the power circuit cable. If the power circuit cable needs to be wired together with the input/output (I/O) signal lines for any reason, use shielded cables and ground one end of the shield to the Smart's FG (Frame Ground) terminal.

Configuration of the BIOS

7

Accessing the BIOS

Precaution

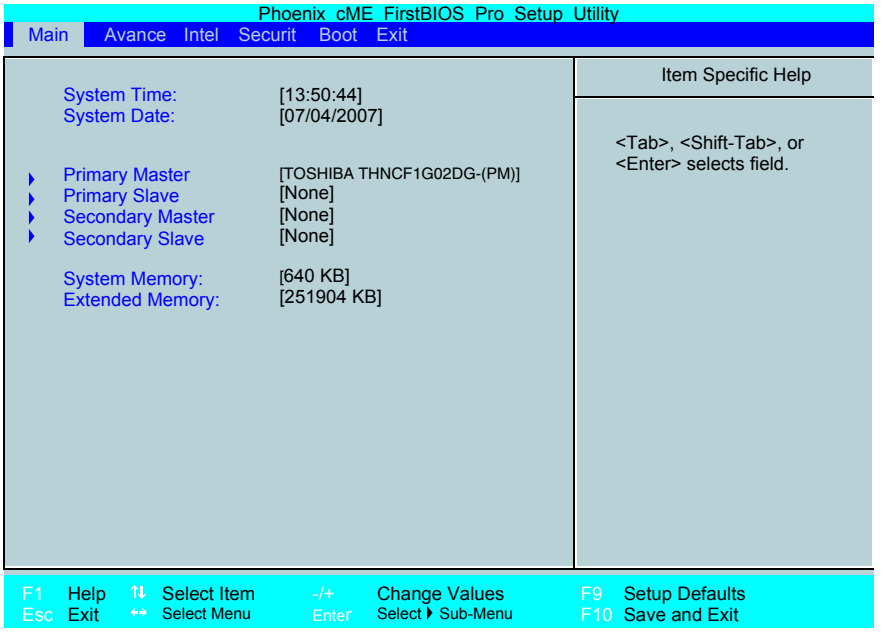
Note: Normally, factory (defaults) settings should be used.

Connect a USB or PS/2 keyboard to the Smart unit.

Switch on the Smart unit power and when prompted to do so, press the F2 key to enter the BIOS.

Main Menu

Selecting the `Main` menu item displays the following screen:



Note: When you have finished entering the parameters, press the Esc key to reach the `Exit` menu. Here you will be prompted either to exit saving the changes, or to exit without saving the changes as described below.

System Time

Time (hh:mm:ss)

This field shows the current Smart unit time from the internal clock.The hh/mm/ss (00:00:00) format is factory set prior to shipping.

Hours: 00 to 23

Minutes: 00 to 59

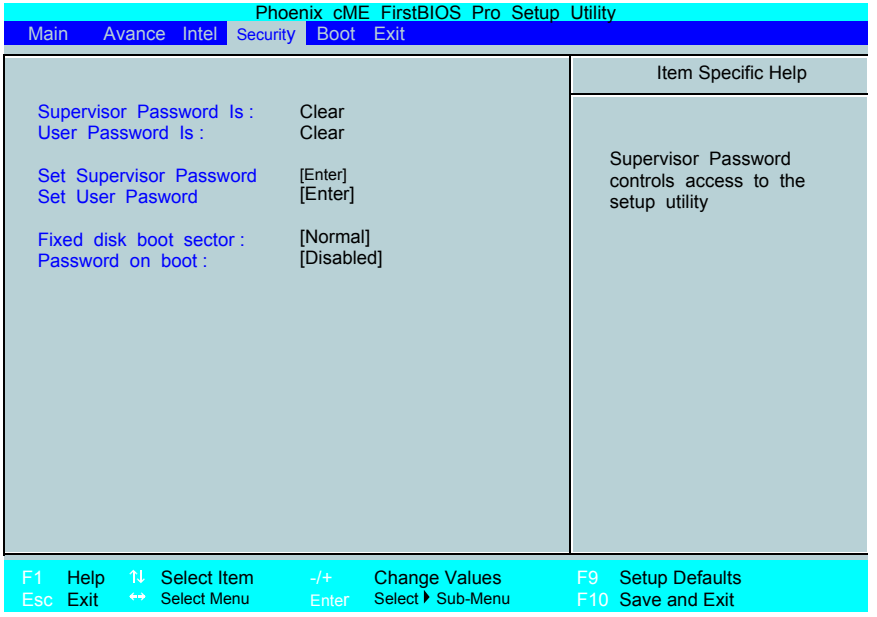
Seconds: 00 to 59

The correct time can be set by using the [+] and [-] keys.

System Date	**Date (mm:dd:yyyy)** This field shows the Smart unit's internal calendar. The correct date can be set by using the [+] and [-] keys. Year: 1999 to 2099 Month: 01 to 12 Day: 01 to 31
Primary Master	Displays the name of the devices connected to the primary bus of the Smart. Pressing the Enter key will call up the `Parameter Settings` menu.
Primary Slave	Displays the name of the devices connected to the secondary bus of the Smart. Pressing the Enter key will call up the `Parameter Settings` menu.
System Memory	Displays the capacity of the System Memory.
Extended Memory	Displays the capacity of the Extended Memory.

Password Security

From the `Main` menu use the Tab key to reach the `Security` menu. This menu is used for setting Supervisor and User Passwords.



Supervisor Password

This password is used to change system information settings. It is designed to prevent unapproved users from changing these settings. Entering up to 8 characters here will overwrite the current password.

When you wish to have no password, click on the Enter key. Next, the words "PASSWORD DISABLE" will be displayed, providing confirmation that the Password is no longer set.

User Password

This password is used to view system information settings. It is designed to prevent unapproved users from viewing the system information settings. Entering up to 8 characters here will overwrite the current password.

When you wish to have no password, click on the Enter key. Next, the words "PASSWORD DISABLE" will be displayed, providing confirmation that the Password is no longer set.

Note:
- Without having defined a Supervisor Password, it is not possible to define a User Password.
- When using `Set Supervisor Password`, you can easily view and change the system settings.
- When using only `Set User Password`, you will be allowed to view the system data only, not change it.

Exit BIOS saving the Modifications

This feature saves the settings entered in the `Setup Utility` and restarts the Smart unit.

Exit BIOS Without Saving Modifications

This feature quits the `Setup Utility` program without saving any settings entered.

