CYBELEC
INFRANOR GROUP COMPANY

Embedded Line Terminal
User's Manual

!!! Warning !!!

Cybelec reserves the right to change any information contained in this manual without notice.

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Issue 1.2

Content

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1   DEFINITIONS

CAN	Controller Area Network
CiA	CAN in Automation e. V. CAN-Bus international manufacturer and user organization
CAL	CAN Application Layer. The Application layer for CAN as specified by CiA
COB	Communication Object is a CAN message. Data must be sent across a CAN network inside a COB.
COB-ID	COB-Identifier. Each CAN message has a single identifier. There are 2032 different identifiers in a CAN network.
NMT	Network Management. One of the services of the application layer. It performs initialization, configuration and error handling in a CAN network.
PDO	Process Data Object.
SDO	Service Data Object.

2 GENERAL INFORMATION

2.1 MANUAL HISTORY

Revision	Date	Comments
1.0	4.04.2005	Preliminary revision, DBu
1.1	7.09.2005	Modification of the configuration table, DBu
1.2	17.10.2005	Modification of the configuration table, DBu

2.2 SAFETY GUIDELINES

2.2.1 Introduction

Programmable logic controllers, operating and monitoring devices have been designed, developed or manufactured for conventional use in industry. They were not designed, developed and manufactured for any use involving serious risks or hazards that without the implementation of exceptionally stringent safety precautions could lead to death, injury, serious physical damage or loss of any other kind. Such risks and hazards include in particular the use of these devices to monitor nuclear reactions in nuclear power plants, as well as flight control systems, flight safety, the control of mass transportation systems, medical life support systems, and the control of weapons systems.

Both when using programmable logic controllers and when using operating and monitoring devices as control systems in conjunction with a Soft PLC, the safety precautions applying to industrial control systems (e.g. the provision of safety devices such as emergency stop circuits, etc.) in accordance with applicable national and international regulations must be observed. The same applies for all other devices connected to the system, such as drives. All tasks such as installation, commissioning and service may only be carried out by qualified personnel. Qualified personnel are persons who are familiar with the transport, mounting, installation, commissioning and operation of the product and have the appropriate qualifications. National accident prevention guidelines must be followed. The safety guidelines, connection descriptions and limit values listed in the technical data must be read carefully before installation and commissioning and must be observed.

2.2.2 Intended Use

Electronic devices are generally not fail-safe. In the event of a failure on the programmable control system, operating or monitoring device or uninterruptible power supply, the user is responsible for ensuring that other devices that may be connected, such as motors, are made safe.

2.2.3 Transport and Storage

During transport and storage, devices must be protected from excessive stress (mechanical load, temperature, humidity, aggressive atmosphere).

2.2.4 Installation

- The installation must take place according to the documentation.
- The devices are only allowed to be installed without voltage applied and by qualified personnel.
- General safety regulations and nationally applicable accident prevention guidelines must be observed.
- Electrical installation must be carried out according to the relevant guidelines (e.g. line cross section, fuse, protective ground connection).

2.3 MODELS CONFIGURATION TABLE

Type	Description	Ordering key 3)							
ELITE-000	System without visual interface	ELITE-000-	x	x	x	x	x	x	x
ELITE-065	6.5" TFT Display with resistive touch screen	ELITE-065-	x	x	x	x	x	x	x
ELITE-104	10.4" TFT Display with resistive touch screen	ELITE-104-	x	x	x	x	x	x	x
ELITE-121	12.1" TFT Display with resistive touch screen	ELITE-121-	x	x	x	x	x	x	x
ELITE-150	15.0" TFT Display with resistive touch screen	ELITE-150-	x	x	x	x	x	x	x
Operating System	Windows CE.Net	1							
	Windows 2000 Prof. 1)	2							
	Windows XP Prof. 1)	3							
Processor	VIA Eden 400Mhz 4)		1						
	Intel Celeron M 600Mhz		2						
	Intel Pentium M 1.1Ghz		3						
Main memory	128 MByte			1					
	256 MByte			2					
	512 MByte			3					
	1 GByte 2)			4					
Mass storage	Compact Flash Card 64 MByte				1				
	Compact Flash Card 128 MByte				2				
	Compact Flash Card 256 MByte				3				
	Compact Flash Card 512 MByte				4				
	Compact Flash Card 1 GByte				5				
	Hard Disc Drive 20 GByte 1)				6				
PCI Extension	None					0			
	PCI Extension with 1 Slot					1			
	PCI Extension with 2 Slots					2			
Other Option	None						0		
	Without Touch Screen						1		
Software	None							0	
	CoDeSys SP 32 Bit Full							1	
	CoDeSys SP 32 Bit Full + High SoftMotion Single Axis							2	
	CoDeSys SP 32 Bit Full + High SoftMotion Single Axis/CAM/CNC							3	
	CoDeSys SP RTE for Windows 2000 or XP							4	
Revision	Configuration Table Revision Number								1.2

1)   not available with ELITE-000 and ELITE-065
2)   only available with PM 1.1Ghz
3)   Ordering key example: ELITE-065-1111003-1.1
4)   not available with ELITE-150

Table: ELITE Configuration table

3   GENERAL OVERVIEW

The range of ELITE device has been developed for automation market. It encompasses a line of operating units with and without touch screen interface. It offers a complete PLC, including servo axes controls, adapted to a very wide range of standard and upscale machinery applications thanks to the modular and evolutionary ELITE design.

The design is not only modular in the choice of the number of axes and IOs modules that can be connected together, but also in the choice of various CPU units whereby the power of the main processor can be adapted to machine performance.

Axis and IOs control is achieved by CANopen field bus. This modern concept available in standard increases its reliability and distinctly decreases costs. Furthermore through the PCI Extension bus, the device stay open to other industrial bus such as for example Profibus.

All ELITE devices may be based on the CoDeSys solution. One of the most powerful IEC 61131-3 programming tools. All five programming languages of the standard are supported. CoDeSys combines the power of advanced programming languages such as C or Pascal with the easy handling and operational functions of PLC programming systems.
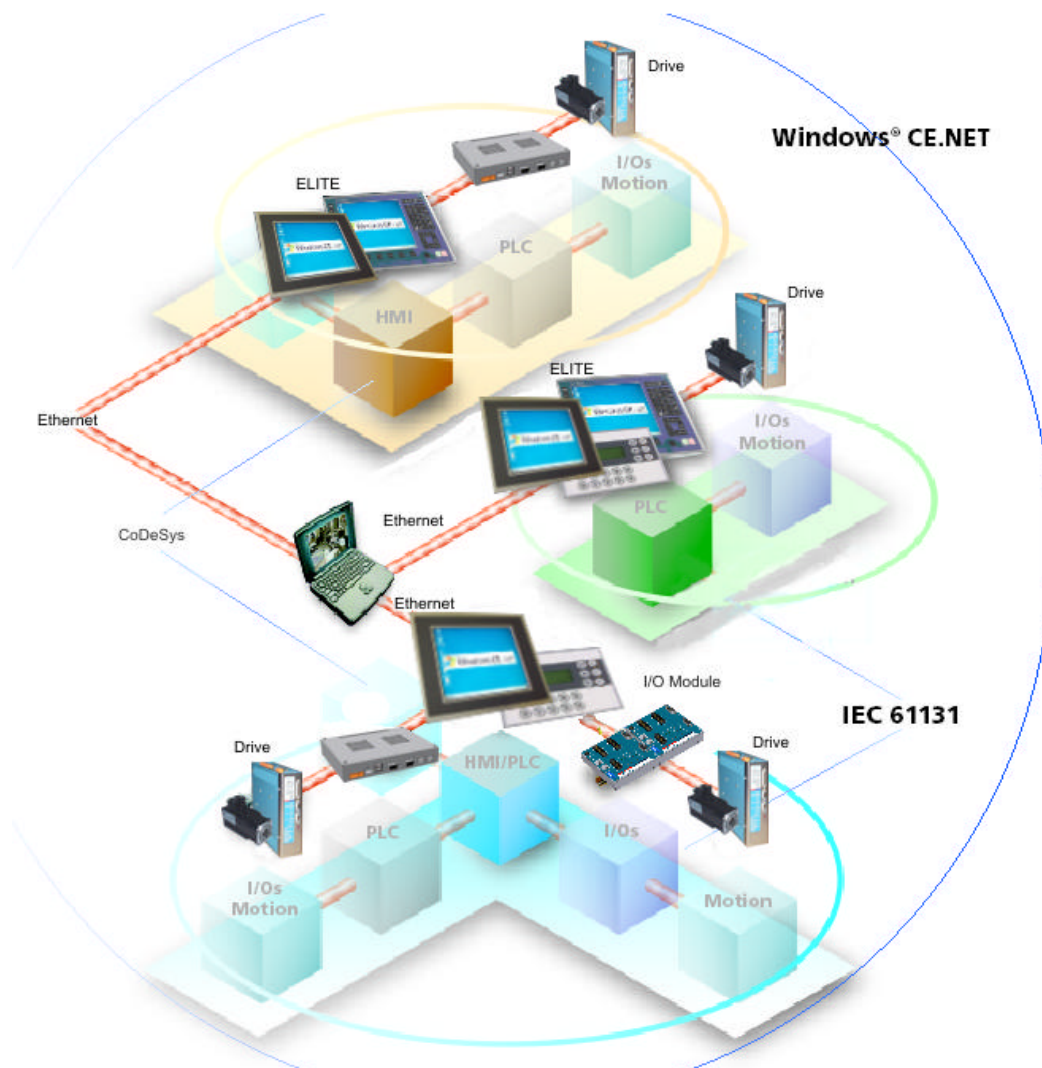

Fig: General Overview

4   TECHNICAL DATA

4.1   GENERAL INFORMATION

CYBELEC offers the ELITE product range for automation of small to midsize machines and systems.
The ELITE product range encompasses a line of devices from operating units with VGA to XGA display to visualizations and control of machines. Depending on the design, the devices contain the operating system such as WINCE.NET or Windows 2000 or Windows XP. The number of onboard interfaces is reduced to a minimum and size is optimized to the smallest dimensions.

Fig: ELITE-065

4.1.1 Features

- 24VDC supply voltage
- Power Button Input
- Ethernet 10/100 MBit interface
- 2 USB connections
- 2 RS232 interfaces
- 2 CAN BUS (RJ45 Connector)
- 1 External Compact Flash card (type I) slot
- Touch screen (analog resistive)
- Sound Interface
- Maximum 2 PCI extension slots (available as an option)

4.2   ELITE DEVICE INTERFACES

In the following section, a description is given for all interfaces and plugs which an ELITE device can have.

4.2.1 Power Supply

Input voltage: 24VDC ± 15%.

The supply voltage is internally protected, so that the device cannot be damaged if there is an overload or if the voltage supply is connected incorrectly.

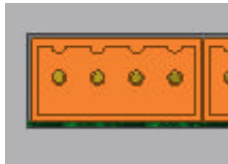| Supply Voltage		
Pin	**Description**	
1	24VDC	
2	GND	
3	GND	
4	24VDC	
Accessorie		
1690440000	Weidmüller Connector (BLZF 3.5/4)	

Table: Supply Voltage Connection

4.2.2 Power Button Input

Connecting an External Switch Button on the Power Button Input give you the possibility to do the following things:

- By just pressing a short time on the switch Button you will turn OFF or Switch ON the display.
- By pressing more than 3 seconds on the External Switch Button you will turn OFF the power of the ELITE device. Once the ELITE device is in the idle mode you will be able to restart the system just by pressing a short time on the External Switch Button.

