

Hardware Manual

PCD7.D5064TX010



PCD7.D5100TX010



saia-burgess
Smart solutions for comfort and safety

The PCD7.D5xxx series

Controls Division

0	Content	
0.1	Document history	0-2
0.2	Trademarks	0-2
1	Introduction	
1.1	Certificates and Directives	1-2
2	Product description	
3	Commissioning	
3.1	Power supply	3-1
3.2	Earthing concept	3-2
3.3	Installation	3-2
3.4	Switch-on	3-2
4	Basic settings and first steps	
4.1	Taskbar	4-1
4.2	Saia PCD Web Panel Manager	4-2
4.2.1	“Screen Control“ (Normal mode)	4-3
4.2.2	“Touch Screen Calibration“ (Normal mode)	4-4
4.2.3	“Network and Connections“ (Extended mode)	4-5
4.2.4	“Reboot System“ (Extended mode)	4-6
4.3	FTP access to file system	4-7
4.4	SysAdmin web interface	4-8
4.5	Web Connect	4-9
4.6	Version control	4-10
4.7	Port list	4-10
5	Technical data	
5.1	Physical dimensions	5-1
5.2	Electrical data	5-5
5.3	Environmental conditions	5-5
5.4	Interfaces	5-6
6	Maintenance and support	
6.1	Battery changing	6-1
6.2	Replacing background lighting	6-1
6.3	Cleaning	6-2
6.4	Usage instructions for touch screens	6-2
7	Appendix	
7.1	Icons	7-1
	Address of Saia-Burgess	7-2

0.1 Document history

Document-no.	Version	Change	Publication	Remarks
026/843	E1		30.04.2006	Initial version
	E2		15.08.2006	New chapt. 4

0.2 Trademarks

Saia® is a registered trademark of Saia-Burgess Electronics AG.

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Technical changes are subject to the state of technology.

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1 Introduction

Please read the manual before you use the controls for the first time, and keep it in a safe place for later use. Pay special attention to the safety instructions, electrical details and environmental requirements.

1

Target group

The information documented in this manual relates to the unit, its location, transport, storage, installation, use and maintenance.

This manual is aimed at the following target groups:

- Users
- Service/maintenance technicians

Conventions used

[KEY] Keystrokes entered by the user are shown in square brackets, e.g. [CTRL] or [DEL]

Italics Names of buttons, menus or other screen elements to be selected, and product names, are given in italics.

Basic knowledge required

A sound knowledge of personal computers is assumed. A general understanding of automation technology and the installed operating system and application is also required.

Approvals and standards

Please refer to the section on “Certificates and Directives”

Safety instructions

Wherever hazardous faults could occur in the automation system, i.e. a fault could cause major damage to materials or people, additional external precautions must be taken or devices installed (e.g. independent limit switches, mechanical locks etc.), to assure/force a safe operating state in the event of a fault.

The user is responsible for checking suitability for the intended purpose, or for use under the specified conditions. Saia-Burgess Controls AG offers no guarantee in this area.

Qualified staff

The unit described here may only be set up and operated in conjunction with this document. A device may only be commissioned and operated by qualified staff. Qualified staff in the meaning of the safety instructions in this documentation are people authorised to commission, ground and label devices, systems and electric circuits according to the standards of the security policy.

Proper use

The device may only be used for the scenarios specified in the catalogue and the technical description, and only in conjunction with third-party devices recommended or approved by Saia-Burgess Controls AG. Trouble-free and safe operation of the device depends on appropriate transport, storage, setup and assembly, as well as careful operation and maintenance.

1.1 Certificates and Directives

The following apply to the product described in this documentation:

EMC Directive

DC power supply

Devices with DC power supply meet the requirements of EC Directive 89/336/EEC on electromagnetic compatibility and are suitable for use in the following area in accordance with their CE marking:

Area of use Requirement for

	Noise emission	Resistance to interference
Industry	EN 61000-6-4: 2001	EN 61000-6-2: 2001

Declaration of Conformity

The EC Declarations of Conformity and associated documentation can be provided to the competent authorities in accordance with the above EC Directive. Your sales representative can supply copies on request.

Assembly guidelines

Observe the assembly guidelines and safety instructions given in this documentation when commissioning and operating the devices.

2 Product description

The PCD7.D5xxx series is suitable for visualising process data of low to medium complexity. The process architecture used (Intel XScale) gives the units a lower power leakage and higher operating temperature range than earlier x86 systems, combined with lower equipment costs.

The devices have been developed for use with the Windows CE open operating system. The 2 USB ports can be used to connect external keyboards, mice, USB sticks or certain models of printer. The integrated Ethernet interface allows the units to be simply incorporated into existing computer networks or used as web panels.

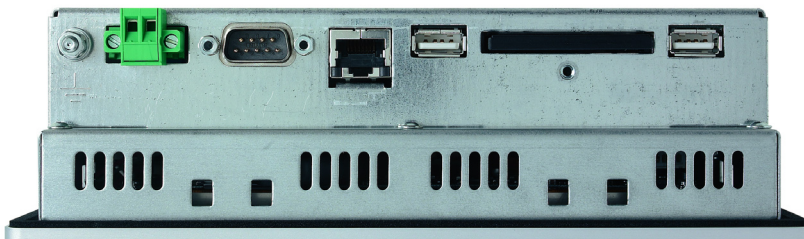
In conjunction with the (optional) Saia® S-Web Editor visualisation software, the devices can be used to visualise SPS data from PCD Classic and PCD xx7 series controls.

The series comprises the PCD7.D5064TX010 and PCD7.D5100TX010 models.



User side

Colour TFT display with resistive touch
(PCD7.D5064TX010 and PCD7.D5100TX010)



Slot side

3 Commissioning

3.1 Power supply



The PCD7.D5xxx devices must only be run on functional extra-low voltage with secure insulation in accordance with EN60950. The control transformer must comply with EN60742.

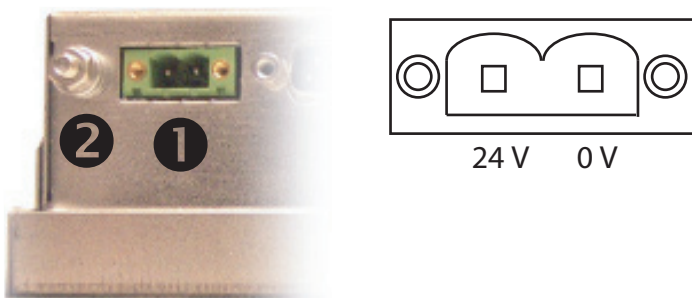
3

The supply voltage must be checked against the type plate.

When wiring the power supply and the connector, the details on the type plate must be observed.

Before commissioning the system, all cable connections should be checked.

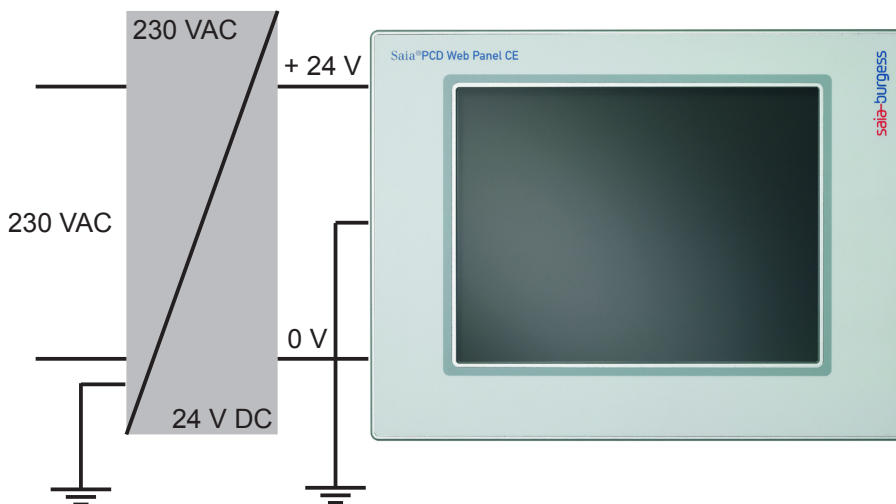
The 0V power supply has a low-resistance connection to the casing (earth).



