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All information in this document can be changed without notice. It is likely that certain sections will be changed at the release of new product versions. Be sure to have the latest version of this document and the corresponding version of Ultra.

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1 Introduction

Welcome to IMSE Ultra. This series of products consists of the control units IMSE UltraBase30 and IMSE UltraBase20, operator panel IMSE Ultra OP and expansion modules that can be connected to expand the number of inputs and outputs.

This user manual is mainly for the person using the pre-configured system. It aims to provide a guide on how to use the system in the easiest and most effective way.
1.1 Manual Version
Version 1.08, 2018-06-19

1.2 Other Manuals

Configuration manual: information on how to configure the system.
Reference manual: more detailed technical information and script programming.
Quick start guide: information on how to quickly get the system up and running.

All manuals are available for download at www.abelko.se

1.3 Warranty

1. Abelko will repair any design, material and manufacturing defects at its own expense, provided they occur during normal use and the purchaser submits a claim within 60 months of the verified delivery date. The purchaser is responsible for removal, re-installation and for paying transport costs to Abelko, and Abelko will repair the defect and return the equipment free of charge to the purchaser.

2. The warranty only covers design, material and manufacturing defects. Abelko is not responsible for defects caused by a failure to follow the instructions, or defects resulting from normal wear and tear, poor maintenance, unauthorized work, non-compliant operating conditions, incorrect installation or repairs not carried out by Abelko or an authorized agent, voltage surges or other electrical faults.

3. Abelko’s responsibility for defects is limited to the circumstances described above. Abelko is not responsible for any consequential damage that may occur as a result of design, material and manufacturing defects. The purchaser is therefore not entitled to use defects as grounds for compensation or any other claim, except in the circumstances described above, nor may such claim be made against any third parties responsible for fulfilling this warranty.

4. Abelko is not responsible for restoring any configurations, etc. added by the purchaser. The purchaser should create a backup of configurations and save them to a server.

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2 Overview of the device

**IMSE UltraBase** is a general device for controlling and monitoring buildings, systems or facilities. It is configured to do a certain task and connects to sensors, actuators and other devices. This manual requires that the device is configured and installed in a facility.

The device’s user interface is web-based, which means that the device is available through a web browser. As a complement you have **IMSE Ultra OP**, a text-based operator panel that can be connected to a control unit locally.

When browsing the device’s URL or IP number, you will be see a login window. The person who configures the device sets up users and passwords and gives the user a user level. You can also select which language you want to use. The device has been tested to work with the latest versions of Firefox and Chrome.

Factory default the system has following users:

<table>
<thead>
<tr>
<th>User name</th>
<th>Password</th>
<th>User level</th>
</tr>
</thead>
<tbody>
<tr>
<td>view</td>
<td>ab12</td>
<td>View</td>
</tr>
<tr>
<td>operator</td>
<td>cd34</td>
<td>Operator</td>
</tr>
<tr>
<td>config</td>
<td>ef56</td>
<td>Configurator</td>
</tr>
</tbody>
</table>

They should be deleted or have changed passwords before connecting the device to the Internet.

The user level **View** allows the user to view the user interface, but not to change anything. An **Operator** may change settings and is intended for those who will take care of the facility. A **Configurator** has full rights, can configure the whole device, upgrade the software, restore backups, and more.

**Warnings when logging in!**

The first time you log in to an Ultra, you will be warned that the connection is not private, or similar. This is because the **HTTPS** that is being used in the system is a secure and encrypted connection. The security is guaranteed by a certificate, which needs to be issued for a specific IP number. Since the IP address is adjustable, there is no certificate for the unit. **You need to add this exception.** The procedure differs depending on which browser you are currently using.