Hardware Modifications

8

At a Glance

Subject of this Chapter

This chapter concerns the hardware modifications for the Smart terminal.

A wide variety of optional units, Main Memory, CF cards, PCMCIA (PC cards) manufactured by Schneider Electric and commercial PCMCIA (PC Cards) can be used with the Smart terminal.

What's in this Chapter?

This chapter contains the following topics:

Before installation

Overview

For the detailed installation procedures for the optional units, please refer to the OEM's (Original Equipment Manufacturer) Installation Guide.

⚠ DANGER

HAZARDOUS VOLTAGE

- Disconnect all power from the Smart terminal.
- Always use a properly rated voltage sensing device to confirm power is off before installing any optional units such as main memory or CF cards.

Failure to follow this instruction will result in death or serious injury.

⚠ CAUTION

EQUIPMENT DAMAGE

- Do not exert more than 0.5 to 0.6 Nm (4.42 to 5.31 in-lb) of torque when tightening the enclosure screws. Tightening the screws with excessive force can damage the plastic casing of the Smart terminal.
- When removing or replacing screws, be careful that they do not fall inside the Smart unit's chassis.

Failure to follow this instruction can result in injury or equipment damage.

Installing a Larger RAM Chip

General

⚠ CAUTION

ELECTRO STATIC DISCHARGE

RAM modules contain components which are sensitive to Electro Static Discharge (ESD).

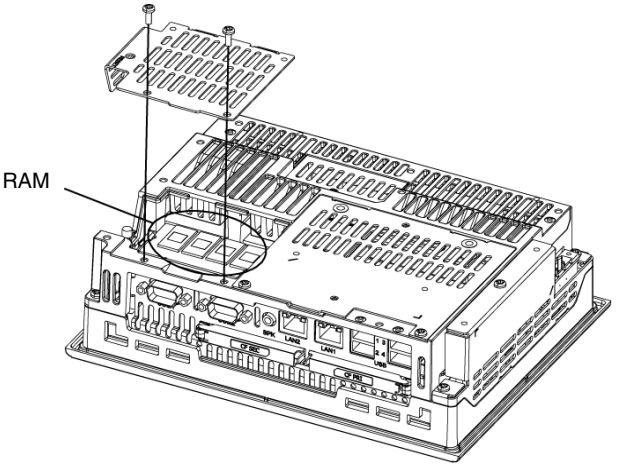
- Use proper ESD protection (grounding wrist strap, protected mat etc.) when handling ESD sensitive components.
- Do not remove ESD sensitive components from their anti-static bags until you are ready to install them.
- Handle the RAM module only by the edges.

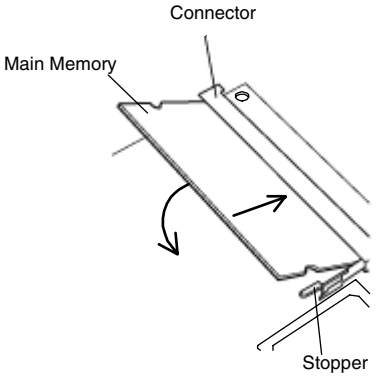
Failure to follow this instruction can result in injury or equipment damage.

Note: If you install a 1GB RAM chip, a blue screen will appear for about 4 minutes the first time you start the terminal. After this installation the terminal will start as usual.

Installing a RAM Chip

The table below describes how to install the Main Memory module

Step	Action
1	Turn the power to the terminal OFF and remove the power cable.
2	Remove the terminal from the mounting brackets and place the unit on a flat, level surface with the display panel facing downwards.
3	Unscrew the two screws on the memory cover slot and remove it. 
4	Lift the stopper on the connector such that the old RAM module is accessible.
5	Carefully remove the old RAM module from the holder and store it in its anti static bag.
6	Angle the new memory module down slightly, and push it into the connector until the connector pins mate with the module's pins.

Step	Action
7	Insert the new memory module completely into the connector and press it down until it is locked into the stopper. Ensure all contacts engage at the same time. 
8	Replace the memory slot cover and screw it into place.

CF Card Installation and Removal

Precautions for Using a CF Card

⚠ DANGER

HAZARDOUS VOLTAGE

Be sure to disconnect the power cord from the power supply and confirm that power is not supplied to the terminal unit before installing any optional units, RAM modules, CF cards, or expansion boards. Failure to do so can result in an electric shock.

Failure to follow this instruction will result in death or serious injury.

⚠ CAUTION

EQUIPMENT MALFUNCTION

Be sure to use only CF cards manufactured by Schneider Electric. The performance of the Smart terminal cannot be guaranteed when using CF cards from another manufacturer.
Be sure to follow the instructions given below to prevent the CF card's internal data from being destroyed or a CF card malfunction from occurring:

- Do not bend the CF card
- Do not drop or strike the CF card against another object
- Do not touch the CF card connectors
- Do not disassemble or modify the CF card
- Keep the CF card dry.

Failure to follow this instruction can result in injury or equipment damage.

⚠ CAUTION

EQUIPMENT MALFUNCTION

The Smart's operating system views the CF Card as a hard disk.

- Shut down the Operating System in an orderly fashion and switch the power OFF prior to removing or inserting a CF Card. Do not turn OFF or reset the Smart terminal whilst it is accessing the CF Card to prevent damaging file data.
- Do not remove or insert the CF Card when the unit's power is switched ON. Doing so may damage data and crash the Operating System.
- Prior to inserting the CF Card, be sure to confirm that the rear and the front of the CF Card are correctly oriented, and that the CF Card connector position is correct. If the CF Card is inserted incorrectly, the CF Card, its internal data, and the CF card unit may be damaged.

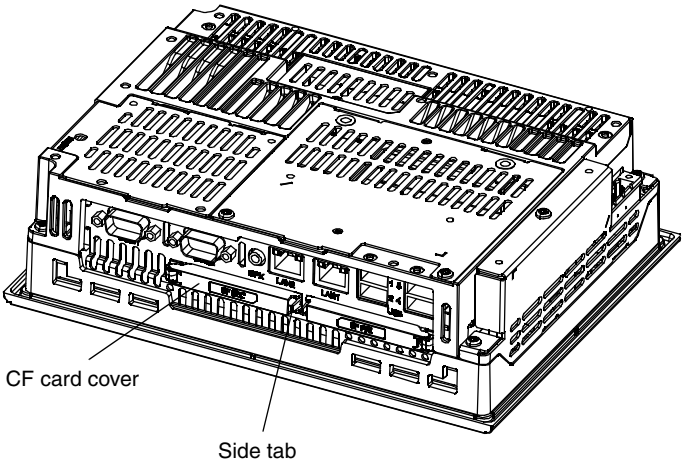
Failure to follow this instruction can result in injury or equipment damage.

