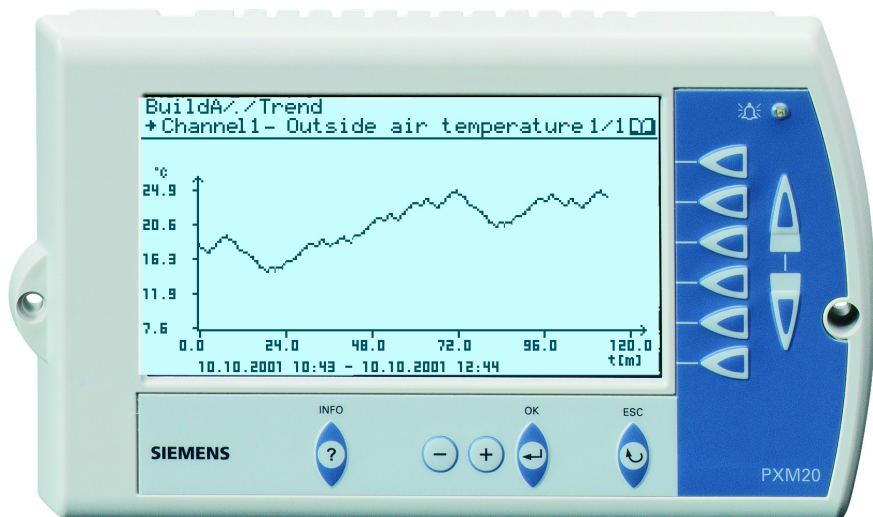


SIEMENS



Desigo™ PX PXM20 / PXM20-E operator unit User's guide Version 6.1 and later

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Revision history

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V5.1	12.2013	CM110754en_04	Note concerning local / global communication	3.2.17	
V5.1	05.2013	CM110754en_03	Functionality 5.1	All	
	12.2009	CM110754en_02	Validity "2.2 and later		1
V2.36	07.2006	CM110754en_01	"Revision history", and "Reference to trade names and product names" added. New note Correction New "View restriction" feature added Amendment and addition to "Wiring test" section Minor changes to text (nomenclature) with no effect on content	 2.1.1 3.2 3.2.3 11.1 Whole docu- ment	
V2.35	12.2005	CM110754en	First edition		

Reference to trade names and product names

The following trade names and product names are registered trademarks:

BACnet American National Standard (ANSI/ASHRAE 135-1995)
LONWORKS® Echelon Corporation, San Jose, USA
LonTalk®

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1 About this manual

1.1 Target readers

This user guide is intended for those responsible for the HVAC plant in a building, and for other qualified staff, including service engineers. It is assumed that the users of the manual will have all the knowledge and skills needed to carry out the required tasks.

1.2 Contents

The manual starts with a description of the display and control panel of the PXM20 (BACnet/LonTalk) and PXM20-E (BACnet/Ethernet/IP) operator unit and presents the procedures for navigation and for editing values, which are always the same. The second part of the manual leads you step by step through the various activities involved in commissioning and maintaining the plant.

As there may be significant differences between one plant and another, and between the read and write access of one user and another, it follows that it is not possible to provide a description which is generally applicable to every individual case.

"Favorite" objects, for example, are special objects containing important values, which can be accessed with a short-cut operation. The question of exactly which objects and which values these are, is determined in the engineering phase according to the individual needs of the plant operator.



Important

For this reason, the descriptions in this manual are intended as examples, designed to clarify the basic operating principles of the PXM20 operator unit.

1.3 Printing conventions

1.3.1 Text

Bold text is used for text exactly as it appears in the display, e.g. **START, ACKNOWLEDGE, Settings** etc.

1.3.2 Keys

Keys are shown as follows:

- Key names that appear on the key itself are shown in angular brackets < > This convention is used for the < ? > key (Info), and the < - > and < + > keys. *Example:* Press the <?> key.
- The OK key and ESC key are referred to without brackets; their name is marked on the unit housing. *Example:* *Press the ESC key or: Acknowledge with OK.*
- The "direct access" keys are referred to as such. Their function is described neither on the keys themselves nor on the housing. *Example:* *Use the direct access key to go to the next value.*
- The same applies to the Page Up and Page Down keys. *Example:* *Go to the next dialog box using the Page Down key.*

1.3.3 Notes



Note!

The symbol shown here acts as a warning in cases where an action may result in permanent loss of data.



Important

Particular attention should be paid to text marked with this symbol.

Note A note qualifies an immediately preceding statement or statements.

2 Display and control elements

2.1 Housing

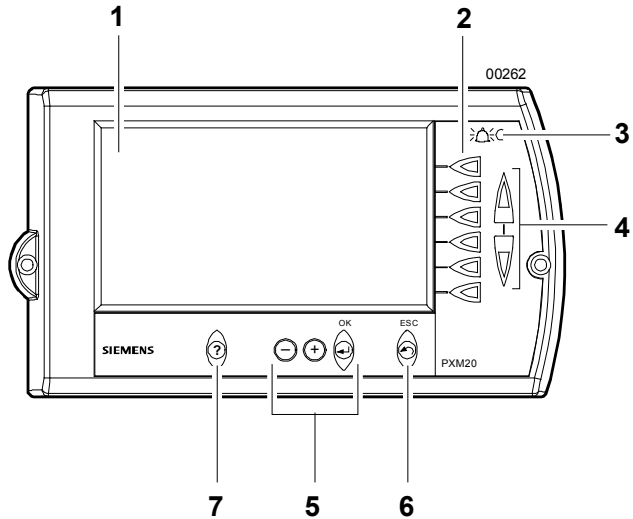


Figure 2-1 Housing

Key:

- 1. Display panel (Section 2.2)
- 2. Direct access keys (Section 2.1.3.1)
- 3. Alarm LED (Section 2.1.1)
- 4. Page Up & Page Down keys (Section 2.1.3.2)
- 5. OK key, <+> and <-> editing keys (Section 2.1.3.3)
- 6. ESC key (Section 2.1.3.4)
- 7. <?> key (Section 2.1.3.5)

2.1.1 Alarm LED

When an alarm is tripped in the system, the alarm LED lights up or flashes, provided a user is logged in. As soon as all alarms have been acknowledged, the LED stops flashing and remains on continuously. For further information on alarm signals refer to Section 7.



Note!

When the view restriction option is **On**, the red Alarm LED lights up in the event of an alarm even if you are **not** logged in.

Exception

The LED does not flash in response to an event.

2.1.2 Audible signal

If the **Buzzer** is set to **On** under **Settings** (see Section 3), then any alarm requiring acknowledgement and/or a reset will be additionally accompanied by an audible signal. Alarms which do not require acknowledgement or reset are not accompanied by an audible alarm signal.

2.1.3 Keys

2.1.3.1 Direct access keys

An arrowhead symbol at the end of a line indicates that, for that line, you can use the associated direct access key to carry out a number of actions:

The direct access keys have a dual function.

- **Navigation:**
Direct access to the view at the next level down.
Refer to Section 5 for detailed instructions on navigating in the PXM20.
- **Editing a value**
Your user access rights determine whether you can edit values, or only read them. Refer to Section 6 for detailed instructions on editing values in the PXM20.

2.1.3.2 Page Up and Page Down

If there are several pages in one display, use the Page Up and Page Down keys to change to the next or previous page. You can also use Page Up and Page Down in addition to the <+> and <-> keys, to edit numerical values.

In pop-ups and dialog boxes, the symbols for Page Up and Page Down are used to indicate that there is too much text to display at once. Scroll up and down with these keys to display the whole text.

2.1.3.3 The OK key and the edit keys <+> and <->

As soon as you access a value with the direct access key, the value concerned begins to flash, indicating that it can be edited with the <+> and <-> keys. Confirm each change by pressing OK. In addition to the <+> and <-> keys you can use Page Up and Page Down to edit numerical values.

The step-by-step procedure for editing is described in Section 6

2.1.3.4 ESC key

By pressing the ESC key you can cancel any current process at any time (e.g. the editing of a value), change over to the dialog box of the next higher level or close a pop-up window. .

Holding down ESC for more than 2 seconds ("Long ESC") closes all the active pop-up windows.

2.1.3.5 The info key <?>

Info mode

Pressing the <?> key once takes you into "Info" mode. A question mark at the end of a line indicates that you can display information associated with this line. To do this, press the associated direct access key.

Siemens	
+Air handling unit	3/4??
Preheater	(100 %)?
Room device	(16.6 °C)?
Reset alarm	Off?
Scheduler	(Off)?
Setpoint for cooling	24.0 °C?
Setpoint for heating	21.0 °C?

Figure 2-2

Siemens	
+A PXM20 information	?
Description: Setpoint for cooling	
Value: 24.0	
Unit name: °C	
Value range: 10.0 - 35.0	
LOG DATA POINT	

Figure 2-3 Example: "Setpoint for cooling"

Pressing the <?> key again displays a dialog box with general information about the associated window.

2.2 Display

All the elements of a plant are shown in the display, with values or information which you can read or overwrite, depending on your user access rights. Figure 2-4 shows the layout of the display. The next section describes the areas of the display and the symbols used.

The keys used for navigation and editing are outside the display panel, and set into the housing itself. These keys are also described below in more detail.