When you log in you will come to a homepage. The start page can consist of a overview or a summary created by the person who configured the system. The purpose is that you quickly can read values of interest or make settings using these overviews and summaries. If there are no overviews or summaries, the list of active alarms will appear on the homepage. Under the menu **System** and **Settings** you can choose what you want to see at the homepage.
There are three buttons up in the interface:

The bell indicates if there are any active alarms in the system, and the letter shows if there are any new notes. The hand indicates that there are manually overridden channels, and is only shown if there are. By clicking on these, you will be directed to more detailed information.

On the left side there is (usually) a node tree with more overviews and summaries. Click in it in order to change overview or summary.

2.1 Menus

- **Home**
  - Home page with a list over summaries and overviews

- **Alarm**
  - Active alarms
  - Alarm history
  - Alarm list
  - Alarm groups
  - Alarm sendouts

- **Data**
  - Data logs
  - Log sendouts

- **Communication**
  - Network
  - Email
  - Recipients
  - Modbus slave register
  - Modbus slave settings
  - Modbus TCP Gateway
  - External units sendouts
  - Portal update
2.2 Menus limited view

A user can have limited view of the web pages, which means that not all menus are visible.

To temporarily leave this mode, go to the menu Help and Support. Under Limited view, you can enable/disable the limited view temporarily by using the check box, and then click Set. Now you will be able to see the menus until the pages are updated or until you log out.

Following menus are visible during limited view:

- Home
  - Home page with a list over summaries and overviews
2.3 Connect a PC directly to IMSE UltraBase

If your Ultra is not connected to a network you have access to, you can connect a computer directly to the Ultra. On the front, to the right, there is an Ethernet port labelled LOCAL PC. It can be used to connect a network cable directly to your computer. You can then go to the address https:\192.168.142.1.

The local PC port has a DHCP server. It automatically provides a connected PC network setting so that you can access the web pages directly without manually changing settings. This means that you should never connect this port to a network.
The port is slower than the one labelled **ETHERNET** and should only be used to configure the regular network connection.

The Ethernet port for regular network connection is on the top left. There are two LEDs for the port. **LINK** shines yellow when Ultran is connected to a network and **LAN** flashes green when there is communication on the network.

On the front of an UltraBase30 there is place for a SD card. See chapters **Updates** and **Backup on SD-card** for more information on how to use this.
3 Overviews

Overviews are pictures created of an installation with important values so you can quickly and easily see the status of the installation. This chapter will explain how overviews work and how they can be used.

3.1 How To Use

An overview provides a schematic image of a system since it can be customized to how your installation looks like.

An overview is created with the overview tool (located under the menu Configuration, Overviews). The overview consists of values, symbols and graphs which show current values (updated every 3rd second).

Values have different view alternatives. They can be viewed as an animated image or as an image who change it appearance when a resource reaches a certain value. For example, an active alarm can change the color of a channel value.

Click on a resource to change settings, see alarm limits and more depending on resource type.
If you want to change the **start page** go to the menu **System, Settings**.
4 Summaries

Summaries are menu pages with added resources to see and edit, such as channels, parameters, alarms and more. Summaries are created by the person who configured the system.

This chapter will explain how the different resources look like in a summary and how they work.

4.1 Channels

Channels handle all the variable data in the unit and have different view alternatives. They can be viewed as a row with name and value, as a graph or as a table. Channels are used for logs and alarm.
4.2 Parameters

Parameters are used to store settings and can be both editable and non-editable. If they are editable you can set their values.

4.3 Alarms

Alarms will help you monitor channel values. You can see its name and current status. If the alarm is active, click on it to go to the active alarm list where you can acknowledge it if needed.

4.4 Time schedules

A time schedule is used to set times when things should be active or inactive.

Edit will take you to the timeschedule’s settings.
You can see the time schedule’s **current status** on the top of the page. To **disable** a schedule uncheck the box to the left of its name. The time schedule will not become active until you select the box again.

The calendar to the left has current date highlighted. Click on a date to see that day’s details and also details for that week. You can also click on the week view to change which day you will see details for. Green blocks enables (activates) the resource and red blocks disables (inactivates) the resource. **The red blocks always rule over the green blocks**.