CF Card Insertion and Removal

Familiarize yourself with the differences between the top and bottom surfaces of the CF card. Also, be sure that the card is properly oriented when it is inserted (i.e. whether the top of the card is up or down etc.).

Inserting the CF Card

The table below describes how to insert the CF Card.

Step	Action
1	Ensure that the Smart unit's power is switched off.
2	Open the CF card cover by pushing the side tab and moving it 90°. Insert the CF Card (Primary or Secondary) firmly into the CF card slot, and check that the eject button pops out. 
3	Close the CF card cover and make sure it is secured in place.

⚠ CAUTION

EQUIPMENT DAMAGE

Do not exert more than 0.6 Nm (5.31 in-lb) torque when tightening the fastener's screws. Tightening the screws with excessive force can damage the terminal's plastic case.

Failure to follow this instruction can result in injury or equipment damage.

Removing the CF Card

The table below describes how to remove the CF Card.

Step	Action
1	Ensure that the Smart unit's power is switched off.
2	Open the CF card cover as described above.
3	Press the eject button in fully to remove the CF Card from the CF Card slot.
4	After removing the CF card, close the CF Card cover and make sure it is secured in place.

Data Writing Limitation

The CF Card has a limitation of approximately 100,000 for the number of data writings . Therefore, be sure to back up all CF Card data regularly to another storage media.

Backup of the CF Card Data

Refer to the relevant procedure in the Installation Guide.

USB Holder Attachment/Removal

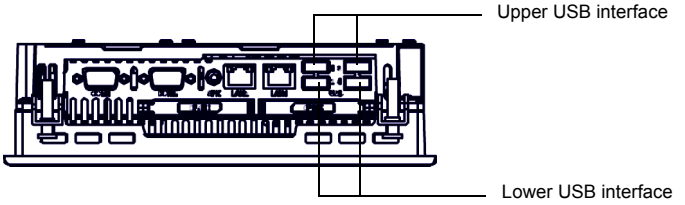
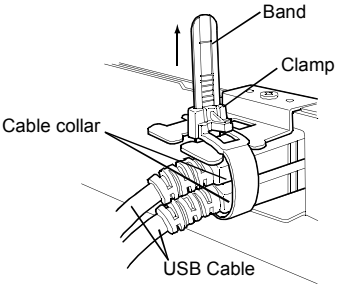
Introduction

When using a USB device, attaching the USB holder to the USB interface located on the side of the Smart terminal prevents the USB cable interface from becoming disconnected.

⚠ CAUTION
RISK OF EQUIPMENT DAMAGE Do not exert more than 0.5 Nm (4.42 in-lb) of torque when tightening the screws. Tightening the screws with excessive force can damage the plastic case. **Failure to follow this instruction can result in injury or equipment damage.**

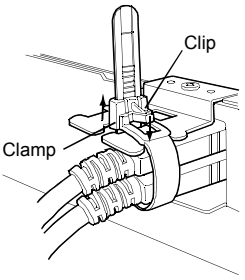
USB Holder Attachment

The table below describes how to attach the USB holder.

Step	Action
1	Place the Smart terminal face-down on a flat surface to see the 4 USB connectors: • When using two or more USB ports, be sure to first connect one USB cable to the lower USB connector, and then connect the second USB cable to the upper USB connector. • When using only one of the USB ports, be sure to use the upper USB connector. This allows you to securely clamp the USB cable in the cable clamp. 
2	Unscrew the two attachment screws used to hold the Smart Unit's Cover and open this cover.
3	Fix the USB holder with a screw.
4	Insert the USB Cable Clamp's band through the hollow of the holder. Pass the USB cables through the Cable Clamp's band and securely tighten the clamp band around the cables. • Be sure the clamp is securely holding the USB cable's plug and collar. • Be sure the clamp is positioned as shown below, with the clamp pointing upwards not to the side. This is to keep the clamp from interfering with nearby connectors and their cables. 
5	Replace the Smart Unit's Cover and reattach two attachment screws.

USB Holder Removal

The table below describes how to remove the USB holder.

Step	Action
1	To remove the clamp from the USB cables, push down on the clamp strap's clip to release it while pulling up on the clamp. 

Installation

III

At a Glance

Subject of this Part

This part describes the product installation.

What's in this Part?

This part contains the following chapters:

Connections to PLCs

9

Connection to PLCs

Nano, Micro, Premium

Different connection cables are provided depending on the type of PLC being used. These cables are specified below:

The connection for the Nano, Micro and Premium requires the use of the TSX PCX 1031 connection cable supplied with the PL7 Pro and PL7 Junior software.

This 2 m (6.56 ft) cable is equipped with the following:

- A 9-pin SUB-D type female connector for connection to the Smart terminal.
- A 5-pin microDin type male connector for connection to the PLC.

Series 7

This connection concerns TSX 27 PLCs, and TSX/PMX 47/67/87/107 PLCs.

The Series 7 connection requires the use of an FT20CBCL30 connection cable supplied with the XTEL Pack software.

This 2.5 m (8.20 ft) cable is equipped with the following:

- A 9-pin SUB-D type female connector for connection to the Smart terminal.
- A 9-pin SUB-D type male connector for connection to the PLC.

TSX 17

TSX 17 PLCs are connected via an accessory for converting the COM1 link

(RS-232) into an RS-485 link (to be ordered separately).

Accessory reference number: TSX 17 ACC PC

APRIL 2000/3000

This connection requires the use of a TSX PKIT 2040 connection cable (to be ordered separately).

This 2 m [6.56 ft] cable is equipped with the following:

- A 9-pin SUB-D type female connector for connection to the Smart terminal.
- A 9-pin SUB-D type male connector for connection to the PLC.

Monitoring Features

10

At a Glance

Subject of this Chapter

This chapter describes the System Monitoring and the RAS (Reliabilty, Availability and Serviceability) features of the Smart.

What's in this Chapter?

