

Room Web Panel PCD7.D443WTxRx

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Document versions

Version	Publication	Changes	Comments
EN01	2016-11-28		First version of manual
EN02	2016-12-02	HW(B)Sensor/LED	Update HW B and FW > 1.28.04
EN03	2017-05-24	Pictures	white Version
ENG04	2017-10-30	Small adaption	

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1 Quick start

1.1 Introduction

This handbook deals with the technical aspects of the PCD7.D443WTxRx Room Web Panel family. The *Quick start* chapter is designed to ensure optimum installation of the PCD7.D443WTxRx series.

Remark:

The small "x" in the product name are placeholders and stand for any digit or letter to draw attention to device variants.

The following points are dealt with here:

- Definition of connections
- Power supply and power consumption
- Dimensions
- Possible communication modes

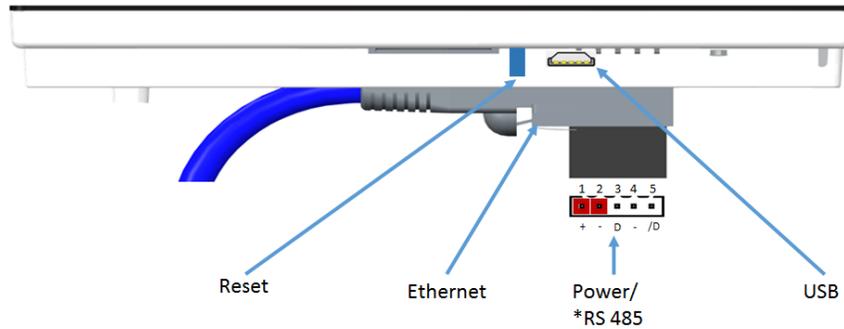
In the other chapters, you will find further details of:

- Hardware
- Software (Setup Menu step by step and configuration)
- Use, firmware updates etc.
- Maintenance

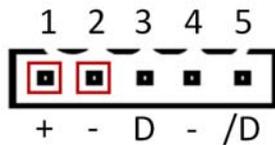
Supplementary manuals:

- PG5 User Guide | 26-732
- File System and FTP Server | 26-855
- Ethernet TCP/IP | 25-766
- Smart RIO PCD3.T665 | 25-892
- PCD3 Series (configuration of communication interfaces) | 26-789

1.2 Definition of connections



1.3 Power supply for the panel / (*RS-485)



Supply voltage:

24 VDC +20% / -20%

Connection pins	Signal
1	24V DC (+)
2	GND (-)
3*	D (RS-485)
4*	GND (-) (RS-485)
5*	/D (RS-485)

* available only on PCD7.D443WT5Rx

	Power	Power without back-	Power with back-
PCD7.D443WTPrx	Max. 160 mA	3.2 W	3.8 W
PCD7.D443WT5Rx	Max. 160 mA	3.2 W	3.8 W

Power supply with jack plug for cable with max. 1.5 mm².

Remark about the 5 pol connector for power supply and RS-485

The above described mounting position of the 5 pol connector of the 24VDC and RS-485 connector (24VDC pins are on the side where the RJ45 Ethernet connector is plugged) was introduced since hardware version B of the PCD7.D443WTxRx

On the hardware version A of the PCD7.D443WTxRx the whole 5 pole connector is mounted 180° inverted, means that the 24VDC pins are not on the side where the RJ45 Ethernet connector is plugged.

The 5 pol connector is the same for the hardware version A and version B, and the Pin numbering on the connector is the same on both hardware version.

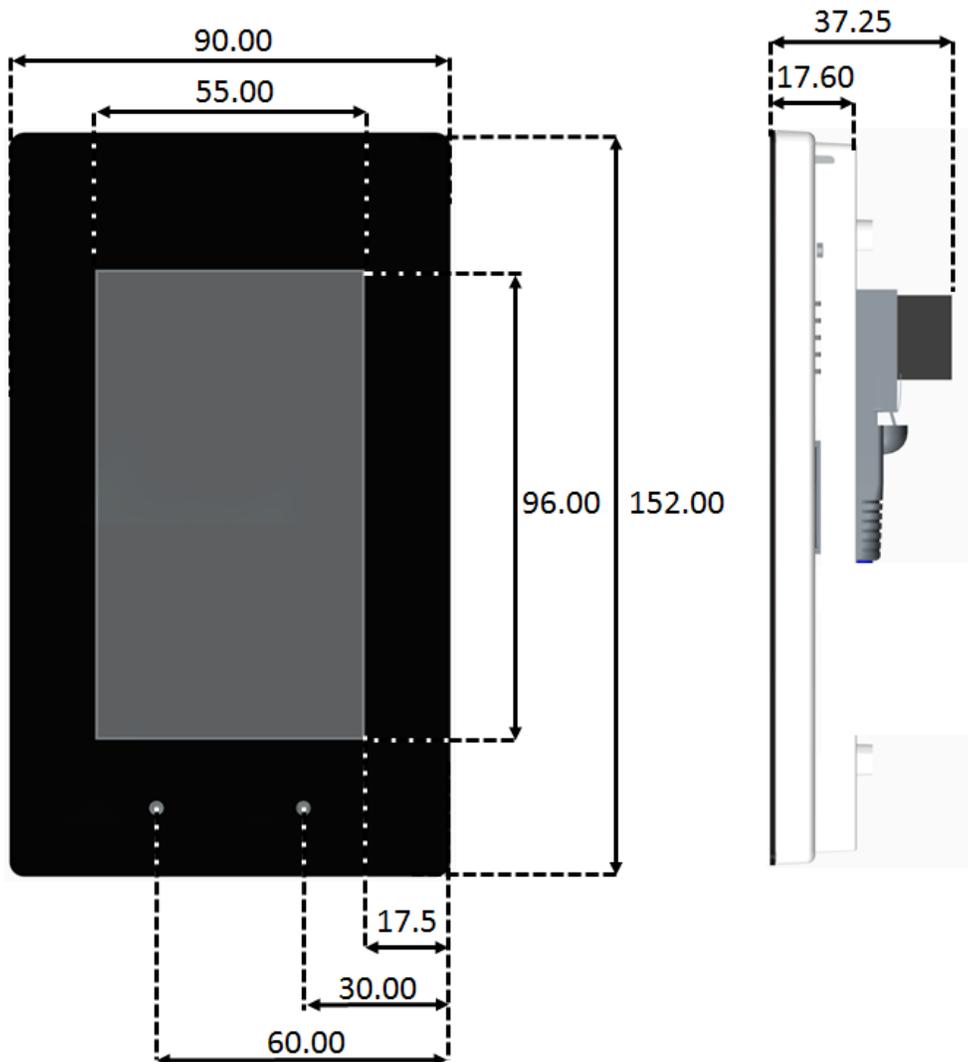
(Pin 1 = 24VDC, Pin 2 = GND, Pin 3 = D RS-485, Pin 4 = GND RS-485, Pin 5 = /D RS-485)

That means, when replacing a panel from hardware version A to hardware version B, there is no need to change the wiring at the connector. Only insert the connector by 180° inverted.

1.4 Device dimensions and cut-out

1.4.1 Device dimensions

	Dimensions in	mm
Front panel	W x H	90 x 152
Display	W x H	55 x 96
Cut-out	W x H	83 x 140



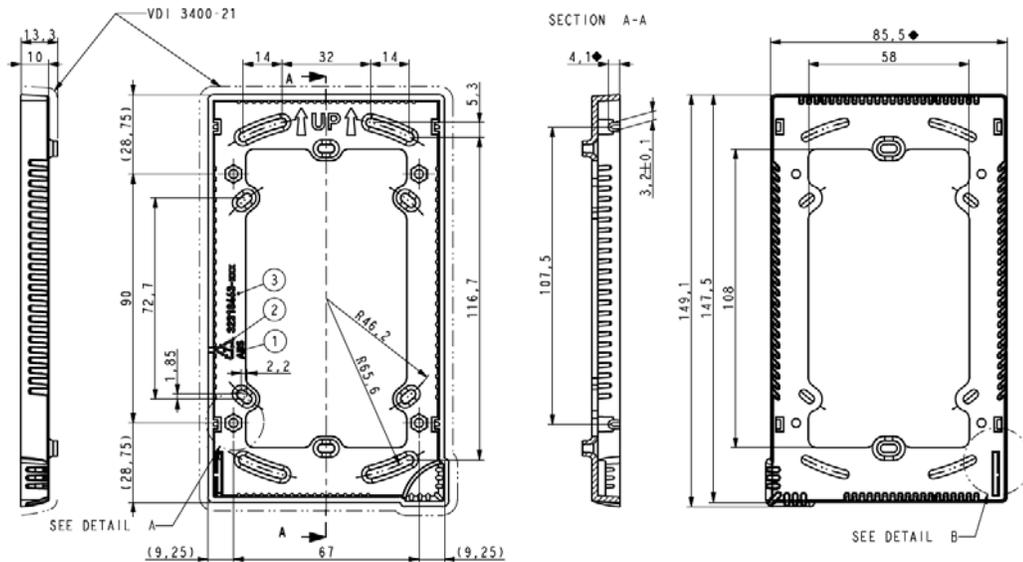
In the sideview can be seen, that some components are protruding out of the mounting frame. That means they go a few millimeters under the surface of the wall plaster.

The device needs a standardized doubled flushmounted box in the wall or an proper spacer frame.

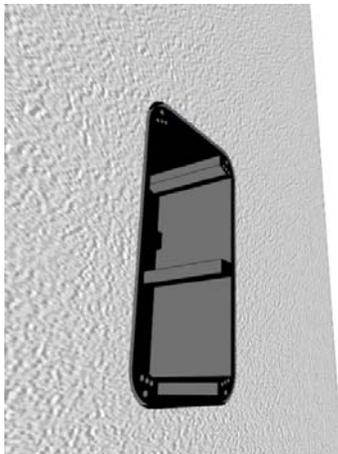
1.4.2 Dimensions of mounting adapter

The adapter is mounted on the wall installation box using 4 enclosed Torx T8 screws.

	Dimensions in	mm
Front panel	W x H	85 x 147



The adapter can be mounted on standard double wall installation boxes.



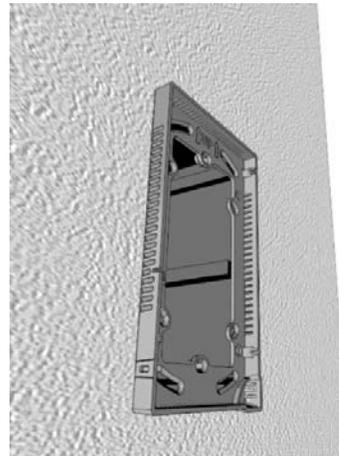
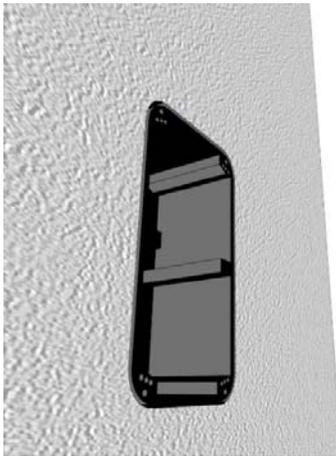
1.5 Mounting the panels

The panel is mounted with the help of the adapter contained in the package on standard double wall installation boxes.

