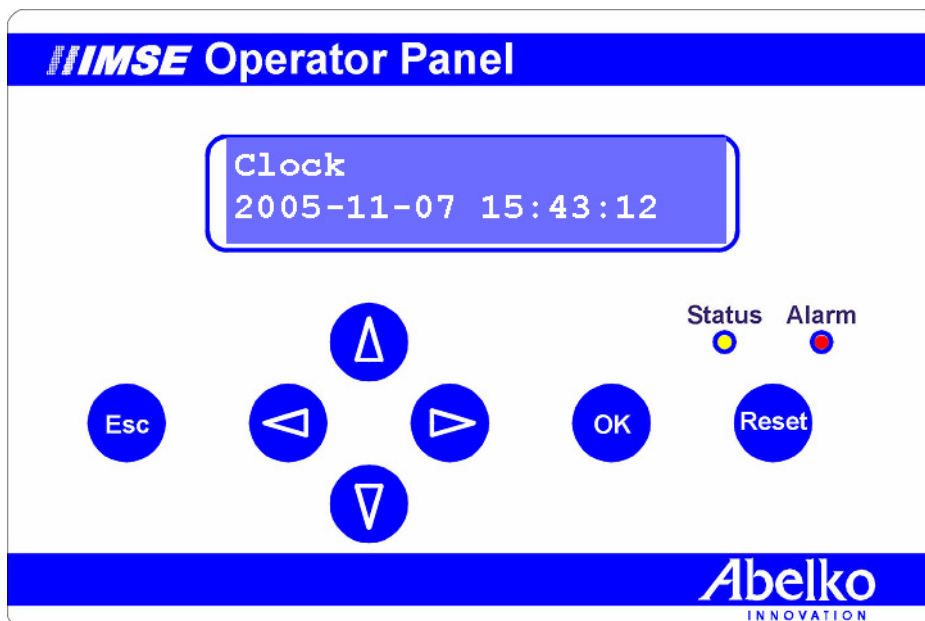# Operator panel

An operator panel is available as an accessory for the WMPro. You can use it to view and acknowledge alarms and to change some system settings. When you configure a controller in the WMPro, the system adds new menus to the operator panel, where you can view the channel values and set certain controller parameters. You can also use the operator panel tool to create your own user-defined menus.

This section explains how to connect and use an operator panel, and also how to create your own menus.

17.1 Description

The operator panel has a LCD display with two lines of 20 characters each. The back-lit display is blue with white text.

The panel has seven keys, an alarm LED and a status LED. It uses a 12 V power supply, which can be taken from the WMPro, and is connected to the RS485 A and B terminals.

The operator panel is available with a plastic case or without, for installation in a larger console.

17.2 Connections

If the WMPro has an expansion port and is running software version R2.0 or later, and if the operator panel rating plate is labeled Operator Panel-AeA, you can connect the panel to the expansion port in the WMPro. The WMPro expansion port is an RJ12 contact.

Otherwise, four wires are used to connect the operator panel. The operator panel terminals are labelled +, -, A and B. Connect the plus terminal to the WMPro terminal labelled "+12V in/out". Connect the minus terminal to any of the GND terminals in the WMPro. Connect A and B to the terminals labelled A and B in the WMPro.

If communication is lost while the device is running, the operator panel hangs. None of the buttons will have any effect in this situation.

The operator panel has a red status LED. This LED lights up if there is an error. The green status LED works the other way around. You can deactivate the operator panel in the WMPro using a setting in Presentation in the System menu. If the Active checkbox in the Operator panel setup section is unchecked, the WMPro does not attempt to communicate with the operator panel. If the operator panel is connected to the RS485 port, you must check the box labelled "Enable operator panel on GFBI interface". This results in slower communication with GFBI units.

> **RS485**
>
> The WMPro has two LEDs for the RS485 port. The yellow LED flashes when the WMPro is sending data, and the green LED flashes when it is receiving data. With the operator panel connected and working, every yellow flash should be followed by a green flash.