This chapter contains the following topics:

System Monitor Overview

Presentation

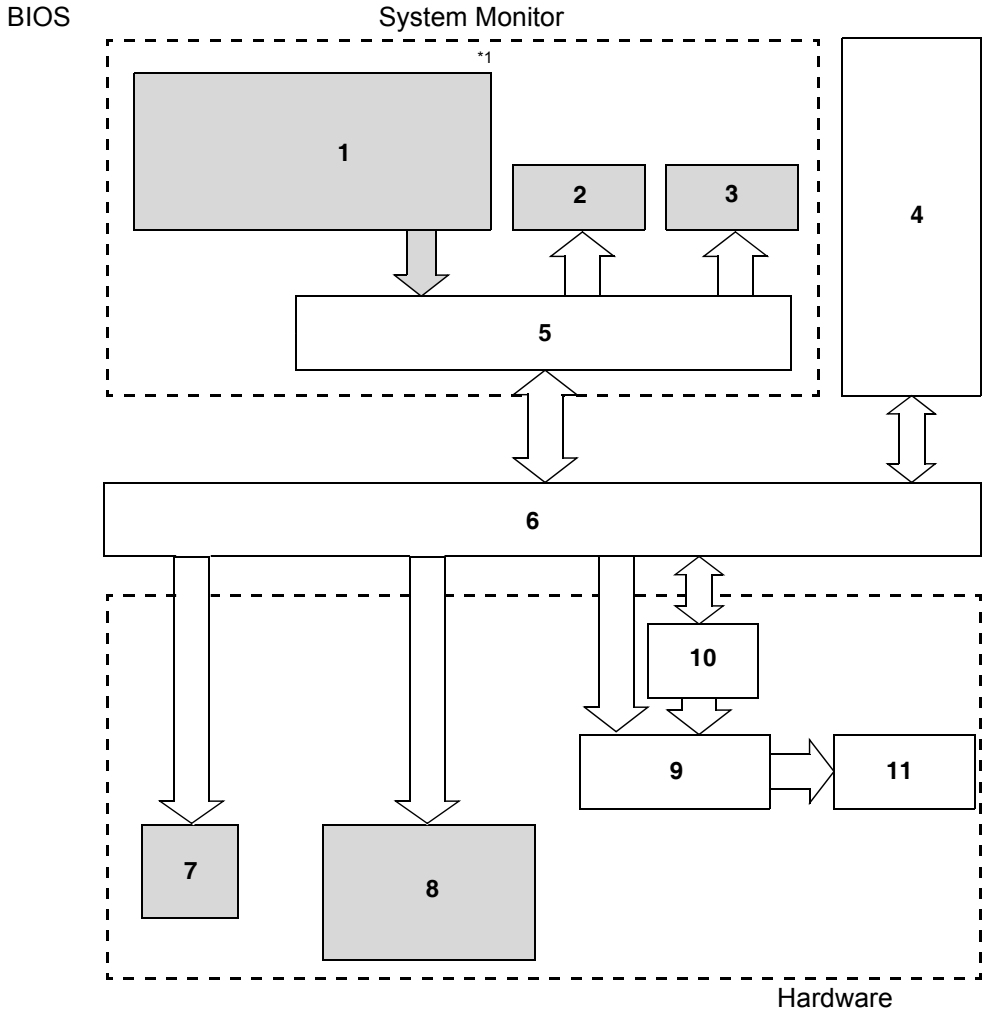
The System Monitor software enables you to monitor several system parameters (CPU temperature, normal operation of the miscellaneous voltages, normal operation of the backlight, normal operation of the hard disk...).

The System Monitor software alerts you if thresholds are overrun via a popup message or a Windows alarm (in the Event Viewer). You can also configure actions to be undertaken: shutdown the Smart, restart the Smart ...

The software enables, on one hand, the system configuration (See *System Monitor Property, p. 89*), and on the other hand, the system operation (See *System Monitor Interface, p. 93*).

System Monitor Architecture

The following figure shows the architecture of System Monitor:



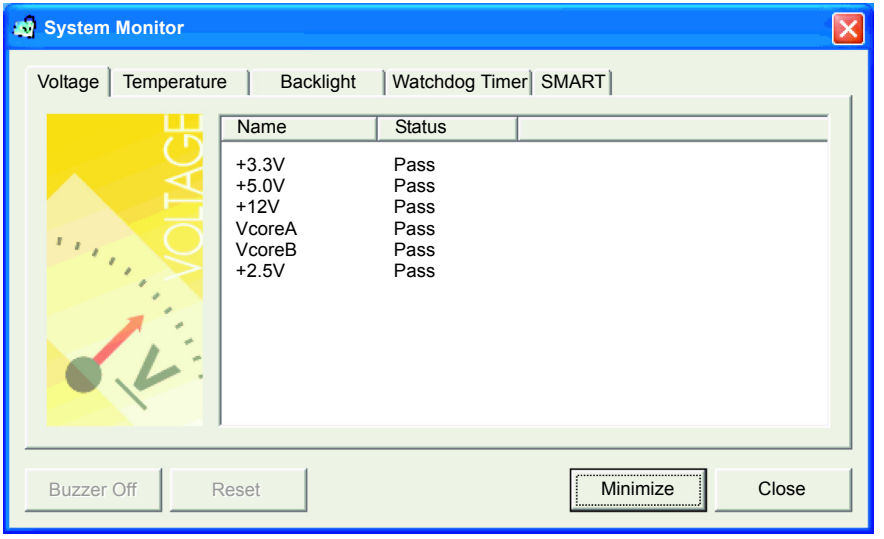
1 System Properties: Voltage, Temperature Alarm, Detection Level Settings, Enable/Disable Settings, Power Alarm, Internal Temperature Alarm, Watchdog Timer Value Settings, Watchdog Reset.
2 Popup Message.
3 OS Shutdown.
4 User Application.
5 System Monitoring Application.
6 Driver or API-DLL.
7 Buzzer.

8 Power LED, Green: Power ON, Orange: Touch Panel Self-Test Error, Orange/Red blinking: Backlight Error, Green Blinking: Soft OFF Status.
9 Reset Control.
10 Watchdog Timer.
11 Hardware Reset.

*1 Be sure to adjust these settings according to your system's specification.

Accessing System Monitor

You can monitor the system status at any time using the System Monitor interface. The procedure below shows how to access System Monitor:

Step	Action
1	Start the Smart 8.4" operating system.
2	In the task bar, double-click the  icon. **Result**: The System Monitor GUI screen appears. 

Note: If you cannot see the  icon in the task bar, launch the System Monitor software by double-clicking the **systemmonitor.exe** file located in the following path: *C:\schneider\sysmon\gui*.