E.g.

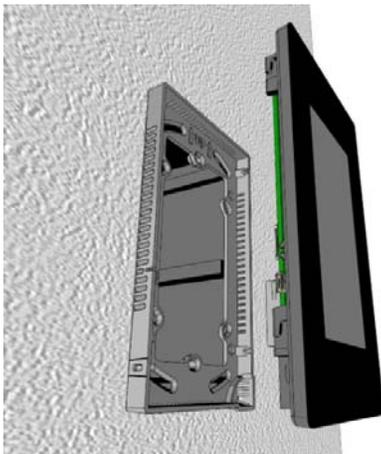
- Electro-Material Art. No. L 8102
- HSB-Weibel AG Art. No. 372 104 747
- Agro Art. No. 9922
- Blass-Elektro Art. No. 22031
- Bticino Art. No. 504E

Mounting the adapter for panels with hardware version B or later

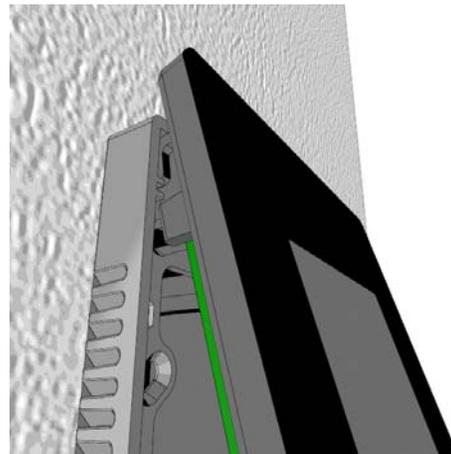


Screw the adapter onto the wall installation box .. using the 4 enclosed Torx T8 screws.

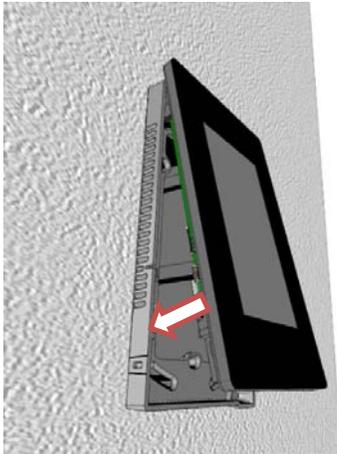
To mount the panel



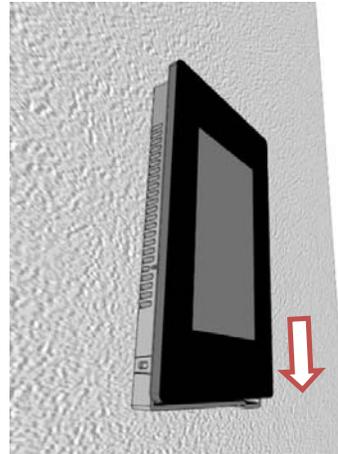
Tilt the panel slightly and ..



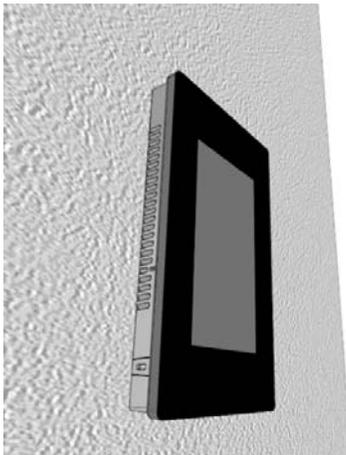
introduce it into the adapter at the top..



Lower it into the adapter and ..



then push it down.



The panel will now lock in the adapter.

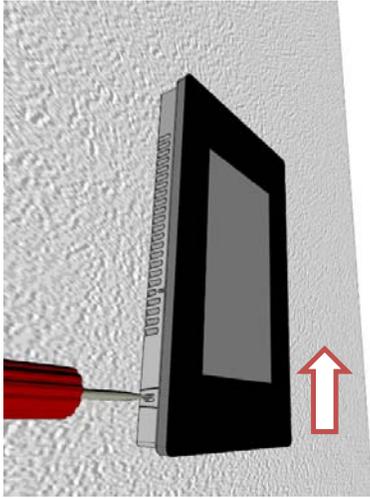
Remark:

The mounting and removing of the panel described below refers to panels with hardware version B or later.

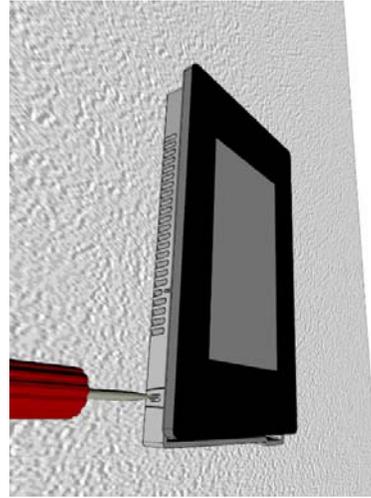
For the panels with hardware version A, the locking ratchet was on the upper right side of the housing.

Dismounting also took place by pressing on the locking ratchet with a screwdriver and pulling forward the display from the adapter.

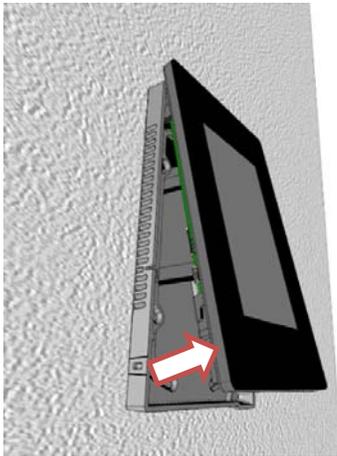
To remove the panel from the adapter



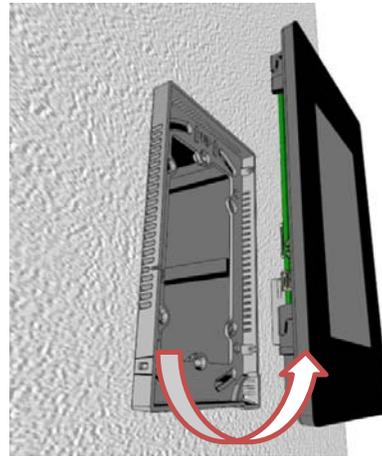
Press on the locking ratchet using a screwdriver and ..



at the same time push the panel upwards.



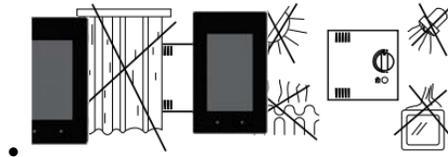
Lift the panel out of the adapter and ..



remove it from the adapter.

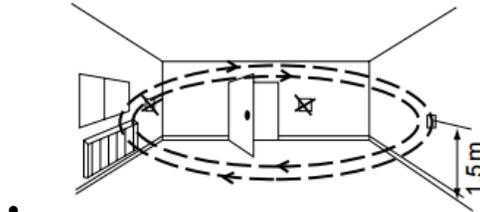
1.5.1 Mounting location

- The device can be mounted horizontally or vertically.
- To ensure the most accurate temperature measurement possible, check that the sensor is not affected by any external influences when choosing a mounting location.

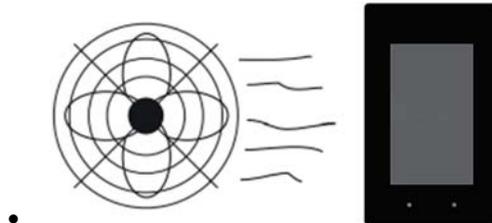


Do not expose the panel to direct sunlight or lighting.

Do not install it close to heat sources such as heating systems, refrigerators, lamps etc.



Do not install it close to windows and doors because of draughts.



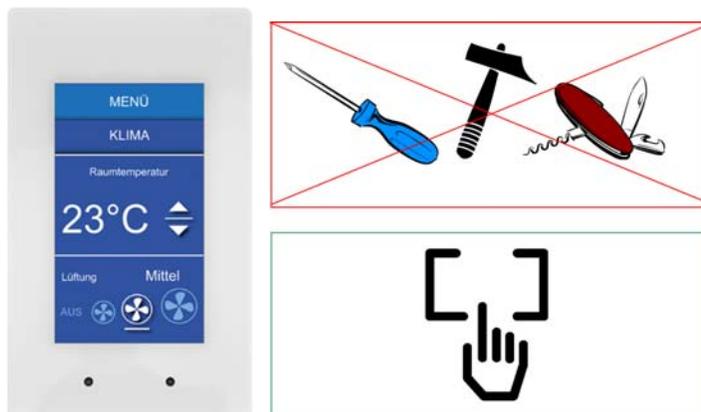
Do not position the panel in a draught produced by air conditioning or ventilation systems.

- Air circulation must be ensured – the ventilation slits in the panel (on all sides) must not be covered.
- Mount the device using the supplied mounting adapter.
- To mount the panel, first insert the panel into the mounting adapter and then lower it until it locks onto the locking ratchet.

1.5.2 Operating and handling the touchscreen

Only use your fingers to operate the touchscreen. Do not use any pointed or sharp instruments (e.g. pointed metal objects, paper clips or screwdrivers...)

Touch pens cannot be used to operate the device.



1.6 Setting up communication to display a web page

1.6.1 HTTP direct via Ethernet RJ45 connection

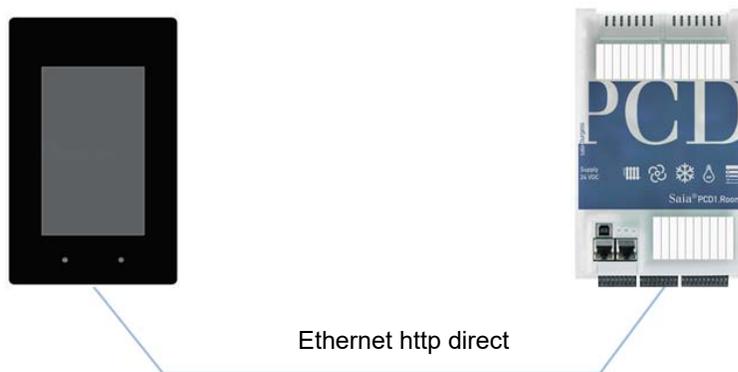
The quickest communication connection is the Ethernet port via RJ45, if the protocol HTTP direct was selected. The speed is either 10 MBit/s or 100 MBit/s with an auto-negotiation protocol via the connected device.

Internal connection for programmable web panels

The programmable panels are connected internally via an Ethernet connection directly to the programmable logic controller. All that you need to do is set the local host IP address 127.0.0.1 and the http direct connection under *Web Connection* in the *Setup Menu*. Naturally, the programmable web panels can also display the web pages of controllers in the network.