System

Information	Presentation	Passwords	File manager	Init

Presentation menu setup

Number	1
Name	Module name
Address	Module address
Alarm frame update interval	60
Select logotype	company.gif	Update

Operator panel setup

Status led channel	Status
Alarm led channel	none
Navigation help	No
Active	☑	Update

17.3 Using the operator panel

The menus are listed vertically, so you use the up and down arrows to change menu.

If you do not use the panel for 15 minutes, the display shows the current time. To display the menu again, press the Esc key. You can also press the key to exit a submenu or cancel a setting.

```
Active alarms

Event log

Setup
```

To select a menu, press OK. All devices have three menu that always appear at the top of the menu list. "Active alarms", as its name suggests, lists alarms that are currently active. "Event log" lists the last 100 alarms and events as on the Alarms and events page. "Setup" allows you to view and change certain system settings.

17.3.1 Login

Before you can acknowledge alarms and change settings, you will need to enter the operator panel password. You can set this four-digit password using the password page – click Passwords on the System page.

```
Login?

****
```

When you attempt to access a password-protected function, the operator panel prompts you to enter the password. Asterisks are used to represent the four digits. One of the asterisks will be flashing. Use the up and down arrows to change the star to the correct digit. Use the right and left arrows to move to another asterisk. Change all the asterisks to the correct digit. Press OK when you have finished.

```
Login blocked

Wait...
```

If you enter the wrong password, you will see the four asterisks again. After three failed attempts, the display changes to an error message and the operator panel is blocked for one minute. You can then try again. If you enter the wrong password again you will have to wait two minutes, then four minutes, the eight minutes, etc.

You can cancel a login attempt by pressing Esc.

```
Logout?

[Esc]=NO, [OK]=YES
```

Once you are successfully logged in, you are not logged out again until the operator panel is inactive for 15 minutes or you log out manually. To log out manually, press Esc until you are back at the main menu, then press Esc again. You are asked if you really want to log out.

Press OK to log out.

```
Acknowledge all?

[Esc]=NO, [OK]=YES
```

17.3.2 Acknowledging alarms

The operator panel has an alarm LED that corresponds to the alarm LED on the WMPro. It flashes if there are any alarms waiting to be acknowledged, and stays constantly lit if there are active alarms that are not waiting to be acknowledged.

You can acknowledge all alarms by pressing Reset. This does the same thing as "Acknowledge all" in the web interface. You will need to press OK to confirm. You are then prompted to enter the password unless you have already done so.

```
Signature?

_
```

Just like the web interface you are prompted to enter a signature. The signature is up to three characters long. Press the up and down arrows to change the character. Press the right and left arrows to select the character you want to change. Press OK when you have entered the correct signature.

17.3.3 Active alarms

You should obviously not acknowledge an alarm unless you know what the problem is, you can use the Active alarms menu to find out. Use the up and down arrows to move to the menu, then press OK.

You can press the up and down arrows to browse through all active alarms (if there are any). The top line in the display shows the alarm status, with the name underneath. The arrow in the bottom right indicates that you can press the right arrow for more information. This display shows the time and date when the alarm was triggered.

If the selected alarm is active, you can press Reset to acknowledge this particular alarm.

If the alarm does not require acknowledgement or if it has already been acknowledged, you will see a message. Otherwise the process is the same as "Acknowledge all".

```
Alarm: Active

Deviation radiator>
```

```
2005-04-07 14:34:56

                  <
```

Alarms

When an alarm occurs, the operator panel immediately displays the active alarm. Press Esc to exit this mode, or Reset to acknowledge.

17.3.4 Event log

The event log is a list of alarms and events in reverse chronological order. The most recent events appear at the top of the list. The content of the event log is the same as the alarm and event log in the web interface. The event log lists the time when alarms became active/inactive, and shows other information such as restarts, software updates, use of the "acknowledge all" function.