The list at the bottom is an overview for all added rules in the timeschedule. The rule’s current **status** is located to the right.

- If the rule **enables** objects and is currently **active**, the light shines **green**.
- If the rule **disables** objects and is currently **active**, the light shines **red**.
- If the rule is **not active**, it will be **grey** regardless if it enables or disables objects.

You can delete a rule or disable it with the box under **Type**.

Add a new rule by clicking on a rule type: **Date, Weekly, Monthly, Yearly** or **Periodically**.
4.4.1 Date

This is used when you want to do something on a specific date.

1. Select if you want the rule to enable (On) or disable (Off) objects.
2. Set start and stop time in the boxes YYYY-MM-DD and TT:MM:SS.
3. Mark the date in the calendar. The rule will automatically be set to Active. You can Inactivate it by using the checkbox up in the corner. If you click Cancel, you will leave you the page without saving the changes you have made.
4. Click Save. The rule will now be included in the list on the overview page.
4.4.2 Weekly

This is used when you want something to be repeated every week.

1. Select if you want the rule to enable (On) or disable (Off) objects.

2. Set start and stop time by moving the bar in the time axis or type the time in the boxes.

3. Select the days the rule should apply to by clicking on the weekdays. The rule will automatically be set to **Active**. You can **Inactivate** it by using the checkbox up in the corner. If you click **Cancel**, you will leave you the page without saving the changes you have made.

4. Click **Save**. The rule will now be included in the list on the overview page.
4.4.3 Monthly

This is used when you want something to be repeated every month.

1. Select if you want the rule to enable (On) or disable (Off) objects.

2. Set start and stop time by moving the bar in the time axis or type the time in the boxes.

3. Mark the date in the calendar. The rule will automatically be set to Active. You can Inactivate it by using the checkbox up in the corner. If you click Cancel, you will leave you the page without saving the changes you have made.

4. Click Save. The rule will now be included in the list on the overview page.
4.4.4 Yearly

This is used when you want something to be repeated yearly.

1. Select if you want the rule to enable (On) or disable (Off) object.
2. Set start and stop time by moving the bar in the time axis or type the time in the boxes.
3. Mark the date in the calendar. The rule will automatically be set to Active. You can Inactivate it by using the checkbox up in the corner. If you click Cancel, you will leave you the page without saving the changes you have made.
4. Click Save. The rule will now be included in the list on the overview page.
4.4.5 Periodically

This is used when you want something to be repeated a certain period.

1. Select if you want the rule to enable (On) or disable (Off) objects.
2. Set **Period time**, this will decide how often the period should be repeated. For example, if you want something to be repeated every third day, type 3 under Day.
3. Set for how long you want it to be active under **Duration**. For example, two hours by typing 2 under **Hours**.
4. You can also add a **Delay**. This gives a delay into the period when the duration will be active. For example, five hours by typing 5 under **Hours**.

This means that it will be active every third day during 05:00 and 07:00.

The rule will automatically be set to **Active**. You can **Inactivate** it by using the checkbox up in the corner. If you click **Cancel**, you will leave you the page without saving the changes you have made.

5. Click **Save**. The rule will now be included in the list on the overview page.

4.5 Curves

A **curve** is a interpolation table presented as an configurable curve. Curves are used to do things like converting an outdoor temperature into a flow temperature and can be monitored by the user both graphically and numerically.
In this example you can see how the outdoor temperature (x-axis) affects the set value for the flow temperature (y-axis). For example, you can see that when the outdoor temperature reaches 0 °C, the flow temperature should be 40 °C.

Click Edit to change settings. You can edit the curve directly in the graph or use the table under the graph. Add a new data point by double-clicking in the graph. A double-click on a data point will erase it.
5 Alarms

This chapter will explain how alarms and alarm history are viewed. It will also explain the different types of alarms, how to acknowledge alarms and how to change the settings for alarm sendouts.

5.1 Active Alarm

All active alarms in the system are listed on Active alarms.

