User manual

EPC PM 2100

EPC PM 1700

EPC PM 1500

EPC PM 1200

EPC PM Box

///LAUER
Ein Unternehmen der AUGUSTA Technologie AG

Elektronik Systeme LAUER GmbH & Co. KG

P.O Box 1465

D-72604 Nürtingen

Operating instructions: Embedded PC Pentium Mobile

issue: 01. September 2005

editor: Jung

Operating instructions, manuals and software are copyrighted. All rights are reserved. Copying, duplicating, translating, transcribing en bloc or partially is prohibited. An exception is the making of a software back up copy for private use.

- We reserve the right to make amendments to the manual without prior notice.

- We can not guarantee the accuracy and correctness of the programmes and data stored on the CD-ROM.

- Helpful suggestions, improvements as well as references to errors are welcome at any time.

- The stipulations are also valid for any special annexes to this manual.

Microsoft, Windows 2000, Windows XP and the Windows Logo are either registered trademarks or trademarks of the Microsoft Corporation in the USA and/or other countries.

The above terms in this documentation can be brands, whose use by third parties can breach the rights of the proprietor.

User tips

Please read the manual prior to using for the first time and keep it in a safe place for future use.

Target group

The documented information in this manual refers to the appliance, place of use, transport, storage, assembly, use and maintenance.

This manual is directed to the following target groups:
• User
• Service technicians/maintenance technicians

Especially observe the chapter „safety instructions and general instructions".

Knowledge of PC and Microsoft-operating systems are assumed. General knowledge in the area of automation technology is recommended.

Diagram convention

[Key]   Key entries by the user are shown in squared brackets, for example [CTRL] or [DEL]

italic   Names of pushbuttons to be used, menus or other screen elements as well as brand names are shown in italic letters.

Necessary basic knowledge

A solid Knowledge of the personal computer and Microsoft-operating systems is assumed and a general knowledge in the area of automation technology is recommended.

Approbation's & standards

You will find information in the annex, chapter „certificate and guide lines".

Safety instructions

Anywhere in the automation equipment, where dangerous errors may occur, i.e. that an occurring error may cause major material or personal damage, additional external precautions or facilities have to be made (for example by means of independent limit switches, mechanical interlocks etc.), which in case of an error guarantee or enforce a secure operating condition.

The test and aptitude of the intended usage by the user res. the usage under operational conditions is the responsibility of the user. Therefore Elektronik-Systeme LAUER does not assume liability.

User Tips

Icons

The following icons are used in the manual to mark certain paragraphs:

	Danger
	Means that death or severe injury will occur when the relevant precautionary measures are not taken

	Caution
	Means that death or severe injury may occur when the relevant precautionary measures are not taken.

	Warning
	With warning triangle means that a light injury may occur when the relevant precautionary measures are not taken

	Precaution
	Without warning triangle means that material damage may occur when the relevant precautionary measures are not taken

	Attention
	Means that an undesirable effect or situation may occur if the respective advise is ignored.

The warning advise for the highest level is used if various danger levels occur. When a warning advise with a warning triangle warns about personal damage then an additional warning for material damage can be added.

Qualified personnel

The described appliance may only be installed and operated in accordance with this documentation. Only qualified personnel may put it into operation and operate this appliance. Qualified personnel are persons, who in accordance with the safety regulations contained in this documentation, are authorised to put into operation, earth and stamp appliances, systems and circuits.

Intended use

The appliance can only be used for the designated purposes as described in the catalogue and the technical write up and only in conjunction with external devises i.e. components recommended and authorised by Elektronik-Systeme LAUER GmbH & Co. KG. The efficient and safe operation of the appliance presupposes appropriate transport, storage, assembly and installation as well as accurate handling and maintenance.

Contents

Preamble

Elektronik-Systeme LAUER GmbH & Co. KG
Kelterstraße 59
D-72669 Unterensingen
Tel.   +49 (0) 7022 / 9660-0
Fax +49 (0) 7022 / 9660-274
http://www.lauer-systeme.net

our philosophy

Elektronik-Systeme LAUER is a reliable internationally orientated partner. From the text display LCA, the high-tech operating console PCS, to the industrial computer we supply a complete range to:

- operate, observe a nd control

Systeme LAUER stands for an almost unlimited product range and competent service, under the umbrella of AUGUSTA Technologie AG – a global group of companies.

Through active co-operation with our customers, persuasive concepts are developed harmonising efficiently man, and interface. Proximity to customers – the direct dialog – is the basis of our success.

Support contact

Telephone: +49 (0) 7022 / 9660 -209
eMail: Support@systeme-lauer.de

for support inquiries always have the serial number of your appliance at hand!

Up to date driver units, software, driver units, manuals ...and innovations can be found in our download-forum:

http://forum.systeme-lauer.de/

Sales contact

Telephone: +49 (0) 7022 / 9660 -0
eMail: Sales@systeme-lauer.de

additionally on offer ...

... courses and technical training in our modern equipped training centre or alternatively at your place of business. Please ask your distribution agent for the latest training course schedule.
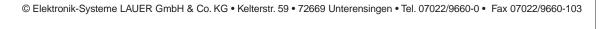
... not only demo-appliances but also specialists who will personally ass-ist you when you first take your appliance into operation.