Power Button Input		
Pin	**Description**	
1	PWRBTN	
2	GND	
Accessorie		
1690420000	Weidmüller Connector (BLZF 3.5/2)	

External Switch Button — Pin 1 / Pin 2
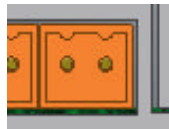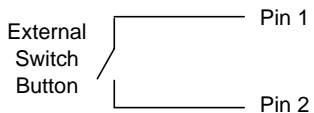
Table: Power Button Input

4.2.3 Ethernet Connection

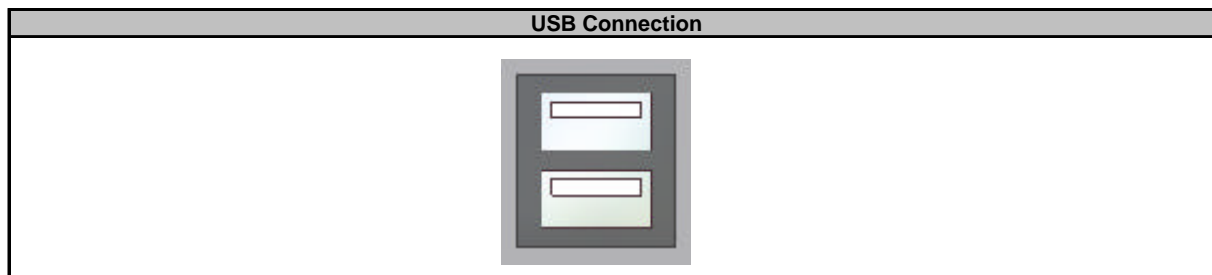| Ethernet Connection	
Ethernet	10/100Mbit/s
Connection	RJ45 Twisted Pair (10BaseT/100BaseT)
Cabling	S/STP (Category 5)
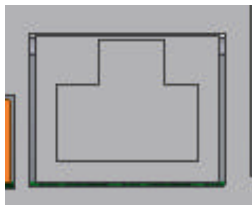
Table: Ethernet Connection

4.2.4 USB Connection

USB Connection

Table: USB Connection

4.2.5 COM Connection

Serial Interface 1-2		
Pin	**Description**	
1	DCD	
2	RXD	
3	TXD	
4	DTR	
5	GND	
6	DSR	
7	RTS	
8	CTS	
9	RI	

Table: COM Connection

4.2.6 CAN Connection

CAN Interface 1-2		
Pin	**Description**	
1	CAN_H	
2	CAN_L	
3	GND	
4	-	
5	-	
6	-	
7	GND	
8	-	
Cabling	S/STP (Category 5)	

Table: CAN Connection

4.2.7 Compact Flash Slot

Compact Flash Slot

Table: Compact Flash Slot

ELITE device are equipped with an external compact flash slot which is accessible from the side. Compact Flash cards of type I are supported.

Caution!
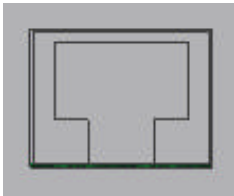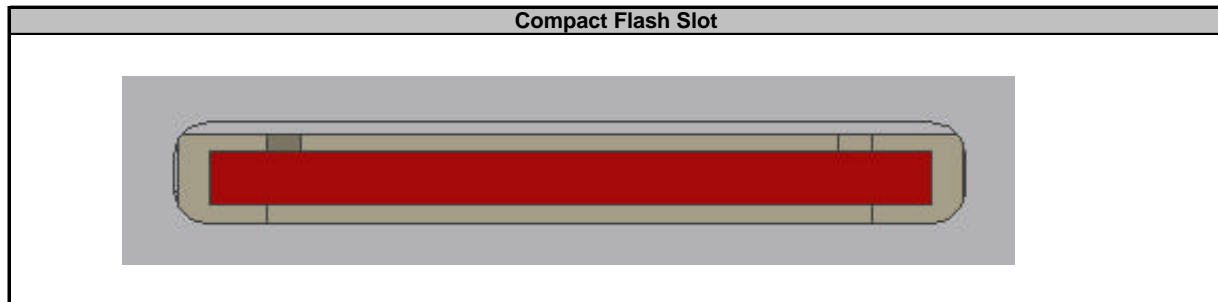**Changing the Compact flash card can only take place without power applied to the device!**

4.2.8 Audio Connection

The Audio In and Out signals are AC-coupled and have a maximum signal level of approximately 1V P-P. The line outputs are capable of driving a 5K Ohm load. Audio sources connected to the line inputs should also be capable of driving a 5K Ohm load.
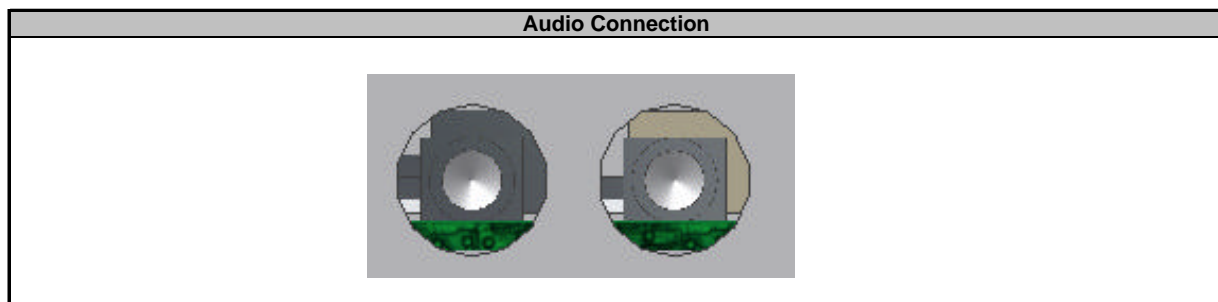
Audio Connection

Table: Audio Connection

4.2.9 PCI Extension

PCI Extension
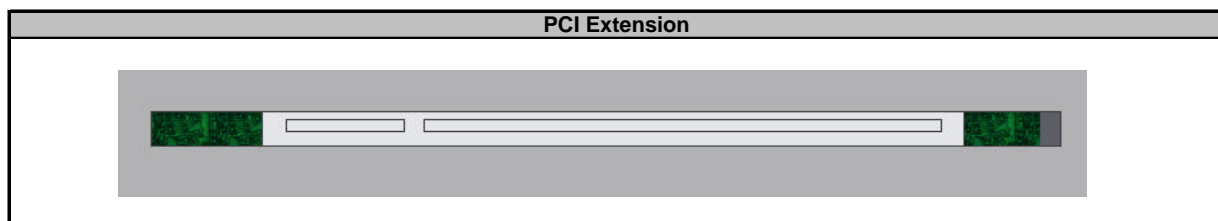
Table: PCI Connection

4.3   LABEL

4.3.1 Safety Sticker

A safety sticker is attached over the Compact Flash slot, which advises that the power must be switched off ELITE device when inserting or removing a Compact Flash card.

Fig: Safety Sticker

4.3.2 Device Label

The following label attached in a suitable location on the ELITE device, displays short definitions for all of the interfaces:

Fig: Device Label 1

Fig: Device Label 2

4.4 EILTE-000

Fig: ELITE-000 Front view

Fig: ELITE-000 Rear view

4.4.1 Technical Data

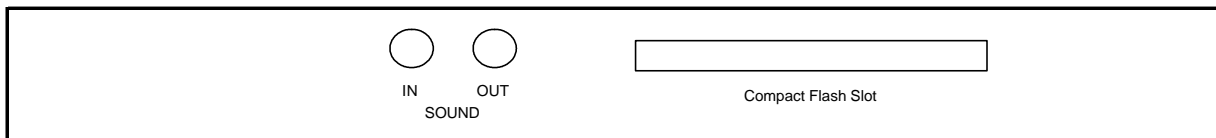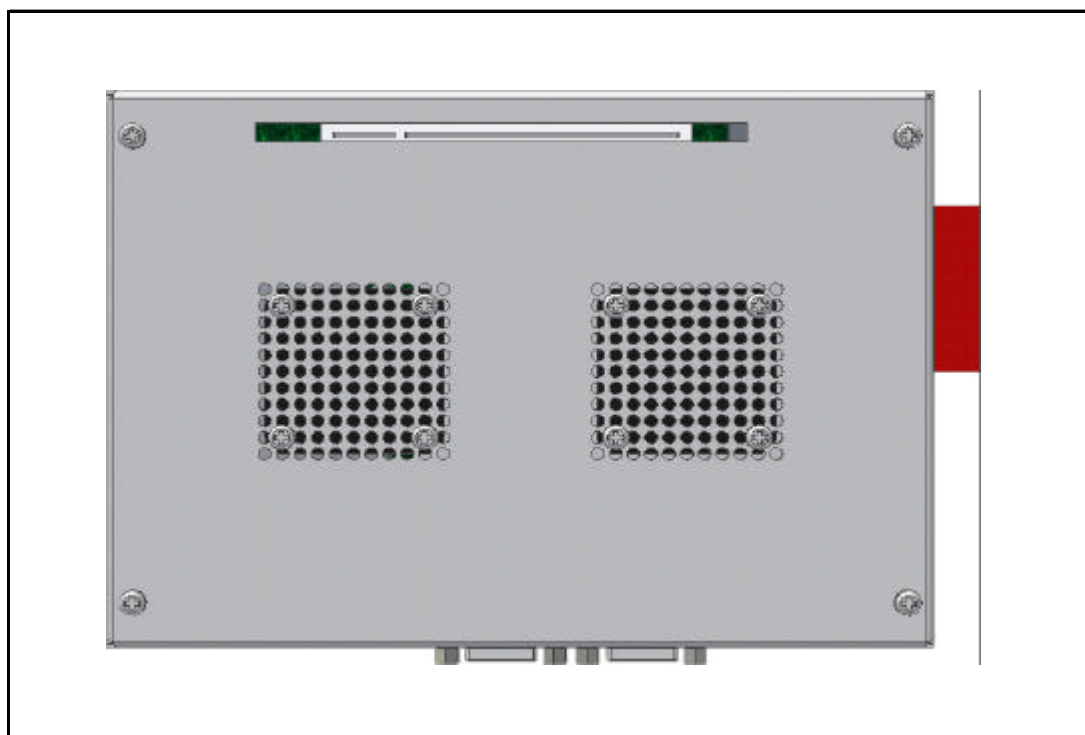| Features	ELITE-000
Operating System	WinCE.Net
Processor	From VIA-EDEN 400Mhz to PM1.1Ghz
Flash	From 64MB to 1GB
Main Memory	128MB to 1GB
Graphic Memory	up to 32MB
Watch Dog	Yes
Power Fail Logic	Need an external Battery
Real-time Clock	Yes
Battery	Yes
Ethernet	
Controller	Is depended of the ETX CPU Board
Connection	RJ45 Twisted Pair (10BaseT/100BaseT)
Cabling	S/STP (Category 5)
Compact Flash	1 external slot for type I Compact Flash cards
Serial Interface	2 RS232
USB Interface	2 USB, connection Type A
CAN Interface	2
PCI Extension	up to 2 standard PCI Slot
Audio Interface	In / Out
Display	
Type	-
Diagonal	-
Color	-
Resolution	-
Brightness	-
Touch Screen	
Technology	-
Controller	-
Front	-
Frame	-
Supply Voltage	24VDC ±15%
Ground Resistance	0 Ohm
Power Consumption	Approx. xxx Watt
Protection	IP 20
Housing	Aluminium
Weight	Approx. xxx kg
Outer dimensions in mm (WxHxD)	186x136x51.6
Environmental Temperature	
Operation	0°C to 50°C
Storage	-20°C to 60°C
Relative Humidity	
Operation	5% to 85%, non-condensing
Storage	5% to 90%, non-condensing