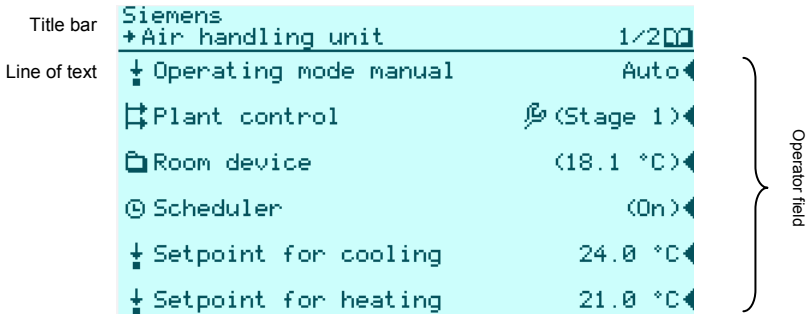
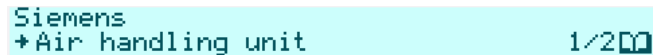


Figure 2-4 Layout of the display

2.2.1 Title bar

The current level within the tree structure is shown at the top left of the display panel; this is marked with an arrow →. The current page and the total number of pages is shown on the right. The title bar is separated from the rest of the display with a horizontal line.



The example above shows page 1 of 2 of the dialog box for the **Air handling unit**.

2.2.2 Operator field

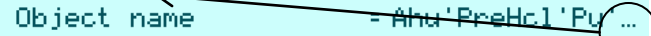
Below the title bar is the operator field, which may contain either several lines of alphanumeric text, or a graph.

Text lines

A maximum of six lines of text can be displayed in the operator field. If there are more than this, the remaining lines appear on the next page.



An ellipsis (...) indicates that the text is too long to fit on the line.



To see the rest of the information, use the <?> key followed by the direct access key.

Each line comprises the following elements from left to right:

- Symbol
- Values, alarms, events, entries, functions, hierarchical elements etc.
- An arrowhead symbol, for values which you can edit.

Graphics

Trends and heating curves are displayed in graph form.

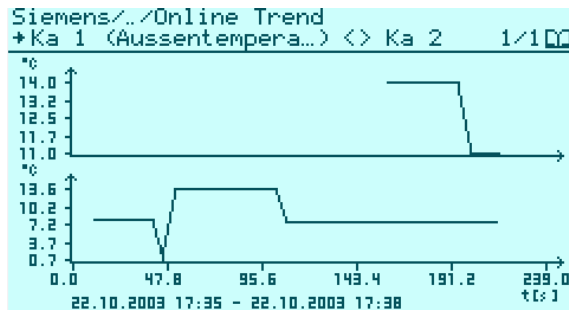


Figure 2-5 Trends graph

Buttons

The button-field contains other functions or dialog boxes to which you can gain access by pressing the associated direct access key. Buttons are identified by upper case text in a box.



Pop-up

A "pop-up" is a dialog box used to display an alarm or an event. The **ALARM VIEWER** button provides direct access to the list of active alarms.

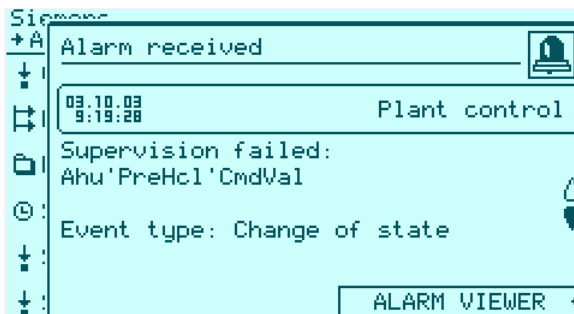


Figure 2-6 Pop-up

Dialog box

After a given action, a dialog box will appear, with a prompt which must be acknowledged before the required action is carried out or cancelled. Dialog boxes containing the relevant information are also displayed when you press the <?> key.

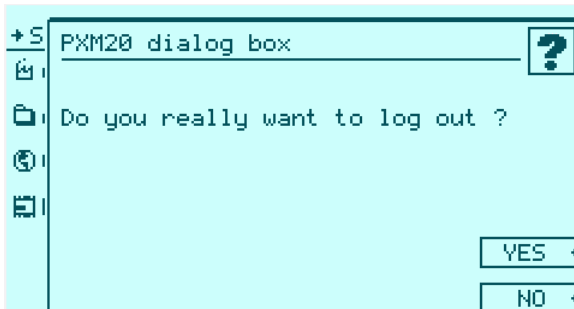








































Figure 2-7 Dialog box with confirmation prompt

2.2.3 Symbols








The following is a list of all the symbols used in the display, and their meanings. The same symbol may represent different entries, or have a different meaning, depending on the context.

Symbols Navigation	Description
	Arrowhead. Values on this line can be accessed with the direct access key directly to the right of the line.
	This line contains additional information about the highlighted object. The information appears when you press the Info key <?>. Refer also to Section 2.1.3.5.
	Page(s)
	Page <i>n</i> of total <i>n</i> pages.
	Scroll up to display more information
	Scroll down to display more information










Symbols	Description
	Site
	Hierarchical element
	Log-out
	Favorites. These are defined in the engineering phase and contain frequently interrogated elements with simple operator access.
	Group object (room automation)
	Command control
	Power control
	Input
	Output
	Operating parameters
	Value object
	Interface variable
	Calendar / Calendar entry
	Trend or multiple trend
	1. Time schedules 2. Set date and time
	Event Enrollment Object

Symbols	Description
	Event Log Object
	Load Control Object
	User-defined system settings
	Alarming & functions
	Daylight savings
	Global objects. Contain data which is globally available (within a given site, across automation stations)
	Edit user
	Add new users
	Delete user
	Change password
	Device (Primary Server)
	Device (Backup Server)
	Program Object
	Wiring test (service engineers only)
	Wink
	Debug information (service engineers only)

Symbols	Description
Alarms & Events	

	1. Alarm overview 2. Alarm and event history: Alarm for "Off Normal" or fault state; flashing indicates unacknowledged alarm
	Acknowledged alarm state
	Alarm for "Normal" state; flashing indicates unacknowledged state.
	Normal state not reset
	System event
	Acknowledged alarm or event in Alarm & event history
	Reset alarm or event in Alarm & event history

Symbols	Description
Status	

	Work in progress
	Override (manually overwritten value)
	Life safety
	Plant security
	Fault
	Override active
	Out of service
	Delay
	Switch

3 Settings

- Notes*
1. You can only carry out the settings described below if the appropriate rights have been assigned to you. These rights are allocated either in the engineering phase, or later by the system administrator.
 2. To be able to carry out settings and modifications, you must be in a site (see Section 4).

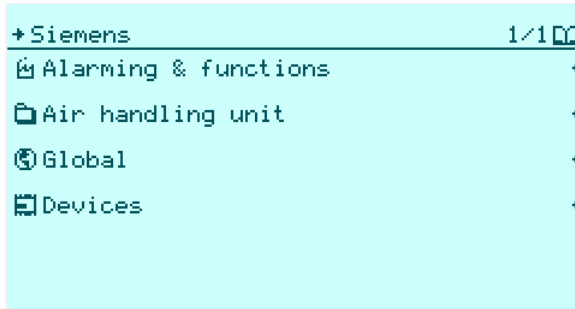


Figure 3-1 Site overview

Alarming & functions

Open **Alarming & functions** for the current site.

This is where you will find all the entries which you use to modify settings in the system using your PXM20 operator unit.

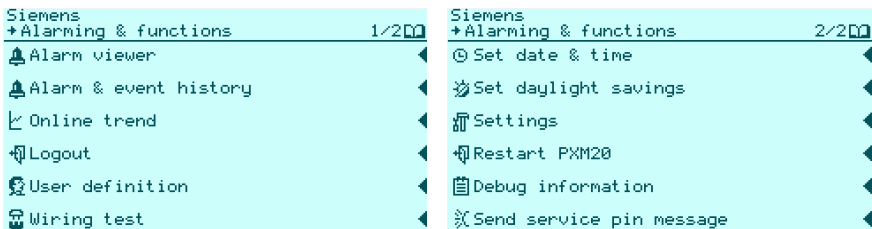


Figure 3-2 Alarming & functions

3.1 System

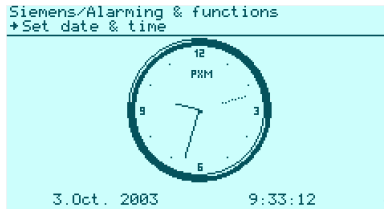
3.1.1 Set time & date (system time)

Note You can only make time settings if a primary server has been defined in the network.

The system time is always applicable to one site. To change the system time, proceed as follows:

⌚ Set date & time

1. Open **Alarming & functions > Set date & time** for the current site.



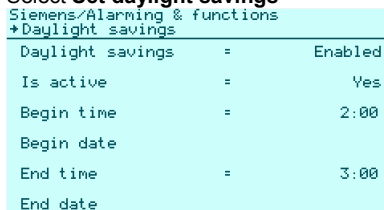
2. Set the required time using the direct access key adjacent to the numerical time display.
3. Save the new settings.

3.1.2 Daylight savings

This option is used to define the requirements for an automatic daylight savings time change.

🌞 Set daylight savings

1. Open **Alarming & functions** for the current site.
2. Select **Set daylight savings**



3. You can start by accepting or rejecting the current automatic summer time change.
4. You then define on what date and at what time summer time is to begin and end. The basic settings are the last Sunday in March at 0200 hours for the start of summer time and the last Sunday in October at 0300 hours for the end of summer time.

3.2 Device

Note

The procedure for defining or modifying settings in the PXM20 is always the same. It is therefore described here once only. The same procedure applies to Sections 3.2.1... 3.2.17.