Certificates and guide lines

The following applies for the products described in this documentation:

EMV-directives

Alternating - AC supply

The appliances running on AC supply comply with the EC-directive „89/336/EEC electromagnetic compatibility" and are according to the CE-marking designed for following applications:

Application	Standard	
	Emitted interference	interference resistant
industrial	EN 61000-6-4: 2001	EN 61000-6-2: 2001

Direct current –DC supply

The appliances running on DC supply comply with the EC-directive „89/336/EEC electromagnetic compatibility" and are according to the CE-marking designed for following applications:

Application	Standard	
	Emitted interference	interference resistant
industrial	EN 61000-6-4: 2001	EN 61000-6-2: 2001

low voltage directive 230V

The appliances running on AC supply comply with the EC-directive 73/23/EEC, low voltage directive. Compliance with this standard was tested in accordance with EN 60950.

Declaration of conformity

The EC- declaration of conformity and the associated documentation and are kept at the disposal of the responsible authorities. Your distribution agent can make these available on demand.

Assembly directives

Please note the assembly directives and safety instructions mentioned

1   Preparation

1.1   list hof supplied equipment

The transport cardboard box contains the following parts and materials:

CD with operating system.

Driver software CD for all pre-installed components like mother board, touch, key board etc. Further information will be found in chapter „installation".

1 standard power cable (European or US standard) length approx. 1,9m

Notice! The Power-cable is NOT delivered at the DC-Version.

User manual
Notice! Separate documentation of third party components is included on the enclosed CD. This manual only describes specific information about LAUER products – not about third party components.

The LAUER appliance pass is supplied with every appliance. It contains important information for the user. Ready to hand are important address data, serial number, then there are the components and type designation corresponding with the company internal appliance designation.
Also shown are all components contained in the system – therefore the CPU and hard disk type or the operation system are easily identifiable for the user.

Your advantages:

- all important contact data for a fast and uncomplicated handling for desired improvements, general queries or for service purposes.
- complete configuration of your system including serial number.

Fixing kit
Varying numbers of screws are contained in the parcel depending on the appliance.
EPC PM 1200   -   8 nuts with toothed washers and plain washers
EPC PM 1500   -   10 nuts with toothed washers and plain washers
EPC PM 1700   -   14 nuts with toothed washers and plain washers
EPC PM 2100   -   14 nuts with toothed washers and plain washers

1 Preparation

1.1.1 Organisation driver-CD

On the supplied driver CD you will find the available drivers necessary for your installation.

- AUDIO (Onboard Sound)

- CHIPSET

- Graphic (Graphic cards driver for a resolution up to 1600 x 1200 for a 21" Display)

- LAN (Onboard network)

- Touch (mouse pointer control directly over screen contact of the EPCPM)

Note:

Key Version of the EPC PM: with keyboard on the front plate, you can install the program *Keyconf* under E:\Tools\Keyconf for configuring the individual keys. The software is self-describing over the menu guidance.

1.2 Preparing the installation of the appliance

Open the package and check, whether the contents match the list above. The cardboard box should be kept for an eventual future safe transport.

After removing the appliance from the parcel, lay the parts on a suitable clean and open surface (for example a table. Workbench etc.). Follow exactly the instructions described in the following chapters.

2 Description

2.1 Installation

The installation of the PPC is independent of the display size, shown as follows:
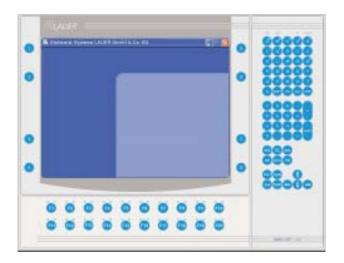

1 Frontunit
2 PC-unit

2   Description

2.2   Display

Display sizes of 12", 15", 17"and 21" are available, alternatively with Touch or keyboard and Touch.

Pure Touch variants available in 12", 15", 17"and 21"
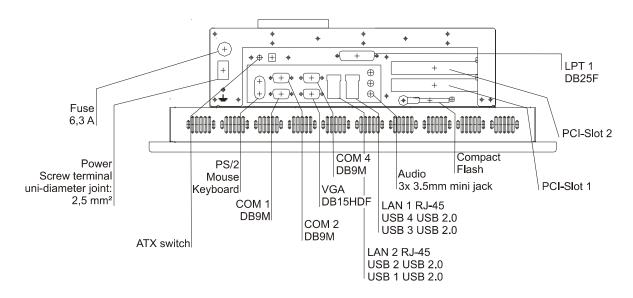

Touch/key variants available in 10" and 15"
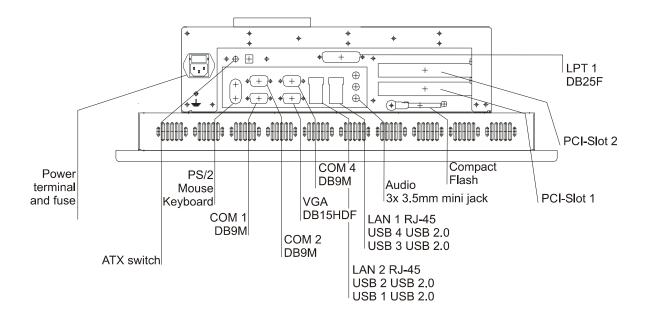
2 Description

2.3 Ports

24 V panel

2 Description

230 V panel

Power terminal and fuse

PS/2
Mouse
Keyboard

COM 1
DB9M

COM 2
DB9M

ATX switch

VGA
DB15HDF

COM 4
DB9M

Audio
3x 3.5mm mini jack

LAN 1 RJ-45
USB 4 USB 2.0
USB 3 USB 2.0

LAN 2 RJ-45
USB 2 USB 2.0
USB 1 USB 2.0

Compact
Flash

LPT 1
DB25F

PCI-Slot 2

PCI-Slot 1

2 Description

2.4 Motherboard – slots, memory module

The panel-PC and the PC-module have 2 DIMM slots for the main storage, 2 PCI-slots.