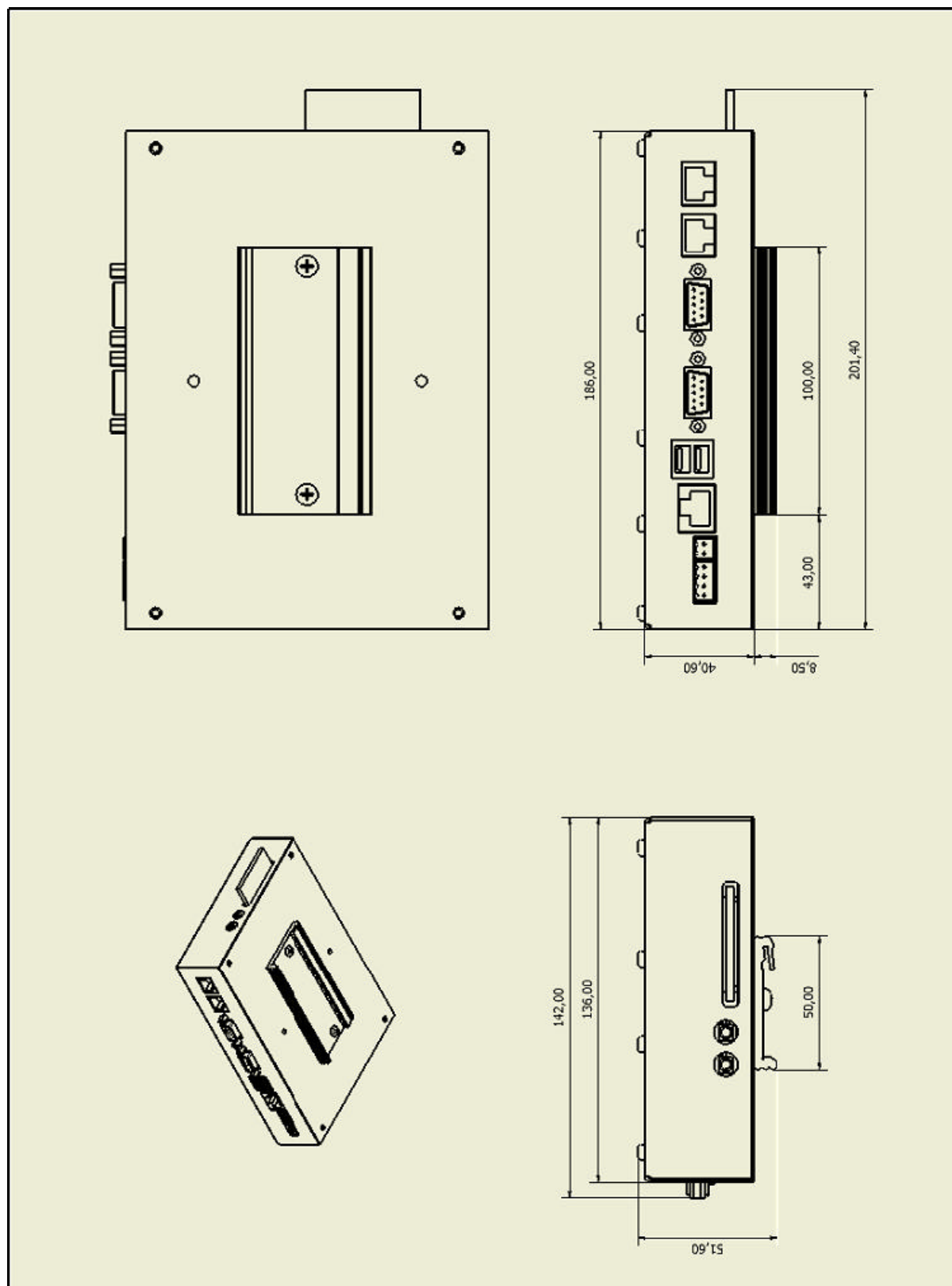Table: ELITE-000 Technical data

4.4.2 Dimensions

Fig: ELITE-000 Dimensions

4.5 ELITE-065
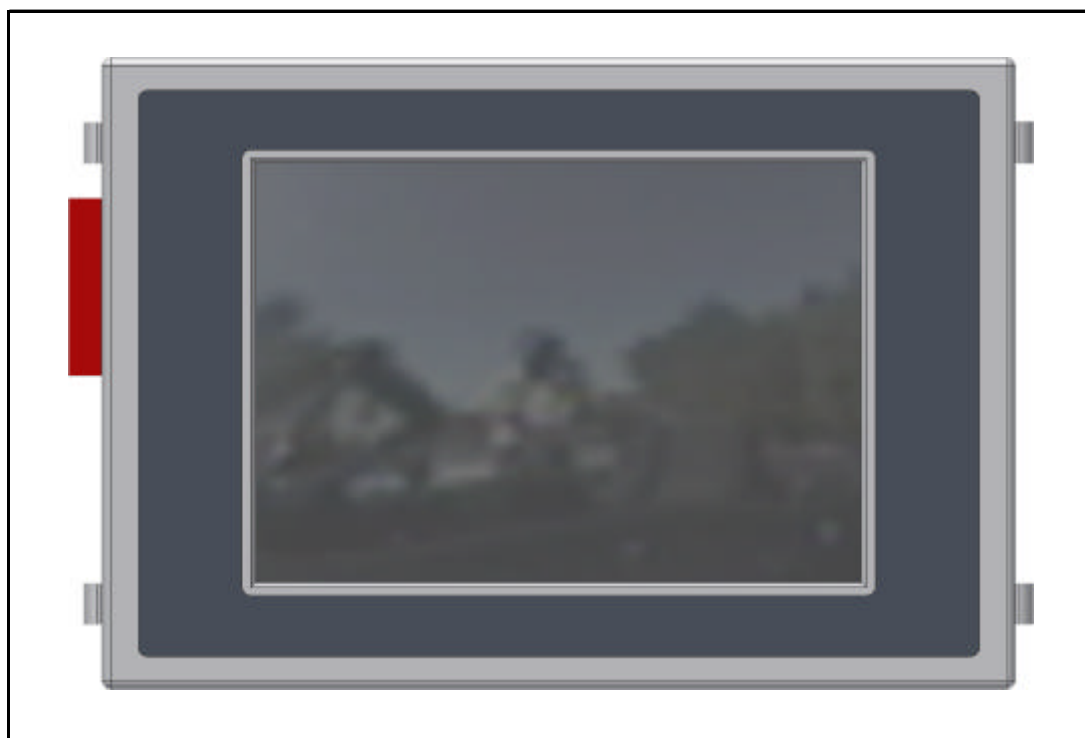
Fig: ELITE-065 Front view

Fig: ELITE-065 Rear view

4.5.1 Technical Data

Features	ELITE-065
Operating System	WinCE.Net
Processor	From VIA-EDEN 400Mhz to PM1.1Ghz
Flash	From 64MB to 1GB
Main Memory	128MB to 1GB
Graphic Memory	up to 32MB
Watch Dog	Yes
Power Fail Logic	Need an external Battery
Real-time Clock	Yes
Battery	Yes
Ethernet	
Controller	Is depended of the ETX CPU Board
Connection	RJ45 Twisted Pair (10BaseT/100BaseT)
Cabling	S/STP (Category 5)
Compact Flash	1 external slot for type I Compact Flash cards
Serial Interface	2 RS232
USB Interface	2 USB, connection Type A
CAN Interface	2
PCI Extension	up to 2 standard PCI Slot
Sound	In / Out
Display	
Type	TFT
Diagonal	6.5"
Color	256K
Resolution	VGA, 640x480 pixels
Brightness	480 cd/m²
Touch Screen	
Technology	Analog, Resistive
Controller	USB Controller
Front	Aluminium
Frame	Polyester, light gay
Supply Voltage	24VDC ±15%
Ground Resistance	0 Ohm
Power Consumption	Approx. xxx Watt
Protection	IP 65 (Front side) / IP 20 (Back side)
Housing	Aluminium
Weight	Approx. xxx kg
Outer dimensions in mm (WxHxD)	202x152x47.6
Environmental Temperature	
Operation	0°C to 50°C
Storage	-20°C to 60°C
Relative Humidity	
Operation	5% to 85%, non-condensing
Storage	5% to 90%, non-condensing

Table: ELITE-065 Technical data

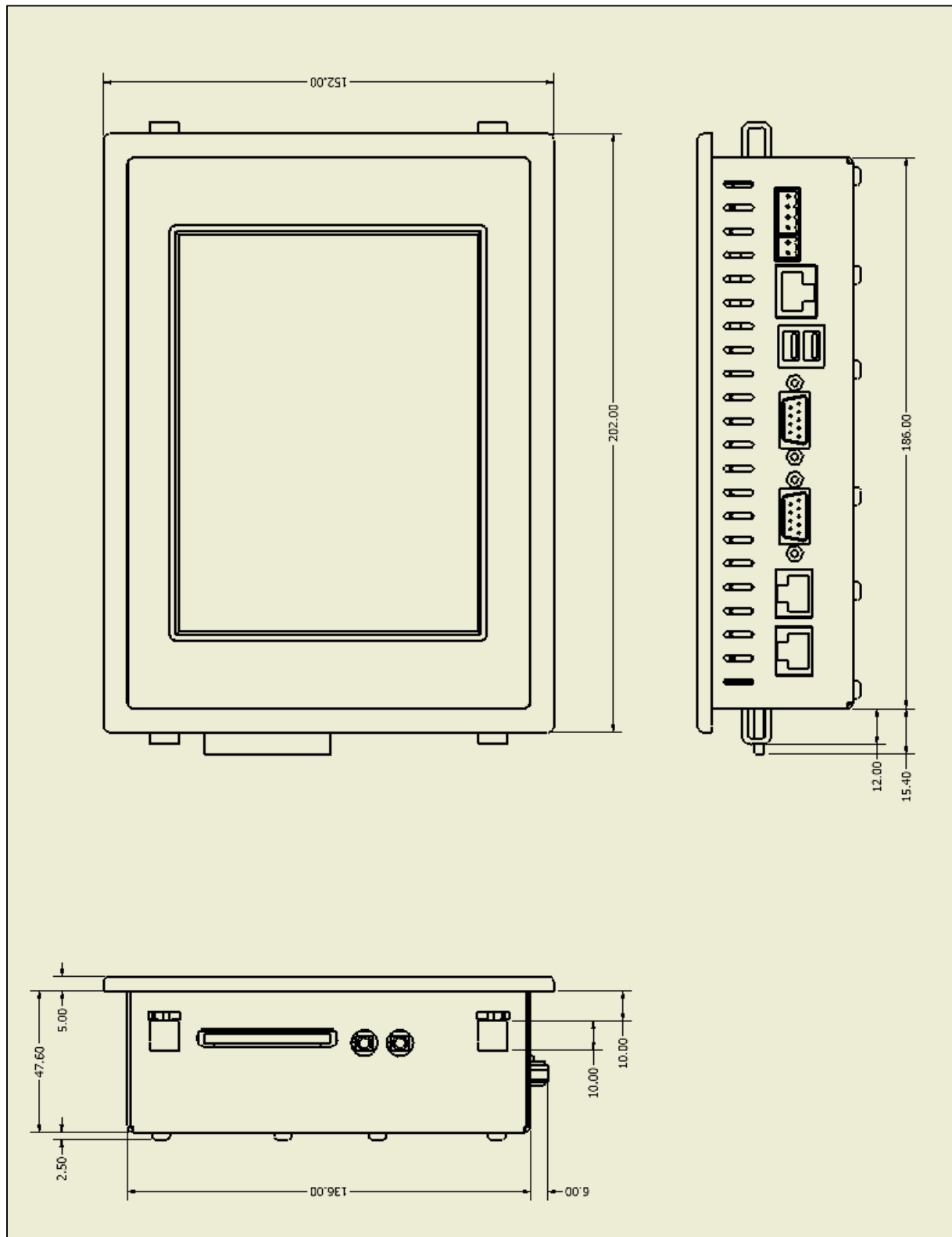## 4.5.2 Dimensions

Fig: ELITE-065 Dimensions

4.5.3 Cutout Installation

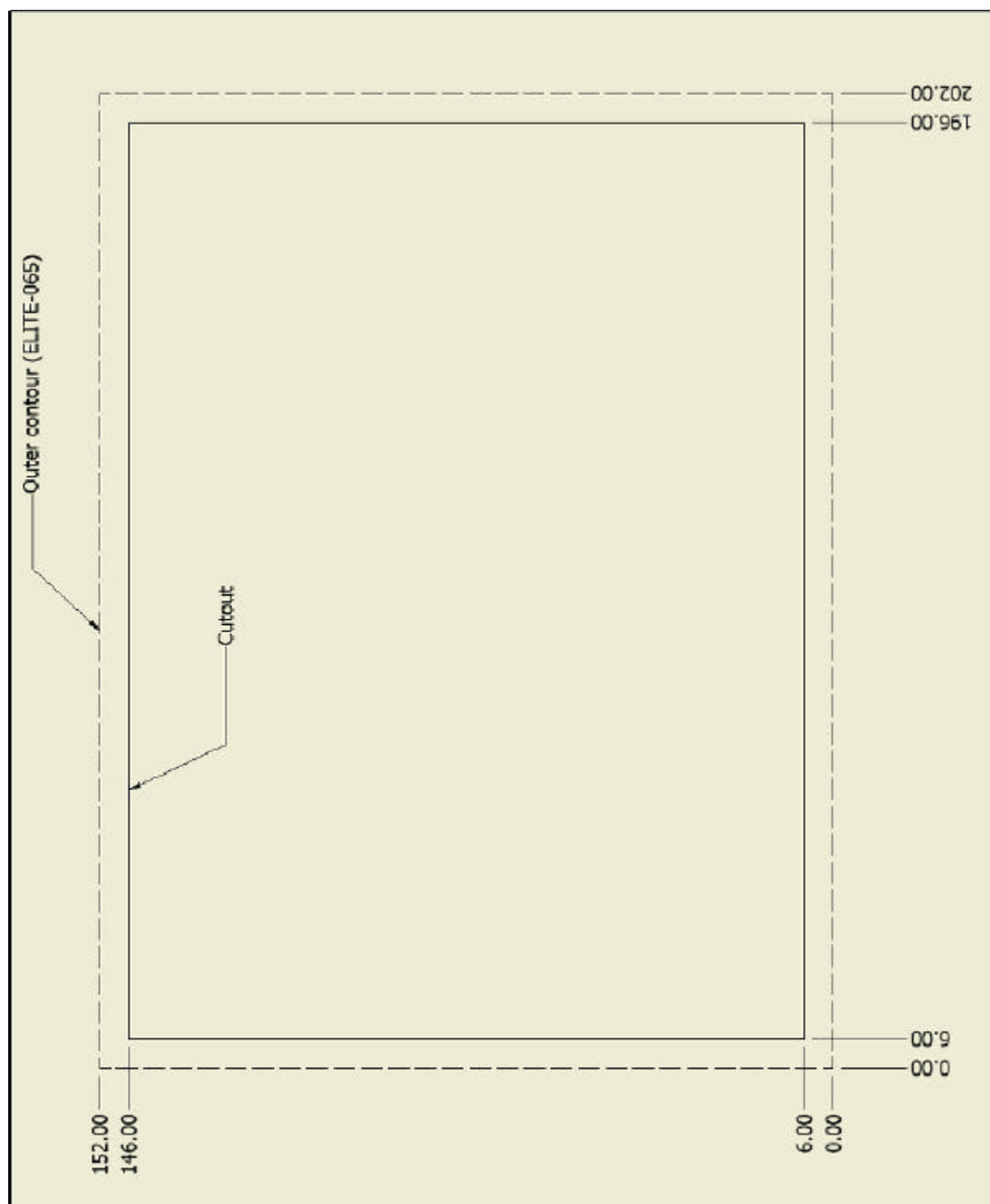The cutout hole is made according to the following dimensions.