Settings

1. Open **Alarming & functions > Settings** for the current site.

Siemens/Alarming & functions		
→Settings 1/3		
Language	=	English
IP Settings		
View restriction		
Date format	=	DD.MM.VV
Time format	=	HH:MM
Display long texts	=	On one line
Siemens/Alarming & functions		
→Settings 2/3		
Buzzer	=	On
Alarm popup	=	On
Event popup	=	On
Alarm text mode	=	Description
Relogin	=	On
Display saver on	=	5 min
Siemens/Alarming & functions		
→Settings 3/3		
Main value	=	On
Welcome window	=	On
3rd-Party Site	=	Off
Network scope	=	Global

SAVE AND RESTART PXM20

2. Select the required entry; the value will start flashing.
3. Configure the value as required.
4. Always save the new settings and restart the PXM20 operator unit.

3.2.1 Language

Language

Select the language here. The basic setting is English.

3.2.2 IP settings (PXM20-E only)

Note

These settings must be carried out only by (or by arrangement with) your system administrator or network administrator.

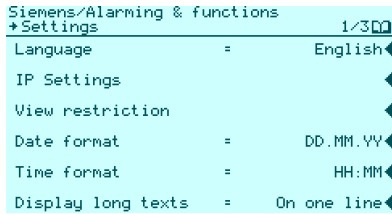


Figure 3-3 Settings

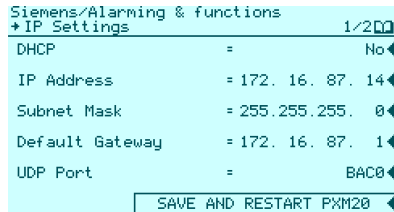


Figure 3-4 IP settings

Set your network parameters here.

DHCP

If the dynamic IP configuration in your network is set up via DHCP (Dynamic Host Configuration Protocol), then the settings for the IP address, subnet mask and default gateway are provided by the DHCP server. These settings cannot be modified.

Note If the IP address, subnet mask and default gateway settings are entered manually, they are not checked for consistency.

UDP port

BACnet communicates via UDP (User Datagram Protocol) and IP (Internet Protocol). The default UDP port for BACnet is **BAC0**. A port other than the default UDP port can be set by means of the edit string.

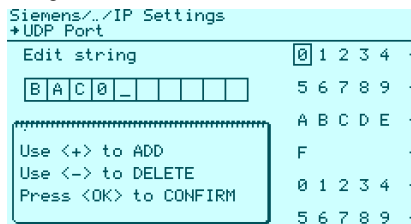


Figure 3-5 Setting the UDP port

Foreign device

The BBMD (BACnet Broadcast Management Device) function is required for BACnet communications between the different IP segments (separated by IP routers). The PXM20-E from another IP

segment can register itself with BBMD as a foreign device. This function can be enabled here. The same dialog box is also used to enter the IP address of the device with BBMD functionality.

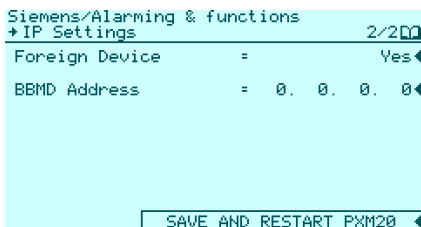



Figure 3-6 Foreign device enabled

3.2.3 View restriction

View restriction PXM20/PXM20-E units are delivered with the default setting **View restriction = Off** (Figure 3-7). This means that all sites and devices are visible. Use this menu to configure the site and devices that you need to see.

1. Log into the site for which you want to configure a restricted view.

 **Note!** If the setting is **View restriction = On**, you will be able to see this site only

2. Set **View restriction = On** (Figure 3-8)

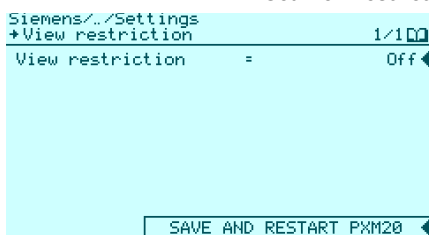


Figure 3-7 Default setting a the new operator unit: **View restriction = Off**

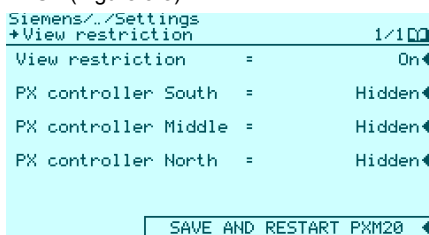


Figure 3-8 **View restriction = On**

3. The devices associated for that site are displayed. They are all set to **Hidden**.
4. Select the devices you want to be able see for your work, and set them to **Visible** (Figure 3-9).

Note It is recommended that the Primary Device also be set to **Visible**.

```

Siemens/./Settings
+View restriction 1/100
View restriction = On
PX controller South = Visible
PX controller Middle = Hidden
PX controller North = Hidden
SAVE AND RESTART PXM20

```

Figure 3-9 One device visible

SAVE AND RESTART PXM20

5. Save the new settings and restart the PXM20 operator unit.
After a restart, only the devices set to **Visible** can be seen.



Note!

When you are logged in, only alarms from the visible devices are displayed.

With **View restriction = On**, the red Alarm LED lights up in the event of an alarm even if you are **not** logged in.

Disabling the view restriction

Set the view restriction to **Off** under **Settings**. When you save this setting and restart the operator unit, all devices are visible again. The user-specific view-restriction settings remain in memory. This means that you only need to enable or disable the view restriction.



Note!

Always save new and modified settings and restart the PXM20 operator unit to make the new settings take effect.

3.2.4 Date and time format

Date format

Time format

Select either the American or the European date and time format.

3.2.5 Contrast

Contrast

The display contrast can be set here:

3.2.6 Display long texts

Display long

Use this option to define whether or not a long text item should be displayed on two lines.

3.2.7 Buzzer

Buzzer

Use this option to specify whether or not alarms are to be indicated with an audible signal. This is only possible if a user is logged in, and provided that the alarms are displayed in pop-up windows. Audible signals are only available for alarms which require acknowledgement or acknowledgement and rest.

3.2.8 Alarm pop-up

Alarm popup

Use this option to define whether or not alarms should be displayed in pop-up windows.

3.2.9 Event Pop-up

Event popup

Use this option to define whether or not events should be displayed in pop-up windows.

3.2.10 Alarm text mode

Alarm text mode

5. This allows you to specify how alarms and events are to be displayed in the Alarm viewer and Alarm & event history.
6. If you select Description, a generic description of the object will be displayed.

3.2.11 Relogin

Relogin

This setting enables you to specify that a user must log in again after the display saver has been switched on.

3.2.12 Display saver on

Display saver on

This option lets you define the time period (from 5 to 60 minutes in 5-minute increments) after which the display saver is to switch on.

3.2.13 Main value

Main value

This setting lets you specify that when operating the plant, the main value should appear at the end of the line for the object concerned.

3.2.14 Welcome window

Welcome window

Here you can define whether a "Welcome" window is to appear when a user logs in.

3.2.15 Third-party site

3rd-Party Site

Use this option to specify whether or not third-party devices are to be operated with the PXM20.

In third-party devices, the following BACnet objects can be displayed:

- Analog Input/Output/Value objects
- Binary Input/Output/Value objects
- Multistate input/Output/Value objects
- Calendar object
- Device object

Notes

Only a subset of the standard properties, as in the BACnet standard, is displayed.

In the context of PXM20 and PXM20-E, the term "third-party" or "devices from third-party manufacturers" is used to refer to "non-PX devices".

3.2.16 Domain ID (PXM20 only)

Domain ID

Set the Domain ID for the PXM20 here.

```
Siemens/.../Settings
+Domain ID

Domain ID length=          1 ◀
Domain ID =                0x 49 ◀
                           I
LOAD DEFAULT DOMAIN ID ◀
SAVE AND RESTART PXM20 ◀
```

Figure 3-10 Domain ID



Important

This setting should be modified only by fully trained staff.

3.2.17 Network scope

Network scope

Use this option to specify whether the BACnet communication is to be local or global, i.e. whether PXM20 should be able to communicate only with BACnet devices connected to the same network, or also with BACnet devices connected to another BACnet network.

BACnet networks are divided by BACnet routers. Communication within a BACnet network is **local**, while communication across all BACnet networks (connected by BACnet routers) is **global**.

The setting Local/Global is has only effect with the PXM20 and with Siemens BACnet routers PXG... . With PXM20-E and with standard routers this setting has no effect, the communication is always global.

As the PXM20(-E) registers itself as a temporary alarm recipient, the number of devices in a BACnet internetwork is limited. See CM110664en18, sections 18.3 and 18.4. This limit also applies when the BACnet internetwork has several UDP/IP segments, which are connected via IP/Ethernet routers. As soon as the number of PXM20(-E) is exceeded, no more devices are registered, or they do not find a site.

This limitation can be avoided by using BACnet routers (PXG80-N, PXG3.L) and PXM20 with network scope "Local". This way the PXM20 is a temporary alarm recipient for the automation stations of the own LonTalk segment only.



Important

This setting should be modified only by fully trained staff.

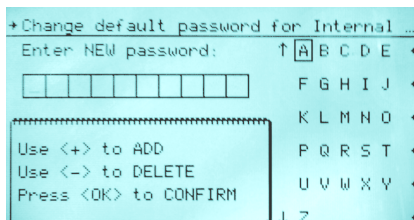
Notes

- This setting is not visible to all users.
- Local communication is only supported by the PXM20 and only with Siemens PXG... routers. With other models, and with PXM20-E, communication is always global.

4 Login and log-out

First start

New security feature starting from V5.1: When starting the device for the first time, you have to enter the default password for the user "Internal View". The device immediately requires changing this password.



Forgot the password

To reset the internal password, you have to re-load the firmware. Firmware Download Tool > select device (PXM20, PXM20-E).

Normal start

As soon as you connect the PXM20 operator unit to an automation station or to a connection point in the LONWORKS network, the "Start" window will appear in the display panel.