Connecting to external devices

An HTTP connection can be established between our PCD7.D4xx and any Saia PCD® controller if an Ethernet connection to the automation server exists. With the programmable panels, the panel is generally connected to the internal controller.



1.6.2 Panel speed test

- A web program generated with the Web Editor must first be loaded onto the Saia PCD®.
- Connect the panel to the Saia PCD® using a CAT5 cable. Because the current controllers support auto-crossing, a crossover cable is no longer needed.

Setup settings for the PCD7.D443WTxRx panel:

For configuration, the *Setup Menu* must be open. (See Chapter 5):

- First ensure that you are in the same network subnet. Example: If the Saia PCD® has the IP address 192.168.12.92, enter an IP address such as 192.168.12.90 in your terminal (in the Network Menu), because the subnet mask is usually 255.255.255.0.
- In the Configuration Menu, enter the address of the start page which corresponds to the IP address of the Saia PCD® and also the name of the HTML start page.

The MB panel should now be connected to the Saia PCD® and the selected start page should be displayed on the monitor. You can now navigate through your web pages!

1.6.3 USB port as service port

With the PCD7.D443WT5Rx panels, the USB port is used to load the user program with PG5 onto the controller.

With the PCD7.D443WTPRx panels, this port generally serves as a service port. It is mainly used to load new firmware programs onto the device.

The USB port meets the USB 1.1 specification. Maximum speed: 12 MBit/s.

1.6.4 Introduction to the Web Editor on the Micro Browser Panel PCD7.D4xx

You can download detailed documentation from our website.

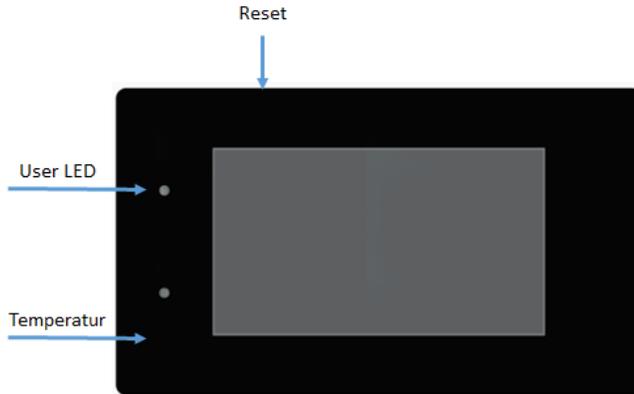
See Manual 26-838_Manual_Web-Editor.

- 1) When setting up the project, you must select the resolution WQVGA. This corresponds to 480 x 272 pixels.
- 2) You must define the entry panel (SIP) depending on whether the panel is installed vertically or horizontally. See Chapter 5.6.2 Keyboard

2 Technical data for the two panel types

Because of the programmable logic controller in the programmable panels, the hardware of the PCD7.D443WTPR and PCD7.D443WT5R Micro Browser Panels differs in certain respects. These differences are described in the following sections.

2.1 Status display, sensors and actions



	PCD7.D443WTPRx	PCD7.D443WT5Rx
Reset button		
In run: Button is pressed for longer than 45 sec during operation.	Not available (x)	Program restore will be triggered.
When starting up: Button is pressed for longer than 45 sec before the power supply (24V DC) is connected.	Not available (x)	Program restore will be triggered.
When starting up: Button is pressed for longer than 90 sec before the power supply (24V DC) is connected. Device reset to default factory settings	Device reset to default factory settings, the local INTFLASH and PLC_SYS file systems will be formatted.	Device reset to default factory settings, the local INTFLASH and PLC_SYS file systems will be formatted. User program will be deleted.
LED		
Important:	Hardware version "< B". Supports the colour green only Hardware version ">= B". Supports the colours red, green and orange	
Status display See also Chapter 3.2 / 7.6	During the boot process, the LED shows the operating status of the panel. The LED will go out once the LCD has started successfully.	
Temperature sensor		
Accuracy +/- 1°C Temperature range: Note installation location "1.5.1" Sensor must be calibrated See also Chapter 7.6	Yes 0°C to 40°C Hardware version >= B FW version >= 1.28.04	Yes 0°C to 40°C Hardware version >= B FW version >= 1.28.04

2.2 Technical data for the Room Micro Browser Panel

	PCD7.D443WTPRx	PCD7.D443WT5Rx
Display		
Colours	65 K	65 K
Display	4.3" TFT	4.3" TFT
Resolution/pixels	QWVGA / 480 x 272 pixels	QWVGA / 480 x 272 pixels
Touchscreen	PCAP technology	PCAP technology
Adjustable contrast	Yes, 20 levels	Yes, 20 levels
Background lighting	LED	LED
Processor		
Processor	Coldfire CF5373L. 240 MHz	Coldfire CF5373L. 240 MHz
Memory for local file system	3 MB	128 MB
Real time clock (RTC)	Yes, with Super Cap	Yes, with Super Cap
Data remanence	x	No
Cycle time	x	> 100ms
Interfaces		
Ethernet	1x Ethernet interface RJ 45 / http direct	1x Ethernet interface RJ 45 / http direct
USB 1&2	1x client. Connector Type: USB Micro-B (device connector)	1x client USB Connector Type: USB Mi- cro-B (device connector)
Serial	Reserved, don't use	1x RS 485 (not galvanically isolated)
Operating system	Saia PCD® COSinus	Saia PCD® COSinus
Browser	Saia Micro Browser®	Saia Micro Browser®
Server	FTP server	FTP server, web server
Software tools		
Graphics editor	Web Editor	Web Editor
* Use of PG5 resources	Yes	Yes
Logic controller		*
User program	No	128 kB
RAM/DB/Text	No	128 kB
Media	No	16 384 flags / 16 384 registers
Storage for backing up media	No	1000 non-volatile registers
Technical data		
Supply voltage	24 VDC ± 20 %	24 VDC ± 20 %
Current	160 mA	160 mA
Housing protection class (front)	IP20	IP20
Operating temperature	0 ... 50 °C	0 ... 50 °C
Storage temperature	-20 ... 70 °C (not condensing)	-20 ... 70 °C (not condensing)
Dimensions (W x H x D) mm	90 x 152 x 37.25	90 x 152 x 37.25
Cut-out (W x H) mm	83 x 140	83 x 140

Important:

The PCD7.D443WTxRx panels do not have an internal battery that can maintain the current status of media such as registers, flags, counters etc. in the event of a power cut.

With the "EL Backup Restore Media" FBox from the E-Suite library, media content and the FBoxes adjust parameters for example can be stored permanently in non-volatile registers.

3 Logic controller for the PCD7.D443WT5Rx programmable panels

3.1 Communications interfaces

The programmable logic controller has various built-in communications interfaces.

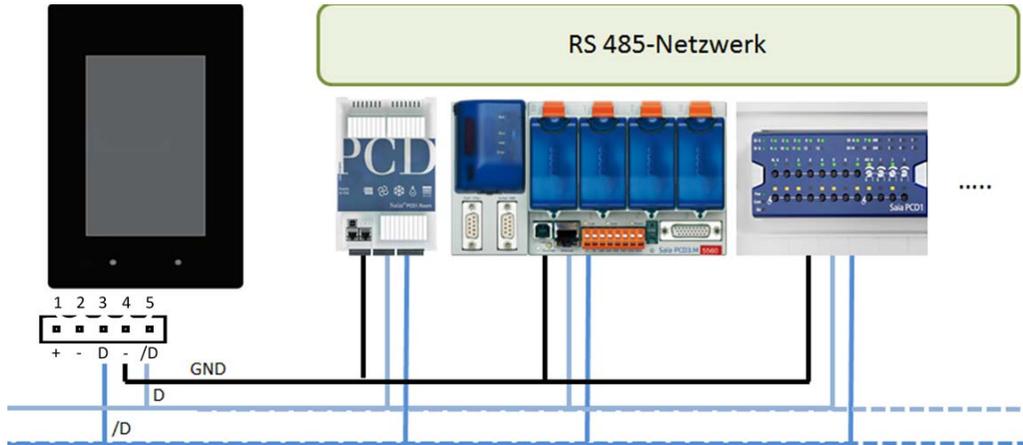
3.1.1 RS-485 on board

PCD4.D443WT5R

PCD3.Mxxxx

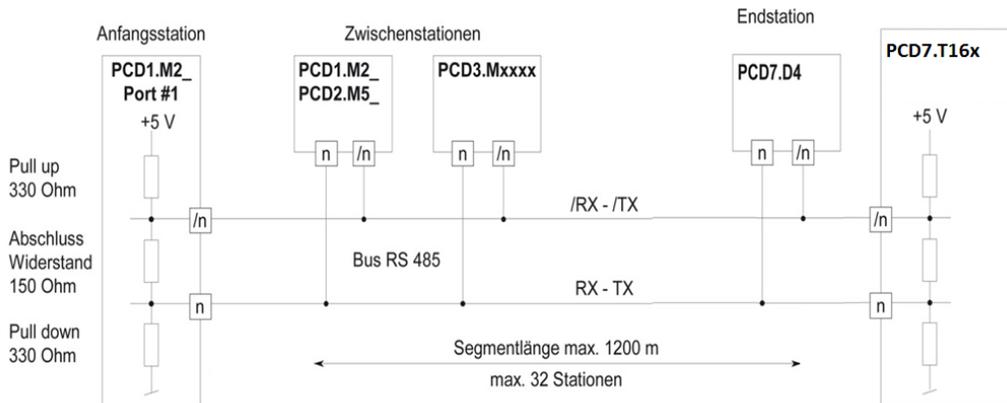
PCD2.M5xxx

PCD1.M2xxx



Ensure that the terminals are terminated correctly.

The example below shows a possible connection between the terminals and the PCDs. In order to avoid reflection on the communication channel, the network should be equipped with terminators. The PCD7.T16x can be used for termination.



The configuration can be carried out either via the Setup Menu in the Web Panel or via the hardware configuration in the PG5. In the event of changes, the existing configuration will be overwritten.

3.2 Configuring the hardware settings in PG5 (PCD7.D443WT5Rx)

Generally speaking, the PCD7.D443WT5Rx is configured via PG5 in which the project too is created. However, it can also be carried out on the panel itself via the Setup Menu described in Chapter 4.

3.2.1 General

The following description assumes that you are familiar with the PG5 software. If not, it is recommended that you read Manual 26/732 " User Manual PG5 21 ": The device configurator defines direct access to programming instructions in order to read out values from the peripheral input module and write values to the peripheral output module.