Click Acknowledge to acknowledge an alarm with your name. You can also Acknowledge all the alarms. Click on an alarm to get more detailed information about the alarm.

An alarm stops being active when it has been inactivated and/or acknowledged, depending on the alarms settings. You can see the alarm event on the page Alarm history.

The number of active alarms will also be indicated on the top of the web interface.

When it has a red symbol, it means that at least one of the active alarms is an A-alarm. When it has a yellow symbol, at least one of the active alarms is an B-alarm, and a blue symbol is when the alarms are C-Z alarms. If the symbol is blinking, it means that there are alarms that need to be acknowledged.

If the device has one or more companions, the table is extended with another column stating which device the alarm belongs to.
5.2 Alarm History

Here, all the alarm events are listed. You can see when they were activated, inactivated and acknowledged.

A-alarms are red, B-alarms are yellow and C-Z alarms are blue. When an alarm is inactivated, it will turn green.

Click on an alarm to get more detailed information about the alarm.

5.3 Alarm Types

An alarm is created based on a channel in the graphical programming and can have different types of priorities.

The different priorities are:

- **A-alarm** (red indication)
- **B-alarm** (yellow indication)
- In addition to these, an alarm can have the priority **C-Z** (blue indicator)

In addition to these types, there are events/errors and messages. Events/errors are created by the system and provide information when there is an error in the system, preventing from working properly. Messages are created by script and provide information concerning system changes, such as the system being switched over to summer mode.

The different conditions are:

- **Equals (value = limit 1)**: the alarm is activated when the value is exactly the same as the value entered under Limit 1.
- **Greater than (value > limit 1)**: the alarm is activated when the value is greater than the value entered under Limit 1.
- **Less than (value < limit 1)**: the alarm is activated when the value is less than the value entered under Limit 1.
- **Greater** \( (\text{abs} \ (\text{value}) > \text{limit} \ 1) \): the alarm is activated when the value is greater than the value entered under Limit 1 without taking into account whether the value is positive or negative.

- **Smaller** \( (\text{abs} \ (\text{value}) < \text{limit} \ 1) \): the alarm is activated when the value is smaller than the value entered under Limit 1 without taking into account whether the value is positive or negative.

- **Between** \( (\text{limit} \ 1 < \text{value} < \text{limit} \ 2) \): the alarm is activated when the value is between the values entered under Limit 1 and Limit 2.

- **Outside** \( (\text{limit} \ 1 < \text{value} \ or \ \text{value} > \text{limit} \ 2) \): the alarm is activated when the value is below the value entered under limit 1 or above the value under Limit 2.

The **Hysteresis** settings prevent the alarm from repeatedly switching between active and inactive when the value is equal to the limit. It specifies the number of degrees by which the value must fall back below the limit or limits before the alarm can be cleared.

The **On-filter** specifies the number of consecutive seconds the alarm condition must be true before the alarm is triggered. The **Off-filter** specifies the number of consecutive seconds the alarm condition must be false before the alarm is cleared.

The different **acknowledgments** are:

- **Reset when acknowledged**: the alarm remains active until a user acknowledges it. If the error remains after the alarm is acknowledged, it will remain active until the error is cleared, including the delay and hysteresis.

- **Automatic reset, with acknowledgment**: the alarm resets itself when the error is cleared, but it still has to be acknowledged. In this case, the acknowledgment is a kind of confirmation that someone has noticed the alarm. Details of the reset and the acknowledgment are both recorded in the alarm history.

- **Automatic reset, without acknowledgment**: there is no need for a user to acknowledge the alarm. The alarm is cleared when the error is no longer active as defined in the alarm conditions. You can specify delay and hysteresis values in the condition.

### 5.4 Alarm List

Here all the alarms in the system are listed.
5.5 Alarm Groups

Here you create alarm groups. An alarm group defines which alarms are included, either by priority or a selection of individual alarms. Alarm groups are used for managing alarm sendouts for both email and texts (if this unit can handle texts).