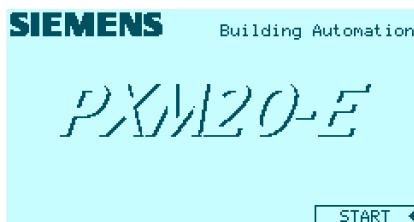


Figure 4-1 "Start" window

Press the direct access key adjacent to **START**.

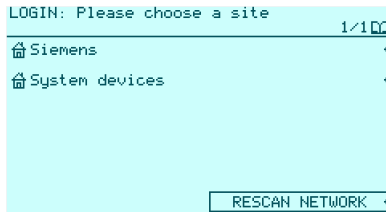
4.1 Connecting to the network



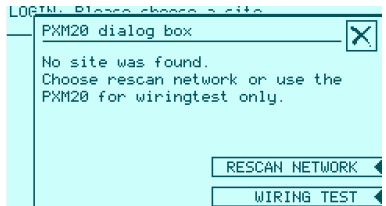
A connection is established with the network. The PXM20 starts by looking for an automation station defined as the primary server.

The login procedure is in two steps:

1. Select a site



If no sites are listed, this means that no automation station in the network has been defined as the primary server.



RESCAN NETWORK

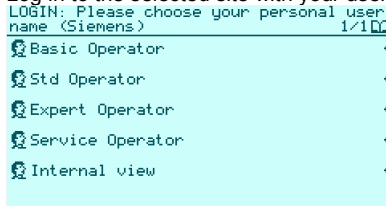
WIRING TEST

2. Select **RESCAN NETWORK** to look for all the devices on the network. In this case, access to the system is via an automation station defined as the back-up server.
3. Commissioning and service engineers can carry out a wiring test with the **WIRING TEST** option (see Section 11)

4.2 Login

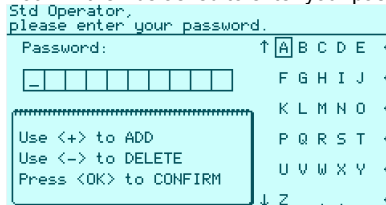
Siemens

1. Log in to the selected site with your user name and password.



Std Operator

2. You will then be asked to enter your password.



3. Select the required letters, numbers or characters and use the <+> key to enter them in the password field. These inputs can be deleted using the <-> key.

Note

Note that wildcard characters (*) are used to represent the password in the password field. You can cancel password entry at any time by pressing ESC.

4. Press OK to confirm the password entered.

Logging in to another site

Before you can log in to a new site, you must first log out from the current site (see the next section).

Note

It is strongly recommended that user change the default password. Siemens is not liable for damages which can result from unauthorized access.

Note

Desigo V5.1

First time login as Internal view enforces the procedure to change that default password.

4.3 Logout

Note

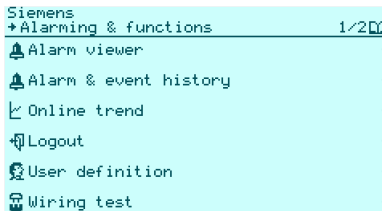
If you disconnect the PXM20 from the network without first logging out, this can temporarily impair the performance of the plant (e.g. by delaying the transfer of alarms). You should therefore always log off properly as described below.

Logging out with
ESC

By repeatedly pressing **ESC** you can navigate to the top level. If you now press **ESC** again, a dialog box will be displayed in which you will be asked if you want to log off. Answer with **Yes** or **No**. Alternatively, instead of **No**, you can press **ESC**.

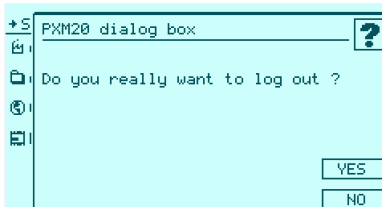
Logging off via
Logout

Alarming & functions



Logout

2. Select **Logout**.
3. Confirm that you really do want to log out.



4. The site overview appears again (Figure 3-1).

5 Navigation

- Tree structure** The navigation structure for the PXM20 operator unit is displayed as a tree structure.
- Down one level** The arrowhead symbol at the end of a line indicates that you can move to a dialog box at the next level down, by pressing the associated direct access key.
- Up one level** Press **ESC** to leave the current dialog box and move to a dialog box at the next higher level.
- Closing windows** Press **ESC** to close pop-up windows and dialog boxes.
- Moving from page to page** If there are several pages in one display, use the Page Up and Page Down keys to change to the next or previous page. The total number of pages is shown in the top right corner of the display:
1 / 100

6 Reading and editing values

In order to edit values, you must have Write access rights. If you only have Read access, you can view a value, but not modify it.

In the example below, the values which you can edit are indicated as follows:

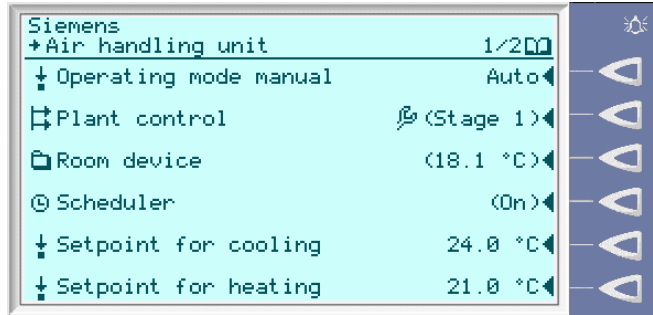


Figure 6-1 Display and direct access keys

Key:



Arrowhead

The arrowhead symbol at the end of a line indicates that you have the necessary Write access rights to edit this value. You can use the direct access key to switch to Edit mode (press briefly) or to navigate to the next level down (sustained pressure). If there is no arrowhead symbol adjacent to any of the other values, this means that you have no access to these values.



Direct access key

To edit the value **Setpoint for cooling**, press the direct access key adjacent to the line concerned.

Note As the procedure described below is always the same, it is only described once, in order to keep this manual as easy to read as possible. If you are required to edit a value in any subsequent routines, the procedure referred to is the one described here.

To keep the manual as clear as possible, the instruction "Press the direct access key" is not repeated.

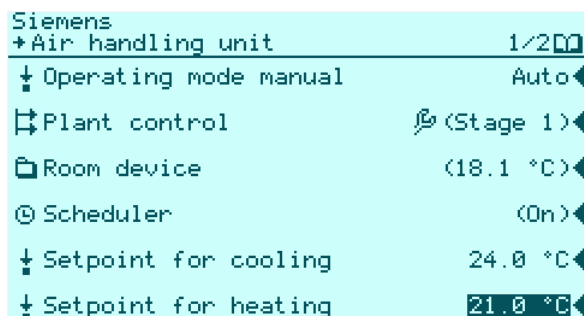
Example: "Select the month and the year".

When editing always proceed as follows:

1. Press the direct access key adjacent to the required line. If you press the key briefly, the value will be displayed in inverse video ready for editing (see below). Sustained pressure on the direct access key allows you to navigate to the next level down (if there is one).
Edit the required value with the <+>-, <-> keys. Numerical values can also be edited using the Page Up and Page Down keys.
2. Acknowledge the changes you have made by pressing OK.
3. You can also acknowledge an input by pressing the direct access key itself.
4. If several values are displayed on one line, press the direct access key repeatedly, until no further values are displayed in inverse video.

6.1 Example: Setting a setpoint

Navigate to the value that you want to edit. Set the required value.



```
Siemens
+Air handling unit 1/200
↓ Operating mode manual Auto◀
⏏ Plant control ⏏ (Stage 1)◀
📁 Room device (18.1 °C)◀
⊙ Scheduler (On)◀
↓ Setpoint for cooling 24.0 °C◀
↓ Setpoint for heating 21.0 °C◀
```

Figure 6-2 Setting a manual setpoint

6.2 Example: Editing the heating curve

The heating curve is used to determine the flow temperature setpoint for weather-compensated flow temperature control.

Two display formats

There are two ways of setting the heating curve values using the PXM20 operator unit. Either the main parameters can be displayed in graph form, or all the parameters, inputs and outputs can be displayed in list form. .

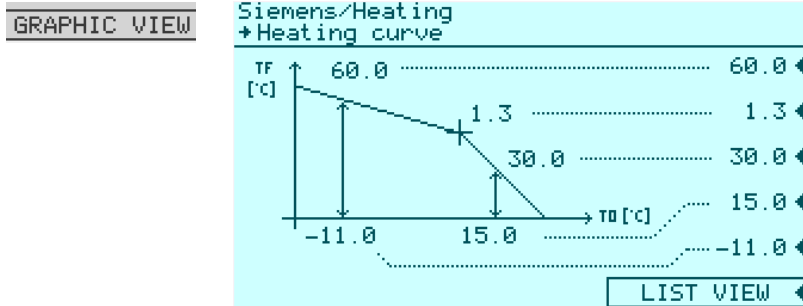


Figure 6-3 Graphic view of heating curve

List view of heating curve

Select **LIST VIEW** for access to a list of all parameters, inputs and outputs.