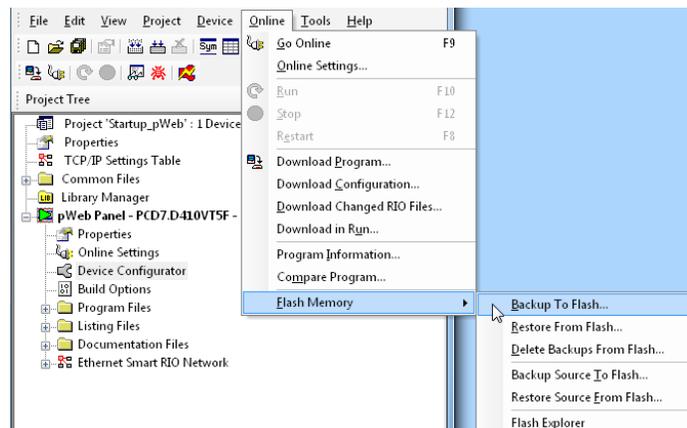
3.3 Downloading the program and backup (PCD7.D443WT5Rx)

The user program and the device configuration are loaded onto the panel with the PG5 software. This is described below.

3.3.1 Backing up and restoring the user program

Backing up with PG5

Enable the backup with "Backup to Flash..."



Because the user program is already backed up in the on-board flash memory, only RAM DB/texts of the on-board flash memory will be backed up (not visible to the user)

Note: Registers, flags, timers and counters will not be backed up.

If the system is restored, DB/text will be copied to the SRAM memory again.

Backup to INTFLASH file system

The RAM DB/text values will be backed up in the internal PCD_Backup folder. The backup files can be accessed via the FTP server and uploaded to a PC.

3.4 Software watchdog (PCD7.D443WT5Rx)

The PCD7.D443WT5R panels have a software watchdog where the processor monitors itself and the CPU is restarted in the event of a malfunction or a loop. The core of the software watchdogs is the instruction SYSWR K 1000. When this is output for the first time, the watchdog function will be enabled. This instruction must then be output at least every 200 ms, otherwise the watchdog will be triggered and the controller restarted.

Instruction:

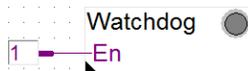
SYSWR K 1000 ; Function «Software Watchdog»
K/R x ; Parameter as per the following table
 ; K = Constante (0..16535) or R = Register contents

; x = 0 The «Software Watchdog» is deactivated.
 ; x = 1 The «Software Watchdog» is activated.
 If the instruction is not repeated within 200 ms, a cold start will take place.
 ; x = 2 The «Software Watchdog» is activated.
 If the instruction is not repeated within 200 ms, XOB 0 will be called up and a cold start will then take place.

XOB 0 call-ups are entered in the PCD history as follows:

"XOB 0 WDOG START" if XOB 0 was triggered by the software watchdog
 "XOB 0 START EXEC" if XOB 0 was triggered by a supply fault

Also available as an F-Box



3.5 Connecting RIOs to the PCD7.D443WT5Rx

For decentralized expansion via Ethernet, the PCD3 Smart-RIO T66x modules can be used (see also Manual 26-892)

For decentralized expansion via RS-485, the PCD1 RIOs can be used.

4 Using the panel's Setup Menu

This chapter describes the menu structure of the PCD7.D443WTxRx Micro Browser Panel.

4.1 Opening the Setup Menu

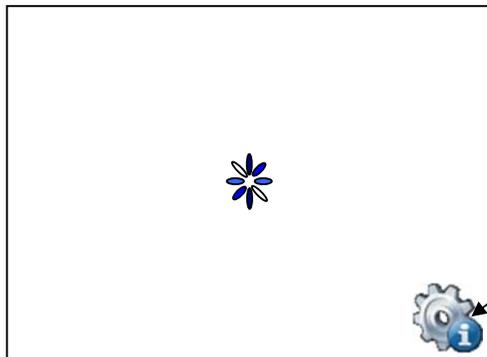


Bringing up the Setup Menu:

- By pressing and holding any area (excluding buttons) for 4 seconds **at any time**
- By pressing the icon shown during the start-up (see Chapter 4.2)
- The SETUP Menu also has an ONLINE Help feature (press the Help icon)

4.2 Modifying the start screen

The title screen is shown for a few seconds after switching on the device by pressing ON. The welcome text and welcome screen are defined under → System / Intro Screen (see Chapter 5.3.4)



Available for a few seconds only, pressing on this icon will take you directly to the setup menu or see Section 6: Setup Menu



= Animated icon for "Please wait, data loading"

User-defined start page: See Chapter 5.3.4

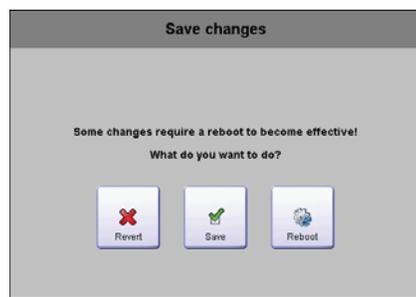
4.3 Changing your password

MB Panels from the PCD7.D4xxx range are supplied without a setup password.

If access to the Setup Menu has been restricted with a password, you must enter the correct password and confirm by clicking on OK.

- Entering passwords: see Chapter 5.6

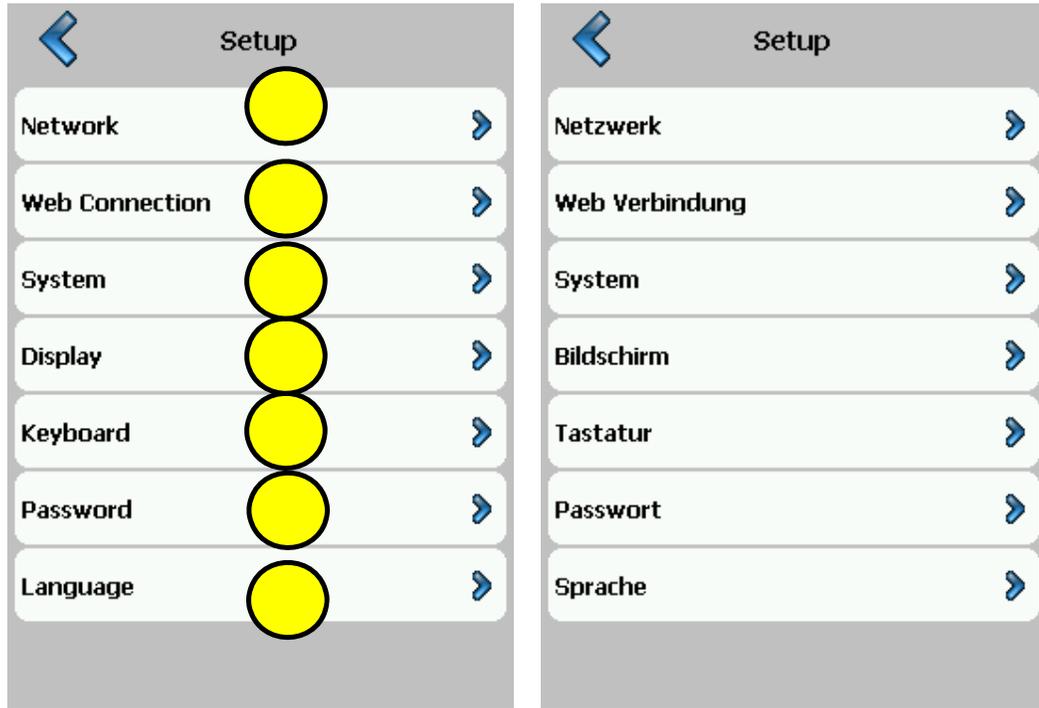
4.4 Saving and exiting



If you change one or more parameters, you must confirm whether you want to save the changes, save and reboot or revert to the old parameters without saving the new ones.

5 Structure and description of the Setup Menu

The Setup screen is the first screen that is shown when you bring up the Setup Menu.



1	Network	MB Panel settings	Chapter	0
2	Web connection	Configuring the web connection	Chapter	5.2
3	System	Info/Settings/Special/Download FW and reboot	Chapter	5.3
4	Display	Display settings	Chapter	5.4
5	Keyboard	Virtual keyboard	Chapter	5.5
6	Password	Entering password	Chapter	5.6
7	Language	Selecting the language (E, G, F, I and Dutch)	Chapter	5.7
8	Back to application	Back to the application		

5.1 Network



The network settings for the panel are configured here. Depending on the network, the connection works without setting a gateway or DNS server. You can exit the menu using the Setup button.



With the programmable panels, the network configuration is generally carried out via the PG5 Device Configurator. If the device configuration is updated via PG5, the data set via the Setup will be overwritten. If these data are to be carried over in the PG5, the configuration must be carried over by uploading the configuration data to the PG5 project.

5.1.1 DHCP on

If DHCP is off, an IP must be set by the user. Otherwise, all necessary settings will be obtained from the DHCP server.

5.1.2 TCP/IP address

IP address of the panel

5.1.3 Subnet mask

Subnet mask of the network in which the panel is located

5.1.4 Default gateway

IP of the default gateway

5.1.5 DNS on

Enables access via DNS

5.1.6 Primary DNS server

IP of the primary DNS server

5.1.7 Secondary DNS server

IP of the secondary DNS server

5.2 Web connection



The data for the device which loads and displays the web page are set here. With the programmable panels, this is normally the internal controller. The local host IP address must therefore be set to 127.0.0.1.

5.2.1 Connection

Name of the connection

5.2.2 Start page

Name of the start page for this connection

5.2.3 Remote host IP

IP address of the connected PCD

5.2.4 Remote port

Remote port (80 default)

5.2.5 Default password

The web server password from the PG5 Device Configurator will be used

5.2.6 Remote info

Information regarding the PCD from which the web pages are displayed.

5.2.7 Search

Allows the network to scan for PCDs with web servers. The PCDs found can then be added to the connection list.

5.2.8 Connection list

We recommend that you set up one or more connections (up to x16) **from the "List of connections"**. Configure the connection or connections and select the connection that you would like to use for your project. Each connection can be configured at any time.

Names for the connections are needed as URL jump targets in the Web Editor:

Example: The name of the connection in the list is conn2_http, and the name of the start page for the project is Start.html

<input checked="" type="checkbox"/>	URL Jump	URL	<input type="text" value="conn2_http/Start.html"/>	<input type="button" value="Browse"/>
		Frame	<input type="text" value="_self"/>	

5.3 System



5.3.1 Info

System info such as firmware version, booter version...