- 1 24V power supply
- 2 Earth screw

The power supply is connected via a two-pole plug connector (Phoenix MST BT 2.5/2-STF-5.08).

Supply layout



3.2 Earthing concept

To ensure that electrical faults are dealt with safely, the following points should be observed:

- Connect device and switching cabinet by the shortest route to a central earthing point.
- Ensure lowest impedance possible in connection between device and switching cabinet.
- All data cables connected to the device should use shielded lines.
- The shields should be earthed at both ends. There must be a low-resistance connection between the linked systems. High equalising currents across the shield resulting from potential differences must be avoided.
- Earth connection to use green/yellow cable with min. 4 mm² cross-section.

3

3.3 Installation

The device should be installed in an RF shielded housing or a metal switching cabinet.

Adequate ventilation must be provided. To ensure that the heat generated in the device can be dissipated, a 100 mm space must be kept clear around the unit.



The unit must be disconnected from the power supply for installation and de-installation.

Only the assembly components supplied should be used to mount the unit in the housing. The type and number of assembly components is dependent on the device (see Technical Details).

The dimensions specified for the holes in the front plate must be adhered to, to maintain IP 65 (front) protection (see Technical Data).

Failure to observe the above instructions could cause damage to the device.

3.4 Switch-on

Start-up: The PCD7.D5xxx units boot up and load the operating system independently.

4 Basic settings and first steps

The PCD7.D5xxx is fitted with the Windows CE operating system. The Web Panels therefore offer a large number of functions and configuration options which largely match those already familiar from Pocket PCs. Please note that Windows CE is highly adaptable to individual fields of use. Depending on the individual manufacturer, particular applications or functions may or may not be available on a Windows CE device or a Pocket PC. However, the underlying philosophy will be the same.

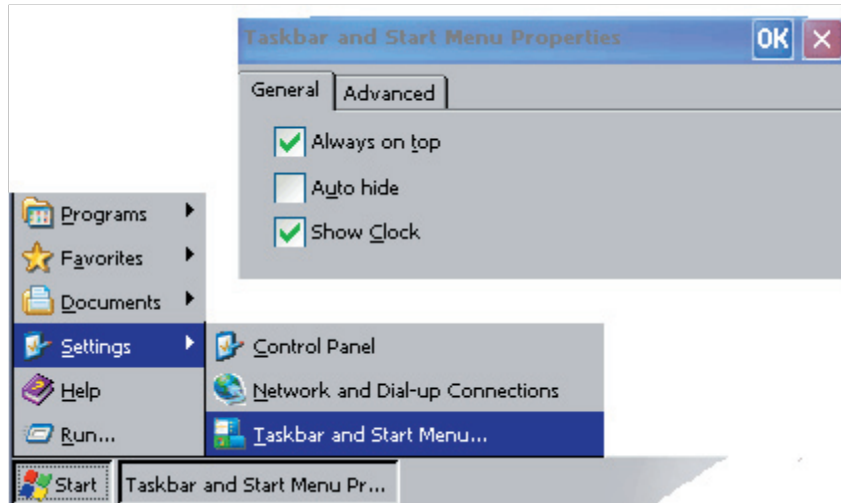
The following sections give examples of the most common functions and configurations typically required when the device is used as a control panel.



All settings are initially held in RAM only. A permanent configuration requires a restart with the “Reboot System” function (see 4.2.4 “Reboot System”).

4.1 Taskbar

After system start-up, the Windows CE desktop appears on the display, with the taskbar.



The Start menu can be used to configure the taskbar.

- “Always on top”
The taskbar cannot be hidden by active applications. The taskbar is always visible.
- “Auto hide”
The taskbar is automatically reduced to a narrow grey bar at the bottom of the display, freeing up more space for applications. Clicking on the minimised taskbar restores it for use in the normal way. After a short time (a few seconds) without any activity, it is minimised again.
- “Show Clock”
The time of day appears on the taskbar.

If the user of the control panel has no access at Windows level, applications can be launched in so-called Kiosk mode, i.e. the application (e.g. micro-browser, Internet Explorer) takes up the whole display. For this, the taskbar must be configured as follows:

- “Always on top” → inactive

4.2 Saia PCD Web Panel Manager

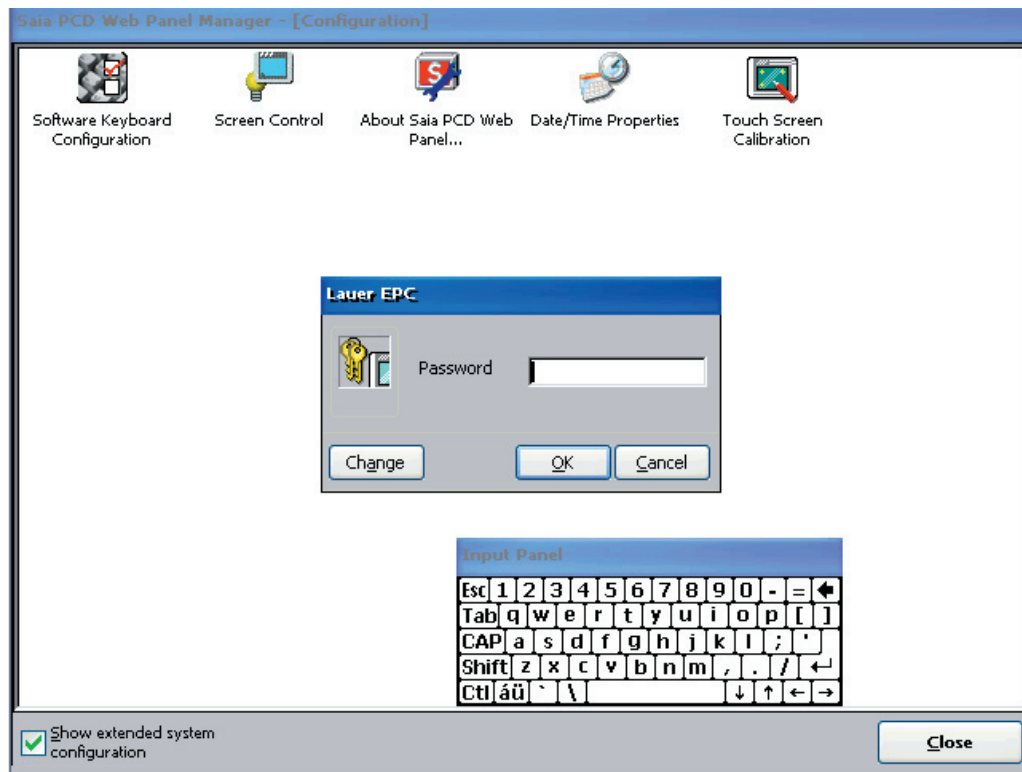
All basic settings can be entered via the Saia PCD Web Panel Manager. The Saia PCD Web Panel Manager is accessible either via the Start menu or via a shortcut on the desktop.

The Saia PCD Web Panel Manager has two modes:

- Normal mode
Only non-critical settings that are also important to an end-user can be entered (e.g. set time, calibrate touchscreen)
- Extended mode
Extensive operating system settings can be entered.

4

i Extended mode can be enabled by selecting “Show extended system configuration”. Unauthorised access can be prevented by the use of a password. In the default setup, no password is activated. The password request can be simply acknowledged by clicking OK. If a password is to be used, it can be assigned by the user (“Change” button).