Create a new alarm group

1. Click New alarm group.
2. Name the alarm group.
3. Then choose Language for the mail sendouts and under Type you can choose which format the mails should have. You can also create your own format.
4. Select which alarms you want in the alarm group by clicking the box next to the alarms.
5. For example, if you would like to add all A-alarms, click the box next to the A. By doing this, all future A-alarms created in the application will be included in the alarm group.
6. Click Save.

Email settings for sendouts are configured under the menu **Alarm, Alarm sendouts**.

### 5.6 Alarm Sendouts

Here you create and edit alarm sendouts. Alarm groups must be created before editing alarm sendouts (see previous chapter).

#### Add a recipient

1. Click on the icon under **Recipients** on the alarm group you want to add to.

2. Select an already existing recipient (these are created under the menu **Communication, Sendouts**) in the drop down menu or create a new by entering name and contact information. **Mail host** is mandatory since all email recipients need to be tied to an email server. If you don’t have any mail hosts here you need to fill the settings under the menu **Communication, Mail host**.

3. Click **Add**.
The system will send an email to all recipients each time an alarm in the alarm group turns active or inactive. The mail contains information about the alarm event. The mail can either be sent to people or to an alarm server.

6 Logging data

Logs are history of what has happened in the system, and are used to create statistics. This chapter will explain how logs work and how they can be used.

6.1 Data Logs

In order to view logs on this page, you need to log channels. This is set under a channel’s settings.

Here you can group logs and save log views.

View log channels

1. Drag-and-drop channels to the graph from the node tree to the left.
2. These will be listed under the graph where you can click the box next
to the channels name if you don’t want to view it.

3. Set start and stop time under **From** and **To** and select how many **data points** you want to be able to see in the graph.

Draw a square in the graph to **zoom**. The image down to the right indicates where in the graph you have zoomed. Click [ ] to go back to normal view. You can also move the graph by using [ ].

**Save the log view**

1. Name the log.
2. Click **Save**. This view is now in the list **Saved views** to the left.

6.1.1 **Smart Log**

Smart log is a log that compresses the data that comes in. Second values are converted to minute values, and so on. This allows you to store data for a longer period.

6.1.2 **Periodic Log**

Periodic logs allow you to measure momentary values, which is an instantaneous value. You can monitor statistics by **measuring mean value, max value, min value** or a **sum of a certain period**. Then select the **range** you are interested in (1 second, 2 seconds, 15 seconds, 1 minute, 5 minutes, 15 minutes, 1 hour or 12 hours). If you don’t want to set a **range**, select **log when the value changes**. In addition, the change log can be used for a parameter, and it will appear in the log if someone changes it.
6.2 Log Sendouts

Here you can export a log based on your saved log views.

1. Add a new recipient next to the log you want to export.

2. Select an already existing recipient (these are created under the menu Communication, Sendouts) in the drop down menu or create a new by entering name and contact information. Mail host is mandatory since all email recipients need to be tied to an email server. If you don’t have any mail hosts here you need to fill the settings under the menu Communication, Mail host.

3. Click Add.
4. When you have the recipients click **Edit** for a **Data log**.

5. Set **Period time** (how often you want it to be sent) and an **Offset** if needed (how far into the period time you want the transfer to take place).

6. Click **Save**.

The first time, it will send all the data. After this, it will remember what it has sent and only send new data (all data collected after the last transfer).