- **Firmware version**
The firmware version currently installed on the panel
- **Booter version**
The booter version currently on the panel
- CPLD version
The current CPLD version on the panel
- **Permanent video cache**
Info: Permanent video cache used
- **Deletable video cache**
Info: The cache is used for images. Dependent on the size and number of gif files in the cache
- About
- Internal information

5.3.2 Production data

The most important production data such as the serial number and ASN

- **ASN**
Saia product number (order number)
- **Serial number**
Serial number of the device
- **MAC address**
MAC address of the device
- **HW version**
Hardware version of the device
- **Production date**
Month in which the device was produced
- **Display type**
Type of display (internal designation)
- **HW LCD rotation**
Display rotation

5.3.3 Expansion

- **Expansion info**
Information regarding the hardware and firmware expansions on the device
-

5.3.4 Settings

General settings for the panel

- Order of file search
Local / remote files
 - **No local file search**
"No local file search" means that files (.teq, .gif ...) will **not** be searched for on the local server of the MB Panel.
 - **Local before remote**
"Local before remote" means that files (.teq, .gif ...) will be searched for on the local

- server before the PCD server is searched. Files will be searched for in the INTFLASH/web pages first
- **Remote before local**
"Remote before local" means that files (.teq, .gif ...) will be searched for on the remote server before the local server of the MB Panel is searched.
- **Start delay [s]**
Start delay in the event of a restart (min. 1s, max. 15s)
- **Start screen**
Allows you to enter a welcome text and welcome screen
 - **Start text**
Free welcome text (max. 64 characters)
 - **X position of the text**
Value between 0 and 639
 - **Y position of the text**
Value between 0 and 479
 - **Name of the graphic file**
Graphic gif file: INTFLASH/WEBPAGES/...
 - X position of the graphic
Value between 0 and 639
 - Y position of the graphic
Value between 0 and 479
- **File cache active**
The file cache should be enabled during normal operation.
The file cache can be enabled or disabled. Disabling the cache is an option for example during a project because changes to cached files can be tracked.
- **Setup display with delay**
Delay enabled or disabled

5.3.5 Special

Special system settings

- **Reset all parameters**
This command resets all parameters to the default values
- **Format Intflash**
Advanced function with conformation prompt: "Do you really want to format INFLASH?"
This command deletes the flash and creates a new file system. After Formatting OK, the display will re-start.
- **Time**
Real time clock RTC
 - **Time**
Real time clock (RTC): Time entry (Container: uBT_RtcTime)
 - **Date**
RTC: Date entry (Container: uBT_RtcDate)
 - **Time zone**
Active time zone selected
 - **Time zone list**
List of predefined time zones
 - **Time server active**
Time server enabled/disabled
- **Memory**
Displays the Heap 1, 2, 3, 4 and LR memory used
- Settings**
Defines the memory area → Heap 1, 2, 3, 4 and LR.

→ **Show runtime infos**

Advanced command for the runtime

→ **FTP server**

→ Allows you to enable/disable the FTP server, define the FTP port, FTP users, timeout, connections and default users

→ **Calibrating the temperature sensor**

→ Allows you to enter a temperature value which was measured by an external device. The firmware offset is calculated on the basis of the temperature value.

5.3.6 Log

By clicking on the button, you can scroll through the list. In the process, you can check whether font types were found for example. The last page provides information regarding error messages.

Access to log.txt via FTP: uBT_FS/LOG.TXT

**5.3.7 FW download
FW download via USB or Ethernet**

5.3.8 Restart

Restarts the system.

5.4 Screen



5.4.1 Brightness

Can be set to a value between 0 and 20

5.4.2 Gamma

Gamma correction can be set to a value between 0.01 and 4.0

5.4.3 Background lighting [min]

If the touchscreen or keys are inactive during this period, the background lighting will be switched off. The background lighting will be reactivated when the screen or a key is pressed. Can be set to a value between 0 and 5000.

5.4.4 Rotation

Landscape format / portrait format

5.5 Keyboard



5.5.1 SIP (virtual keyboard)

Enable/disable SIP (Soft Input Panel).
Virtual keyboard

5.5.2 Keyboard compatible SIP

5.5.3 Name of the first keyboard:

To be used if the panel is installed vertically:
alphanpad.teq (alphanumeric) or keypad.teq (numeric) opened as first keyboard.

To be used if the panel is installed horizontally:
alphanpad90.teq (alphanumeric) or keypad90.teq (numeric) opened as first keyboard.

5.5.4 Width of the focus (in pixels)

You can select from 0 to 6 pixels.

A border shows the area or the editing field that is selected. The value entered defines the border width in pixels. If the width is set to 0, no border will be shown. This is useful if you only work with a touchscreen.

5.6 Password



You can enter an alphabetical, numeric or alphanumeric password (maximum number of characters = 32, incl. spaces)

You must confirm the password when entering it.

If you enter a new password, you must confirm it. If the characters entered for confirmation purposes do not match, the old password will be retained.

If you would like to remove password protection, press the Enter key and confirm without entering characters.



Forgotten password? → Delete the inflash/config/passwd.dat file (FTP connection). This solves the problem.

Nom	Ext.	Taille	Date	Attr.
[..]		<RÉP>	00.00.1980 00:00----	
TSPPOINTS	DAT	48	01.01.2010 09:12-006	
PASSWD	DAT	64	01.01.2010 09:12-006	
KEYMAP	DAT	933	01.01.2010 09:12-006	

5.7 Language



You can set one of the predefined languages for the setup

6 Local files / local server

6.1 Connect via FTP access

The internal structure can only be brought up via FTP: Saia file system (ftp access: User name and password). **ftp:// IP address**

Name	↑Erw.	Größe
[-]		<DIR>
[FILECACHE]		<DIR>
[INTFLASH]		<DIR>
[UBT_FS]		<DIR>
[WEB]		<DIR>

FILECACHE : Contains the cache memory

INTFLASH : Contains:

- **INTFLASH/CONFIG/**
 KEYMAP.DAT → Configure keyboard - only MB with keys (Fkeys).
 Does not apply to this MB Panel.
 PASSWD.DAT → Is only shown if password was set (Forgotten password? → Delete this file.)
 TSPOINTS.DAT → For internal use
- **INTFLASH/WEBPAGES** → Directory for all project files that you would like to save "LOCALLY" (teq, gif files...)
- **INTFLASH/FONT** → FONT directory must be created by the user. It contains all special or additional .bft files with font types.
- **INTFLASH/TRENDLOGS** → The TRENDLOGS directory is automatically created when saving protocols. The .CSV files with the protocols are automatically saved at this location. (The Web Editor MB macro S2F is used in the process.)
- **UBT_FS** → **UBT_FS/LOG.TXT** List of startup process + error infos (read only)
- **WEB** → For internal use

7 Update and special settings

7.1 Firmware update

7.1.1 Additional information regarding FW download

If problems occur when downloading via USB, try the following solution:

Restart the MB Panel with the USB cable removed. Press the Download button and the MB Panel's download mode will be enabled. Next, connect the USB cable to the MB Panel and press Start in the FW download service program

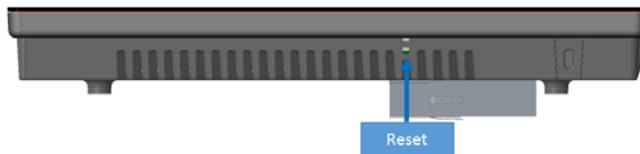
If problems occur when downloading via USB or Ethernet, try the following solution:

If communication is interrupted during the download process, "Booting Up" will appear on the display. The reason for this is that the FW flash memory was deleted at the start of the process. In this case, restart the update process.

7.1.2 Secure firmware download via USB

The secure method for downloading firmware is always via USB.

- a) Switch off the MB Panel.
- b) On the left-hand side, you will find a 2 mm slit in the middle. There is a button inside it. Take a small screwdriver and press the button for a time.
The illustration shows the position of the reset button:



- c) At the same time, switch the MB Panel on by pressing ON. Wait 3-4 sec. "Booting Up" will be shown on the LED.
Now download the FW with the Saia FW service program.

IMPORTANT: *.blk file signifies a complete FW file.

Only use files provided by SAIA-Burgess Controls AG and intended for the PCD7.D443 panel.
The PCD7.D443WTPrx and the PCD7.D443WT5Rx panels have two different firmware versions.

7.2 Resetting the device to the factory settings

In a number of special cases, the reset button can be used to reset the MB Panel and restore the default factory settings.

When can this function be useful?

If for example you are connected to the local server via an FTP connection and you have copied the local file needed to the wrong directory or have accidentally deleted data that are needed to display the Setup Menu. The most common error is the message "**uBTerminal not found**" on an unchanged screen. In this case, proceed as follows:

- 1) Switch off/disconnect the power supply to the MB Panel.
- 2) Press and hold the reset button (see Chapter 0)

- 3) With the button still pressed, switch on the MB Panel and keep the reset button pressed for a further 90 sec.
- 4) The firmware will recreate the file systems. In the process, the panel may not react for 1 to 2 minutes. Please do not switch off the panel during this time. Once the process is complete, the MB Panel will automatically restart and you will be prompted to recalibrate the touchscreen. The system is now fully restored.
- 5) In the event that the panel was switched off while the formatting or setup process was running, repeat the procedure under Point 1.

7.3 Background lighting

The duration of the background lighting can be set manually. This function helps to save energy. If background lighting is disabled, you can save approx. 3/4 watt – a significant amount. This also helps to extend the **operating life** of the background lighting.

Operating life of the background lighting

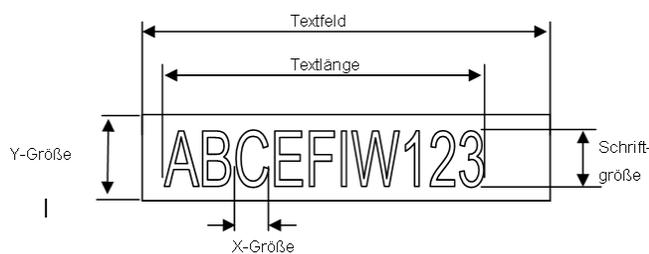
The **normal** operating life of the background lighting (at 25°C) is defined at approx. 50 kh. This corresponds to being switched on permanently for 5 years. However, this value **quickly drops** (to half or less) if the operating temperature is 10°C or lower. You must bear this mind and set the value for the duration of the background lighting accordingly.

7.4 Font types supported by the PCD7.D443WTxRx MB Panel

The panel supports the use of TTF "TrueType Fonts"

Calculating the required space for:

Simple text field, multi-line text field, editing field for text field and button with text.



Definitions:

Font size: Character size (font size in pixels)

Y size: Size of the graphic symbol (in pixels)

X size: Width of a character

Text length: Length of a single-line text.

Text field: Length of the painter

General recommendations for **text fields** (information can be found in the online help for the first Web Editor version)

It is recommended that you use text fields which exceed the size shown in the editor by up to 20%. To determine the text field length, you can use the table for min. and max. x sizes below.

General recommendations for the **Y size** in relation to the font size and format

Basic rule: the text should lie WITHIN the contours.

For buttons and editing fields, a 2 pixel shadow is added (on the **inside** for button contours and on the **outside** for editing fields).

If the text is too big for the editing field, it will overlap the edge and the 3D shadowing.

You should make allowances for the following edges:

- Simple text fields and those with several lines: 2 x edge width + 1
- Buttons: 2 x edge width + 5
- Editing fields: 2 x edge width + 5

	Fontgröße	yGröße	min xGröße	max xGröße
Arial	36	41	7	36
Arial	24	28	7	24
Arial	20	23	6	20
Arial	16	19	3	16
Arial	12	15	3	12
Arial	10	12	3	10
Arial Bold	36	41	9	35
Arial Bold	24	28	7	23
Arial Bold	20	23	6	20
Arial Bold	14	16	4	15
CourierNew	20	23	12	12
CourierNew	16	19	10	10
CourierNew	12	14	7	7
CourierNew	10	12	6	6
CourierNew Bold	20	23	12	12
CourierNew Bold	14	17	8	8
Tahoma	24	29	5	24
Tahoma	20	25	4	20
Tahoma	16	20	4	16
Tahoma	12	15	4	12
Tahoma	10	13	3	10
Tahoma Bold	24	29	7	29
Tahoma Bold	20	25	6	24
Tahoma Bold	14	17	4	17

7.5 Internal special functions

The internal sensor values are made available to the web application. For this purpose, INT variables reserved by the system are updated cyclically by the firmware with the current value and made available to the web application.