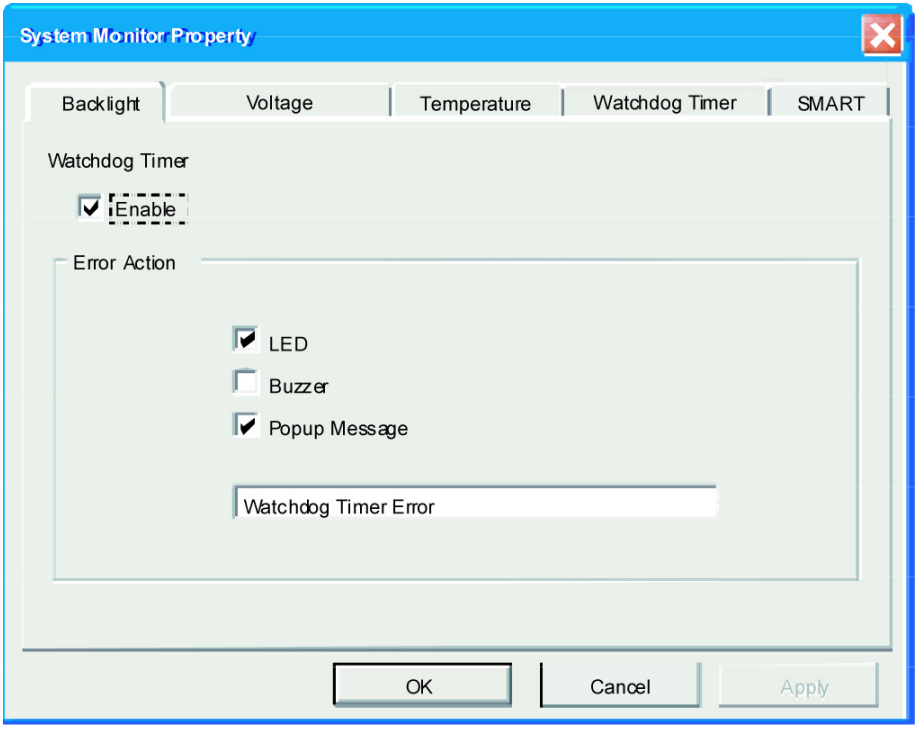
System Monitor Property

Presentation

The System Monitor Property enables you to specify which system parameters you want to monitor and how you want to be alerted.

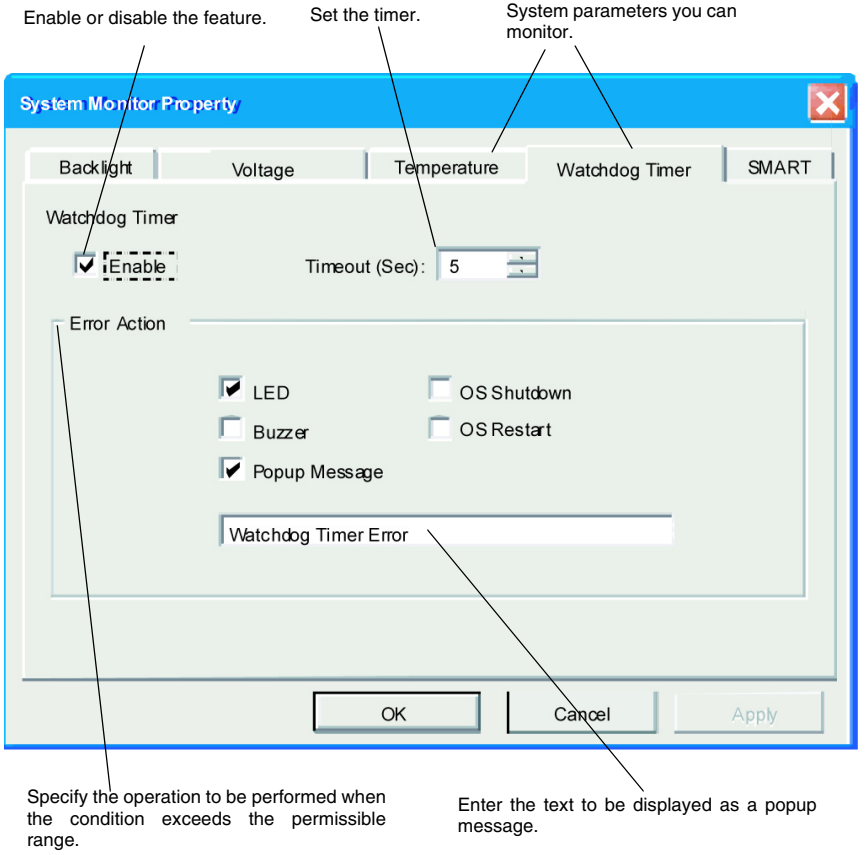
Accessing the System Monitor Property

The System Monitor Property screen enables you to configure the operating system parameters you want to monitor and select how you want to be alerted. The procedure below shows how to access the System Monitor Property screen:

Step	Action
1	Start your Smart 8.4 " operating system
2	Click **Start** → **Control Panel**. **Result**: The Control Panel window appears.
3	Double-click **System Monitor Property**. **Result**: The System Monitor Properties window appears. 

Setting up the System Monitor Properties

The following screen gives an overview of the System Monitor Property setting screen.



Click the tabs on the top of the screen to access configuration page of each system parameters.

Note: Since the Smart 8.4 " has no HDD, the SMART monitoring function is not available, and nothing is functional in the SMART tab.

The table below describes the system parameters available for monitoring:

Feature	Functions Supervised
Volt	Power Voltage: Monitors the status of the Smart's built-in power supply and internal CPU power supply.
Temperature	Provides an alert when a dysfunction of the System, or the CPU, could appear (due to high temperature).
Backlight	Detects backlight alarms. When the backlight burns out, the power LED will flash orange/red (See *Smart Unit Description, p. 24*).
Watchdog Timer	This feature monitors the performance of the CPU by writing the uptime count value for the CPU and by periodically clearing the count value from the CPU. Errors are detected when the clearing of the count values from the CPU stops. This causes a timer overflow.

Once you know the system parameters you want to monitor, you can specify actions that will be undertaken when an event (timeout, value out of range...) occurs. Set the processing to be performed when a System Monitor event occurs, by selecting the relevant check box.