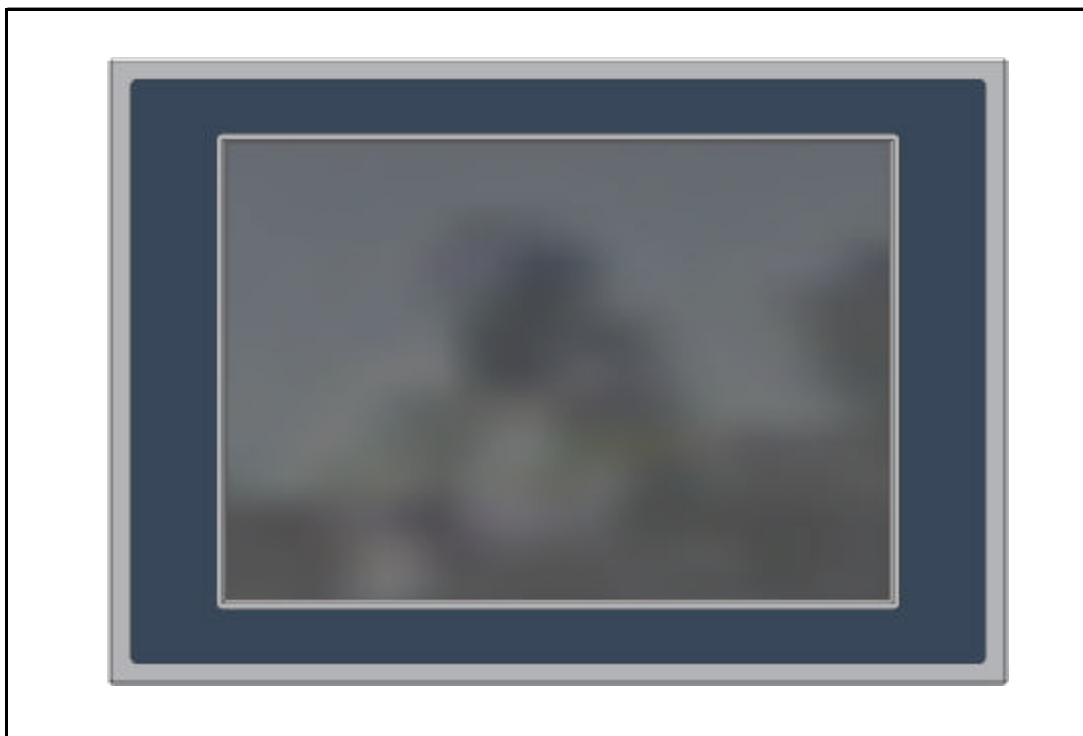Fig: ELITE-065 Cutout Dimensions

4.6 ELITE-104

Fig: ELITE-104 Front view

Fig: ELITE-104 Rear view

4.6.1 Technical Data

Features	ELITE-104
Operating System	WinCE.Net or Win2000 or WinXP
Processor	From VIA-EDEN 400Mhz to PM1.1Ghz
Flash	From 64MB to 1GB
Main Memory	128MB to 1GB
Graphic Memory	up to 32MB
Watch Dog	Yes
Power Fail Logic	Need an external Battery
Real-time Clock	Yes
Battery	Yes

Ethernet
    Controller
    Connection
    Cabling
	
	Is depended of the ETX CPU Board
	RJ45 Twisted Pair (10BaseT/100BaseT)
	S/STP (Category 5)

Compact Flash	1 external slot for type I Compact Flash cards
Serial Interface	2 RS232
USB Interface	2 USB, connection Type A
CAN Interface	2
PCI Extension	up to 2 standard PCI Slot
Sound Interface	In / Out

Display
    Type
    Diagonal
    Color
    Resolution
    Brightness
	
	TFT
	10.4"
	256K
	VGA, 640x480 pixels
	380 cd/m²

Touch Screen
    Technology
    Controller
	
	Analog, Resistive
	USB Controller

Front Frame	Aluminium Polyester, light gay
Supply Voltage	24VDC ±15%
Ground Resistance	0 Ohm
Power Consumption	Approx. xxx Watt
Protection	IP 65 (Front side) / IP 20 (Back side)
Housing	Aluminium
Weight	Approx. xxx kg
Outer imensions in mm (WxHxD)	290x220x65.6

Environmental Temperature
    Operation
    Storage
	
	0°C to 50°C
	-20°C to 60°C

Relative Humidity
    Operation
    Storage
	
	5% to 85%, non-condensing
	5% to 90%, non-condensing

Table: ELITE-104 Technical data

4.6.2 Dimensions

Fig: ELITE-104 Dimensions

4.6.3 Cutout Installation

The cutout hole is made according to the following dimensions.

Fig : ELITE-104 Cutout Dimensions
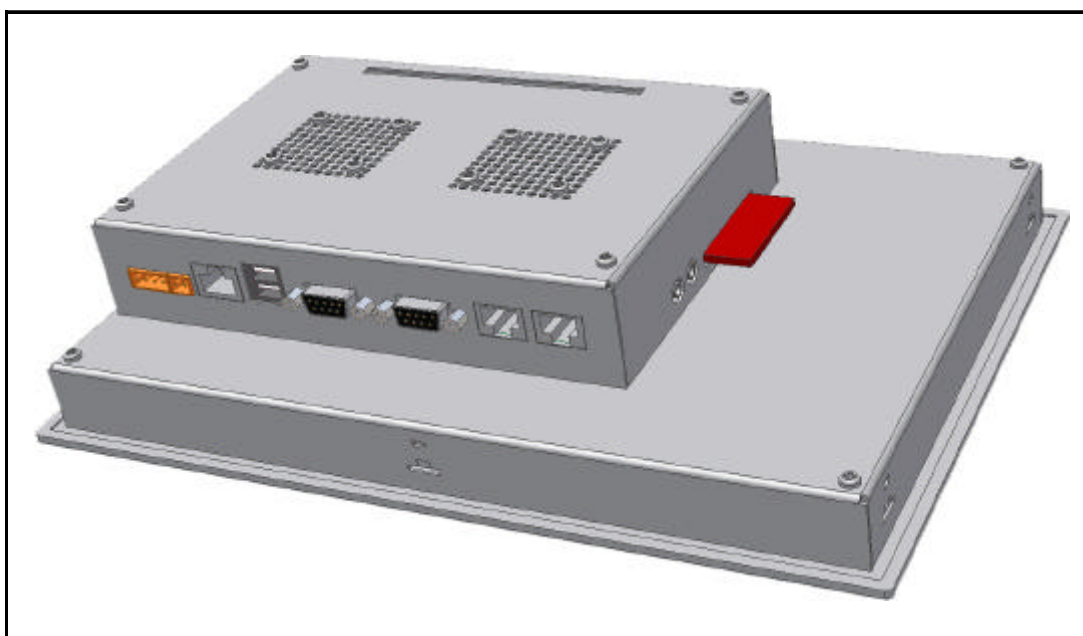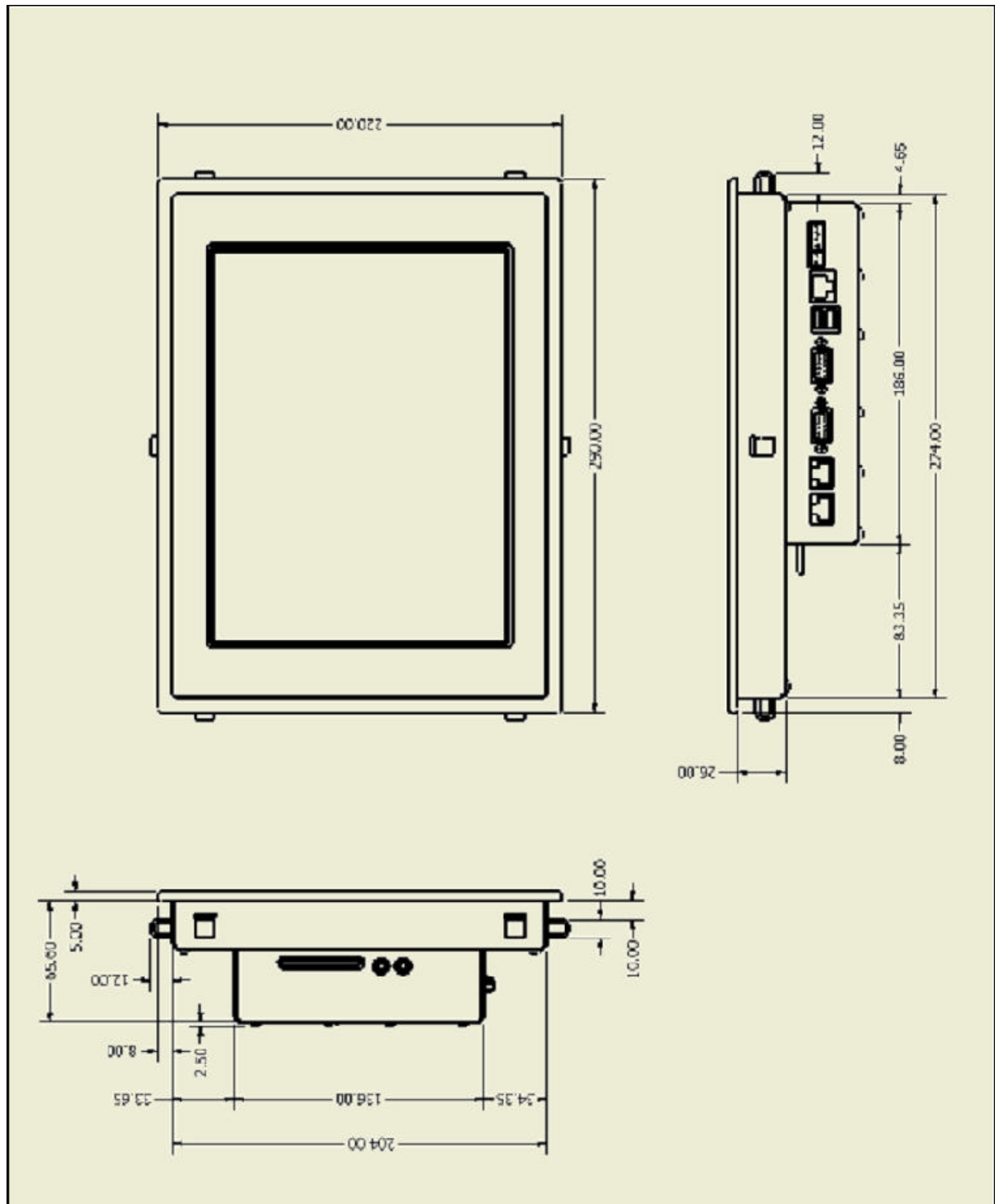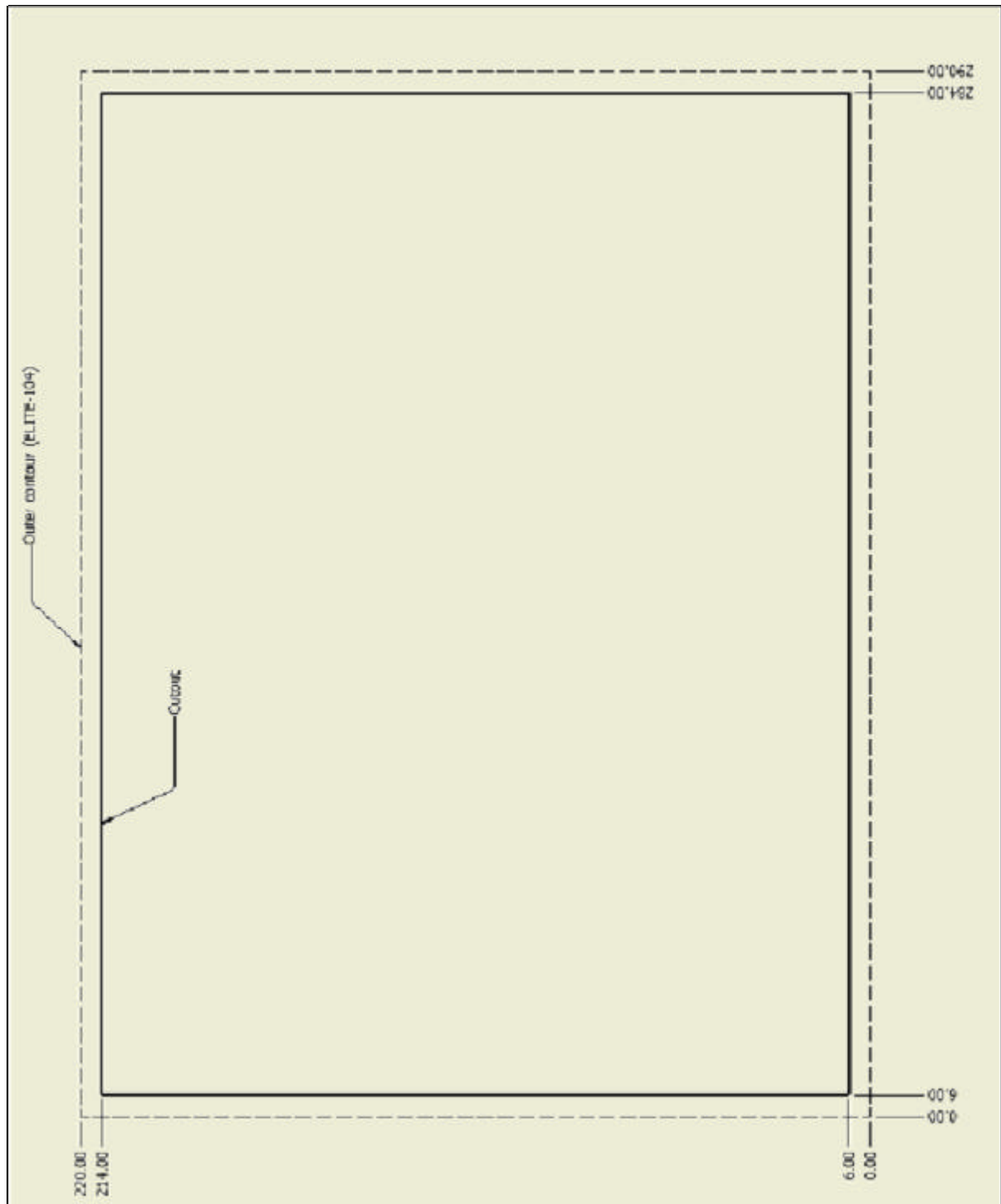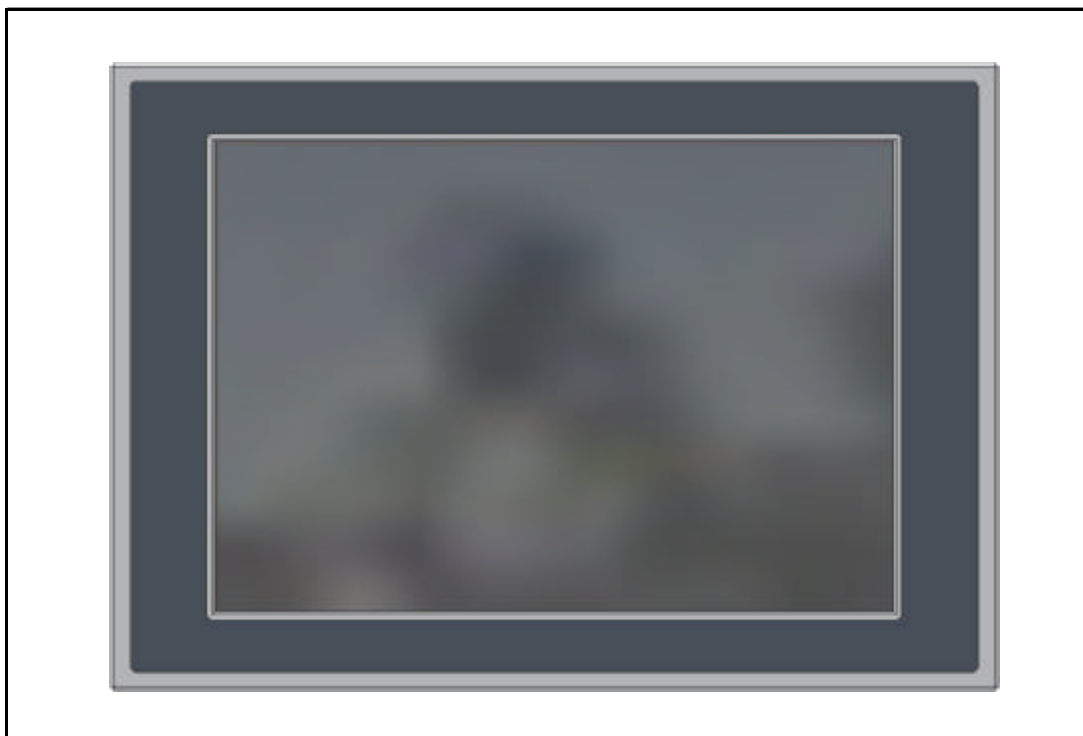
ELITE-121