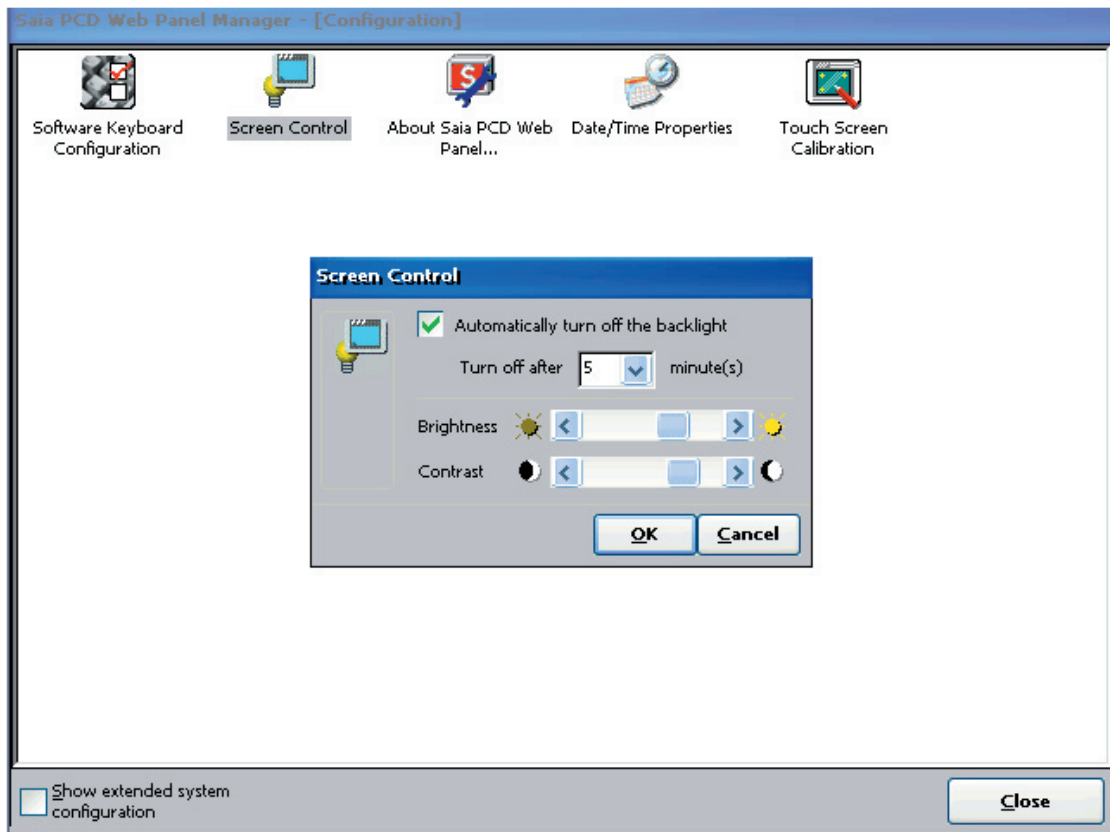


i Once a password has been assigned, the password dialogue can only be disabled by re-entering the password. The same applies to changes of password. If you have forgotten the password, you have to re-import the operating system image (from the Compact Flash card). All previously entered settings will then be lost.

4.2.1 “Screen Control“ (Normal mode)

The Web Panel automatically switches off the display illumination. This helps to prolong the life of the lighting element. The “Screen Control” dialogue can be used to enable automatic switch-off. You can also specify the period of inactivity after which this will occur. When the illumination is switched off, the display is completely dark. The illumination will be switched on again when you touch the touchscreen, press a key or move the mouse (where a mouse is connected).

The intensity of the display can also be changed (“Brightness” button).



4

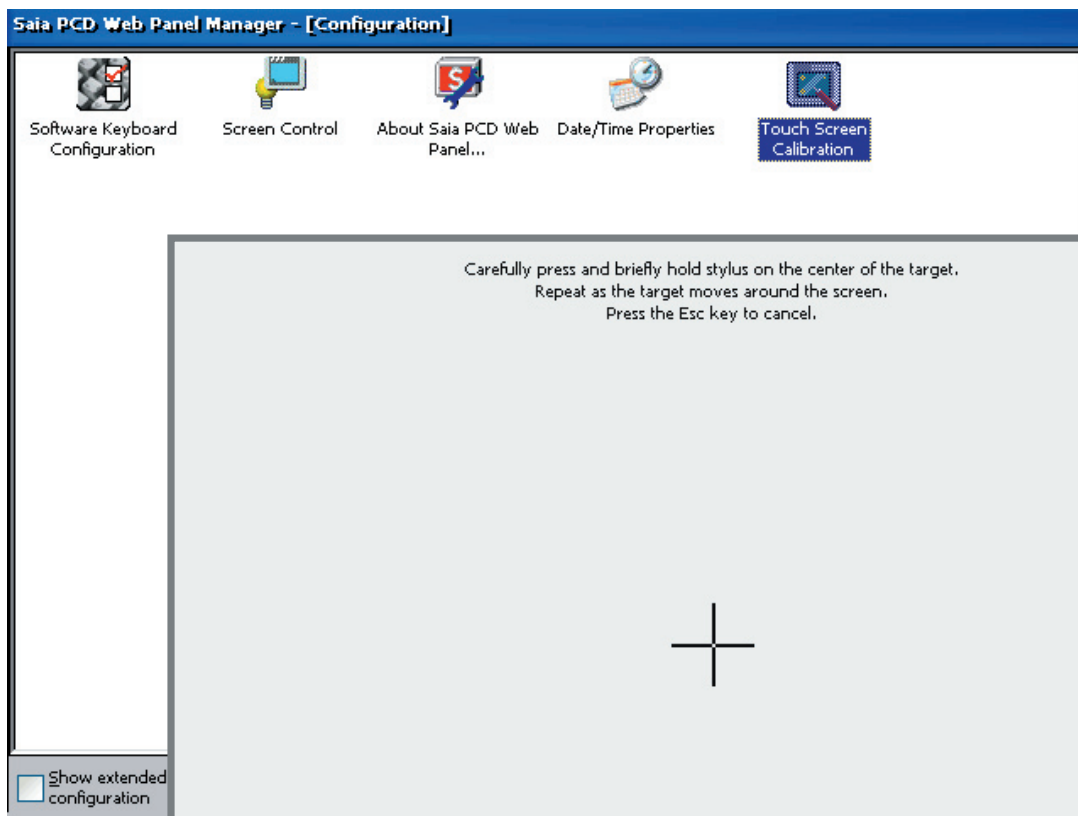


PCD7.D5xxx series control panels are fitted with high-quality TFT displays. The “Contrast” control is therefore not used.