Further details on the motherboard can be found in the manual with the supplied materials.

Notice!

Individual slots may be part of the supply depending on configuration and customer requirements!

The quality of the memory module may influence the system stability.

Please only use memory modules cleared by Systeme LAUER.

Memory modules are electrostatic sensitive components. Relevant protective measures (earth) have to be considered during assembly/ disassembly.

ESD-protective measures to be considered when opening and working on the appliance.

---

2   Description

3 Putting in to operation

3.1 Power supply

The Embedded PC Pentium Mobile are available as AC-115/230V-power system or DC-24V-power system.

Power supply system 24V DC

The EPC PM can be operated with extra-low- voltage in accordance with EN60950!

The controlling transformer has to comply with EN60742!

Check the power supply system with the relevant data on the type plate.

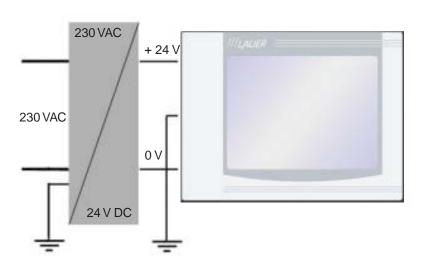All cable connections have to be checked prior to putting the system in to operation.

It has to be ensured that all voltages and signals comply with the relevant specifications.

1 fuse 6,3 A
1 power supply 24V
3 earth screw

The power supply is carried out via a double-pole connector (Phoenix MST BT 2,5/2).

Supply build up

3   Putting in to operation

Power supply system 230 VAC

The EPCPM is certified for the connection to protective grounded power supply after EN60950.

1 Supply connection 230 VAC

2 Earth screw

3.2   Earthing system

The following items have to be observed to guarantee a safe dissipation of electronic interference:

•   Appliance and switch board have to be connected to the nearest possible central earthing point.

•   make sure of a possibly low inductive connection between appliance and switch board.

•   All data cables connected to the appliance have to be the screened type.

•   The screens have to be earthed on both sides. There has to exist a low ohm connection between the connected systems. High equalising currents through the cable screen due to voltage fluctuations are to be avoided.

•   The earthing connection is to be carried out with min. 4 mm² cross section.

3 Putting in to operation

3.3 Assembly

Assembly

The EPC PM is to be inserted in a HF close housing or switchgear cabinet made of metal

To dissipate the heat generated in the appliance a free space for air circulation, of 100 mm has to be provided around the appliance!

The assembly takes place by hexagon nuts or retaining blocks (depending upon the version of the EPC PM)

Notice!

Possibility of damage to the appliance!

Protection class IP65 to the front panel is only guaranteed with a perfect fitting seal.

Pay attention to the torque when fixing the front panel!

---

3 Putting in to operation

3.4 operating system

Supply incl. operating system

hard disk version:
We offer our appliances with installed operating system software. In this case we opt for following installation concept. The respective operating system and other programmes are installed on C: drive. D: drive is a complete free partition and can for example be used for your data (beneficial for example for data back up). On E: drive are all the data required for a new installation (drivers and operation system). This partition always uses a FAT 16-data system.

At present the following operating systems are available:

Windows 2000 German, English and multi-language pack
```
(C: and D: NTFS)
```

Windows XP professional German and English
```
(C: and D: NTFS)
```

depending on the configuration, the respective user interface of the installed operating system appears, once the EPC has booted from the hard disk.

Compact Flash Card-Version:
Windows embedded XP
Wir stellen kundenspezifische Konfigurationen als Dienstleitung zusammen.

Without operating system

If no operating system is present, the message „DISK BOAT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER" comes at switching on the EPCPM, because of non formatted Non removable disk and missing partition. In this case you can install the operating system either over own boat disk, set UP starting disks or directly with your operating system CD start (consider BIOS settings). The additional installations e.g. the Touch or display driver can be started over the provided drivers - CD, (driver folder).
Further details to the individual driver installations you will find in following chapters.
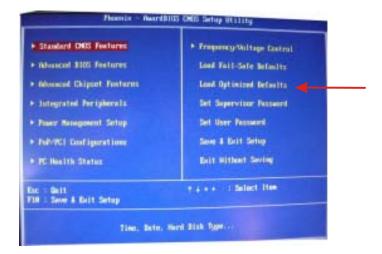
VICPAS
HMI Parts Center

3 Putting in to operation

3.5 BIOS-settings

Settings DFI-ACP G5M100N:

Switch on the EPC PM and press the [DEL] i.e. [Entf]-button shown in the first screen image, to start the set up.