Fig: ELITE-121 Front view

Fig: ELITE-121 Rear view

4.6.4 Technical Data

Features	ELITE-121
Operating System	WinCE.Net or Win2000 or WinXP
Processor	From VIA-EDEN 400Mhz to PM1.1Ghz
Flash	From 32MB to 512MB
Main Memory	From 64MB to 1GB
Graphic Memory	up to 32MB
Watch Dog	Yes
Power Fail Logic	Need an external Battery
Real-time Clock	Yes
Battery	Yes
Ethernet	
Controller	Is depended of the ETX CPU Board
Connection	RJ45 Twisted Pair (10BaseT/100BaseT)
Cabling	S/STP (Category 5)
Compact Flash	1 external slot for type I Compact Flash cards
Serial Interface	2 RS232
USB Interface	2 USB, connection Type A
CAN Interface	2
PCI Extension	up to 2 standard PCI Slot
Sound	In / Out
Display	
Type	TFT
Diagonal	12.1"
Color	256K
Resolution	SVGA, 800x600 pixels
Brightness	300 cd/m²
Touch Screen	
Technology	Analog, Resistive
Controller	USB Controller
Front	Aluminium
Frame	Polyester, light gay
Supply Voltage	24VDC ±15%
Ground Resistance	0 Ohm
Power Consumption	Approx. xxx Watt
Protection	IP 65 (Front side) / IP 20 (Back side)
Housing	Aluminium
Weight	Approx. xxx kg
Outer dimensions in mm (WxHxD)	326x250x65.6
Environmental Temperature	
Operation	0°C to 50°C
Storage	-20°C to 60°C
Relative Humidity	
Operation	5% to 85%, non-condensing
Storage	5% to 90%, non-condensing