4.2.2. “Touch Screen Calibration“ (Normal mode)

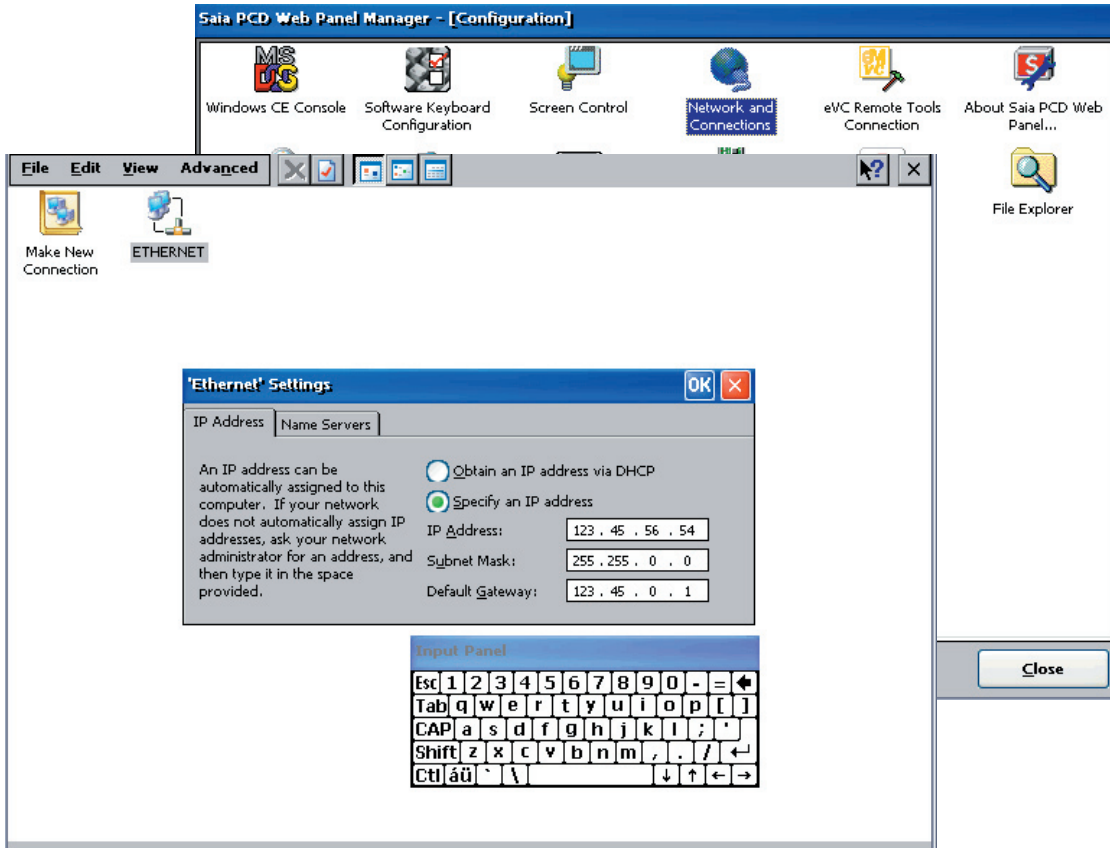
Depending on the user and the position of the panel, it may be necessary to calibrate the touch screen. When you select “Touch Screen Calibration”, a white box with cross-hairs will appear on the display. Touch the centre of the cross-hair sight with a touch pen or similar blunt-ended stylus (please do not use any metal objects). When the cross-hair sight is touched, it moves to a new position, where you have to touch the centre of the cross again. When all positions have been configured, the cross-hairs disappear. Click on the now blank box on the display and check the precision of the setup (the cursor should move with you). This completes the calibration and the white box disappears.

4



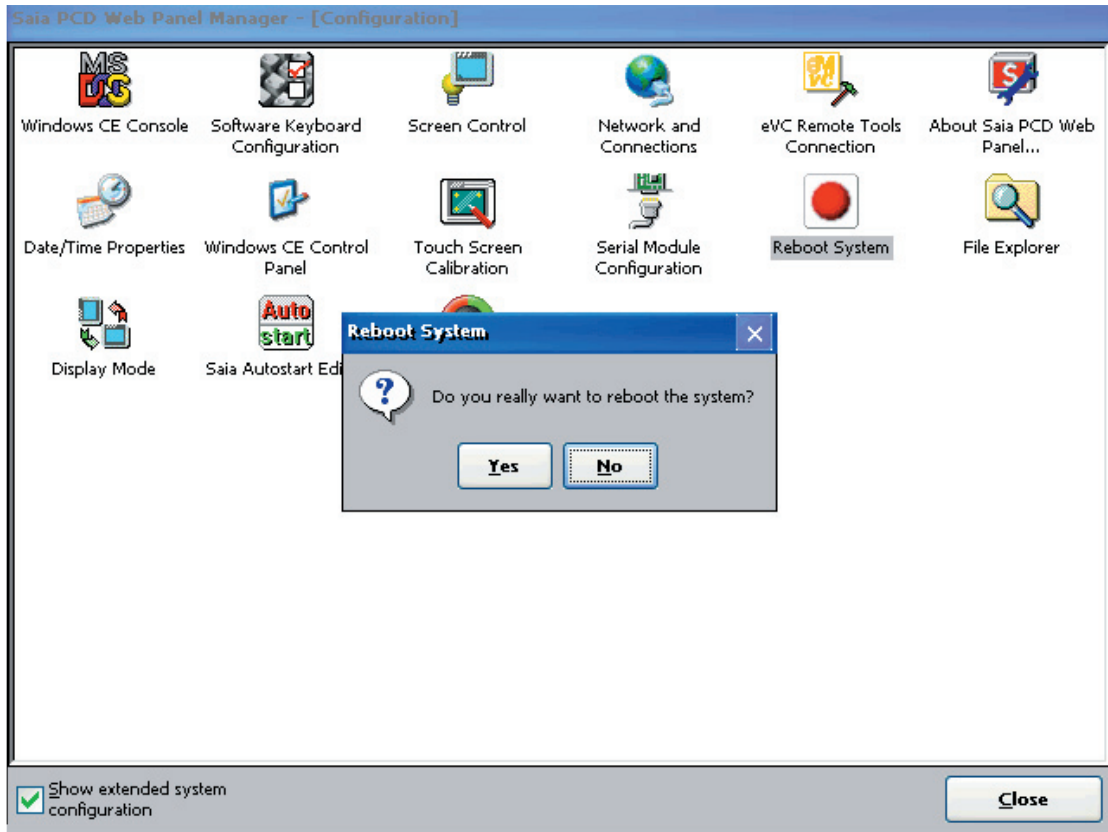
4.2.3 “Network and Connections“ (Extended mode)

If the Panel is to be connected to a network, the LAN parameters can be changed by clicking on the “Network and Connections” icon. Select the type of connection required (“Ethernet”). The “Ethernet Settings” dialogue will open. Here, you can enter the IP Address, Subnet Mask, Default Gateway and DNS Server.



4.2.4 “Reboot System“ (Extended mode)

The “Reboot System” function can be used to restart the Panel. Before the restart, all Windows settings are backed up to the Compact Flash card. This ensures that the settings are retained even after the Panel has been switched off and on again.



All Windows operating system settings (e.g. LAN, touch screen settings) are initially held only in transient RAM storage. If the Panel is switched off without a prior “Reboot System”, the settings will be lost.