Select the menu item „Load Optimised Default" and affirm the selected operation.

3 Putting in to operation

Settings for the Mini-ITX Board DFI ACP G5M100N:

1. Load "Load Optimized Default" and carry out the respective settings in the shown menus.

Menü/Untermenü	Menüpunkt	Einstellung
Standard CMOS Features	Date	current date
Standard CMOS Features	Time	current date
Standard CMOS Features	check if all IDE-Devices (HD, CD und CF) were correctly recognised!	
Advanced BIOS Features	First Boot Device	HDD-1
Advanced BIOS Features	Second Boot Device	HDD-0
Advanced BIOS Features	Third Boot Device	Disabled
Advanced BIOS Features	Boot Other Device	Disabled
Advanced BIOS Features	Boot up Floppy Seek	Disabled
Advanced Chipset Features	Panel Number 12" 15" 17" und Box 21"	2: 800x600 18(bit) 8: 1024x768 24(bit) 4: 1260x1024 48(bit) 10: 1600x1200 48(bit)
Integrated Peripherals/ Super IO Device	PWRON After PWR-Fail	On
Integrated Peripherals/ Super IO Device	Serial Port 3 Use IRQ	IRQ4
Integrated Peripherals/ Super IO Device	Serial Port 4 Use IRQ	IRQ3

3 Putting in to operation

3.6 Important items regarding software installation

To carry out a successful re-installation you have to observe the following items:

- For the set up please use the supplied operating system-CD.

- After the re-installation, the Chipset driver has to be installed first. This can also be found on E:\drivers\Chipset.

- Install the graphic drivers (select E:\graphic\operating system).

The picture refresh rate has to remain at 60 Hz, as the TFT displays do not have an electron beam for image formation, and therefore no improvement is achieved from a higher setting. Higher settings can even result in the destruction of the graphic board/display.

- install the touch drivers in accordance with the instructions.

Notice!

To avoid always having to re-start the installation procedure of the operating system, we recommend image production of the new hard disc (for example Norton Ghost, Drive Image etc.).

So, if needed, you can always fall back on the operational image.

Notice!

We recommend after operating the system for the first time that you reproduce Start i.e. Emergency discs. These might be needed to restore an operational system. Additionally you should make backup copies of your own data and applications!

3 Putting in to operation

3.7 Touch installation 6.10 Windows 2000 / XP

technical data: (check the BIOS entries when re-installing)

- Serial Tsharc 12 Touch-Controller
- Com 3 (check the BIOS entries)
- 3E8 hex
- IRQ 4
- 9600 bps

Carry out the SETUP.EXE under

- drive E:\Driver\Driver-EPC-PM\Touch\Touch
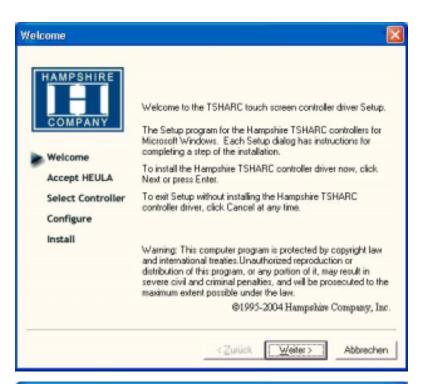 (with the ordered operation system)
- CD-ROM: (D:) E:\EPC-PM\Touch

3 Putting in to operation

• follow the instructions on the monitor. press [CONTINUE].
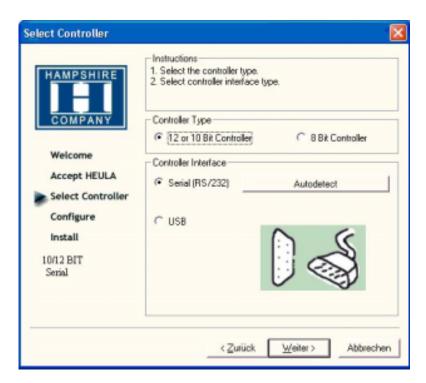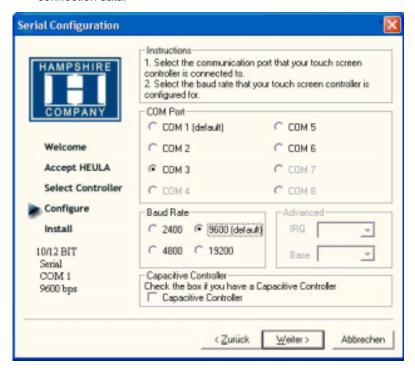
• accept the license provisions
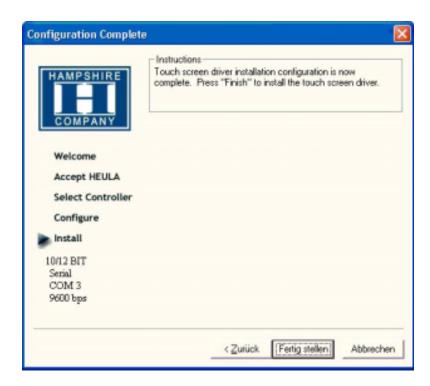
3   Putting in to operation

*   select the „Auto detect Function" or manually select the technical connection data.