You can press the right arrow to move to the next display to see when the event occurred and a signature if there is one. You can also acknowledge individual alarms from the event log.

Active alarms
  Alarm1
  Alarm2
  …
Event log
  Event1
  Event2
  …
Setup
  Language
  Menu navigation
  Clock
  Change password
  LAN/DNS
   Ethernet DHCP
   Ethernet IP address
   Ethernet netmask
   Ethernet gateway
   Ethernet DNS serv 1
   Ethernet DNS serv 2
   Ethernet DNS serv 3
  SMS
   Alarm max limit 24h
   Recipient 1 (+46…)
   Recipient 2 (+46…)
   Recipient 3 (+46…)
   Recipient 4 (+46…)
   Testing
  Restart

17.4 Setup menu

Setup is the third and last of the permanent menus. The menu map on the left shows the menus and submenus in the operator panel. The Setup menu contains various settings that you can view and change.

17.4.1 Language

The second line shows the current language. You can change the language by pressing OK (and logging in). Press the up and down arrows to scroll through the available languages. The language setting only affects the language used by the firmware. Web pages and user-defined names are not affected. The language of the permanent menus in the operator panel will change, as well as the firmware messages that appear in the web interface. You should make sure that the language setting is the same as the web interface.

17.4.2 Menu navigation

Menu navigation can be either active or inactive. If it is active, a number appears briefly in the bottom left whenever you move around in the menu structure. The number indicates where you are in the menu structure. For menu navigation, for example, the number 3.2 will appear because the Setup menu is menu 3 and Menu navigation is submenu 2.

17.4.3 Clock

The clock command shows the current system time. You can set the clock by pressing OK (and logging in).

To set the clock, change one digit at a time. The digit you are changing will be flashing. Press the left and right arrows to move to another digit. Press the up and down arrows to increase and decrease the value of digit. When you have finished setting all the digits, press OK. You will see the usual confirmation prompt.

17.4.4 Change password

You can use this command to change the password for the panel. The process for changing the password is exactly the same as logging in. Press OK to save.

17.4.5 LAN/DNS

The LAN/DNS menu contains network settings.

Ethernet DHCP can either be active or inactive. If it is active, the device automatically obtains an IP address and other network settings from a DHCP server. If you are using a static IP address (so the device address is always the same), set Ethernet DHCP to inactive.

Network problems

If you are unable to connect to the WMPro from a web browser, you can use an operator to verify the network settings. You can show the IP address, netmask and gateway. If any of these settings are wrong, you can change them.

```
Ethernet IP address

10.0.48.94
```

The Ethernet IP address menu shows the address currently being used by the device. If DHCP is inactive, you can set the address here. An IP address consists of numbers and full stops. Press the left and right arrows to move to the number you want to change, and press the up and down arrows to change the number. When you have finished setting the IP address, press OK to save. The new setting will not be applied until the device is restarted.

The process is the same for changing the other settings, which are all related to network communication. See section 3 for information about them.

17.4.6 SMS

The SMS menu contains SMS alarm notification settings. You can only send SMS text messages if there is a GSM/GPRS modem connected.

The first setting – Alarm max limit 24h – limits the number of text messages the WMPro can send over a 24-hour period. The function is described in more detail in 3.8.

Next, there are four user-defined phone numbers. The numbers must include the country code. The code for Sweden +46 appears in brackets as a reminder. To remove a number you do not need to delete every digit – instead you can simply change the first digit to a space.

The last command is called Test. This sends a test SMS text message to all recipients.

Turn to 3.8 for details of the requirements for SMS alarm notifications. You can use the operator panel to enter the recipients' phone numbers.

17.4.7 Restart

You can use this menu to restart the WMPro.

17.5 Controller menus

```
Value Radiator ctrl.

45.3 °C
```

When you use the controller tool to create a controller, the tool also add new options to the operator panel. A menu with the same name as the controller is placed after the permanent menus in the menu list. The menu contains the channels and parameters that are important for controller operation.