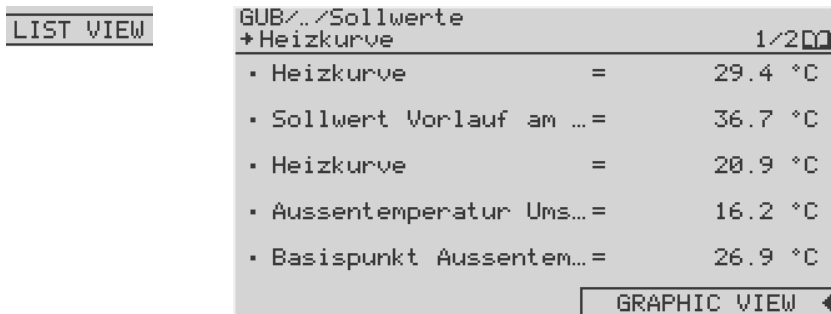


Figure 6-4 Heating curve: list view, page 1

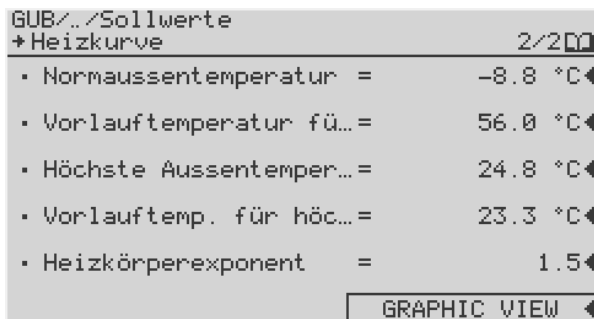


Figure 6-5 Heating curve: list view, page 2

GRAPHIC VIEW

Select **GRAPHIC VIEW** to return to the graph.

6.3 Forced control

"Forced control" applies to the process of setting inputs and outputs manually to a given value.

The inputs and outputs are edited in the normal way. As soon as you select the required value you will be prompted in a dialog box to confirm that you want to force this value.

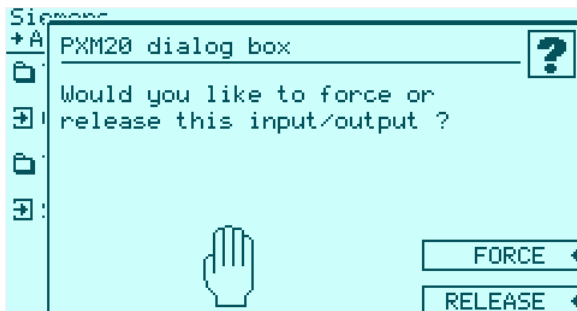


Figure 6-6 Prompt for acknowledgement of forced control

You can use the direct access key to cancel the forced control in the dialog box again.



Forced control symbol

The forced control symbol is displayed after the input or output has been forced.

7 Alarms

7.1 Occurrence of alarms and events

Signals

Attention is drawn to the presence of alarms and events by use of pop-up windows (Figure 7-1). In the case of alarms requiring acknowledgement and/or reset, there is also an audible signal and the LED display starts flashing. The use of pop-up windows and audible signals for this purpose is optional and can be enabled in **Settings** (Section 3.2.8).

If a common alarm was set up in the engineering phase, you will be able to use the pop-up concerned to acknowledge and/or reset all the alarms “below” that hierarchical level.

Information in pop-up

The main information about the current event is displayed in a pop-up window:

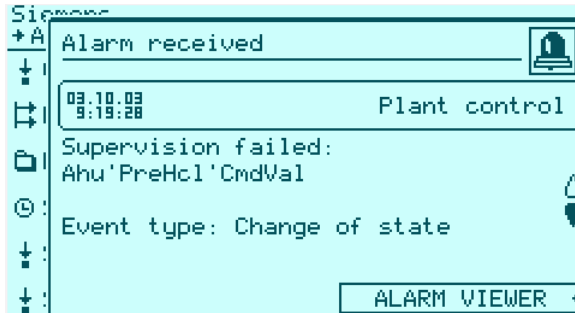


Figure 7-1 Alarm pop-up with unacknowledged alarm

The display shows a time stamp, the object name, the notification text and the alarm priority. In the case of alarm messages, you can display the **Alarm viewer** directly (see Section 7.2.1).

Symbols in the alarm pop-up



Unacknowledged alarm



Alarm state acknowledged



Normal state, existing alarm unacknowledged



Normal state, unset
(only used for Extended alarms. In such cases, reset the alarm.)



System event

Deleting a pop-up

Press **ESC** to delete a pop-up window without affecting the alarm or event.


Canceling audible signal

An audible signal can also be canceled by deleting the associated pop-up window with **ESC**.

7.2 Alarm acknowledgement

All alarms still requiring acknowledgement are listed in the **Alarm viewer**.

7.2.1 Displaying the alarm viewer

 Alarm viewer

ALARM VIEWER

You can go to the **Alarm viewer** either from the **Alarming & functions** window, or display it directly from the alarm pop-up.

```
Siemens/Alarming & functions
+Alarm viewer 1/100
├─ Bell Thermo-electrical overload 03.10.03 9:55 ◀
├─ Bell Plant control 03.10.03 9:55 ◀
├─ Bell Diff.pressure monitor 03.10.03 9:55 ◀
```

Figure 7-2 Alarm viewer

All recently received alarms are listed in this dialog box.

Each line consists of an alarm symbol, the object name or notification text, and the date and time.

Tracking the alarm state

The **Alarm viewer** tracks the state of an alarm as follows: If the alarm state changes (e.g. an alarm is acknowledged) the associated entry also changes.

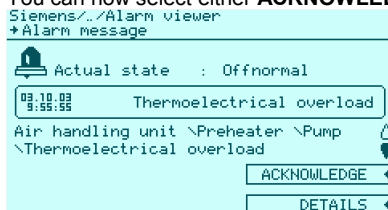
Note Note that for each object, only the current alarm, i.e. the last alarm received, is displayed.

When a fault has been cleared and acknowledged the relevant entry disappears from the list.

7.2.2 Selecting an event or alarm

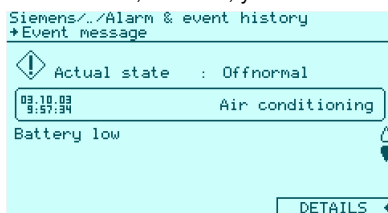
Plant control

5. Select the alarm which you wish to acknowledge. The **Alarm message** dialog box will appear.
6. You can now select either **ACKNOWLEDGE** or **DETAILS**.



The procedure for events is basically the same as for alarms.

Unlike alarms, however, you do not need to acknowledge events.



7.2.3 Alarm acknowledgement / Alarm & Event details

ACKNOWLEDGE ◀

Select **ACKNOWLEDGE** to acknowledge the alarm. The **Alarm viewer** dialog box will re-appear (Figure 7-2).

DETAILS ◀

By selecting **DETAILS** you can switch to a dialog box which provides more information about the object responsible for triggering the alarm or event, and which displays the priority of the alarm message.

```
Siemens/.../Alarm message
+Details 1/100
-----
Object name      = Ahu'PreHcl'Pu'...
Priority         = 2
OBJECT PROPERTIES ◀
```

Figure 7-3 Alarm details

```
Siemens/.../Event message
+Details 1/100
-----
Object name      = Siemens'AS01
Event type       = System message
Priority         = 1
```

Figure 7-3 Event details

OBJECT PROPERTIES ◀

OBJECT PROPERTIES lets you navigate directly to the alarm source. Press ESC to return to the **Alarm viewer**.

Note

Your user access rights will determine whether or not you have access to **Object properties**.

Extended alarm

After acknowledgement, Extended alarms will also need to be reset with the **RESET** option. You cannot do this until the object has returned to normal.

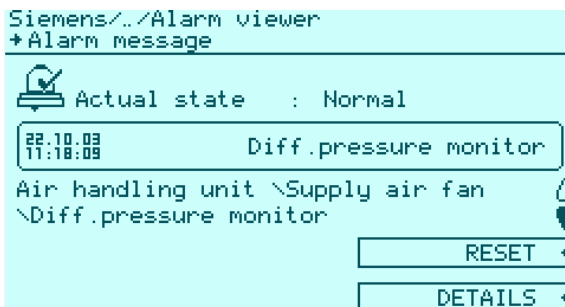


Figure 7-4 Example of Extended alarm

RESET

After the reset, you will be returned to the **Alarm viewer**.

7.3 Alarm & event history

Alarm & event history

Go to the **Alarming & functions** dialog box to display the **Alarm & event history**.

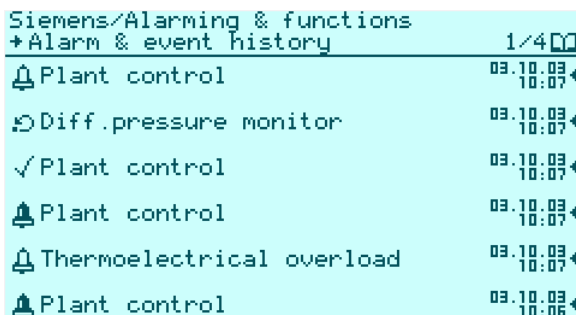


Figure 7-5 Alarm & Event history

The **Alarm & event history** dialog box displays not only the current alarm, but all alarms which have occurred in conjunction with the selected object.

As with the **Alarm viewer**, a line consists of a symbol, the object name and the date and time.

The following information is displayed for a maximum of 30 entries:

- All the most recently received alarms
- The most recent alarm acknowledgements
- The most recent events

Note Note that it is not possible to acknowledge or reset alarms in the **Alarm & event history**.

Unlike the **Alarm viewer**, the **Alarm & event history** only logs incoming alarms, but does not update the entries with any changes.

As with **Alarm viewer**, you can invoke an individual alarm or event here, and view the details.

Symbols in the Alarm & event history



Unacknowledged alarm



Normal state, existing alarm unacknowledged



System event



Acknowledged



Reset

8 Access rights

8.1 Introduction

There are seven user levels in the system. In the engineering process, each user group is defined with the associated Read and Write access rights (user level). Individual users are then assigned to one of these user groups.

8.2 Password

When the plant is handed over, you will be told which users have been set up, and notified of the associated passwords. Users can then change their own passwords to suit their own preferences. The procedure is as described in Section 8.5.