© Elektronik-Systeme LAUER GmbH & Co. KG • Kelterstr. 59 • 72669 Unterensingen • Tel. 07022/9660-0 • Fax 07022/9660-103

3 Putting in to operation

- Press the [finalise]-Button and follow the instructions for a re-start.

- After a re-start of the operating system you will find amongst the programs the entry „Hampshire Control Panel".

- Calibrate the touch screen with your finger or with a rounded pointed touch pen.

3 Putting in to operation

3.8 Graphic board installation

After conclusion the Windows installation (chip set driver) and restart of the device, close the installation window for the automatic driver search of the grafic board driver.
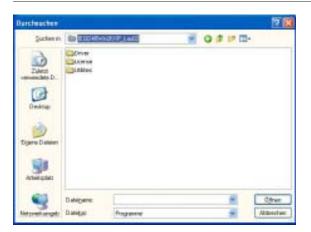
- The grafic driver is on the delivered Driver CD
  or on
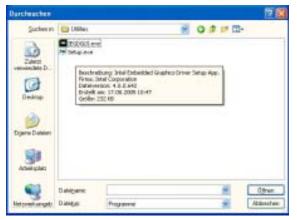
  Partition E:\ EPC-PM \ Grafic

- Start *SETUP.EXE* in the directory *UTILITIES* and accept the following messages.
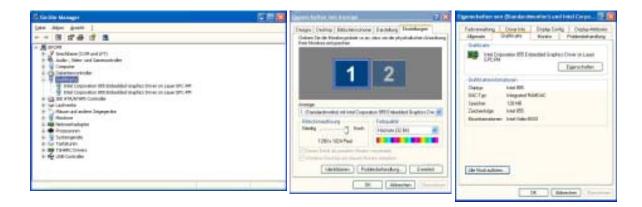
Attention!

The grafic driver will be installed 2x!

- After conclusion the installation and restart the PPC the following entries can be seen in the Control Panel or in the display properties.

3   Putting in to operation

3.9   Installation LAN-/network card

proceed as follows to install the LAN-/network card(s):

- following the installation of the operating system and the chipset driver, the system automatically makes a link to a network connection. You find the relevant icon (Network icon) in the right hand lower taskbar.

- call-up the EXE-file from the drive-directory, drive E:\Driver\EPC-PM\LAN for the installation of the second network card.

- confirm each installation step and re-start the EPC PM at the end of the installation.

- After the re-start 2 new network icons appear in the right hand side lower taskbar.

- You can now configure both network cards to your own needs (IP-address etc.) via the system control.

- Via the MS-DOS window, under *Start -> accessories -> entry prompt,* you can set a „connection PING". Herewith you can then test your connections to the server and other PC's.

  (for example: C:\ping 192.168.5.100).

3   Putting in to operation

4 Service

Tools

You can carry out the assembly with an Allan key 2,5 and a Phillips screw driver size 3.

Preparation

Disconnect the appliance from the power supply.

Attention!

Deadly peril .....

Please pay attention that your electrostatic pad does not damage the front panel of the EPC PM.

Open the appliance

All operations to the opened appliance may only be carried out by authorised personnel. Only the expansion of hardware with memory and plug-in-cards is permissible within the defects liability period.

Attention!

There are electronic components within the appliance which can be destroyed by electrostatic charges.

Therefore cautionary measures have to be taken from the moment the appliance is opened. These can be consulted in the guidelines for electrostatic endangered components (EGB-guidelines).

4 Service

4.1 Changing the fan

To change the fan you have to remove the left hand part of the rear enclosure.

To open the enclosure remove the marked screws with an Allen key.

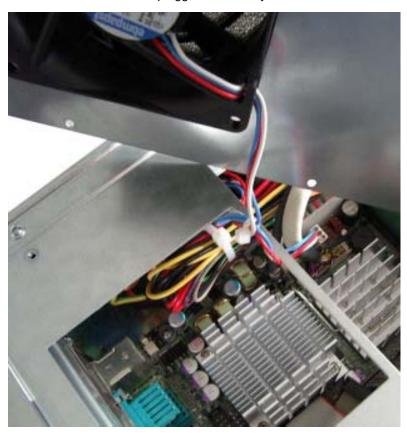

Then lift the enclosure and pull out the fan cable.

4 Service

Please note the correct location of the cable prior to pulling the cable out so that the new fan can be plugged in correctly.

Remove the protective cover of the fan and remove the fan with a Phillips head screw driver.

After changing the fan, assemble the appliance in the reverse order.

4 Service

4.2 PCI-board installation

To install a PCI-board the right hand side part of the rear enclosure has to be removed.

To open the enclosure remove the marked screws with an Allen key

After removing 7 screws the enclosure can be lifted easily.

4   Service

A look at the opened appliance shows the 2 PCI-slots and the board holder.

Remove the slot cover of the desired slot to insert your PCI-board.

4   Service

Unscrew the board holder.

Insert your PCI-board.

Please ensure a correct fit at the lower edge of the slot.

Screw your PCI-board tight.
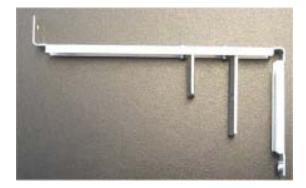
4   Service

Subsequently the board holder has to be re-fixed.

To ensure an optimal use of the board holder, we suggest that you put wide boards in the lower slots and narrow boards in the upper slots.