The channels usually appear first in the controller menu, showing the current values of sensors and actuators and the internal status of the controller.

```
I-time Radiator ctrl.

180.0 s
```

In the case of parameters, you can not only view the values but change them as well. To do this, press OK (and log in). Use the arrow keys to change one digit at a time in the usual way, then press OK again when you have finished.

```
ERROR:

Write param!
```

Some parameters are subject to upper or lower limits. If you attempt to save a value outside these limits, an error message appears "ERROR: Write param!". This means that the value has not been saved. The operator panel returns to edit mode, where you can try again.

17.6 Curves

Starting from WMPro release 1.3, you can use the operator panel to edit curves. Curve menus are identified by the word curve in brackets below the name.

```
Radiator ctrl.

(curve)
```

Press OK to access the curve edit functions. The first setting is the Y-label, in other words what the Y-axis is called, and the unit for the Y-axis value. If you press the down arrow you will see the X-label. You cannot change these labels from the operator panel.

```
Y-label

Forward temp °C
```

Keep pressing the down arrow to scroll through pairs of X and Y values defining all the breakpoints in the curve. You can change these values by pressing OK.

```
Y03: 47

X03: -15
```

The X and Y values start flashing as you are editing a breakpoint. Press the arrow buttons to change the values. The up and down arrows change the Y value. The right and left button increase and reduce the X value. The last digit is always the first to change. If you keep the arrow key pressed, the speed of increase/decrease gradually increases. Either press OK to save a change, or cancel by pressing Esc.

Remember that all X values must be in ascending order. Otherwise the system displays an error message when you attempt to save the values.

You have to use the web interface to change the number of breakpoints and the number of decimal places.

17.7 Time control and calendars

Starting from release 2.1 it became possible to use the operator panel to edit calendar functions. The time function name appears in the top line, and the second line contains either calendar off or calendar on in brackets.

```
Night calendar

(calendar off)
```

Calendar on means that the time function has the value 1 at this particular moment. Calendar off means that the value is 0. The display on the left means that the WMPro does not think it is night time right now.

Press OK to access the time control functions. You will see details of the type of calendar function first. Turn to section 9 for an explanation of three types: Time, Calendar and Week schedule. The week schedule is the most frequently used type, and the one with the most functions, as you can see in the example below. The submenus for the three types are different.

```
Calendar type

Week schedule
```

Press OK to enter edit mode, where you can select a type using the arrow keys. Press OK to save or Esc to cancel.

Press the down arrow to scroll through the 10 different

```
Item 1

Active
```

items that can be used to define a time control. The second line indicates whether the item is active or not. To edit the definition, press enter.

Each object has a number of submenus, which are slightly different depending on the particular calendar type.

```
Start time

00:00:00
```

In a week schedule, for example, the first item is a start time. This is also true for the calendar and time types, but the calendar type takes an absolute date and the time type takes the start time in days, hours, minutes and seconds. This is the same as the web interface.

```
Stop time

06:00:00
```

The next menu item down is the stop time for the week schedule. The stop time is also the next item for the calendar type, but not for the time type – here, it is the duration.

To edit the start and stop times, press OK.

For the week schedule, the next menu shows the days of the week defined for this item. Use the right and left arrows to move to the day of the week you want to change. Press the up arrow to activate the day and the down arrow to deactivate it. A line appears, replacing the day of the week when you deactivate it. You can also specify whether to use the weekday catalog or not. The weekday catalog option appears on the second line, but it is actually to the right of Sunday in the menu.

```
Mo Tu We Th Fr Sa Su

Weekday catalog
```

For all calendar types, the last menu allows you to activate or deactivate the current definition item. In edit mode, the up and down arrows toggle between Active and Inactive.

The time type has an extra menu just below the calendar type menu, showing the base period for the time function.

```
Item

Active
```

17.8 User-defined menus

There is a tool to help you define your own menus for displaying channel values or setting parameters. To open the tool, go to Operator panel menu in Settings/Advanced.