8.3 Adding new users

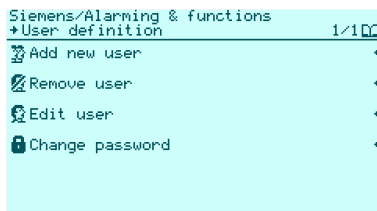
Members of a group are authorized to add new users to groups at a lower hierarchical level.

User definition

- 1 Within the current site, go to **Alarming & functions** and select **User definition**

Add new user

- 2 Select **Add new user**



User name

- 3 You will be prompted in the next dialog box to enter the user name:
Select the required characters and use the <+> key to enter them in the field. Use the <-> key, if required, to delete characters.



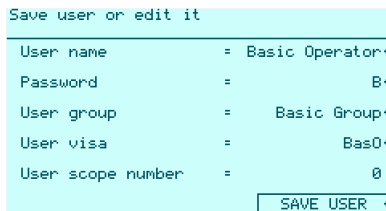
4 Acknowledge the user name with **OK**.

Password

5 You will then be prompted to enter the password: Please enter the **PASSWORD**

Enter the required password and confirm with **OK**

A list of all the information describing the newly defined user will now appear. You now have the option of modifying or adding to the information or settings:



6 **User group**

Select the required user group

7 **User visa**

Select initials for the user you have defined

SAVE USER

8 Answer the prompt to save the new user entry:

SAVE USER

The display will revert to the User definition dialog box

8.4 Remove user

To remove a user, proceed as follows:

Note

You can only remove users at a lower level in the hierarchy.

Remove user

- 1 In the current site, select **Alarming & functions > User definition**.
- 2 Select **Remove user**. The next dialog box displays a list of all the users which your access rights entitle you to delete.
- 3 Select the user to be removed.
- 4 Confirm your instructions in the next pop-up window.

8.5 Change password

To change your own password, proceed as follows:

Change password

- 1 In the current site, select **Alarming & functions > User definition**.
- 2 Select **Change password**.
The following prompt will then appear:
- 3 **Enter OLD password:**
Enter your old password and confirm with **OK**.
The following prompt will then appear:
- 4 **Enter NEW password:**
Enter your new password and confirm with **OK**.
- 5 The change of password is confirmed in a pop-up window.

8.6 Edit user

Proceed as follows to change the data for a given user:

Edit user

- 1 In the current site, select **Alarming & functions > User definition**.
- 2 Select **Edit user**.
The next dialog box displays a list of all the users which your access rights entitle you to modify or delete.
- 3 Select the user, for which you want to edit the data.
- 4 Make the required changes and confirm them by selecting **SAVE USER**.

SAVE USER 

9 Setting time schedules

The Scheduler consists of a 7-day schedule and an exception schedule. You can use the scheduler to program the following:

- Time-dependent on/off switch control and/or
- Time-dependent setpoint adjustment

In the 7-day schedule, you can define daily profiles to be repeated week after week. In the exception schedule, you define days which deviate from those defined in the 7-day schedule.

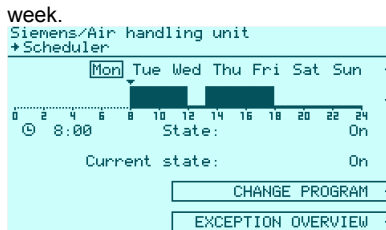
The names and locations of these time schedules are defined on a plant-specific basis. The following illustrations are examples only.

9.1 Scheduler

It is possible to define a particular profile for each day of the week within the 7-day schedule .

Ⓢ Scheduler

1. Navigate to the required scheduler.
2. Use the direct access key to select the required day of the week.



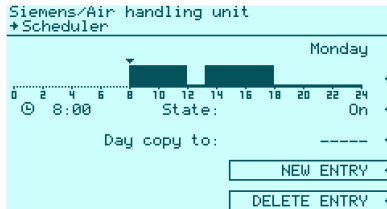
The selected day is marked with a rectangle (Monday in the example above). A graphics-based display of the selected day appears on the second line. You can select the individual switching points with the associated direct access key. The next line displays the values for the selected switching point.

9.1.1 Editing the switching points

The exact time and the state which comprise the entry are shown on the next line, and can be selected for editing. Confirm your entry by pressing **OK**.

CHANGE PROGRAM

1. To change the schedule for this day, select **CHANGE PROGRAM**.



2. Move from one entry to the next within the 24-hour schedule. The selected entry is marked by a small black arrow above the 24-hour schedule.

9.1.1.1 Editing an existing entry

Edit existing entries in the normal way, using the associated direct access keys (the procedure is described in Section 6).

9.1.1.2 Copy 24-hour profile

To copy a 24-hour profile to other days, navigate to the day which is to be used as a template.

Then go to the line **Day copy to** and select the days to which you want to copy the profile; acknowledge with **OK** for each day.

9.1.1.3 New entry

NEW ENTRY

To add an entry select **NEW ENTRY** and edit the new entry.

9.1.1.4 Delete entry

DELETE ENTRY

To delete an entry, first select the entry to be deleted, and then select **DELETE ENTRY**.

9.2 Exception schedule

The exception schedule contains two kinds of exception:

- Exceptions which are stored locally in the time schedule and apply only to that specific time schedule; these are identifiable by the date information.
- Exceptions which are stored in a calendar object and used by various time schedules. These are recognizable by their names, e.g. holidays without date information.

Identification of exceptions in lists:



Symbol for an exception with a 24-hour profile and a date period

There are two ways of invoking exceptions in a list:

- Via an individual day in the **Exceptions overview** (see Figure 9-1)
- Via the **EXCEPTIONS** button (see Figure 9-1).

9.2.1 Listing the exceptions for a given day

EXCEPTION OVERVIEW

In the 7-day schedule, navigate to the exceptions overview via **EXCEPTIONS OVERVIEW**.



Figure 9-1 Exceptions overview

Select the month and the year from the top line. All the days of the selected month will then be displayed. Days on which exceptions are programmed appear on a black background.

Select the required day and confirm with **OK**. A list of all the exceptions for the selected day is displayed. You can edit this display directly.

9.2.3 Create new local exception

NEW LOCAL EXCEPTION

NEW LOCAL EXCEPTION allows you to create a standard exception with the current date and add it to the Schedule exception list (Figure 9-3). The next section describes how to adapt this exception to your own particular needs.

9.2.4 Editing a local exception

Select a date entry from the Schedule exception list (Figure 9-3). A dialog box will appear (Figure 9-4), from which you can select the editing option you require.



Figure 9-4 Schedule editing options

CHANGE DATE

Select **CHANGE DATE** to display the following dialog box:

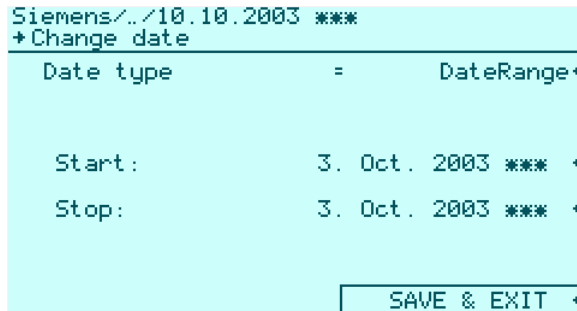


Figure 9-5 Changing the date of an exception

Enter the required information and return to the editing functions via **SAVE & EXIT** (Figure 9-5).

EDIT PROFILE

Select **EDIT PROFILE** for access to the 24-hour profile of an exception. In this dialog box, you can select whether you want to modify the program or to delete all entries.

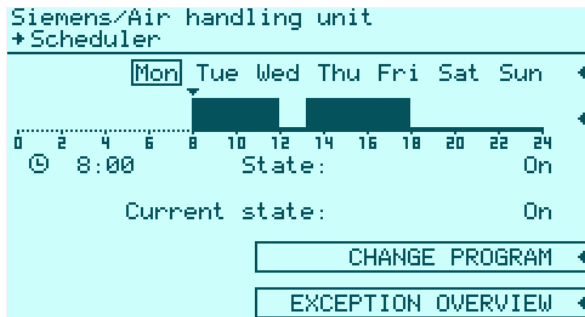


Figure 9-6 Changing the profile of an exception

CHANGE PROGRAM

Select **CHANGE PROGRAM** to invoke the editing mode.



Note!

The priority should only be modified by fully qualified personnel.

DELETE ALL ENTRIES

Select **DELETE ALL ENTRIES**. Acknowledge the data protection prompt. All entries will be deleted from the system.

DELETE ENTRY

This button is used to delete the selected exception.

SAVE & EXIT

Use this button to revert to the **Schedule exception list**, Figure 9-3).

9.2.5 Edit Calendar object

Select a calendar object from the **Schedule exception list**.

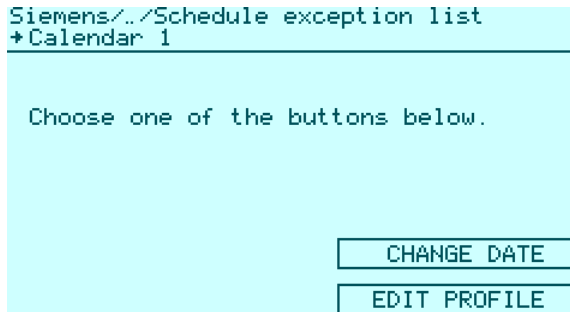


Figure 9-7 Editing a calendar object

You can edit the date and profile as described in Section 9.2.4.

Note Exceptions in a global calendar object can be edited only if the time scheduler is on the Primary Server. If this is not the case, an error message is displayed.



Note!

When editing calendar entries, extreme caution is advised, as this can sometimes affect the exception programs of other time schedules.