4.3 FTP access to file system

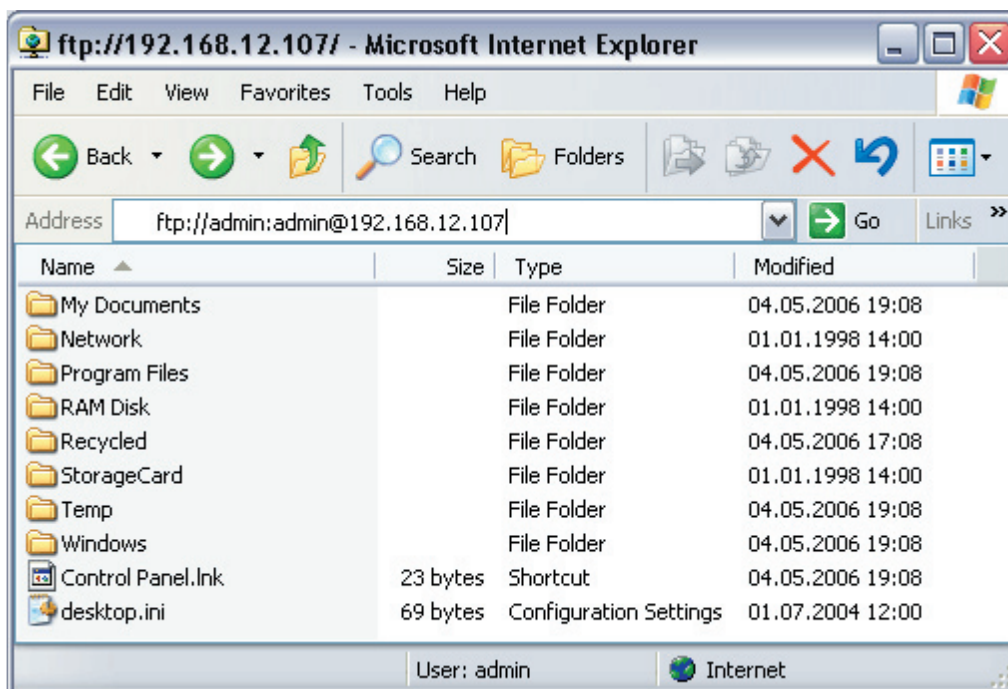
The Web Panels are fitted with an FTP server, which is active by default. The FTP server can be used to access the file system on the Panel, and hence the whole of the Compact Flash card (i.e. files can be transferred, copied, deleted, renamed etc.). An FTP client is required for access; in the simplest case, Microsoft Internet Explorer is sufficient.

The FTP server is password-protected. In the default setup, the following login is enabled:

User: admin

Password: admin

4



4.4 SysAdmin web interface

The Web Panels provide a convenient diagnostics and configuration facility, even over long distances: the SysAdmin web interface. A web server is active on the Panel, providing the SysAdmin web interface. Connection is via the usual standard browsers.

URL for SysAdmin web interface:

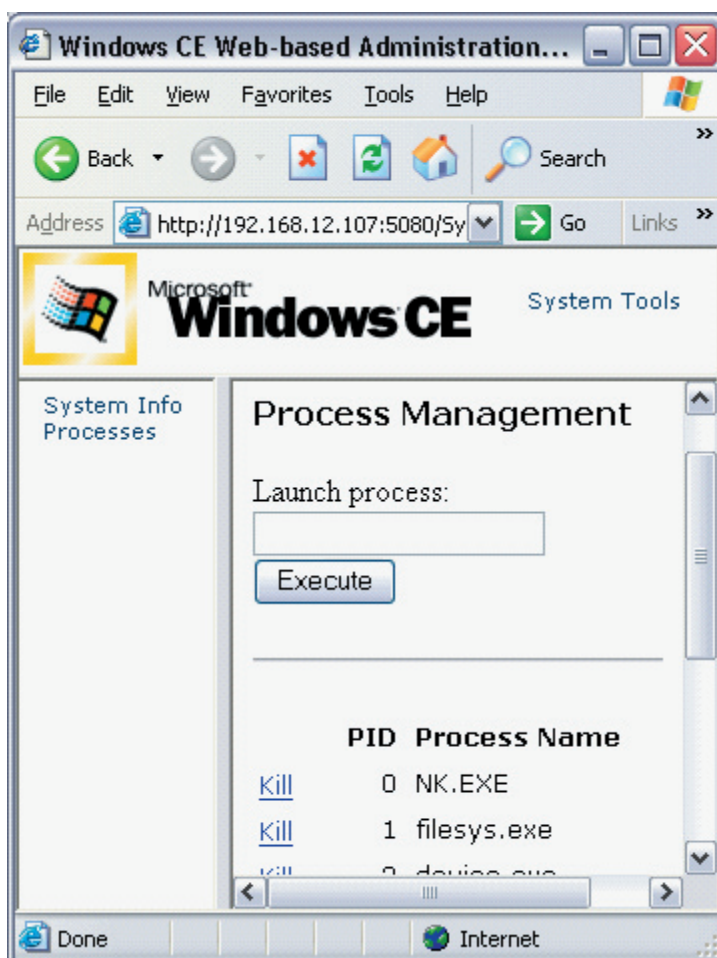
http://<IP of panel>:5080/SysAdmin

The web server is password-protected. In the default setup, the following login is enabled:

User: admin

Password: admin

4



The SysAdmin web interface provides the following functions:

- System Information
- Status of active Windows processes (e.g. applications)
- Starting and stopping Windows processes
- File Browser
- Registry Editor

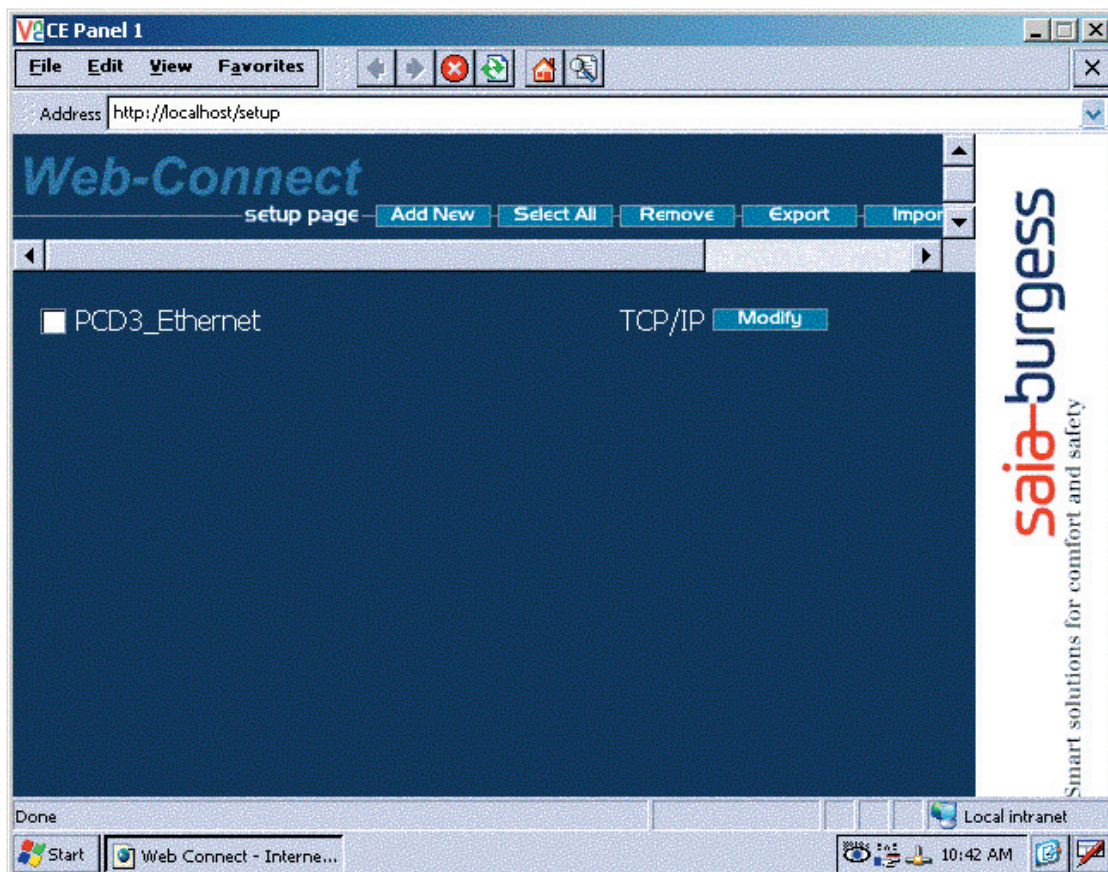
4.5 Web Connect

The Web Panel has the Web Connect communications server pre-installed. Web Connect enables access to PCD controllers via Ethernet, USB and serial ports.

Web Connect is automatically launched when the Panel is booted up. The Web Connect icon appears on the taskbar. By clicking on the Web Connect icon, you can configure the port used by Web Connect and the web page directory.