7.5.1 Gesture recognition

The panel allows the recognition of user gestures on the touchscreen.

The information is made available in internal variables.

The following gestures can be recognised:

Swiping, final speed when swiping, tapping, pressing, duration of the press

Read/write	Internal variable INT	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R	uBT_Gesture	Decimal value string	0	0	4	Gesture recognition: Swiping 0: No result 1: Swiping to the right 2: Swiping upwards 3: Swiping to the left 4: Swiping downwards
R	uBT_Tap	Decimal value string	0	0	2	Gesture recognition: Tapping 0: No result 1: Single tap 2: Double tap
R	uBT_TapX	Decimal value string	0			Gesture recognition: Tapping X coordinate Contains the X coordinate if the tapping gesture recognition was activated
R	uBT_TapY	Decimal value string	0			Gesture recognition: Tapping Y coordinate Contains the Y coordinate if the tapping gesture recognition was activated
R	uBT_Press	Decimal value string	0	0	5	Gesture recognition: Duration of press on the touchscreen 0: No result 1: Single press 2: Short press 3: Long press 4: Repeated press 5: Release
R	uBT_PressX	Decimal value string	0			Gesture recognition: Press recognition on touchscreen X coordinate Contains the X coordinate if the press gesture recognition was activated
R	uBT_PressY	Decimal value string	0			Gesture recognition: Press recognition on touchscreen Y coordinate Contains the Y coordinate if the press gesture recognition was activated
R	uBT_Drag	Decimal value string	0	0	2	Gesture recognition: Final speed when swiping 0: No result 1: Speed at the end of swiping was slow 2: Speed at the end of swiping was fast (throw)
R	uBT_DragX	Decimal value string	0			Gesture recognition: Drag X coordinate Contains the X coordinate if the drag gesture recognition was activated
R	uBT_DragY	Decimal value string	0			Gesture recognition: Drag Y coordinate Contains the Y coordinate if the drag gesture recognition was activated

7.5.2 User LED

The user LED can be used once the user has successfully started the firmware and application with the help of the internally reserved INT variable "uBT_Watch,UserLed".

Read/write	Internal variable INT	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R/W	uBT_Watch,UserLed	Integer	0	0	3	Read or write the status of the user LED. 0 = "Off" 1 = "Red" 2 = "Green" 3 = "Orange"



7.5.3 Temperature sensor

The panel features an internal temperature sensor. The temperature value currently measured is made available in the internal system variable INT *uBT_Watch, Temperature, value* for the user application in Web Editor 8.

Read/write	Internal variable INT	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R	uBT_Watch, Temperature, value	Type	Current			Read the temperature DEC uBT_Watch, Temperature, value Temperature resolution is 0.1°C. 21.3°C gives the value 213 in the internal variable. If the value is transferred to the PCD, the format "DEC1" must be selected in the Web Editor. As a result, the value is stored as 213 in the PCD.

Calibrating the temperature sensor:

The temperature sensor must be calibrated in the device's Setup Menu when it is used for the first time.

To do this, you need to open the panel's Setup Menu as described in *Chapter 5.3.5*.

In *Setup Menu -> System -> Special -> Calibration*, a correction value for the installation location must be defined.

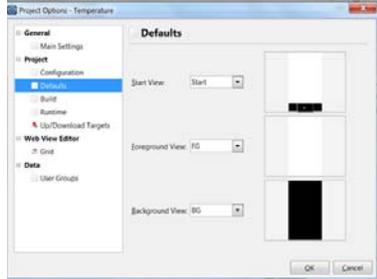
To do this, you need to measure the temperature at the installation location using an external measuring device. The temperature value measured must be entered in the Setup Menu. The correction factor is calculated and saved by the device itself.

IMPORTANT:

To ensure that the system functions correctly, the installation location must be taken into account when using the temperature sensor as described in *Chapter 1.5.1*.

The temperature value can be passed on to the controller by Web Editor 8 for the user application with the following steps:

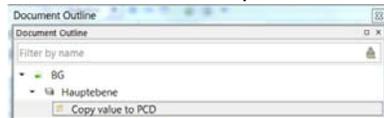
- 1) First of all, a background page for all pages in your project should be set up for the project. This page is permanently worked through by the panel.



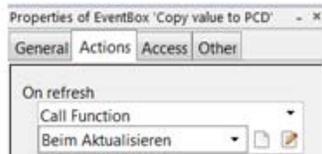
Important:

The MsgBox page and "entry pages" like the keyboard stop communication between the panel and controller.

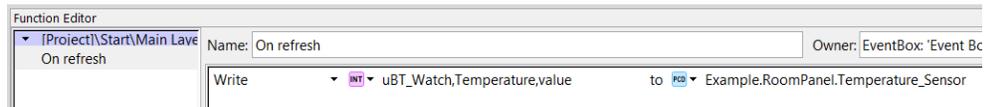
- 2) A result box must be placed on the background page which is active in all views.



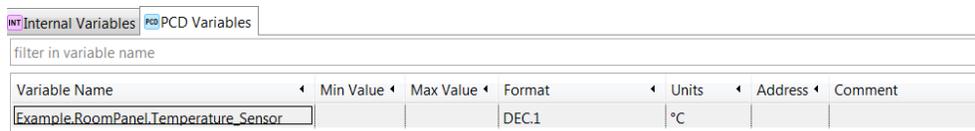
- 3) An action when updating must be set up in this result box.



- 4) The temperature value which is available in the internal variable (INT) *uBT_Watch, Temperature, value* must be written to a PCD variable.



- 5) To ensure that the number of decimal places is correct, the format "DEC.1" must be used for the PCD variable in the WVAR file in the Web Editor 8 project.



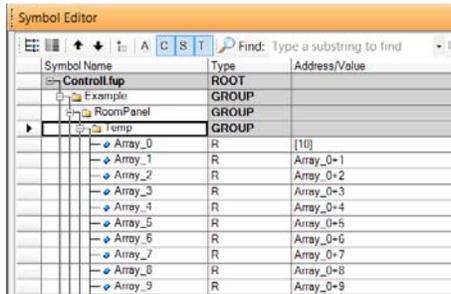
IMPORTANT:

To ensure that the value is overwritten by other display devices that do not have the temperature sensor, it is a good idea to set up an additional condition. If the value *uBT_Watch, Temperature, value* is "empty" or has the default value defined in the WVAR, the function will not be executed.

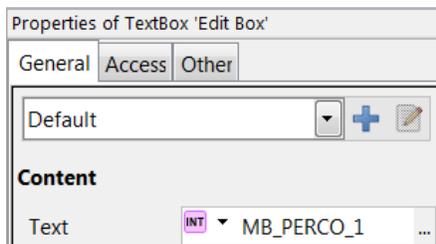
A number of sensor values in the same application which are executed on different panels:

It is also possible to transfer to the controller a number of sensor values in the same application which are executed on different panels. In order to do this, each panel must be clearly identified. The *MB_PERCO_x* provides a variable which is saved in the panel in a remanent manner.

- 1) Steps 1 to 5 described previously are identical and must be carried out. In contrast, the write operation must be expanded.
- 2) In order to save the values of different panels, an array must be created in the symbol editor.



- 3) In Panel 1, the INT variable *MB_PERCO_1* is written with a function or entry field. The value in the INT variable *MB_PERCO_1* specifies the position of the current panel in the array created.



- 4) The user project must now use the *MB_PERCO_1* variable when searching for the array. In order to do this, the symbolic name of the PCD variable must be searched for dynamically. In the web application, the internal variable must now be included in the resolution of the PCD variable.

The *@CO_MB_PERCO_1@* in the PCD variable is used for this purpose. The panel will now use the locally defined value in *MB_PERCO_1* in order to request the PCD variable.



E.g. the content of *MB_PERCO_1* on Panel 1 corresponds to the value "1". In this case, the value with the symbolic name *Example.RoomPanel.Temp.Array_1* will be written.

E.g. the content of *MB_PERCO_1* on Panel 2 corresponds to the value "5". In this case, the value with the symbolic name *Example.RoomPanel.Temp.Array_5* will be written.

7.5.4 Container (INT) variable for Room MB Panel

The configuration file *UBTERMINAL.TXT* is **not** accessible via the FTP connection because this file is in the (write-protected) sub-directory / *PLC_SYS/CONFIG/*.

Containers allow the application program to exchange data with the firmware. All container variables have the prefix "uBT_". Please note that the variables are case-sensitive!!!

Read/write	Internal INT variables (Container)	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R/W	uBT_AutoRepeat	Boolean value string	0	0	1	Via Soft Input Panel SIP (on-screen keyboard) Use: SIP keyboard: AutoRepeat on (1), off (0)
No	uBT_BackLight	Boolean value string	1	0	1	Write and read the command of control of backlighting. Background lighting is turned off when the value changes from 1 to 0. Background lighting is switched on when the value changes from 0 to 1. Switching off the background lighting by uBT_BackLightTimeout does not set this variable to 0. If the background lighting is switched on by touching the screen, this variable is not set to 1. If the backlight is to be switched off by means of a push button, the action 'on release' must be used, and not the function 'on press'.
No	uBT_BackLightOn	Boolean value string	1	0	1	Writing and reading of backlight: 0: Backlight off 1: Backlight on Permanent writing with 0 or 1 to this variable turns the backlight on or off permanently For this reason do not write permanently on this variable but write only once this variable in case of need. If the backlight is to be switched off by means of a push button, the action 'on release' must be used, and not the function 'on press'.