The field on the left shows the user-defined menus and the menus created by the controller tool in graphical form. The permanent menus are not shown.

The screenshot below was taken from a device with two controllers. This means that the tree already contains menus. The field if empty is the device has not been configured yet.

Icons are used to identify different menu types. A square symbolises a menu heading. A menu heading can have submenus. A green triangle symbolises a channel, and a blue dot means a parameter.

You can double-click on a menu heading to hide or show all submenus.

17.8.1 Adding and erasing items

If you click on a menu to highlight it (in blue), you will see the relevant settings on the right. You can change the settings, and they are copied to the menu tree when you click Apply.

The menu item type setting can have one of three values: Submenu, Channel or Parameter. If a submenu (menu heading) already contains other items, you will not be able to change the element type.

<div style="border: 1px solid; background: #fdf6c3; padding: 8px;">

Controller menus

You are free to change the menus generated by the controller tool, but remember that if you make changes to the controller and save it, you will overwrite all your manual changes.

</div>

The second field determines what the menu will display. For a submenu, type the name. For channels and parameters, select one of the channels or parameters from the drop-down list box.
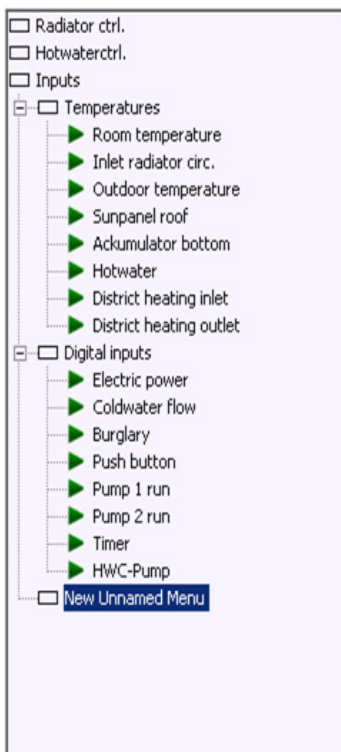
The third field defines whether channels and parameters are editable, and whether the user has to be logged in to make changes. You can make channels editable, but there is not much point if they are connected to an input or other data source or controlled by a script, controller or graphical program.

Remember to click Apply to make the changes permanent.

There are four buttons for creating new menus. Add Menu creates a new menu heading at the same level as the highlighted item. Add Submenu creates a submenu in the highlighted menu.

The Add Channel, Add Parameter, Add Curve and Add Calendar buttons create new menu items in the highlighted menu, just below the highlighted item. The new menu item is created using default settings. You must always change these settings, then click Apply.

The Erase Selected button deletes the highlighted menu, including all submenus if there are any.

17.8.2 Testing and saving

The operator panel settings are saved in the user script. When you click the Save button, a script file is created and stored in the device. This means the device has to be restarted, taking a few minutes. You can use the Test button to transfer the settings to the device without a restart. You can test the way the menus work in the operator panel, but the settings will be lost the next time the device restarts unless you remember to click Save before quitting the tool. The tool always loads the configuration from the user script.

17.8.3 Limitations

As always, there are some restrictions on what you can do. WMPro cannot handle more than 250 menu items. Overall storage space is also limited, so you may run out of memory even before you reach the 250 menu items. If so, an error will occur when you attempt to save or test.

17.8.4 Advanced settings

If you click the Advanced button, some more settings appear. You can specify exactly how the values are displayed and edited, and what values are accepted.

The Edit Method field defines how a value will be changed when it is edited. Normal edit is the usual method, and it is the method used for controller menus.

If you choose Digital ON/OFF, the value will appear as OFF if it is 0, and ON if it is 1. The value can only be changed to one of these values.

The Step edit method means you can use the arrow keys to change the value in steps. You can specify the step size in the field underneath.

The Select and Named Select methods mean you use the up and down arrows to move between the values or names specified in a comma-separate list in the field below. If you use this method, make sure you use the correct formatting.