Web Connect can be configured via Internet Explorer. The URL <http://localhost/setup> takes you to the Web Connect setup menu. More detailed information on Web Connect can be found in the “Web Connect Manual”, document 26/800.

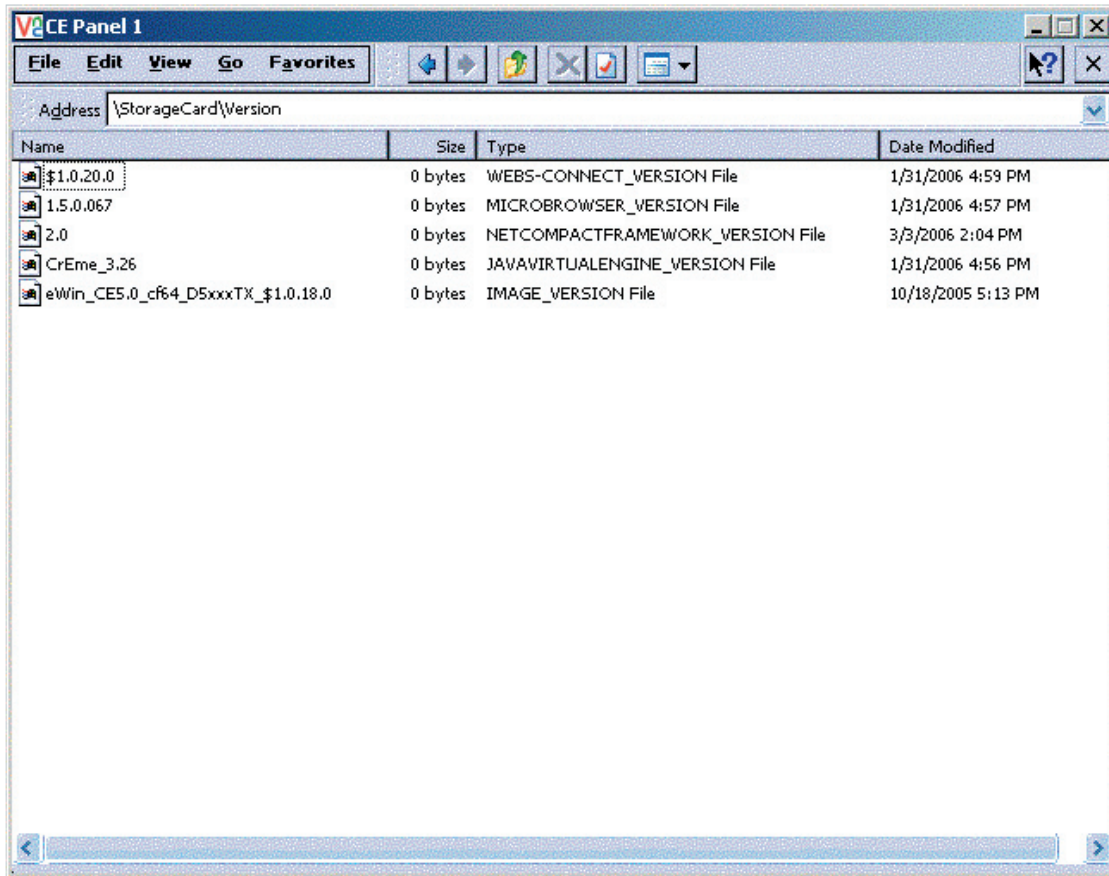
4



4.6 Version control

On the Compact Flash card (“StorageCard”) is the “Version” directory. This contains files whose names include the installed versions of the individual software components, and the version of the operating system image. The file-name gives the version, and the file extension indicates the type of software component.

In case of queries (technical support), it may be helpful to give the installed software versions. The version details represent the default state of the panel. Please note that where more recent versions of components (e.g. micro-browser) are installed later, the details in the version directory may no longer match the installed software. It is therefore advisable when updating the software components to update the version in the version directory also.



4.7 Port list

The following ports are used by the Web Panel:

Port	Protocol	Function
20, 21	TCP	FTP server
5080	TCP	SysAdmin web interface
987	TCP	Remote desktop connection (CERDISP)
80	TCP	Web Connect

5 Technical data

5.1 Physical dimensions

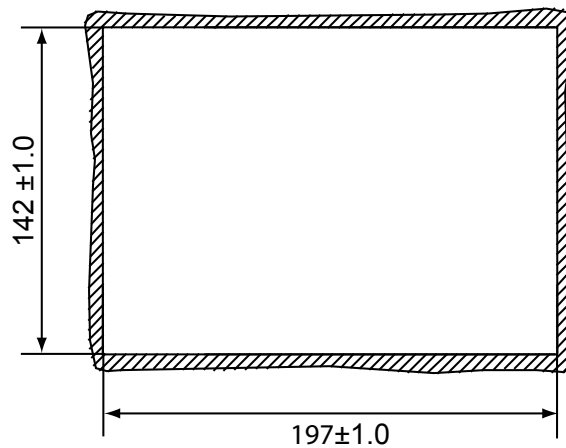
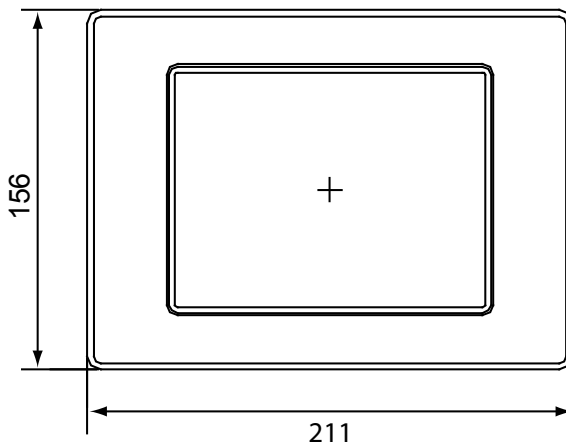
PCD7.D5064TX010 exterior/flush mounting dimensions