Read/write	Internal INT variables (Container)	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R/W	uBT_BackLightTimeout	Decimal value string	15	0	5000	Time (min) until the background lighting is switched off. When the screen is touched or when switching on via containers, the background lighting is switched on and the countdown begins. If value = 0: No time-delayed monitoring of the background lighting. In this case, the background lighting will remain switched on all the time.
Only readable	uBT_BooterVersion	ANSI text string	Current version string	0	8	Firmware booter version String only readable
Only readable	uBT_ConfigType	ANSI text string	Current config. type	0	24	Configuration type String only readable
R/W	uBT_DefaultGateway	String IP address	0x00 00 00 00	*	*	Read/write IP address of the gateway in the subnet used (forced position, overwrites default). * Set to 0: Forced position disabled. If setting = 0: Depending on the router used, external addresses that lie outside the subnet cannot be reached. If the setting is changed, a restart is necessary. FTP connections will be lost in the process.
No	uBT_DispResolution	ANSI text string	<Screen width> <Screen height> <Colour depth>	0	16	Information regarding resolution String only readable
Yes	uBT_DisplayRotation	UTF8 1) !!! Text string	0° (0x30 C2 B0)	0°	270°	Rotation 0°, 90°, 180°, 270° If changed, a restart is necessary. FTP connections will be lost in the process. !!!! 1) Direct displaying of UTF8 may not be supported by the FTP client. The display is rotated "as it is". The screen may not be displayed in full even with automatic scaling. If the upscaling function is enabled, the scaling of the non-rotated screen will be retained during rotation. The calibration of the rotated screen corresponds to that of the non-rotated screen. In order to change the calibration, please return to the non-rotated screen.
R	uBT_Drag	Decimal value string	0	0	2	Gesture recognition; final speed when swiping 0: No result 1: Speed at the end of swiping was slow 2: Speed at the end of swiping was fast (throw)

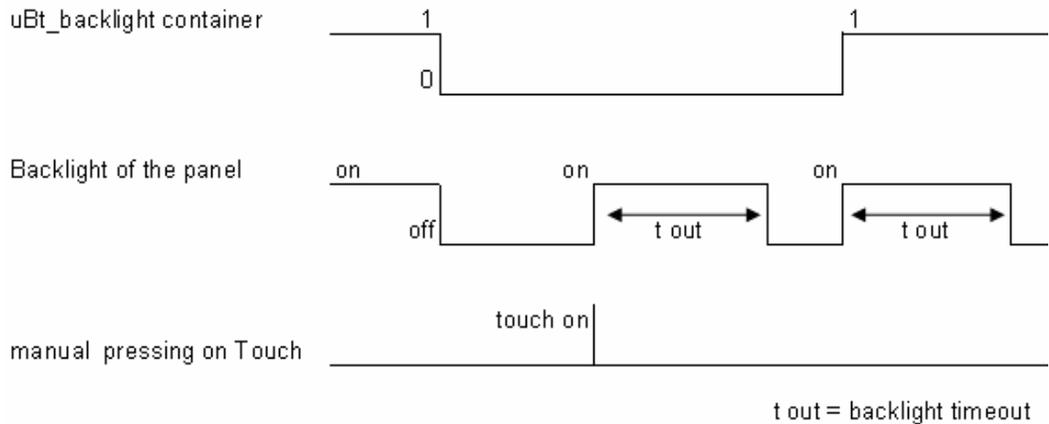
Read/write	Internal INT variables (Container)	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R/W	uBT_EnableCache	Boolean value string	1 (Enabled)	0	1	File cache is used (1), 0 no file cache for all visualisation files that are not images. Files are cached for the first time as soon as they are used. Files are searched for in the cache memory first, regardless of the local file settings. The cache memory is deleted during starting and in the event of URL jumps. Image files are decompressed and cached in a separate video cache which is always enabled. This video cache is always deleted during starting, in the event of URL jumps and if too many data were loaded. All files required are reloaded and decompressed in the process.
R/W	uBT_EnableSIP	Boolean value string	1 (Enabled)	0	1	Read/write SIP → Selection of the Soft Input Panel (virtual keyboard) Write 0 → SIP is disabled. Virtual keyboards are disabled Write 1 → SIP is enabled. Virtual keyboards (alphapad.teq and keypad.teq) are enabled.
No	uBT_FlashStatus	Decimal value string	0	0	255	INTFLASH Status 20: Device present, no file system 21: Device present, file system OK 22: Device present, error when setting up file system 23: Device present, file system being set up 24: Device present, flash sector being compressed -1: Unknown error
R/W	uBT_FocusBorder-Width	Decimal value string	2	0	5	When the painter for editing fields and buttons is displayed, a rectangular focus border indicates that it is enabled. This setting is used for the line thickness (pixels) of the focus border: 1-5 0: Focus border is disabled.
R	uBT_Gesture	Decimal value string	0	0	4	Gesture recognition; swiping 0: No result 1: Swiping to the right 2: Swiping upwards 3: Swiping to the left 4: Swiping downwards
R/W	uBT_InactivityPollTime	ANSI text string	0	0	5	Setting for touchscreen / keyboard inactivity (1), with 0 switched off. For switching to less frequent touchscreen/keyboard call-up.
No	uBT_IntFlashStatus	Decimal value string	0	0	255	Status of the internal flash memory 20: Device present, no file system 21: Device present, file system OK 22: Device present, error when setting up file system 23: Device present, file system being set up 24: Device present, flash sector being compressed -1: Unknown error

Read/write	Internal INT variables (Container)	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R/W	uBT_IntroGraphicName	ANSI text string	SaiaSU Grande.gif	0	20	Start graphic
R/W	uBT_IntroGraphicXPos	Decimal value string	100	0	639	Position of the start graphic (Horizontal position from the left)
R/W	uBT_IntroGraphicYPos	Decimal value string	50	0	479	Position of the start graphic (Vertical position, from the top downwards)
R/W	uBT_IntroText	ANSI text string	Welcome	0	32	Start text
R/W	uBT_IntroTextXPos	Decimal value string	350	0	639	Position of the start text (Horizontal position from the left)
R/W	uBT_IntroTextYPos	Decimal value string	300	0	479	Position of the start text (Vertical position from the top downwards)
R	uBT_Tap	Decimal value string	0	0	2	Gesture recognition; tapping 0: No result 1: Single tap 2: Double tap
R	uBT_TapX	Decimal value string	0			Gesture recognition; tapping X coordinate Contains the X coordinate if the tapping gesture recognition was activated
R	uBT_TapY	Decimal value string	0			Gesture recognition; tapping Y coordinate Contains the Y coordinate if the tapping gesture recognition was activated
R/W	uBT_TCPIPAddr	String IP address	0xC0 A8 0C 5A: 192.168.12.90	*	*	Read/write the TCP/IP address of the terminal (own address) within the subnet used.* If the setting is changed: Restart required. FTP connections will be lost.
No	uBT_IsTSPresent	Decimal value string	Current value	0	255	Touchscreen was recognised (1). If the value is 0, calibration was/will be skipped during starting.
R/W	uBT_LcdContrast	Decimal value string	10	0	20: 100%	Contrast and brightness setting for the background lighting (0:20). An increasing value means greater brightness.
R/W	uBT_LocalFileSearch	Decimal. List string	Local before remote (1)	0	2	Search mode for local file search 0: Do not search local files 1: Search local files before remote files 2: Search remote files before local files
No	uBT_MACAddr	ANSI text string		0	20	Own MAC address (only readable)
No	uBT_MultiKeyValue	ANSI text string	0	0	1	Container is not available External SIP keyboard multi-key display (1). If 0: Multi-key combinations not enabled
R	uBT_Press	Decimal value string	0	0	5	Gesture recognition; duration of press on the touchscreen 0: No result 1: Single press 2: Short press 3: Long press 4: Repeated press 5: Release

Read/write	Internal INT variables (Container)	Type	Standard	Min. value Min. length	Max. value Max. length	Description
R	uBT_PressX	Decimal value string	0			Gesture recognition; press recognition on touchscreen X coordinate Contains the X coordinate if the press gesture recognition was activated
R	uBT_PressY	Decimal value string	0			Gesture recognition; press recognition on touchscreen Y coordinate Contains the Y coordinate if the press gesture recognition was activated
R/W	uBT_SbusAddr	Decimal value string	10	0	253	Own SBus address
R/W	uBT_ScaleMode	Decimal. List string	Auto (0)	0	2	Setting for scale mode Auto (0): Smaller views are automatically adapted view for view to the terminal screen size. QVGA views are enlarged to the full screen size of VGA terminals (2x horizontal and vertical enlargement with pixel doubling). VGA (1): Forced position for VGA without scaling of smaller views. Scaling on VGA terminals is thus disabled. QVGA (2): Forces scaling with pixel doubling on VGA terminals. The setting takes effect when the view changes, with the next URL jump or following a restart.
Only readable	uBT_SerialNumber	Hex. or dec.		0	...8	Serial number (only readable)
No	uBT_Setup	Text	-	-	-	Entry of "show" (case sensitive). A pop-up window with the Setup Menu will be opened in the terminal.
R/W	uBT_SubNetMask	String IP address	0xFF FF FF 00	*	*	Read/write subnet mask of the subnet used by the terminal. * If changed, a restart is necessary FTP connections will be lost.
Only readable	uBT_Version	ANSI text string	Current version string	0	32	Firmware version String only readable
R/W	uBT_RtcDate	ANSI text string				The date is obtained from the real time clock on the MB Panel. (Real time clock RTC must be enabled in the Setup Menu)
R/W	uBT_RtcTime	ANSI text string				The time is obtained from the real time clock on the MB Panel. (Real time clock RTC must be enabled in the Setup Menu)

*: IPv4 private addresses are generally used. Default settings are:
 - 1 x A class with subnet mask 10.x.x.x and mask 255.0.0.0 – parts can also be used
 - 16 x B class with subnet mask 172.16.x.x to 172.31.x.x and mask 255.255.0.0 – parts or combinations can also be used - or 256 x C class with subnet mask 192.168.0.x to 192.168.255.x and mask 255.255.255.0 - combinations can also be used

7.5.5 uBT_BackLight container diagram



7.5.6 Additional uBTerminal containers for "Save logs to File" function

Name of the contain-	Default	Meaning	Access
uBT_TrendPath		Dynamically linked file path	Only readable
uBT_TrendDevice	INFLASH:	Energy saving facility	Only readable
uBT_TrendDir	WEBPAGES/	Subdirectory for saving all trends.	Read
uBT_TrendSDFlash	0	0: INTFLASH (SVGA)	Read/write
uBT_TrendPrefix	TR	File name prefix, max. 5 characters	Read/write
uBT_TrendSave		File last saved.	Only readable
uBT_TrendLoad		File currently loaded.	Read/write
uBT_TrendSelect	Last file in the di-	File currently selected. Value will be set when sav-	Read/write
uBT_TrendOldest	Changes the uBT_Trend-Select container. Used in the event of button actions.	Select oldest file.	Only writable
uBT_TrendNewest		Select newest file.	Only writable
uBT_TrendPrev		Select previous file.	Only writable
uBT_TrendNext		Select next file.	Only writable
uBT_TrendDelAll	Use in the event of button actions.	Delete all files in the directory.	Only writable
uBT_TrendDelSel		Delete file currently selected.	Only writable
uBT_TrendDelLast		Delete last file saved.	Only writable
uBT_TrendDelOld		Delete all files that are older than the selected file.	Only writable

Example: The online minimal S2F macro for the MB Panel
"MB_OnlineTrendMinimal_5_13_01.esm"

7.6 List of message box messages

Messages	Remarks
Out of memory in Ramdisk	Can be shown if a file (usually a .gif) is too big. VGA MB Panel: < 256 kB (see also Section 18)
Language	
Failed to parse .csv	No available memory for parsing a .csv file
LR: out of memory! or out of memory for language resource	No available memory for parsing a .csv file. Or the total memory required is > 512 kB (see also Section 18)
Failed to initialize LR heap!	The memory for the .csv file is initialised each time that a file is parsed. This message indicates that the process has failed.
Memory	
Failed to initialize heap1	The painter objects and the list of current PPOs are assigned to Heap 1. This heap is deleted af-ter each .teq jump.
Out of memory in heap 1	Total memory used by the painters is > 1536 kB (see Section 18)
Failed to initialize heap 2	Container variable, html tags, TCR table + source & object output of online trends are saved in Heap 2. This heap is initialised with each URL jump.
Out of memory in heap 2	Total memory used by html tags and container variables is > 1024 kB. Having too many active offline trends is the most likely reason for this message. → Can be displayed for online and offline trends.
Out of memory in heap 3	→ Usually displayed if there are too many data points. Offline trend, alarm incidents, HD log and online trend are saved in Heap 3. Total memory used by offline trend data and HD log is > 1280 kB (see Section 13) You need to calculate the memory needed before using trends. <u>Online trends:</u> If the update period for process points (Web Editor parameter) = < 1000 milliseconds → (storage time in sec.) x (total number of trends) x (size of a data point → 28 bytes) Example: 4200 sec. x 4 trends x 28 bytes = 470 kB <u>Offline trends:</u> - Macros for offline trends (with or without "save to file" function). Avoid freezing the trend lines by pressing the Delete (Clear) button in the macro when you receive the "Out of memory in Heap 3" message in order to assign memory to Heap 3. You can then load the next files.
Object	
Maximum number of object reached!	Maximum number of objects (e.g. buttons, rectangles etc.) in a .teq view was exceeded. <u>Maximum objects = 512</u> → See Defining an object in Section 17.
PPO	
OrderValues on remote host has failed!	Querying the list of the remote host's current PPOs failed.