Following picture shows this once more in detail.

The short support can be removed with boards of the same design. Otherwise the two supports can be individually adjusted.

4 Service

4.3 Memory expansion, -change

To change the memory board you have to remove the left hand part of the rear enclosure.

To open the enclosure remove the marked screws with an Allen key.

Then lift the enclosure and pull out the fan cable.

Please note the correct location of the cable prior to pulling the cable out so that it can be plugged in correctly.

© Elektronik-Systeme LAUER GmbH & Co. KG • Kelterstr. 59 • 72669 Unterensingen • Tel. 07022/9660-0 • Fax 07022/9660-103

4 Service

Put the enclosure to one side and you have a free view of the slots.
Pull out ribbon cable (see arrow) and move it to the top.
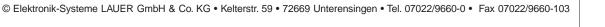
The picture shows a free and an occupied slot.

If a memory expansion is carried out the memory module is positioned vertically and pushed in, the fixing brackets snap shut.

4 Service

If a memory board is changed then the holding brackets have to be pushed outwards simultaneously.

The memory board is now loose and can be removed. Locate the memory board vertically and push it down, the brackets snap shut

Bend back and plug in the ribbon cable.

Subsequently plug in the fan cable and reposition the enclosure.

Re-fix the enclosure.

5 Technical data

The following technical data divide on into CPU unit and display unit.

CPU-Unit

CPU	long life cycle embedded Board
Processor	Low Power Mobile CPU Intel Celeron-M 1,3 GHz / 512MB Cache /FSB 400
Chipset	Intel Mobile 855GME with integrated graphic up to UXGA
Memory Slots	2x DDR-SDRAM bis max. 2GB
Memory	Compact Flash or 2,5"-HD (optionally with extended temperature range)
Extension Slots	2x PCI bis 220mm lang
	1x CF-Card Typ II
Interface	1x PS/2 Keyboard
	1x PS/2 Mouse
	1x VGA
	3x RS232
	1x Parallel
	2x Ethernet 10/100
	4x USB2.0
	Audio
power supply DC	24 V_{DC} ± 15 % polarity safely
	4A max. (Switch on peak 15A)
power supply AC	115-230 V_{AC} ± 15 %
	0,8A max. (Switch on peak 30A)

Options

CD	CD Slimline drive
	CD Brenner Slimline drive
DVD	DVD Slimline drive
	DVD Brenner Slimline drive

5 Technical data

Display-Unit

Screen Size (inch)	10,4"	12,1"	15,0"	17,0"	21,3"
Active Area (mm)	211,2x158,4	246,0x184,5	304,1x228,1	337,9x270.3	432,0x324,0
Pixel	800 x 600	800 x 600	1024 x 768	1280 x 1024	1600 x 1200
Max. Colors	16,7 Mio.	16,7 Mio.	16,7 Mio.	16,7 Mio.	16,7 Mio.
view angle (H)/(V)	120°/100°	130°/120°	140°/115°	178°/178°	170°/170°
max. Brightness (cd/m²)	350	350	330	250	250
Contrast	350	500	300	600	500
Response time (ms)	$10(T_r)/25(T_f)$	$10(T_r)/30(T_f)$	$5(T_r)/20(T_f)$	$10(T_r)/15(T_f)$	$10(T_r)/15(T_f)$
Display Technology	TN	TN	TN	PVA	PVA

Touchscreen Technology	Resistiv
Touch resolution	4096 x 4096 Punkte
Keyboard	Short-stroke keys
Life span short-stroke keys	1 Mio. Tipps

environment conditions

Protection type	IP 65 front site IP 20 back site for DIN EN 60529
Temperature	Operating 0°…+45 °C Storage -20° +65°C
Humidity	< 90% r.f., not condensing
Vibration in the enterprise	10", 12", 15" 0,075 mm (10 ... 58 Hz) 1G (58 ... 500 Hz) for EN60068-2-6
Vibration in the enterprise	17", 21" 0,035 mm (10 ... 58 Hz) 0,5G (58 ... 500 Hz) for EN60068-2-6 --> **does not apply with CD/DVD drive assemblies in the enterprise**
Shock in the enterprise	15 g, 11 ms, halb Sinus for EN60068-2-27
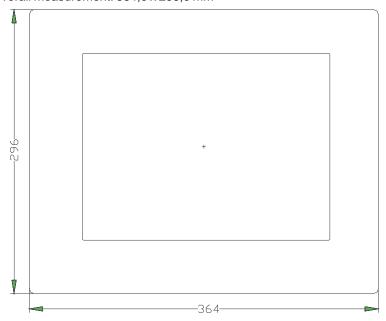
5 Technical data

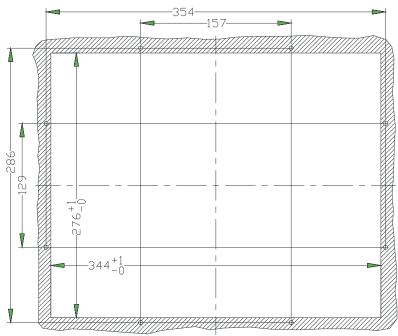## 5.1 Detailed drawings

5.1.1 EPC PM 1200

frontal view
overall measurement: 364,0 x 296,0 mm

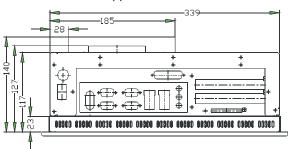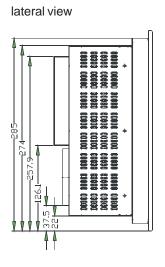Front panel assembly aperture
Aperture size: 344,0 x 276,0 mm