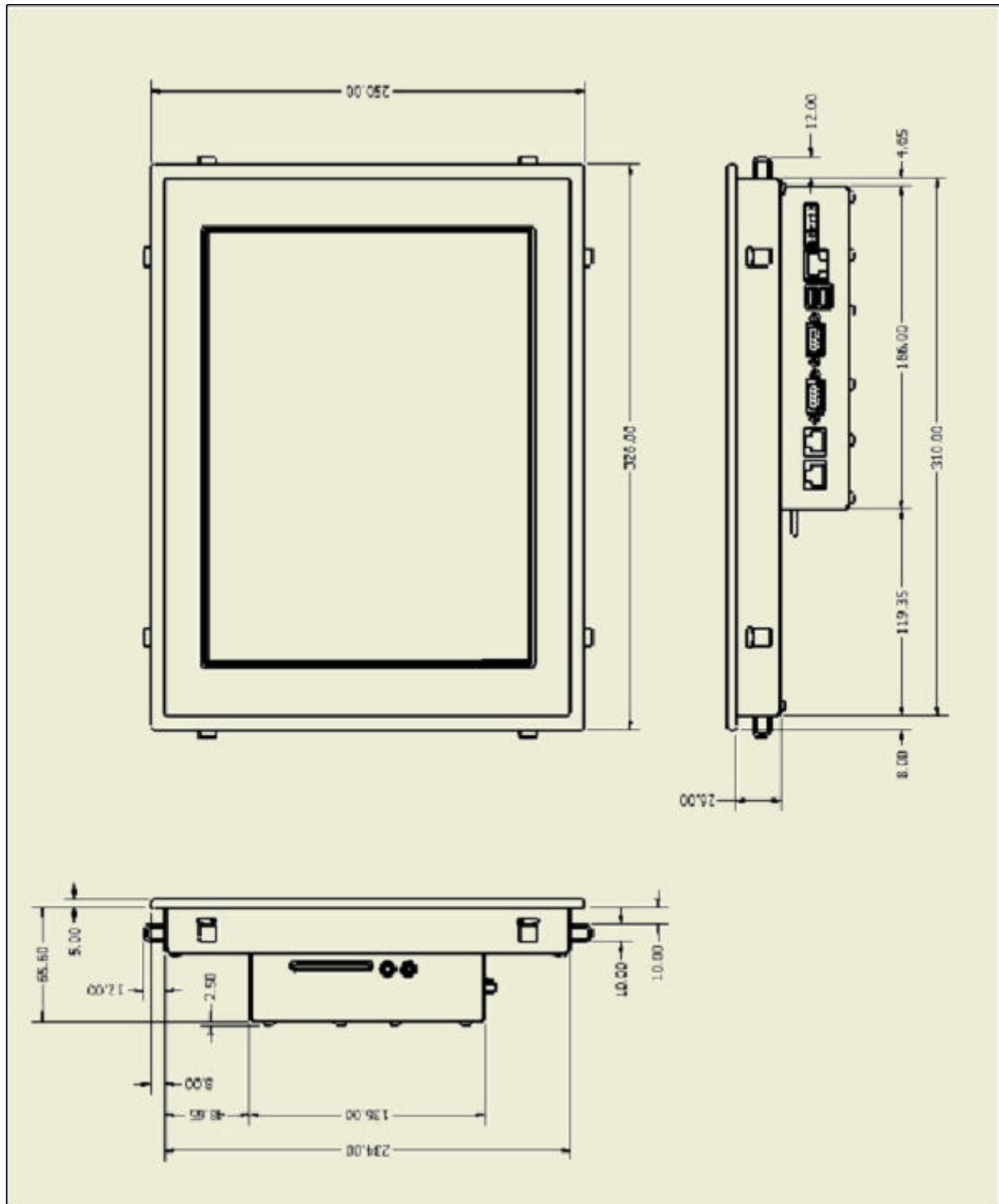Table: ELITE-121 Technical data

4.6.5 Dimensions

Fig: ELITE-121 Dimensions

4.6.6 Cutout Installation

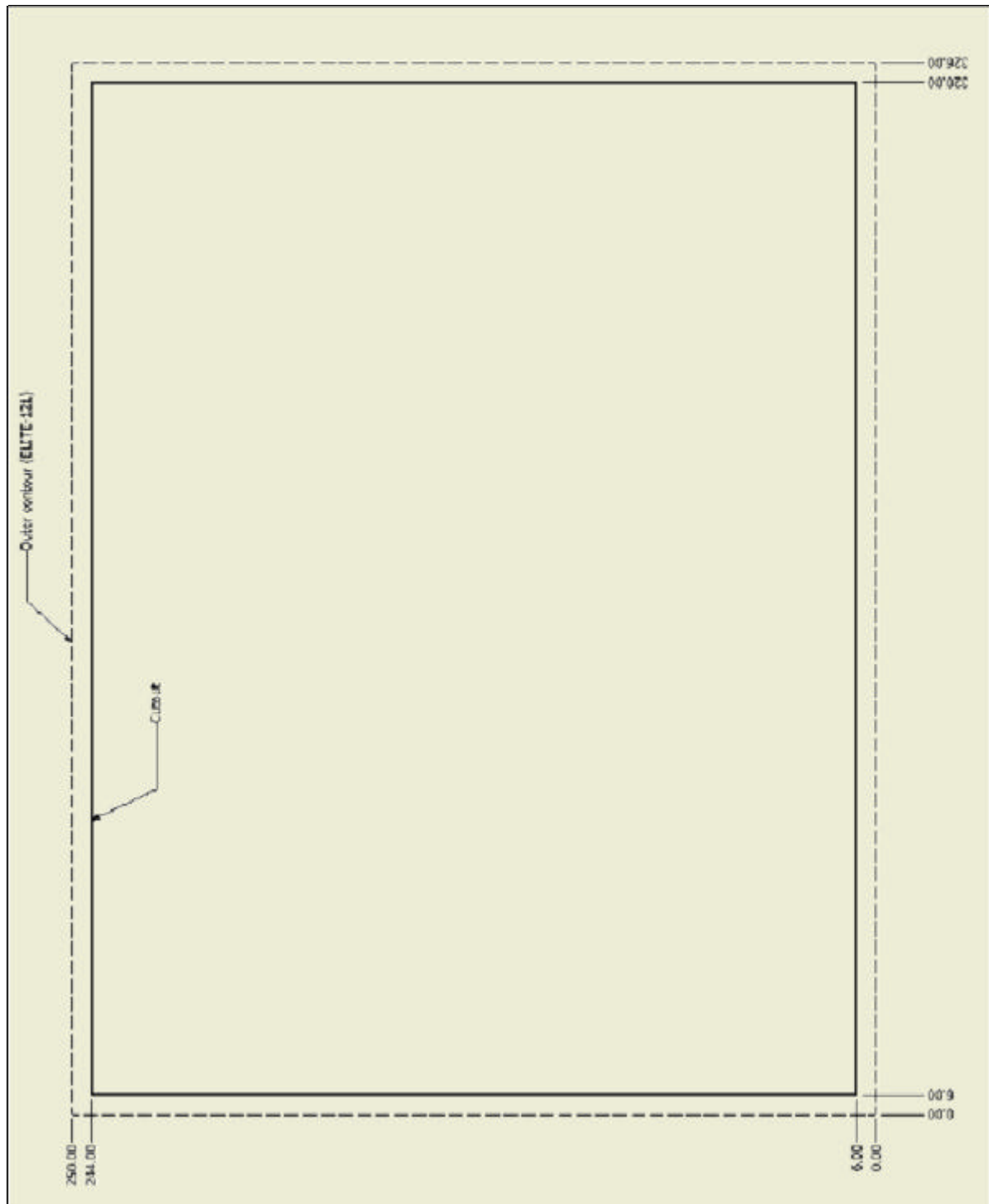The cutout hole is made according to the following dimensions.

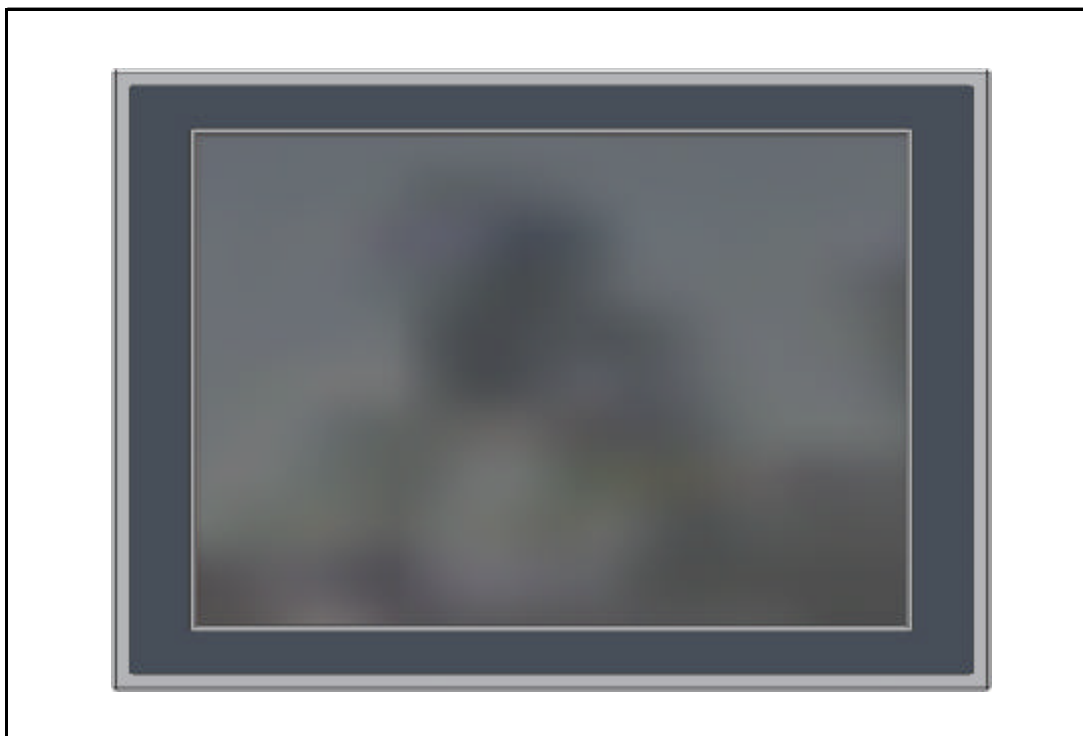Fig: ELITE-121 Cutout Dimensions

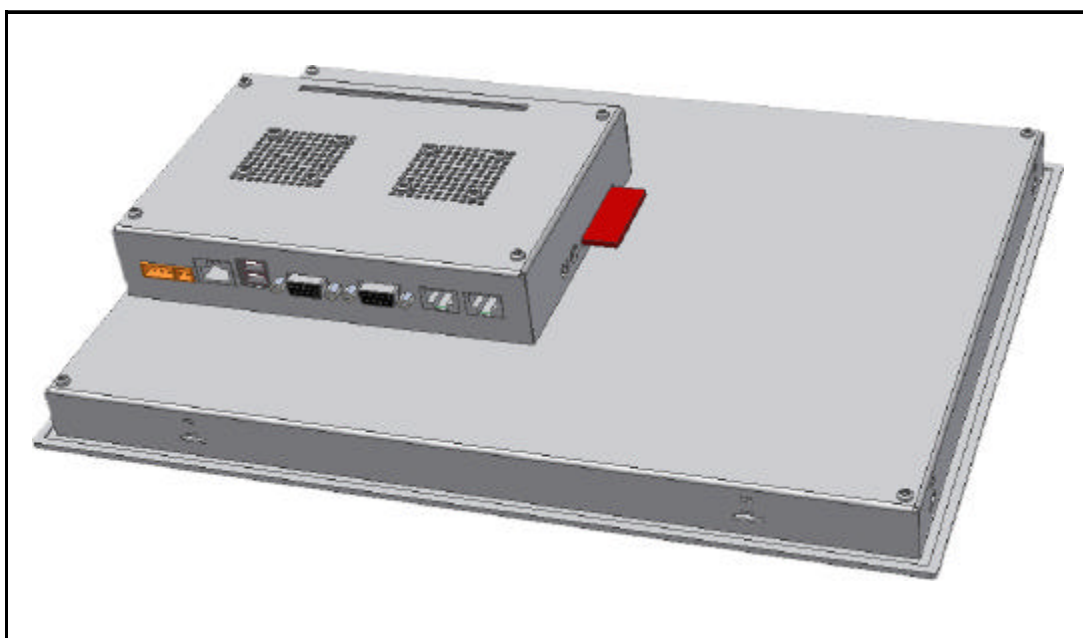## 4.7 ELITE-150

Fig: ELITE-150 Front view

Fig: ELITE-150 Rear view

Technical Data

Features	ELITE-150
Operating System	WinCE.Net or Win2000 or WinXP
Processor	From Celeron 733Mhz to PM1.1Ghz
Flash	From 64MB to 1GB
Main Memory	128MB to 1GB
Graphic Memory	up to 32MB
Watch Dog	Yes
Power Fail Logic	Need an external Battery
Real-time Clock	Yes
Battery	Yes
Ethernet	
Controller	Is depended of the ETX CPU Board
Connection	RJ45 Twisted Pair (10BaseT/100BaseT)
Cabling	S/STP (Category 5)
Compact Flash	1 external slot for type I Compact Flash cards
Serial Interface	2 RS232
USB Interface	2 USB, connection Type A
CAN Interface	2
PCI Extension	up to 2 standard PCI Slot
Sound Interface	In / Out
Display	
Type	TFT
Diagonal	15.0"
Color	16M
Resolution	XGA, 1024x768 pixels
Brightness	250 cd/m²
Touch Screen	
Technology	Analog, Resistive
Controller	USB Controller
Front	Aluminium
Frame	Polyester, light gay
Supply Voltage	24VDC ±15%
Ground Resistance	0 Ohm
Power Consumption	Approx. xxx Watt
Protection	IP 65 (Front side) / IP 20 (Back side)
Housing	Aluminium
Weight	Approx. xxx kg
Outer dimenssions in mm (WxHxD)	380x292x65.6
Environmental Temperature	
Operation	0°C to 50°C
Storage	-20°C to 60°C
Relative Humidity	
Operation	5% to 85%, non-condensing
Storage	5% to 90%, non-condensing

Table: ELITE-150 Technical data
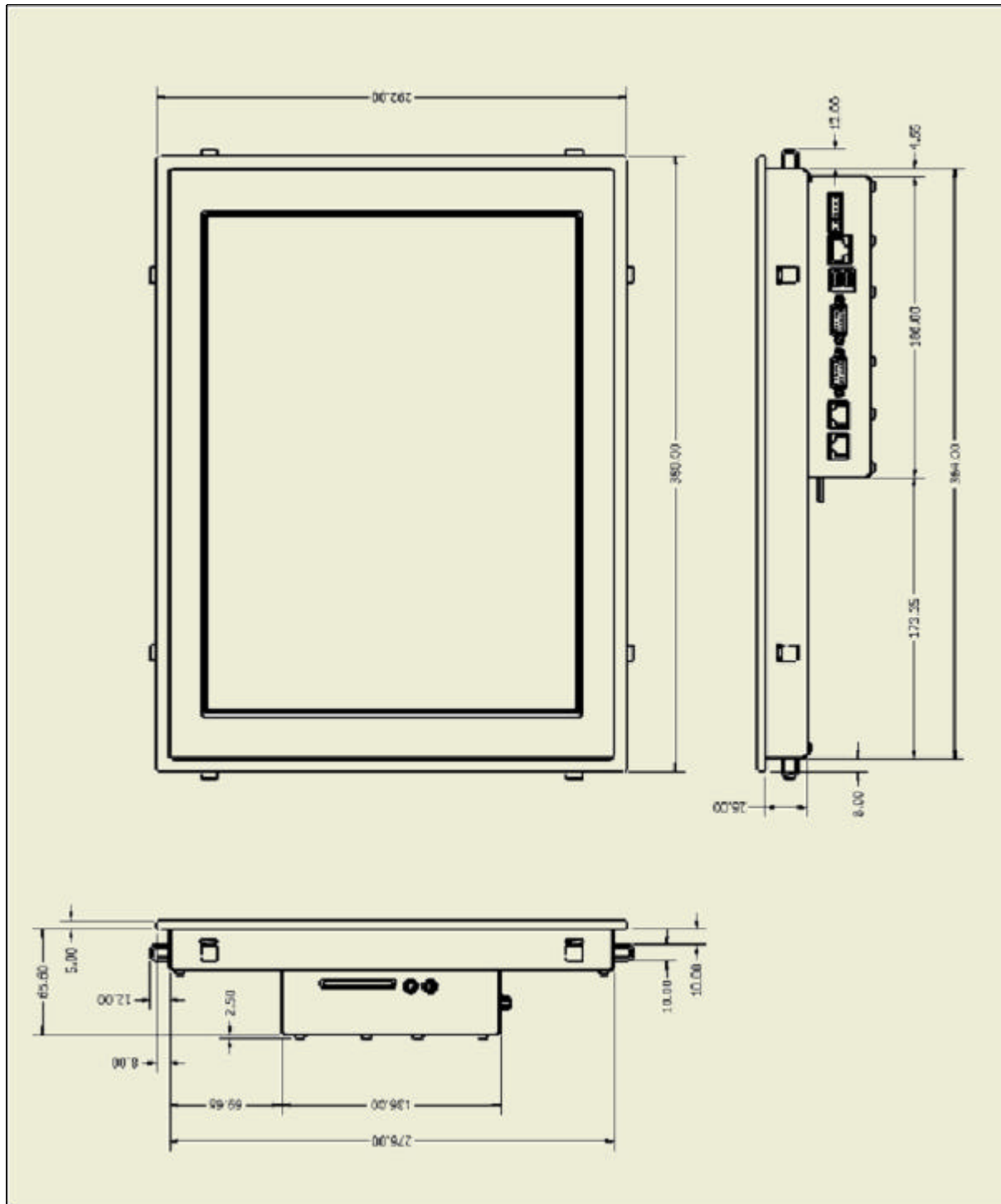
4.7.1 Dimensions