The following table gives a description of the operations that can be performed:

Item	Action
Enable	Select or deselect this option to enable/disable each setting of the monitoring feature.
Buzzer	Sound an electronic beep as an alarm (Cannot be set up when a checkmark is placed in the "OS shutdown checkbox).
Popup Message	Display error messages as pop-up messages. (The monitoring item and description of the error are displayed).
Operating System shutdown	Shutdown the operating system. (The shutdown confirmation message is not displayed).
Operating System Restart	Resets the hardware.
Power LED	The front LED is ON orange/red (solid).

Power LED Indicator

The three color power LED (See *Smart Unit Description, p. 24*) indicates the Smart system conditions. It is also a power ON/OFF indicator. The power LED is located on the front face of the unit.

The Smart unit can send the following system status information to an external device:

Power LED Color	System Status	Output Condition
Green (Lit)	Normal operation (Power is ON)	None
Green (Blinking)	System is NOT running (Soft OFF). See *Smart Unit Description, p. 24*.	None
Orange (ON)	Touch Panel Self-Test Error	None
Orange/Red (Blinking)	Backlight is not functioning	None
OFF	Power is OFF	–

Note: If the power LED of the Smart terminal is illuminated immediately in orange after the power is turned, a Touch Panel Self-test Error may have occurred.

Features Availability

The following table lists the operating settings available for each feature:

O: Setting available X: Setting not available

Feature	Operation				
	Buzzer	Popup message	OS shutdown	Reset	Power LED
Watchdog Timer	O	O	O	O	O
Voltage	O	O	O	X	O
Temperature	O	O	O	X	O
Backlight	O	O	X	X	O

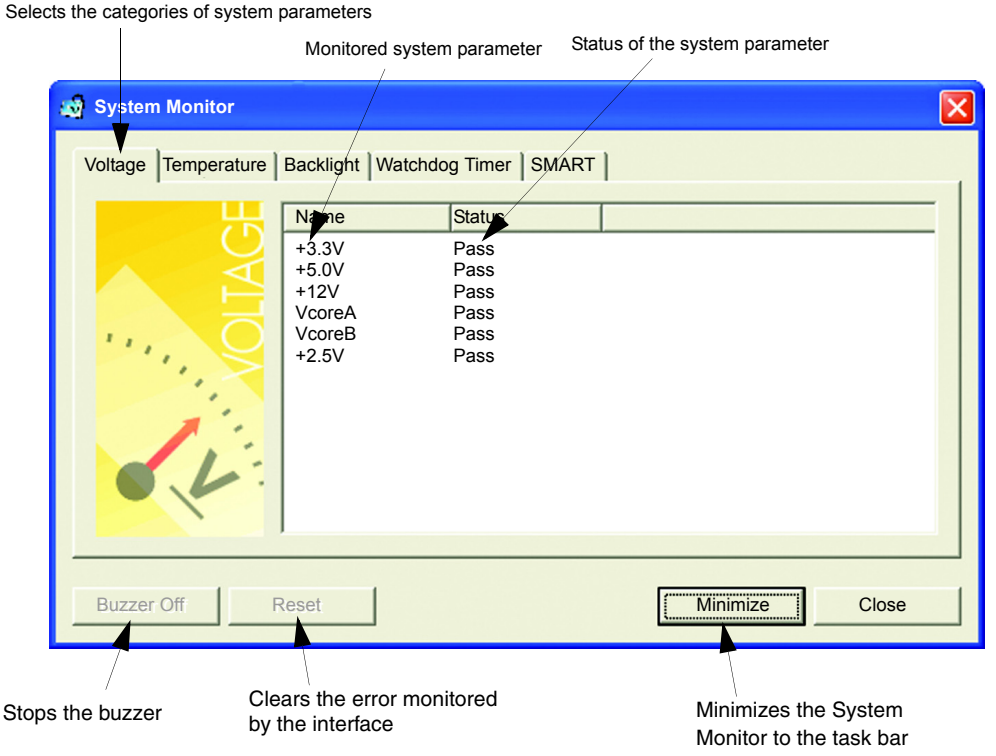
System Monitor Interface

Presentation

You can monitor the system status at any time using the System Monitor interface.

Description of the Interface

The following screen gives an overview of System Monitor. Selecting each of the tabs displays the status of each item. When an error occurs, the color of the tab changes.



Note: Since the Smart 8.4" unit has no HDD, the SMART monitoring function is not available, and nothing is functional in the SMART tab.

Note: 0 means Master and 1 means Slave.

System Monitor displays the status of the system parameters. The following table describes the messages provided by the System Monitor interface:

Display	**Meaning**
Pass	Normal
Fail	Abnormal
Disabled	Monitoring disabled
Not Supported	Not supported

System Monitoring Operation

When an error is detected, the operations specified in the System Monitor Property settings are performed (buzzer, popup message etc.) and an "X" is displayed on the icon in the system tray indicating an error status.

When the icon in the system tray changes as shown below, double-clicking the icon gives an explanation of the error condition.

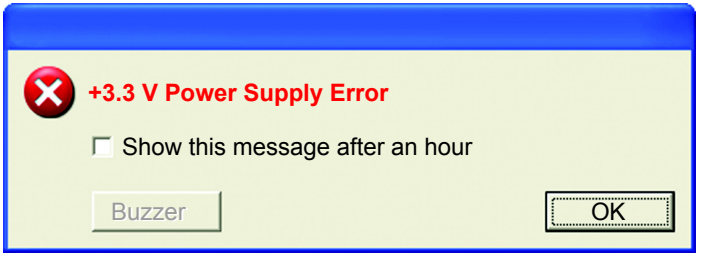
System Monitor GUI icon when no event occurs

System Monitor GUI icon when a specified event occurs

The system performs the Error Action set in System Monitor Property when an error condition is detected with each monitoring item. The Error Action is performed only once when an error is detected for any of the items being monitored.

For example, look at the "+3.3 V" and "+5.0 V" options in the Voltage field. When the popup message feature for monitoring the voltage status is enabled, the popup message **+3.3 V Power Supply Error** is shown on the screen if a +3.3 V power supply error occurs. Press the **OK** button on the dialog box to hide the message.

Example of +3.3 V Power Supply error:



If a +5.0 V power supply error occurs, the popup message **+5.0 V Power Supply Error** is shown on the screen. The popup message displays the monitored item and an error description. When the buzzer feature is enabled, press the **Buzzer Off** button on the popup message to stop the buzzer sound. Press the **OK** button to close the popup message.

When OS Shutdown is enabled, the system automatically enters the shutdown operation without prompting the user for confirmation. To display the System Monitor screen for reviewing the current condition and normal time, double click on the icon in the System Tray.