Type of mounting with 8 pieces into the front plate pressed in thread pin
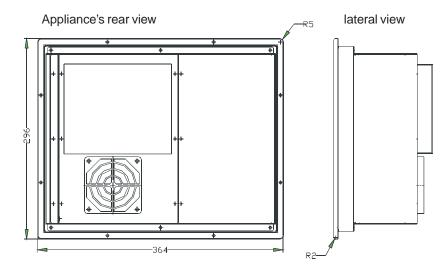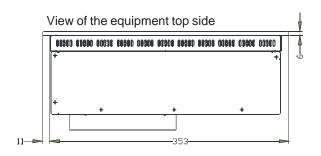M4 x 16. Max. 5 mm thick mounting frame
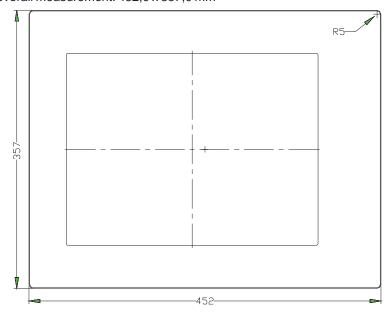
5   Technical data

view of the appliance's underneath

lateral view

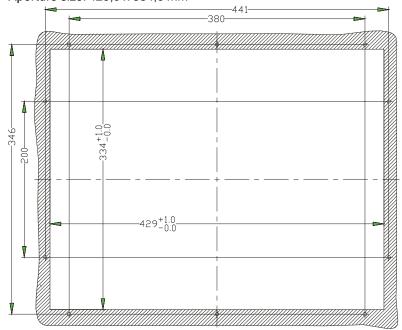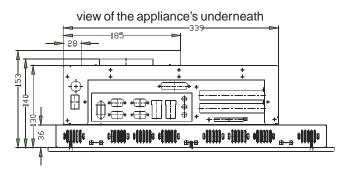Appliance's rear view

lateral view

View of the equipment top side

5 Technical data

5.1.2 EPC PM 1500

frontal view

overall measurement: 452,0 x 357,0 mm

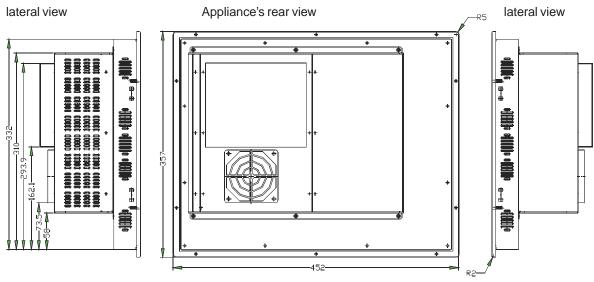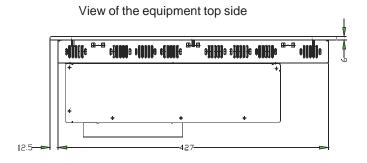Front panel assembly aperture

Aperture size: 429,0 x 334,0 mm

Type of mounting with10 pieces into the front plate pressed in thread pin
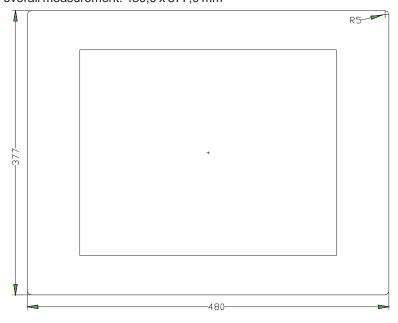M4 x 16. Max. 5 mm thick mounting frame

5 Technical data

view of the appliance's underneath

lateral view

Appliance's rear view

lateral view

View of the equipment top side

© Elektronik-Systeme LAUER GmbH & Co. KG • Kelterstr. 59 • 72669 Unterensingen • Tel. 07022/9660-0 • Fax 07022/9660-103

5 Technical data

5.1.2 EPC PM 1700

frontal view

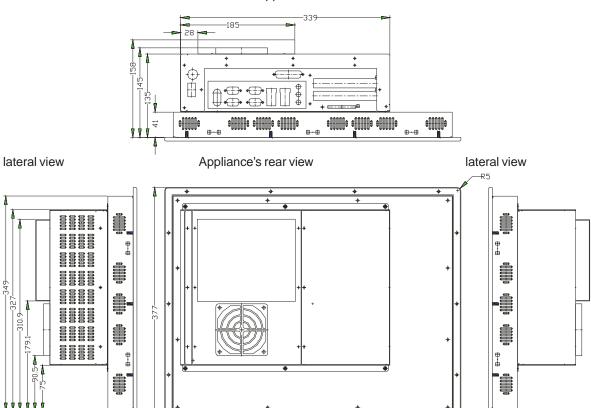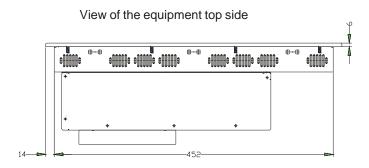overall measurement: 480,0 x 377,0 mm