Fig: ELITE-150 Dimensions

4.7.2 Cutout Installation

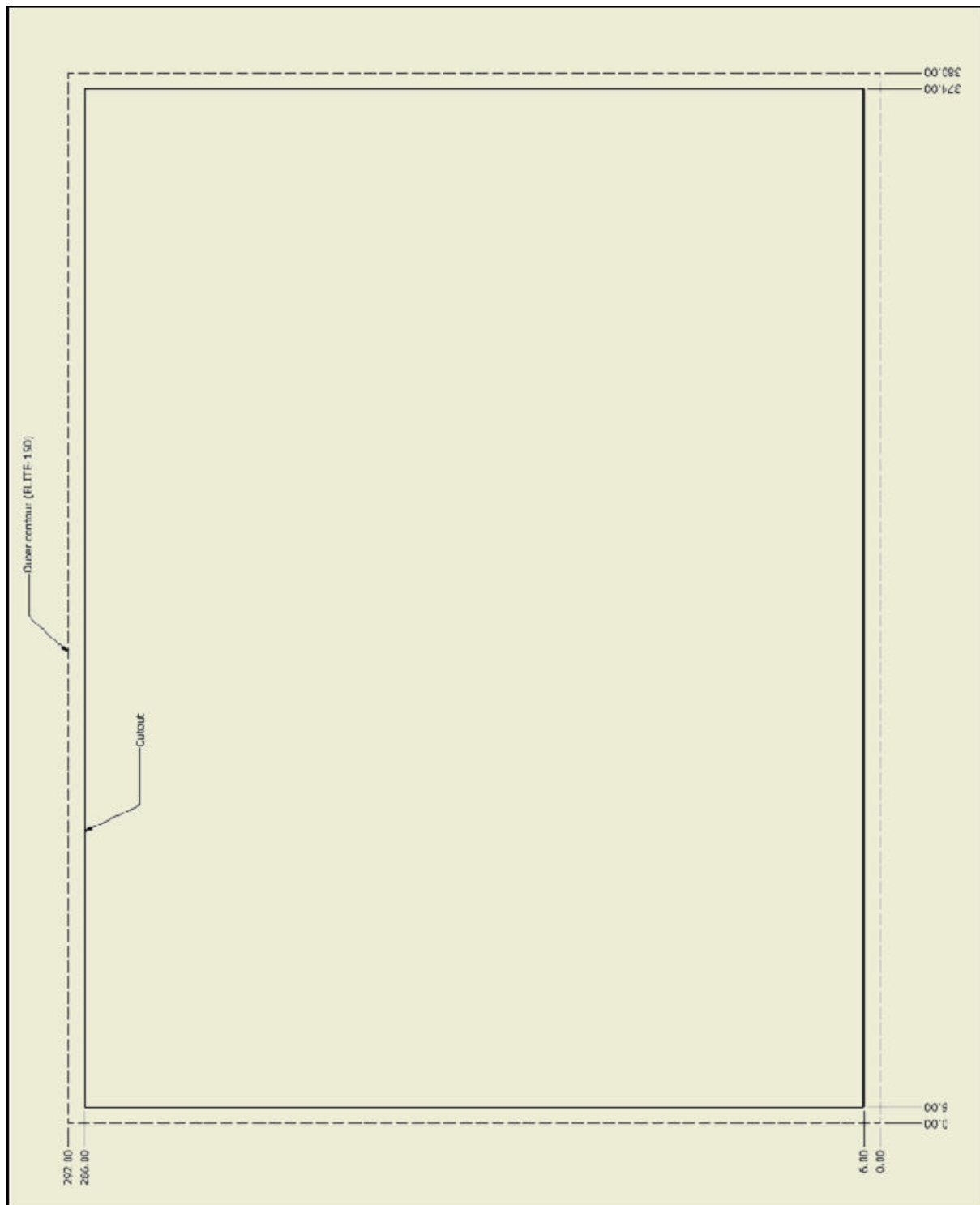The cutout hole is made according to the following dimensions.

Fig: ELITE-150 Cutout Dimensions

5 MOUNTING

5.1 MOUNTING INSTRUCTIONS

The ELITE device (Except the ELITE-000) must be mounted using retaining clips included in the delivery. Depending on the ELITE version, a corresponding number of retaining clips are included.
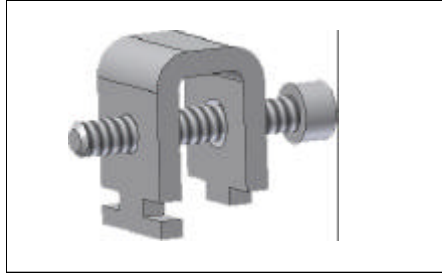
Fig: ELITE Retaining Clip

In order to guarantee proper air circulation, allow a sufficient amount of space above, below, to the side and behind the ELITE device. The minimum specified free space can be found in the diagram below. Free space specifications apply to all ELITE versions (with/without PCI slots extension).

Fig: Distance for air circulation

Fig: Distance for air circulation rear view

Caution!
The maximum permitted environmental temperature can be found in the technical data for the respective ELITE device.

6 NETWORK TOPOLOGY

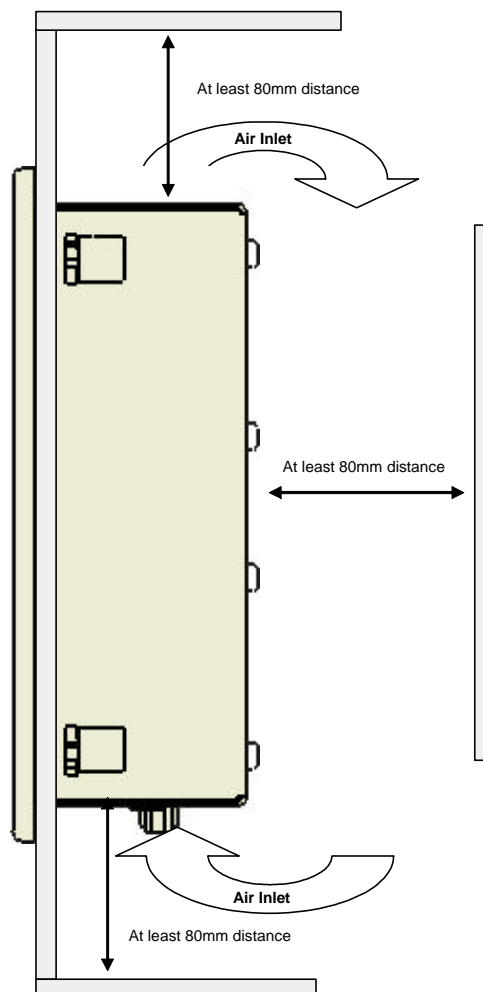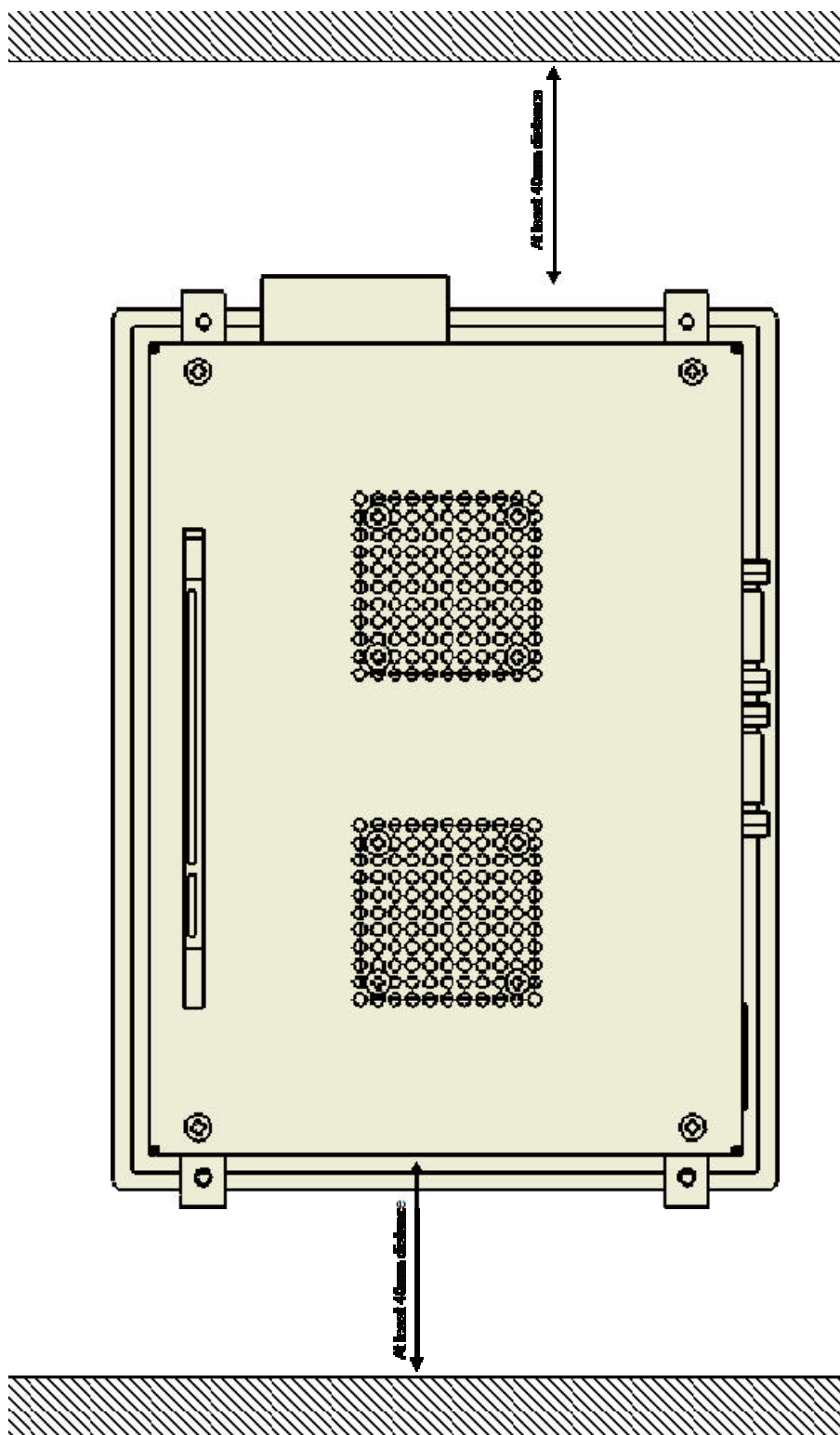To build a simple CANopen network, you need IOs (CANOPEN IO Modules), Drives (CD1-K) and connection cables (RJ45 S/STP Cat.5) in addition to an ELITE device.

The CANopen Network is constructed as a line structure with matching resistors (120 Ohm). In systems having more than two stations, all subscribers are wired in parallel.

Network 1 and Network 2 are working totally independently. Therefore, in order to get the best performance of your system, we recommend you to use one Network for the IOs and the other for the Drives.

All net subscribers from one Network communicate at the same baud rate. In the network, all IO Modules or Drives operate as slaves. The master operation is taken over by the ELITE device.
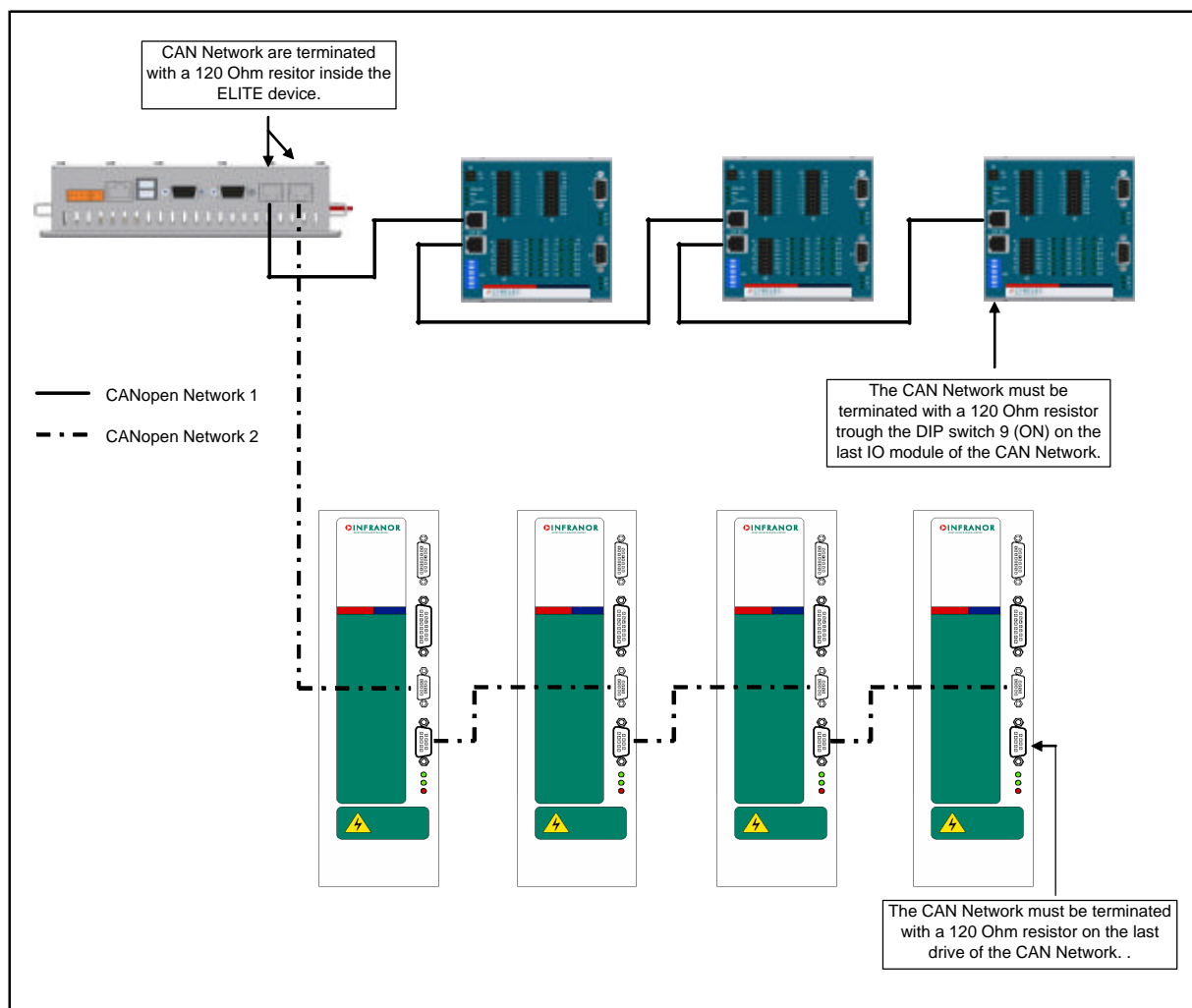
Fig: Network Topology