Front plate: Width 211.0 mm
 Height 156.0 mm

Aperture size: Width 197.0 mm
 Height 142.0 mm

Depth: 57 mm

Weight: approx. 1.4 kg



Front aperture for installation

Aperture W x H

197.0mm x 142.0mm

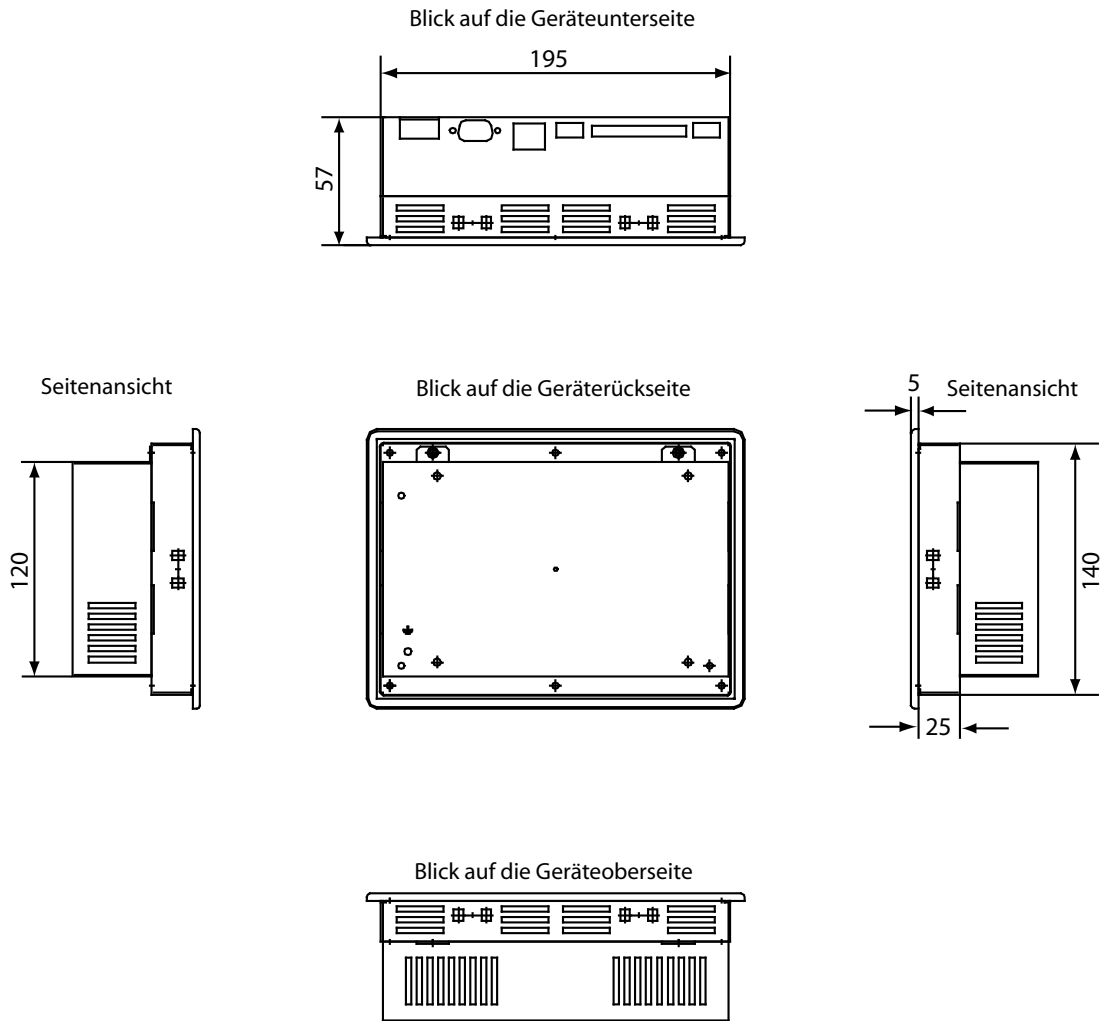
Type of fixing:

6 aluminium or plastic

brackets with grub screws

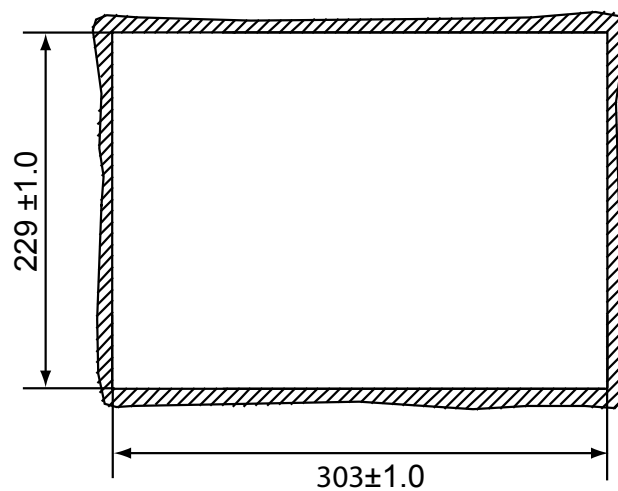
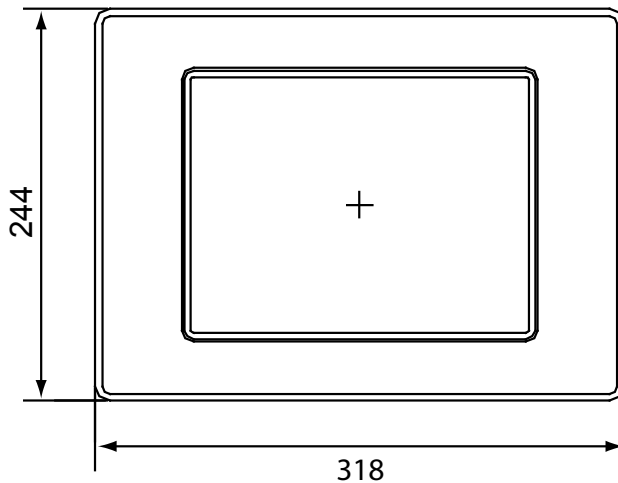
M5x30, DIN 914, pointed with
hexagonal recess, zinc-plated.

PCD7.D5064TX010 dimensions:



PCD7.D5100TX010 exterior/flush mounting dimensions

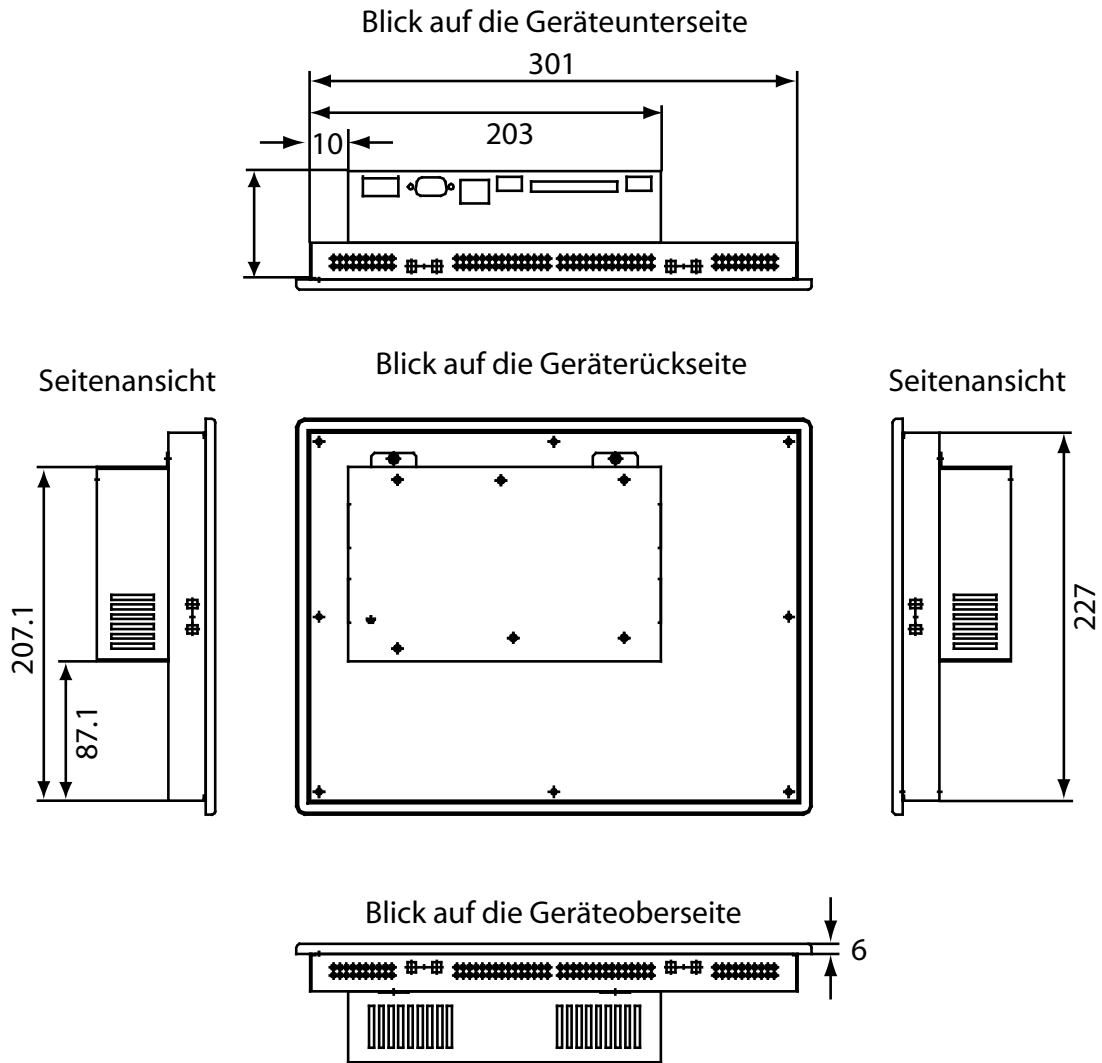
Front plate:	Width 318.0 mm Height 244.0 mm
Aperture size:	Width 303.0 mm Height 228.0 mm
Depth:	63 mm
Weight:	approx. 2.7 kg



Front aperture for installation
Aperture W x H
303.0mm x 229.0mm

Type of fixing:
6 aluminium or plastic
brackets with grub screws
M5x30, DIN 914, pointed with
hexagonal recess, zinc-plated.