When the buzzer sounds as an error action, the System Monitor screen displays the **Buzzer Off** button that is hidden during normal operation. When a popup message window is displayed, the **Buzzer Off** button is displayed in the window.

Note: Once an error is detected, the System monitor stores the error status (displays the icon indicating an error status). To resolve the error, press the **Reset** button on the System Monitor screen or switch off the terminal, perform the actions necessary to remove the cause of the error and power up the terminal once more.

System Monitor Error Messages

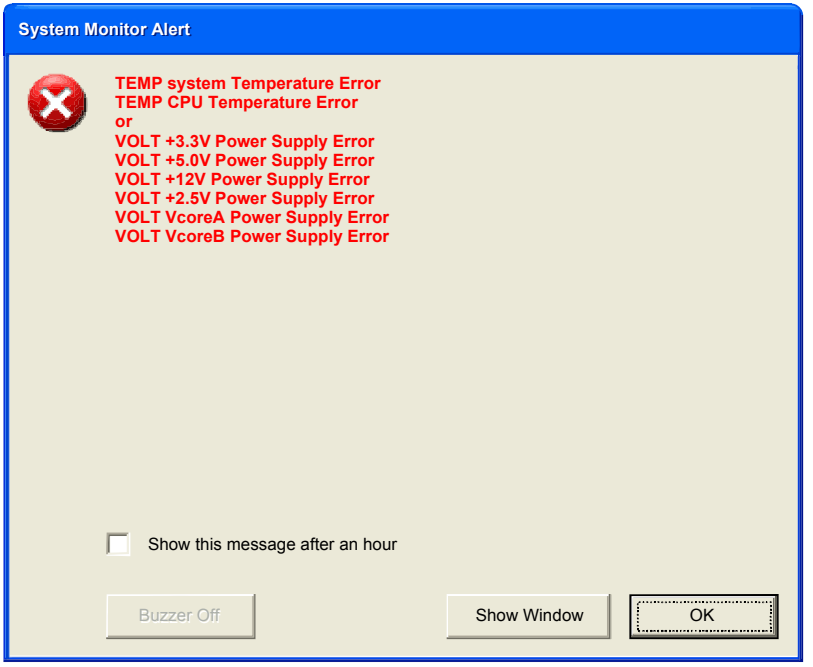
This section describes the error messages and closing messages displayed on the System Monitor and System Monitor Property screens.

When an error occurs whilst the popup message option is enabled for Error Action, the following messages are displayed on the popup message output screen under the factory settings.

List of the error messages:

Error Generating Item	Message
VcoreA	VOLT VcoreA Power Supply Error
VcoreB	VOLT VcoreB Power Supply Error
Voltage +3.3 V	VOLT +3.3 V Power Supply Error
Voltage +5.0 V	VOLT +5.0 V Power Supply Error
Voltage +12 V	VOLT +12 V Power Supply Error
Voltage +2.5 V	VOLT +2.5 V Power Supply Error
System Temperature	TEMP System Temperature Error
CPU Temperature	TEMP CPU Temperature Error
Watchdog Timer	Watchdog Timer Error
Backlight	Backlight Blowout Error

Example of displayed screen:



Note: You can modify the messages displayed on the popup message from the System Monitor Property screen.

Error Displays when Using the Event Viewer

The System Log records error type/location and error actions as error events. You can check the error event information using the Event Viewer.

Step	Action
1	Start your Smart terminal
2	Click **Start** → **Control Panel** → **Administrative Tool** → **Event Viewer**

Note: This feature is supported by Windows® XPe.

Error Type/ Location and Error Action

The error type/locations shown by the Event Viewer are shown in the table below:

Error type/Location	Error Message Description
VcoreA	VOLT VcoreA Error has occured
VcoreB	VOLT VcoreB Error has occured
Voltage +3.3 V	VOLT +3.3 V Error has occured
Voltage +5.0 V	VOLT +5.0 V Error has occured
Voltage +12 V	VOLT +12 V Error has occured
Voltage +2.5 V	VOLT +2.5 V Error has occured
System Temperature	TEMP System Error has occured
CPU Temperature	TEMP CPU Error has occured
Watchdog Timer	Watchdog Timer Error has occured

The actions taken when an error occurs and which are shown by the Event Viewer, are shown in the table below.

Type of Alert	Error Message
Buzzer	Buzzer has sounded because of an "xx" error.
Popup Message	Popup message has been displayed because of an "xx" error.
OS Shutdown	Windows® has been shutdown due to an "xx" error.
Power LED	The LED has changed to orange because of an "xx" error.

Note:
- The data shown in the table as "xx" indicate the error type/location
- The actions to be undertaken by the system after an error occurs are set via System Monitor Property screen.
- When a +3.3 V error occurs and the buzzer sounds, two errors will be displayed by the Event Viewer: **+3.3 V Error has occurred** and **Buzzer has sounded because of a +3.3 V error**.

Maintenance

11

At a Glance

Subject of this Chapter

This chapter covers maintenance of the Smart 8.4 ".

What's in this Chapter?

This chapter contains the following topics:

Reinstallation Procedure

At a Glance

In certain cases, it may be necessary to reinstall the operating system.

Before Reinstallation

Hardware required:

- Reinstallation CD-ROM.
- A computer running Windows 2000/XP able to read "Compact Flash Memory"and having a CD-ROM drive.
  Optimal configuration: Standard computer with PCMCIA slot (Notebook for example) and "Compact Flash" to PCMCIA adaptator.
  Possible configuration (non contractual): Computer and "Compact Flash reader" on USB port."

Note: Save all important data on the Compact Flash card (the reinstallation process erases all data on them). The reinstallation process will return the computer to its factory settings.

Reinstallation

Refer to the relevant procedure in the Installation Guide.

Regular Cleaning and Maintenance

Precaution

⚠ DANGER

HAZARDOUS VOLTAGE

Disconnect all power before working on the equipment.

Failure to follow this instruction will result in death or serious injury.

⚠ CAUTION

EQUIPMENT DAMAGE

Do not clean the unit with paint thinner, organic solvents, or strong acids.

Failure to follow this instruction can result in injury or equipment damage.

Gasket

⚠ CAUTION

LOSS OF SEAL

Ensure that the gasket is in good working order and free from cracks, scratches, and dirt. A gasket which has been used for a long period of time may be scratched or dirty, and may have lost much of its water resistance. Change the gasket at least once a year, or when scratches or dirt become visible.