ReadFile on remote host has failed!	Regular polling of the PPO failed.
Communication	
buffer OVF in Spider_fileReadIn()!	When loading the file, more data were received than the buffer can hold.
Range is null!	Area of a bar chart was calculated incorrectly.
TCR	
value out of range!	The min./max. limits for a TCR value were exceeded.
value out of default range!	Invalid value for a TCR, e.g. "aa" for time.
TEQ	
Reading UTF string failed;	The end of the file was probably reached while reading a string.

8 Handling: Precautionary measures

8.1 Glass touchscreen

Because the touchscreen is pressure-resistant, you can put pressure on the screen with your finger. Please do not use sharp instruments as these could cause permanent damage to the touchscreen.

The pressure required to activate the display is predefined and cannot be changed.

Never strike the touchscreen hard – the layer of glass which is used to reinforce the two touchscreen layers could be destroyed as a result.

8.2 Information regarding the LCDs in the MB Panel display

The liquid in the LCD display contains an irritant substance. If this liquid should come into contact with your skin, wash the affected area under running water for at least 15 minutes.

If the liquid in the LCD display should get into your eyes, flush your eyes under running water for at least 15 minutes and consult a doctor.

Properties of the LCD display

The colours and brightness of the individual MP Panel displays are individual and may vary slightly from display to display.

8.3 Care instructions

These terminals with a display are designed for permanent, maintenance-free operation.

Abrasive cleaners and/or cleaning equipment that could damage or scratch the surface of the MB Panel must not be used!

Used denatured alcohol and apply it with a clean, soft cloth.

At the end, wash off the alcohol using plain water and a clean, soft cloth (recommended)

When cleaning, ensure that no liquids can get inside the panel. Resistant to chemical substances in accordance with DIN 42 115:

9 General recommendations regarding the Web Editor

9.1 In the "project configurations"

- Select a default font which is to be used in the majority of projects.
-
-

9.2 In the Web Editor project (general)

- It is recommended that you use text fields which exceed the size shown in the editor by up to 20%. Details can be found in Chapter 7.4.
- The .tcr file is the only file that has to be integrated in the web server project (.wsp). All other project files can be copied to the flash memory (PLC or local MB Panel server) under INFLASH/webpages/.
- Adding Unicode fonts → For more information visit: <http://www.sbc-support.com> → Product Info → HMI → PCD7.D4xxx Web Panel
- If the correct font type is not in the list → please contact PCD Support in Murten. We would be happy to help.
- The container offset name (container name) must not contain "underscores" and no @ symbols.
- (i.e. not: PDP-ADDRESS+@COFF_containername@,PDP-FORMAT)
- Please bear in mind: the suffix for container offset is ,d for decimal and ,k for the HH:MM format
- Use "online trends macros" with the correct time stamp: the time server must be ENABLED in the Setup Menu.
- PPOs: → Number of objects per page: Tested with 1024 objects (1024 objects with 3 flags per object = 3072 flags)
- PPOs: → Number of registers per page: Tested with 475 registers
- Maximum number of objects (painters) per page is 512 objects
- Project configuration → html scalable: Define HTMLs where the HMI is adjusted by a defined factor during the runtime. Scale your HMI to 200% for example without having to change the TEQ views. MicroBrowser adjusts the TEQ views during the runtime if you enter your new "scalable" HTML file instead of the default HTML as the URL.
Examples: Factor 2.000000 means 200% of 640x480, i.e. 1280x960;
a factor < 1 (< 100%) is not suitable for applications with the MB Panel.
-
-

9.3 Defining an object in the Web Editor

- An object is a static text, a multi-line inscription, a line, a rectangle, an ellipse, a polygon, an editing field, a button or a bar chart. Macros contain numerous objects (an offline trend contains 44 objects).

9.4 A number of rules relating to gif images

- The three times given in the display of the MB Panel are:
 - Repaint from the video cache
 - Decompress to the video cache in the event of a URL jump and after starting (virtually linear with number of pixels).
 - File transfer time via the link if not local
- If the overall size of the gif images is the same, one big image (max. 512 kB) is better than two smaller ones.
Recommended max. size 798 x 598 pixels (one pixel all round free)
- It is better to use the same image several times in a project because it only needs to be transferred, decompressed and saved in the video cache once. For example, give it in the teq file for the general background.

9.4.1 Decompressing to the video cache when starting using the gif list

This solution allows you to decompress gif files to the video cache **in the "background"**.

Advantage: You do not need to wait for decompression to end before the first page is shown.

The first page is shown immediately (as with a project without a gif list) and you do not need to wait until all gif files in the gif list have been decompressed. Decompression continues in the background until the video memory in the case of multiple gif files in the gif list is full.

Operation of:

- Open Microsoft® Notepad Editor
- Write the following head text for the file:
[PATH]
INTFLASH:/WebPages
[FILE]
- Enter the name of all gif files (as listed in the local INTFLASH/WebPages directory).
- Save the file under the name "GifList.txt".

Example of a GifList.txt

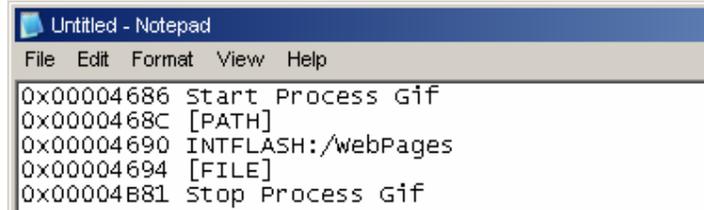
```
[[[PATH]
INTFLASH:/webPages
[FILE]
A_SETTINGS.GIF
A_WATER_IA.GIF
B_ALARM.GIF
B_ALARM_A.GIF
B_BACK.GIF
B_CLIMATE_A.GIF
B_CLIMATE_A_DE.GIF
B_CLIMATE_A_EN.GIF
B_CLIMATE_A_FR.GIF
B_CLIMATE_A_IT.GIF
B_CLIMATE_DE.GIF
B_CLIMATE_EN.GIF
B_CLIMATE_FR.GIF
B_CLIMATE_IA.GIF
B_CLIMATE_IA_DE.GIF
B_CLIMATE_IA_EN.GIF
B_CLIMATE_IA_FR.GIF
B_CLIMATE_IA_IT.GIF
B_CLIMATE_IT.GIF
B_CLOCK.GIF
B_ELECTRO_A.GIF
```

- Copy of the GifList.txt under INTFLASH/Config/



Nom	Ext.	Taille
[..]	<RÉP>	
GIFLIST	TXT	178
TSPPOINTS	DAT	48
KEYMAP	DAT	933

- For control in LOG.TXT (UBT_FS/LOG.TXT)



```

File Edit Format View Help
0x00004686 Start Process Gif
0x0000468C [PATH]
0x00004690 INTFLASH:/webPages
0x00004694 [FILE]
0x00004B81 Stop Process Gif

```

9.4.2 Decompressing gif files to the video cache when starting using a dummy start page

→ Give all gifs in a teq start page that serves as a placeholder.

This solution allows you to decompress the gif files to the video cache before the real page for the project is displayed.

Advantage: Decompression has already ended when the first page of the project is shown.

Disadvantage: You have to wait for decompression to end before the first page is shown.

Tip: Create a dummy page with:
 .. a text such as "Please wait while the images are loaded"
 .. the ViewJump_onTimeout macro allows to jump to the correct first page of the project

9.4.3 Decompressing gif files: Evaluation/calculation

Available for the solutions from Sections 9.4.1 and 9.4.2

How do you evaluate the number of gifs in the video cache on the basis of the number of pixels in the gif images? The total video cache (permanent and flushable) is 16 MB. This includes 4 to 6 MB for the permanent cache. The remaining 10 - 12 MB are available.

Examples showing the calculation of the number of images in the permanent video cache of 4 MB

- The number of pixels in the images is 640 x 480 pixels (whole screen)
 $12\,000\,000 \text{ bytes} / (640 \times 480) \times 2 = 19$, this means a max. of 19 gif files can be in the cache
- The number of pixels in the images is 120 x 120 pixels
 $12\,000\,000 \text{ bytes} / (120 \times 120) \times 2 = 19$, this means a max. of 400 gif files can be in the cache

Note:

The ratio of the size of the gif files to the number of pixels is not a "constant"

9.5 Advanced error messages for the panel

More information:

The following messages * can be displayed if the amount of memory required by the gif files, painters, html tags, container variables, online/offline trends, HD logs and language resources (.csv files) is too large. In this case, a number of parameters must be adjusted by changing the values in the Setup Menu (see Chapter 5.3.5)! After the changes, the panel must be restarted.

Recommendations

We recommend that you do not set the maximum value straight away. It is better to try a medium value first as problems can occur and performance can be reduced significantly if all memory values are set to the maximum values

Error messages*	Default values	Medium values	Maximum values
- out of memory in ramdisk	512 kB	640 kB	1024 kB
- out of memory in heap 1	1536 kB	1792 kB	2048 kB
- out of memory in heap 2	1024 kB	2048 kB	4096 kB
- out of memory in heap 3	1280 kB	2048 kB	4096 kB
- out of memory for language resource (or LR: out of memory)	512 kB	768 kB	1024 kB

A Appendix

A.1 Icons



This symbol indicates further information available in this or another manual or in technical documents relating to this topic. No direct references are made to such documents.



This symbol indicates instructions which must be followed.

A.2 Saia-Burgess address

Saia-Burgess Controls AG
Bahnhofstrasse 18
CH-3280 Murten
Switzerland
www.saia-pcd.com