10 Trend function and settings

The PXM20 operator unit provides the user with five channels for trend logging, enabling five data points to be logged.

The same dialog box is used for basic trend settings in all types of trend view (refer to Section 10.3). This dialog box is invoked when you set up a new data point (see Section 10.1). For channels which have already been set up, it can also be invoked by selecting **Alarming & functions / Online Trend** (see Section 10.2).

There are three separate approaches to the trend view:

- Graphic view (Section 10.3.2)
- Graphic view online (Section 10.3.3)
- List view (Section 10.3.4)

10.1 Setting up a new trend

Navigate to the data point for which you want to log a trend. Display the information dialog box.

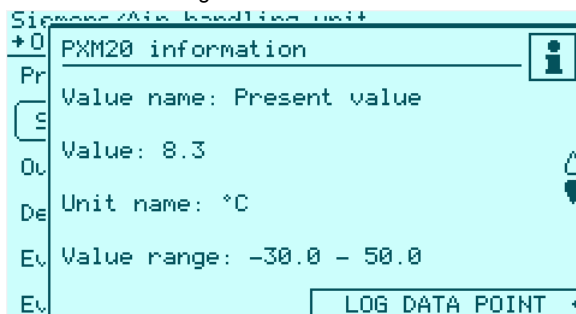


Figure 10-1 Information

LOG DATA POINT

Use the **LOG DATA POINT** button to set up the required trend. The dialog box with the trend settings opens (Figure 10-3). Section 10.3 describes how to set the trend parameters and define the type of view required.<0}

The data point is automatically assigned to the first free channel.

10.2 Displaying an existing trend



Select the required channel via **Alarming & functions > Online trend**. If the adjacent symbol flashes, this indicates that logging is in progress.

Online Trend

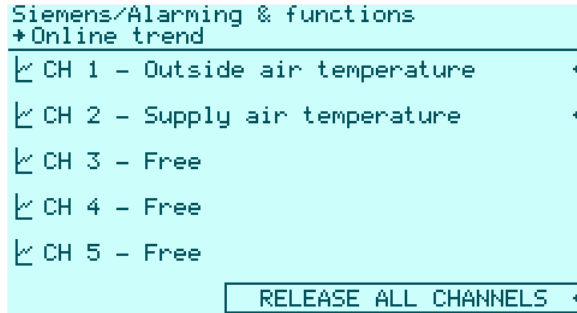


Figure 10-2 Overview of active trend logging and spare channels.

CH 2 - Supply air temperature

Select the required channel. The main dialog box for the selected trend channel will open (Figure 10-3). From here, you can view graphs and edit parameters.

The next section describes how to set the trend parameters and define the type of view required.

RELEASE ALL CHANNELS

This button allows you to stop all trend logging and delete all configured trend charts.

10.3 Main trend dialog box

The main trend dialog box gives you access to the **Trend configuration** dialog box and to the various trend data views.

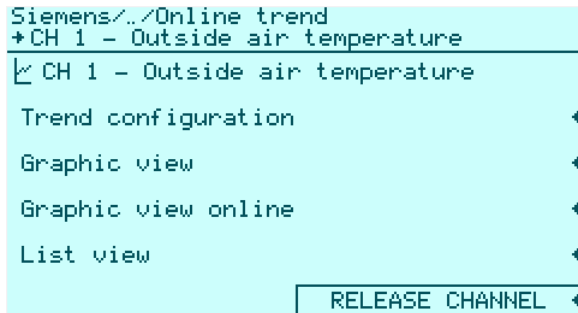


Figure 10-3 Setting trend parameters and defining the view

RELEASE CHANNEL

RELEASE CHANNEL stops the trend logging and deletes the trend configuration.

10.3.1 Trend configuration

Trend configuration

From the main trend dialog box (Figure 10-3) select **Trend configuration**. You can now modify the parameters for the required trend logging.

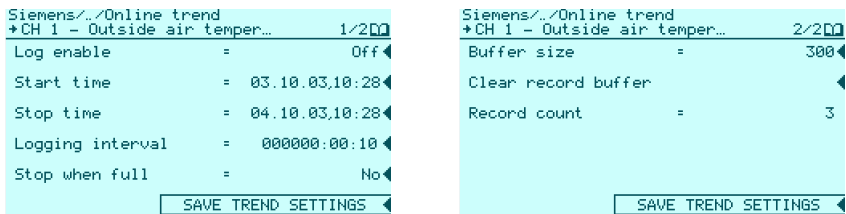


Figure 10-4 Configuration, pages 1 and 2

The individual parameters have the following meanings:

Log enable

On / Off

Start time

Here, you should define the length of time over which the trend values are to be logged.

Stop time

Logging interval

Enter the sampling rate (logging interval) in days, hours, minutes and seconds.

A logging interval of **0** results in COV logging (Change of Value).

Stop when full

Define here what should happen to the trend logging when the memory limits are reached.

If you select **No**, the first values will be overwritten by new values. With **Yes**, trend logging will stop.

Buffer size

Number of values that can be stored

Clear record buffer

Delete all logged values

Record count

Number of sampled values in the current trend log

SAVE TREND SETTINGS

SAVE TREND SETTINGS lets you save your inputs, after which the PXM20 will start logging these values. The display reverts to the main dialog box.

Note The flashing symbol at the beginning of the line in the **Online Trend** dialog box (Figure 10-2) indicates that trend logging is actually in progress. If **Log enable** is set to **On**, but the symbol is not flashing despite this, you should check your settings (start time, stop time and referenced data point).

You can display the trend data in three different views, as described in the next section.

10.3.2 Graphic view

The **Graphic view** displays a graph of all the values in the PXM20 for the logged data point.

Note The graph displayed with this option reflects past events only. To view the values in real time, select **Graphic view online** (Section 10.3.3).

Graphic view

Before displaying the sampled values in a graph, you can adapt the display in **Graphic view** to your requirements, by modifying the following parameters in the **Trend configuration** dialog box (Figure 10-3).

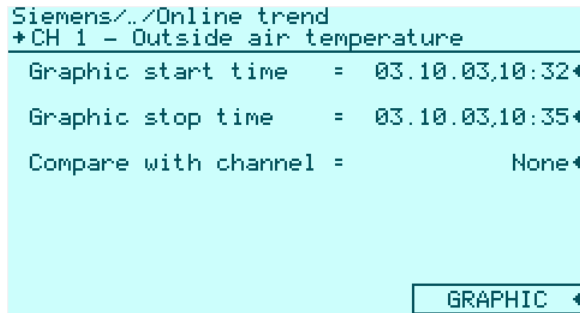


Figure 10-5 Parameters for the Graphic view

The two parameters **Graphic start time** and **Graphic stop time** can be used to reduce the display window to a time-window of particular interest to you. As default values for the **Graphic start time** and **Graphic stop time**, enter the start and end of logging.

Use **Compare with channel** to compare the selected trend with another trend you have set up (see Figure 10-9).

GRAPHIC

Select **GRAPHIC** to confirm your settings and display the trend.

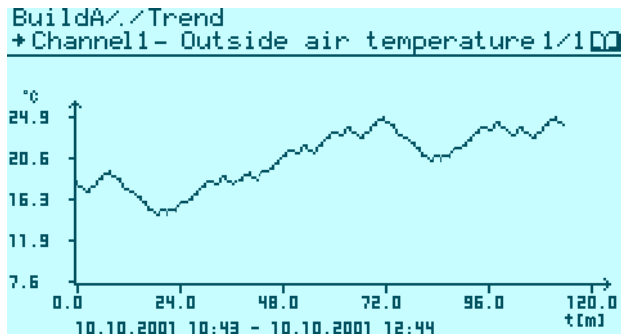


Figure 10-6 Graphic view with a single channel

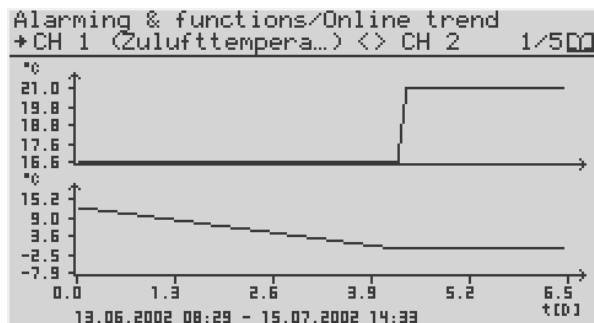


Figure 10-7 Graphic view with two channels

Setting guides

A guide line can be set and moved by use of the <+> and <-> keys. The data display is also refreshed.

10.3.3 Graphic view online

The **Graphic view online** displays the required value dynamically, i.e. in real time.

Note To view all the values so far stored in the PXM20, select **Graphic view** (Section 10.3.2).

Graphic view

Here, you can define the duration ("Record time"), and the high and low range limits for the value.

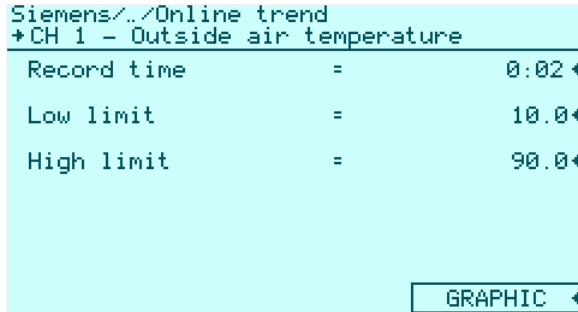


Figure 10-8 Settings in the Graphic view.

Under **Record time** you can define the period of time for which you want to display this dynamic trend.

Low limit and **High limit** represent the upper and lower limits for the value range to be displayed.