PCD7.D5100TX010 dimensions:



5.2 Electrical data

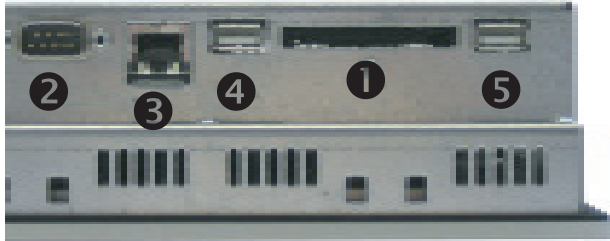
Model	PCD7.D5064TX010	PCD7.D5100TX010
Power supply		
Operating voltage	24 V \pm 20%, reverse voltage protected	
Current consumption	approx. 1.0 A	
Fuse	2.5 A slow-blow	
Jumper time	1 ms at 19.2 V (Ub-20%)	
Display unit		
Display diagonal (inches)	6.4	10.4
Active area (mm)	132.5x99.4	211.2x158.4
Resolution (pixels)	640x480	
Max. colours	65536	
Viewing angle (H/V)	110°/90°	130°/110°
Max. brightness (cd/m ²)	400	430
Contrast ratio	300	500
Reaction time (25°C, tr/ta)	15/16 ms	10/30 ms
Display technology	TFT	
Service life (50% brightness)	30,000 hrs	50,000 hrs
Touchscreen	resistive	
Operating temperature range	0 - 50°	
Memory		
Operating system	64 MByte compact flash (external)	
Working memory	64 MByte SDRAM, 32 bit	
Processor type	Intel XScale PXA255, 400 MHz	
Interfaces		
Serial	1 RS232 for any use	
USB	2x USB 1.1 (max. 0.5 A per port)	
LAN	Ethernet 10/100 MBit	
Real-time clock	Battery buffered, with date and calendar, Precision 1 second	

5.3 Environmental conditions

Ambient temperature	
Operation	0 - 50° C
Storage	-20 - 60° C
Humidity acc. to DIN EN60068-2-3	
Operation	10 - 75%, non-condensing
Storage	10 - 95%, non-condensing
Vibration in operation acc. to DIN EN60068-2-6	
	0.075 mm (10 - 58 Hz), sine 1G (58 - 500 Hz), sine
Shock in operation acc. to DIN EN60068-2-27	
	15 g, 11 ms, half-sine
Protection type acc. to DIN EN60529	
	Front IP 65, back IP 20

5.4 Interfaces

Compact flash slot: The PCD7.D5xxx units are fitted with a CFA standard (type 1) compact flash slot as standard.



- ❶ Compact flash slot
- ❷ COM 1
- ❸ Ethernet
- ❹ USB 1
- ❺ USB 2



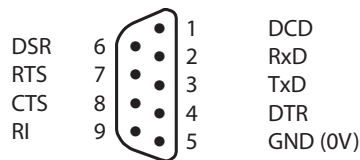
Only compact flash cards from SANDISK and SIMPLETECH should be used in conjunction with PCD7.D5xxx devices.

The compact flash card should only be changed with the device switched off.

Serial port (COM 1)

The serial port is configured to the PC XT/AT standard. The interface is not electrically isolated.

Pin assignment of 9-pole D-Sub connector:



USB ports

Both USB ports conform to the USB 1.1 standard and support a data transfer rate of 10 MBit/s.



A maximum current of 0.5 A may be taken from the two USB ports. External USB devices that need a higher supply current must provide it themselves.

6 Maintenance and support

6.1 Battery changing

The devices are fitted with an integrated lithium battery for data buffering.



Battery type:	Coin cells CR2032, 3V / 230mAh
Manufacturer:	e.g. Varta, type 6032
Buffer current:	2 μ A typ. / 15 μ A max.
Battery voltage monitoring:	yes (functionality dependent on software)
Battery life (typ.):	5 years

6

Battery life is basically dependent on the prevailing environmental conditions (operating temperature, switch-on/switch-off time, humidity). The lifetime given here assumes that the device is switched on regularly (several times a week / at least 1500 hours a year).

The battery should only be changed by trained specialists. ESD protective measures should be observed.

Before changing the battery, the device should be disconnected from the power supply.

The PCD7.D5xxx units do not have to be taken out of the switching cabinet. It is sufficient to loosen the two screws on the back plate (hexagonal recess, size 2.0) and open the back plate downwards. Hold the back plate roughly horizontal with one hand.

Push the battery contacts back with a plastic object (e.g. touch stylus) until the battery pops out of the holder. Remove the battery. Insert new battery into the battery holder and clip in place. The positive pole of the battery must point upwards / be visible.



When the battery is changed, the real-time clock data will be lost.

Do not short-circuit the battery contacts. Risk of explosion. Battery should only be replaced with the same type from the same manufacturer.

Lithium batteries are hazardous waste. Used batteries should be disposed of in accordance with national guidelines.

6.2 Replacing background lighting

It is advisable to allow Saia-Burgess Controls AG to replace the tubes for the background lighting. The projected lifetime of the tubes can be found in the Technical Data.

The tubes for the background lighting contain traces of mercury and are hazardous waste. They must be disposed of in accordance with national guidelines.

6.3 Cleaning

Only mild cleaning agents should be used to clean the front of the unit (e.g. neutral soap solution or dilute washing-up liquid). Always use a clean, soft cloth for cleaning.



Do not use any cleaning agents that contain granules (e.g. scouring powder or cleansing milk). These may affect the readability of the display or damage the touch screen.






Do not use acetone or benzene.

6.4 Usage instructions for touch screens

The touch screen should only be operated with the hand or a specially designed touch stylus. Using sharp metal objects (e.g. screwdrivers) may damage the touch screen.

7 Appendix

7.1 Icons

	<p>In manuals, this symbol refers the reader to further information in this manual or other manuals or technical information documents. As a rule there is no direct link to such documents.</p>
	<p>This symbol warns the reader of the risk to components from electrostatic discharges caused by touch. Recommendation: at least touch the Minus of the system (cabinet of PGU connector) before coming in contact with the electronic parts. It is better to use a grounding wrist strap with its cable attached to the Minus of the system.</p>
	<p>This sign accompanies instructions that must always be followed.</p>
	<p>Explanations beside this sign are valid only for the Saia-Burgess PCD Classic series.</p>
	<p>Explanations beside this sign are valid only for the Saia-Burgess PCD xx7 series.</p>

Address of Saia-Burgess

Saia-Burgess Controls AG

Bahnhofstrasse 18
CH-3280 Murten / Switzerland

Tel: +41 26 / 672 72 72
Fax: +41 26 / 672 74 99

E-mail: pcd@saia-burgess.com
Home page: www.saia-burgess.com
Support: www.sbc-support.ch