Check the Value Range Limit box if you want to specify upper and lower limits for the entered value. If you use step as the edit method, you will not be able to go beyond these limits. The upper limit is the value on the right.

The Format Type defines how a value will be displayed, with the number of digits and decimal places. Standard means the number of decimal places displayed will depend on the channel or parameter settings. With this format type, the number is left-padded.

The three options are Left padded, Right padded and Zero left padded. For these three options you must complete the minimum field, which is the minimum number of digits in the number including the decimal places and the point. If fewer digits are needed to display the number, the number is padded either with spaces or with zeros. These are added to the left unless you select Right padded, in which case spaces are added after the number. Use the Decimals field to specify the number of decimal places to show.

If you select Normal as the edit method, it may be important to specify a minimum number of digits. This is because the Normal method only allows you to change digits that already exist – you cannot add new digits. If a parameter contains the digit 1, it cannot be changed to 10 unless you have entered 2 as the minimum number of digits.
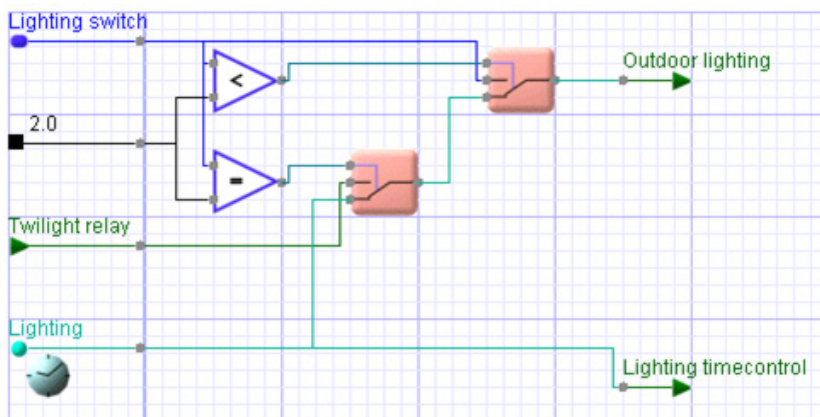
If you use the Select or Named Select edit methods, the numbers you include in the list must match the specified number of decimals.

17.9 Example using advanced settings

Assume we want to control an outdoor lighting system. We want to be able to control the system using a twilight relay, a calendar function and manual on/off. We will use an operator panel to choose between these options.

A small graphical program defines the system, using a parameter to control how it works. If the parameter is 0, the lighting is off. If the parameter is 1, the lighting is on. The parameter value 2 means the system is controlled by a calendar function, and 4 means controlled by the twilight relay.

An extra channel has been added to the graphical program to mirror the status of the calendar function. Now we can start the operator panel tool to help us create the menus in the operator panel. Click Add Menu, change the name to Lighting, and click Apply.
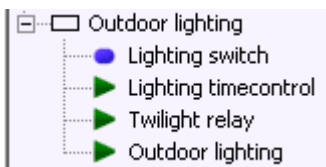
17

Click Add Parameter and select the Lighting control parameter from the list. Now click Advanced to show the advanced settings.

Choose the Named Select edit method. In the field underneath, enter

"0=OFF,1=ON,2=TIME CONTROLLED, 3=TWILIGHT RELAY".

Leave the format type as the default – left padded – and the other default settings 1 and 0 can also be left unchanged. This means that you will be able to choose from OFF, ON, TIME CONTROLLED and TWILIGHT RELAY in the operator panel.

You could go on to add the lighting channel to the menu, so you can check if the light is supposed to be on if it is faulty.

You could also add the time control and twilight relay channels so you can check their status too. Remember to click Save.

17.10 Show Text

A new window appears when you click the Show Text button, containing the menu structure of the operator panel in text form. You can use it for documentation purposes or in the user instructions for the operator panel in a particular installation.

If you select (Ctrl-A) and cut the text (Ctrl-C), you can then paste it (Ctrl-V) to a word processor.