Front panel assembly aperture

Aperture size: 454,0 x 351,0 mm

Type of mounting with14 pieces into the front plate pressed in thread pin M4 x 16. Max. 5 mm thick mounting frame

5 Technical data

view of the appliance's underneath

lateral view   Appliance's rear view   lateral view
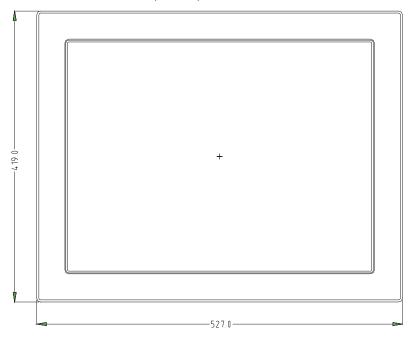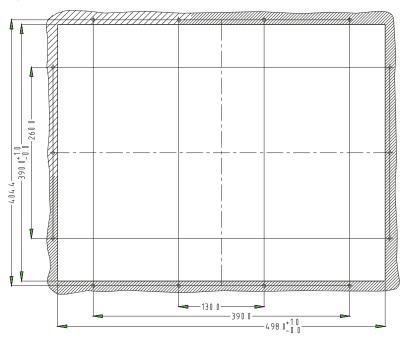
View of the equipment top side

5   Technical data

5.1.3 EPC PM 2100

frontal view

overall measurement: 527,0 x 419,0 mm

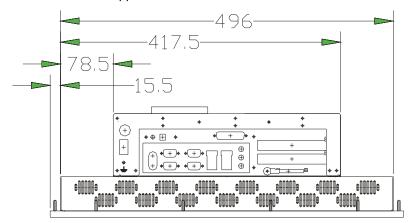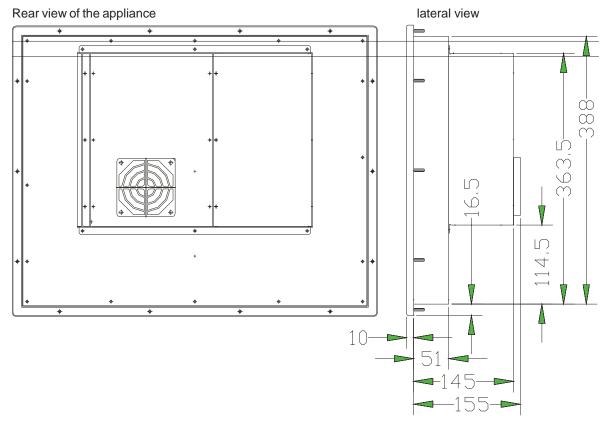Front panel assembly aperture

Aperture size: 498,0 x 390,0 mm

Type of mounting with14 pieces into the front plate pressed in thread pin M4 x 16. Attachment with 14 pieces of nuts. Max. 5 mm thick mounting frame.
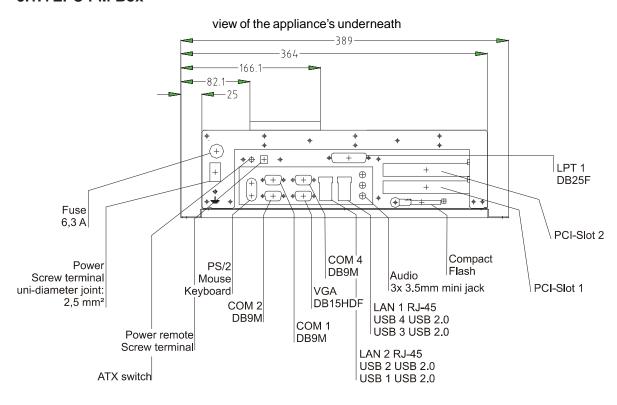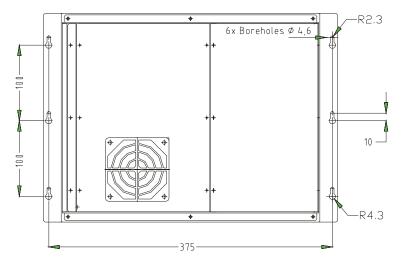
5 Technical data

view of the appliance's underneath

Rear view of the appliance

lateral view

5 Technical data

5.1.4 EPC PM Box

view of the appliance's underneath

389
364
166.1
82.1
25

Fuse
6,3 A

Power
Screw terminal
uni-diameter joint:
2,5 mm²

Power remote
Screw terminal

ATX switch

PS/2
Mouse
Keyboard

COM 2
DB9M

COM 1
DB9M

COM 4
DB9M

VGA
DB15HDF

LAN 1 RJ-45
USB 4 USB 2.0
USB 3 USB 2.0

LAN 2 RJ-45
USB 2 USB 2.0
USB 1 USB 2.0

Audio
3x 3.5mm mini jack

Compact
Flash

LPT 1
DB25F

PCI-Slot 2

PCI-Slot 1

Rear view of the appliance

100
100

6x Boreholes Ø 4,6

R2.3

10

R4.3

375

lateral view

276
264
Fan
111.5
104
114
12
27.5