GRAPHIC

The trend is displayed soon as you confirm your entries via **GRAPHIC**.

You can reset the graphic display by pressing **OK**.

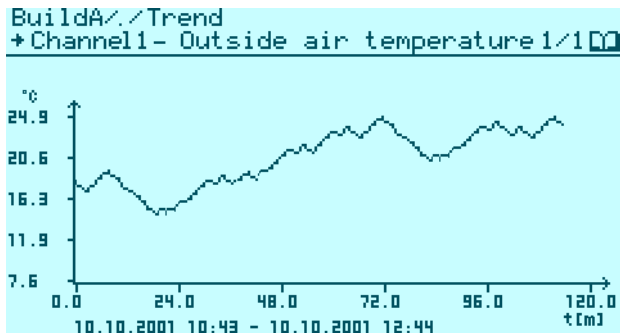


Figure 10-9 Online trend

Setting guides

A guide line can be set and moved by use of the <+> and <-> keys. The value corresponding to the guide line is also displayed.

10.3.4 List view

Instead of displaying the logged values in graph form, you can view them in list form.

List view

```
Siemens/./Online trend
+CH 1 - Outside air temperatur 1/400
-----
Logging started                03.10.03 10:32
Value: 8.3°C                  03.10.03 10:32
Logging stopped                03.10.03 10:32
Logging started                03.10.03 10:34
Value: 8.3°C                  03.10.03 10:34
Value: 8.3°C                  03.10.03 10:34
```

Figure 10-10 Trend values in the list view

11 Service support

11.1 Wiring test

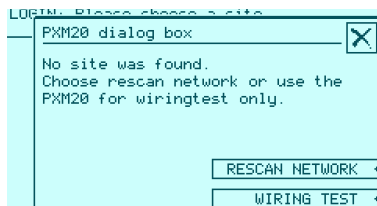
- Notes**
- The wiring test must be carried out only by service and commissioning engineers when commissioning the system.
 - The PXM20 and PXM20-E operator units only support I/Os that are not configurable, i.e. dedicated I/Os on compact automation stations and I/Os on PTM modules. No support of UIs and I/Os on TX-I/O modules.
 - **Therefore the preferred method for wiring test is the Point Test Tool.**

Prerequisite

The automation station which is the subject of the test must not be integrated into a site and must not be loaded with application software. Before the wiring test, a master reset of the automation station is recommended.

Procedure

- A No site exists yet, i.e. no program has yet been loaded by an automation control station.



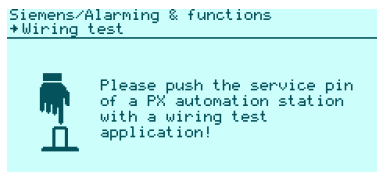
WIRING TEST

- Select **WIRING TEST**

- B A site already exists and you want to extend the network by one automation station:

- Log into the required site.
- Go to **Alarming & functions** and choose **Wiring test**.

Wiring test



- Follow the instructions in the display, and press the service pin of the required automation station.



Position of service pin

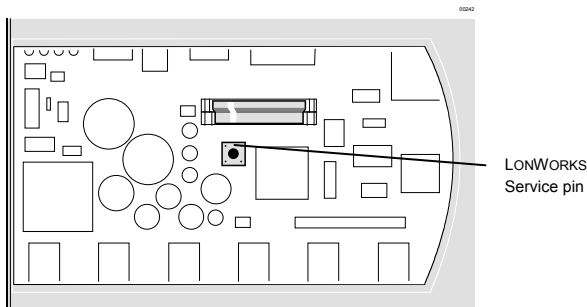


Figure 11-1 Position of service pin in a PX compact automation station

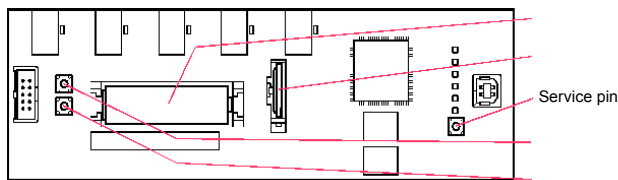


Figure 11-2 Position of service pin in a PX compact automation station on IP

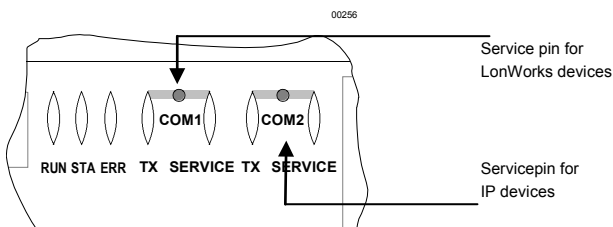


Figure 11-3 Position of the service pin in a PX modular automation station

The wiring test is carried out.

List of all inputs and outputs

For your information, the PXM20 operator unit displays a list of all inputs and outputs of the tested automation and control stations, grouped according to signal type (analog, binary or multi-state, see Figure 11-4).

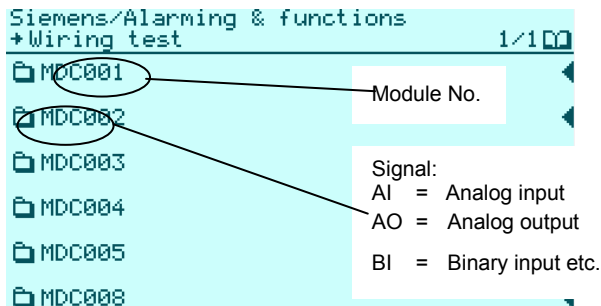


Figure 11-4 Analog signals list

From here you can select the various inputs and outputs and display further information.

Note on analog inputs With the PX automation stations, the analog inputs in the application can be configured. During the wiring test (=No application loaded) it is always assumed that the analog input signal is a type LG Ni100 signal.

Note on exiting from the wiring test Navigate to the top level (the opening menu of the wiring test) by repeatedly pressing ESC, otherwise you will have to perform a master reset of the PX automation station before you can carry out a new wiring test.

Notes on PXM20-E The PXM20-E operator unit must be able to communicate with the automation station via IP, and must not be configured for DHCP. The **Foreign Device** option must be disabled (this is also the default value). It is recommended that you operate the automation station to be tested and the PXM20-E operator unit in the same range as the default IP addresses and subnet masks. During the wiring test, the PXM20-E operator unit assigns the automation station a temporary IP address which is one digit higher than its own IP address:
Example: IP address of PXM20-E: 172.16.87.14
→ IP address of automation station: 172.16.87.15.
The use of this IP address is not checked.

If the wiring test is carried out on a different PXM20-E operator unit, a master reset of the automation is required before you start.

11.2 The Wink command

In certain cases where third-party integration is involved, the PXM20 may need to be specifically identified for commissioning purposes.

Note Although it exists in the PXM20, this command is not needed within the Desigo system.

The identification process is carried out with the Wink command.

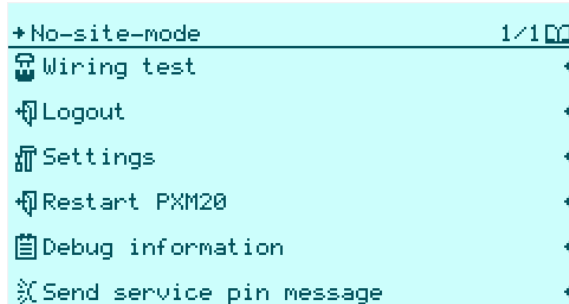


Figure 11-5 The “Wink” command

To send the Wink command, select **Send service pin message**. This immediately triggers the Wink signal.

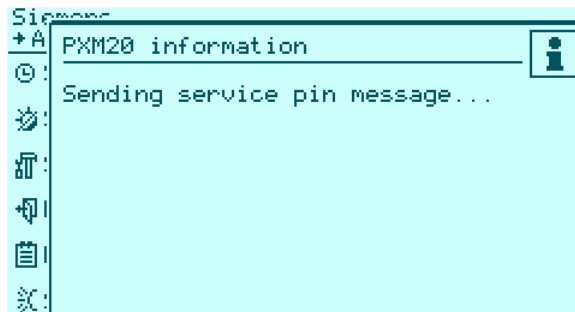


Figure 11-6

11.3 Debug information

<i>Note</i>	These settings are not visible to all users.
-------------	--

Debug information is helpful for troubleshooting, and is intended exclusively for development engineers.

The latest entries are always displayed at the end of the list.

<i>Note</i>	The time entry is only valid once a PXC automation station has been identified.
-------------	---

Debug information

Select **Debug information** from the **Alarming & functions** dialog box.

```
Siemens/Alarming & functions
+Debug information 1/300
I: PXM20 application started
Addr:0x00000000 12321 DAYS 06:36:44.000
I: PXM20 application started
Addr:0x00000000 12321 DAYS 06:37:47.000
I: PXM20 application started
Addr:0x00000000 12328 DAYS 06:49:54.000
I: PXM20 application started
Addr:0x00000000 12328 DAYS 06:51:29.000
I: BCL: SRV_NO_RESOURCES
Addr:0x00000000 12328 DAYS 07:22:50.000
I: BCL: SRV_NO_RESOURCES
Addr:0x00000000 12328 DAYS 07:22:50.000
```

Figure 11-7 Debug information

This dialog box contains the following information:

Error category

Error category (letter at the beginning of the line):

C: Information **E:** Error
F: Fatal error **B:** Reboot

Message text

The following is an example of message text:

PXM20 application started

Address in the program

This address indicates where the error occurred. This information can be useful for troubleshooting.

Example:

Addr: 0x8C6434

Time of occurrence

The time at which the error occurred. The format is as follows:
Day, month, minute, second and millisecond since 01.01.1970 00:00.

Example: **11801 DAYS 09:25:06.000**

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