Caution!
Take care that you have set correctly all node ID and baud rate for each IO Module and Drive on the corresponding CANopen Network.

7 ACCESSORIES

7.1 OVERVIEW

Model number	Description	Comments
xxxxxxx	Lithium Battery	
xxxxxxx	Power Supply Plug	
xxxxxxx	Power Button Input Plug	
xxxxxxx	One Slot PCI Extension	
xxxxxxx	Two Slot PCI Extension	
xxxxxxx	RJ45 CAN Cable 0.3m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 0.6m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 1m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 2m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 5m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 10m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 20m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 50m S/STP Cat. 5	
xxxxxxx	Compact Flash Card 64MByte	
xxxxxxx	Compact Flash Card 128MByte	
xxxxxxx	Compact Flash Card 256MByte	
xxxxxxx	Compact Flash Card 512MByte	
xxxxxxx	Compact Flash Card 1GByte	

Table: Model numbers for accessories

7.2 LITHIUM BATTERY

7.2.1 General information

The lithium battery is needed with the ELITE device for buffering the BIOS and the real-time clock.

7.2.2 Order Data

Model number	Description	Image
xxxxxxx	Lithium battery, 3V / 950 mAh, button cell	

Table: Lithium battery

7.2.3 Technical Data

Description	xxxxxx
Capacity	950mAh
Voltage	3V
Self Discharge at 23°C	<1% per year
Storage Time	Max. 3 years at 30°C
Storage Temperature	-20°C to +60°C
Relative Humidity	0 to 95% (non-condensing)

Table: Technical Data for the lithium battery

7.3   POWER SUPPLY PLUG

7.3.1 General Information

The single row 4 pin terminal is used to connect the supply voltage for the ELITE device.

7.3.2 Order Data

Model number	Description	Image
xxxxxxx	Weidmüller BLZF 3.5/4 Réf.: 1690440000	

Table: Power Supply Plug

7.3.3 Technical Data

Description	xxxxxx
Number of pins	4
Type of terminal	Cage clamps
Distance between contacts	3.5mm
Resistance between contacts	<4.5mO
Nominal Voltage	300V
Current Load	Max. 10A / contact
Connection Cross Section	0.08mm² - 1.5mm²

Table: Technical Data for the Power Supply Plug

7.4   POWER BUTTON INPUT PLUG

7.4.1 General Information

The single row 2 pin terminal is used to connect an External Switch Button.

7.4.2 Order Data

Model number	Description	Image
xxxxxxx	Weidmüller BLZF 3.5/2 Réf.: 1690420000	

Table: Power Button Input Plug

7.4.3 Technical Data

Description	xxxxxx
Number of pins	2
Type of terminal	Cage clamps
Distance between contacts	3.5mm
Resistance between contacts	<4.5mO
Nominal Voltage	300V
Current Load	Max. 10A / contact
Connection Cross Section	0.08mm² - 1.5mm²

Table: Technical Data for the Power Button Input Plug

7.5 ONE SLOT PCI EXTENSION

7.5.1 General Information

The One Slot PCI Extension gives the possibility to add one standard PCI card on all ELITE devices.

7.5.2 Order Data

Model number	Description	Image
xxxxxxx	ELITE One Slot PCI Extension	

Table: One Slot PCI Extension

7.5.3 Technical Data

Description	xxxxxx
Number of PCI slot	1
Type of PCI Card	Height Short Card (5V, 32bit)
Housing	Metal
Weight	Approx. Xxx kg
Outer Dimenssions in mm (WxHxD)	186x136x20

Table: Technical Data for One Slot PCI Extension

7.6 TWO SLOTS PCI EXTENSION

7.6.1 General Information

The Two Slots PCI Extension gives the possibility to add two standard PCI cards on all ELITE devices.
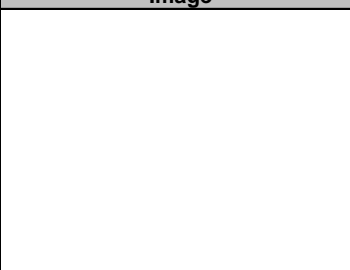
7.6.2 Order Data

Model number	Description	Image
xxxxxxx	ELITE Two Slot PCI Extension	

Table: Two Slot PCI Extension

7.6.3 Technical Data

Description	xxxxxx
Number of PCI slot	2
Type of PCI Card	Height Short Card (5V, 32bit)
Housing	Metal
Weight	Approx. Xxx kg
Outer Dimenssions in mm (WxHxD)	186x136x40

Table: Technical Data for Two Slot PCI Extension

7.7 RJ45 CABLES

7.7.1 General Information

RJ45 Cables are used between ELITE device and alls CANOPEN-IO-Modules.

7.7.2 Order Data

Model number	Description	Image
xxxxxxx	RJ45 CAN Cable 0.3m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 0.6m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 1m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 2m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 5m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 10m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 20m S/STP Cat. 5	
xxxxxxx	RJ45 CAN Cable 50m S/STP Cat. 5	

Table: RJ45 Cables

7.7.3 Technical Data

Description	xxxxxx
Type	Uninet 5502 4P
Category	5e
Class	D
Conductors	4 x 2 x AWG24
Shield	S/STP
Cross Section	6.1mm

Table: Technical Data for RJ45 Cables

7.8 COMPACT FLASH CARDS

7.8.1 General Information

Compact Flash cards are easy-to-exchange memory media. Due to their robustness against environmental influences (e.g. temperature, shock, vibration, etc.), Compact Flash cards are ideal for use as memory media in industrial environments.

7.8.2 Order Data

Model number	Description	Image
xxxxxxx	Compact Flash Card 32MByte	
xxxxxxx	Compact Flash Card 64MByte	
xxxxxxx	Compact Flash Card 128MByte	
xxxxxxx	Compact Flash Card 256MByte	
xxxxxxx	Compact Flash Card 512MByte	

Table: Compact Flash Cards

7.8.3 Technical Data

Description	xxxxxx
Operation Temperature	-40°C to 85°C
Storage Temperature	-50°C to 100°C
Relative Humidity	8% to 95%, non-condending
Vibration	Max 30 G peak to peak
Shock	Max 3'000 G
Altitude	24,000 meters
MTBF at 25°C	> 3'000'000 hours
Clear/Write Procedures	> 2'000'000
Dimensions (WxHxD)	36.4x42.8x3.3

Table: Technical Data for Compact Flash Cards

8   MAINTENANCE/SERVICING

The following section describes service/maintenance work which can be carried out by the user.

Maintenance Work On	Maintenance Work	Change Interval
All ELITE devices (Except ELITE-000)	Cleaning the touch screen	Depends on how dirty the touch membrane is, approximately once a week
All ELITE devices	Changing the battery	Every 4 years

Table: Maintenance work

8.1   OPERATING GUIDELINES FOR THE TOUCH SCREEN

- Do not use pointed objects such as pens, knives, etc.
- Do not place any heavy objects on the touch screen.

8.2   CLEANING THE TOUCH SCREEN

The display with the touch screen should be cleaned at regular intervals.

8.2.1 Cleaning agent

A damp cloth should be used for cleaning the touch screen. For dampening the cloth, use only water with detergent, screen cleaning agent or alcohol (Ethanol). Apply the cleaning agent onto a cloth beforehand and NOT sprayed directly onto the touch screen itself. Under no circumstances use aggressive solvents, chemicals or scouring agents.

Information:
Only clean the device when it has been switched off, as touching the screen will trigger unintended functions to be executed.

8.3 CHANGING THE BATTERY

The lithium battery guarantees buffering of the internal real-time clock (RTC) and also individually saved BIOS settings. When changing the battery, data is buffered for 10 minutes approximately by a capacitor. Under normal operating conditions, the battery has a typical lifespan of approximately 2 years (min.).

Information:
Changing the battery should only be carried out by qualified personnel.

8.3.1 Procedure for changing the Battery

- Disconnect the power supply to the ELITE device
- Touch the housing or earth connection (not the power supply!) in order to discharge any electrostatic charge from your body
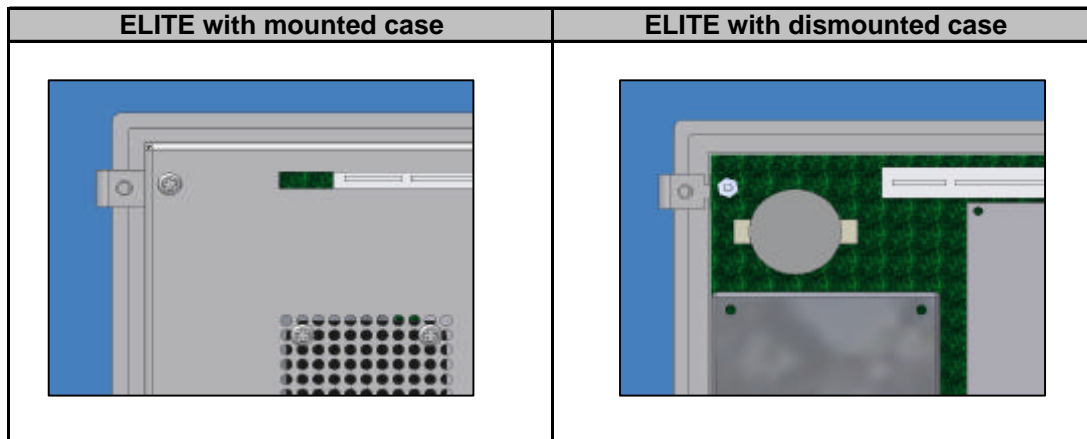- Remove the ELITE case: The case is found on the rear side of the ELITE device.

ELITE with mounted case	ELITE with dismounted case

Fig: ELITE case

- Remove the battery from the holder (don't use uninsulated tools >- risk of short circuiting). The battery should not be held by its edges. **Insulated** tweezers may also be used for removing the battery.
- After removing the battery, the data is buffered for at least another 10 minutes by a capacitor, so that data are not lost.
- Insert the new battery with correct polarity.
- Put on the battery cover and fasten the screws.
- Reconnect the power supply to the ELITE device.
- Possibly, the data and time in BIOS must be set again (see section "BIOS Setup Menu").
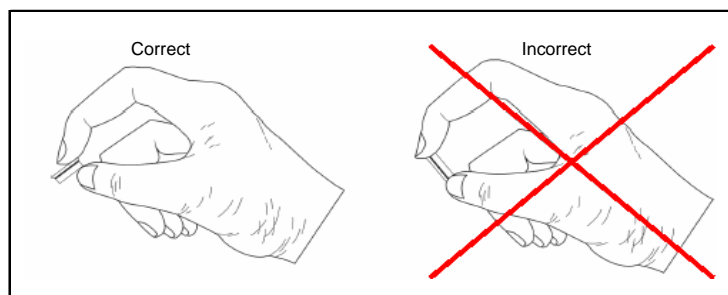

Fig: Handling the battery

Warning!
Lithium batteries are considered hazardous waste. Used batteries should be disposed of accordingly.

9 NOTES