Failure to follow this instruction can result in injury or equipment damage.

Lithium Battery

⚠ WARNING

FIRE OR CHEMICAL HAZARD

The Lithium batteries used in this device may present a risk of fire or chemical burn if not handled properly.

- Do not recharge, disassemble, heat above 100 °C (212 °F), or incinerate.
- Recycle or properly dispose of used batteries.
- Replace with identical type.
- Follow all battery manufacurer's instructions.

Failure to follow this instruction can result in death, serious injury, or equipment damage.

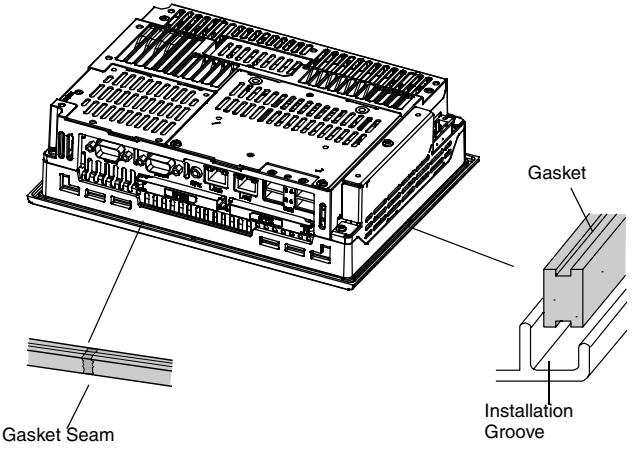
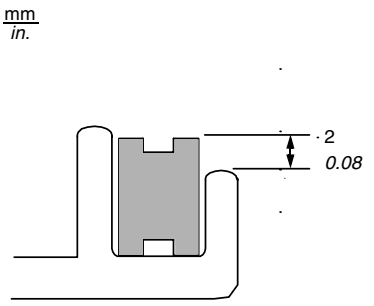
The terminal contains a lithium or mecury battery, which is used to save certain system data such as the date and time.

Installing a Replacement Gasket

The moisture resistant gasket protects the Smart 8.4 " against dust and improves its water resistance.

Note: A gasket which has been used for a long period of time may have scratches or dirt on it, and could have lost much of its water resistance. Be sure to change the gasket periodically (or when scratches or dirt become visible).

The table below describes how to replace the installation gasket.

Step	Action
1	Place the unit on a flat level surface with the display facing downwards.
2	Remove the gasket from the unit.
3	Attach the new gasket ensuring that the gasket's grooved sides are vertical. Be careful that the gasket's seam is not inserted into any of the corners of the unit as this may lead to tearing of the gasket. Gasket Installation 
4	Check that the gasket is correctly attached to the unit. The upper surface of the gasket should evenly protrude approximately 2 mm (0.08 in) out of the groove. Gasket Protrusion 

Periodic Inspection

Be sure to inspect the Smart 8.4 " periodically to ensure that it is in good working order. For example:

- Are all power cords and cables connected properly? Have any become loose?
- Are all mounting brackets holding the unit securely?
- Is the ambient temperature within the specified range?
- Are there any scratches or traces of dirt on the installation gasket?

Troubleshooting

12

Troubleshooting

Troubleshooting Checklist

This section explains how to find and resolve problems with the Smart unit.

The Smart can be connected to a wide range of devices, including a host (PLC), however, this manual will not discuss every possible device or problem. For problems not directly related to the Smart unit, refer to that device's manual.

The main problems that can occur during usage of the Smart are:

- The Touch Panel display is blank
- The Touch Panel does not respond
- Connected devices cannot be used.

When a problem occurs, be sure to first read each checklist item and follow the instructions given. If this does not solve the problem, please contact your local Smart distributor.

When a hardware or software problem cannot be solved, please contact the distributor where you purchased the Smart unit.

No Display

Step	Check Item or Operation	Check Result	Action Required
1	Switch OFF the Smart power supply.		
2	Is the power cord connected correctly?		Connect the power cord correctly.
3	Is the power supply voltage within specification?		Please refer to *Characteristics of the Smart 8.4 ", p. 30*
4	Switch ON the power supply.		
5	Does the ON LED illuminate in green?		Power indicator does not light up or is orange/red blinking and you have no screen operation, contact the distributor where the Smart was purchased.
6	Does the Windows® operating system work as normal?		If a white screen is displayed and Windows® does not work at all, please contact the distributor where the Smart was purchased.
–	Was the problem solved by the above?		If not, please contact the distributor where the Smart was purchased.

Touch Panel does not Respond

Step	Check Item or Operation	Check Result	Action Required
1	Has the Touch Panel been calibrated?		Calibrate the Touch Panel. If the Touch Panel cannot be calibrated, please contact the distributor where the Smart was purchased.
–	Was the problem solved by the above?		If not, please contact the distributor where the Smart was purchased.

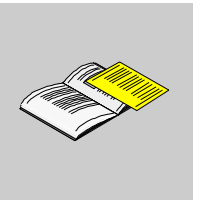
Connected Devices cannot be Used

Step	Check Item or Operation	Check Result	Action Required
1	Switch OFF the Smart power supply.		
2	Is the power cord connected correctly?		Connect the power cord correctly.
3	Are the peripheral devices connected correctly?		Follow the instructions described in the respective manual.
4	Switch ON the Smart power supply.		
5	Does this device require driver setup?		Refer to the device's manual and setup the driver.
–	Was the problem solved by the above?		If not, please contact the distributor where the Smart was purchased.

Recovery

Please refer to the reinstallation procedure *Reinstallation Procedure, p. 102*

IV



Appendices

At a Glance

Subject of this Part

This part contains the appendices relating to the product.

What's in this Part?

This part contains the following chapters:

Accessories

13

Accessories for the Smart 8.4"

List

Accessories are available as options. The list of accessories is shown below:

Description	Reference
RAM 1 GB	MPC YK22 RA 1024
Compact Flash 1 GB - Web edition - Windows® XP Embedded	MPC YN11 CF 110T
Compact Flash 1 GB - HMI edition - Windows® XP Embedded - Vijeo Designer Run Time	MPC YN 11 CF 110H
Protection sheet	MPC YK10 SPS KIT
Maintenance kit including installation fasteners, installation screws and gasket	MPC YK10 MNT KIT

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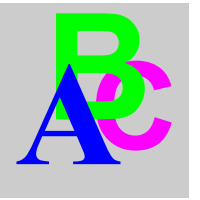

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