Below is an example of a log sendout.

```
DLC Apartment 4, Ableko house, Luleå
00-30-5e-08-01-6c
1, Database log

<table>
<thead>
<tr>
<th>Index</th>
<th>Channel number</th>
<th>Channel name</th>
<th>GT20 [mean]</th>
<th>GT21 [mean]</th>
<th>GT22 [mean]</th>
<th>GT23 [mean]</th>
</tr>
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<tr>
<td></td>
<td></td>
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<td>77</td>
<td>20.89178</td>
<td>20.628164</td>
<td>20.079251</td>
<td>18.456088</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
<td>10</td>
<td>20.891454</td>
<td>20.628817</td>
<td>20.080393</td>
<td>18.457555</td>
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<tr>
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<td>1</td>
<td>11</td>
<td>20.893412</td>
<td>20.629796</td>
<td>20.081698</td>
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<tr>
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<td>20.630612</td>
<td>20.082514</td>
<td>18.458489</td>
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<tr>
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<td>20.630938</td>
<td>20.083983</td>
<td>18.458858</td>
</tr>
</tbody>
</table>
```

At the top you can see from which device the mail comes from, with name and MAC address. You can see what type of log it is (1, database log) and below that, all channel numbers and channel names with units are listed. Under these you can see a timestamp and which value the channel had at that time. There is not always data for each time point for each channel.
7 Communication

Under the Communication menu, you can view an overview of what type of information the different recipients will receive, create register lists and edit mail, texts, network and Modbus.

7.1 Network

Network allows you to handle network settings. These settings are for ETHERNET (not LOCAL PC).

If you change the IP address and click Save, you will be logged out from the system. Enter your new IP address up in the address bar in order to log in again.

If you have trouble reaching your UltraBase through the network, you can always connect a PC directly to the LOCAL PC port on the unit in order to change these settings. Use the address https:\192.168.142.1.

7.2 Mail Host

Here you can edit the settings for the unit’s mail host. This setting is required in order to send emails for both alarm and log sendouts.
1. Enter **Host**, **Port** and a valid **email** for the mail host.

2. **Host name** is used to distinguish the different servers in the system.

3. Many email servers require **authentication**. Select **Auto** and enter **Username** and **Password** for the email server (this is something you receive from your Internet service provider).

4. Click **Save**.

   All email recipients are tied to an email server defined in the settings. You can define more than one email server.

### 7.3 Recipients

View and edit all the people registered in the system. You can also add new recipients. This section gives you an overview over which alarm and log sendouts the different recipients will receive.

You can inactivate a recipient with the box next to the recipient’s name. You can also send a test mail.
7.4 Modbus Slave Register

Modbus is a protocol used to communicate between devices. Here you create and edit register lists for Modbus-slave-communication.

Export lists

You can export two lists, one for Register and one for Coil.

1. Click on the top list for each type.
2. Click on Export.
3. Choose format, CSV or Print.

7.5 Modbus Slave Settings

Here you activate and edit the Modbus slave function.

7.6 Modbus TCP Gateway

Here you create rules for the external units placed under **Modbus TCP Gateway** on the page **External units**.
7.7 External devices sendouts

On this page, you create sendouts for external devices. This is a function that periodically sends email with all values for all external devices of a particular type. The function is primarily intended to be used to send meter indications to automatic collection systems, such as invoicing. You can collect information from many meters without having to connect them to channels or logs.

What’s included in the sendout is the external device name, when it was last updated, status and value.

7.8 Portal Update

This is a function that, together with a portal server, such as portal.abelko.se, helps keep track of the unit’s IP address.

1. Enter a **name**.
2. Set how often (**interval**) you want the unit to update its address with the server. If you use a mobile subscription or have a connection that changes the IP address frequently, set a short interval. If you have a connection that does not change the address very often, such as fiber or DSL, set a high interval.

On our portal portal.abelko.se, you can use the units MAC address, view its current IP address and view when the unit was last connected to the server and updated it.

3. When you found your unit (using the units MAC address) save the result page as a bookmark. This gives you a link that is updated with the most recent address as long as the unit is connected to the Internet.

Please note that the portal service only gives you a link to the product, you do not surf through the portal.
7.9 Companion

You can use the companion function to see active alarms, alarm history, overviews and summary pages from many IMSE Ultra devices in the user interface of one Ultra. This enables a good overview of a plant without the user needing to log in to several devices and switching between tabs. To achieve this you configure all devices as companions to one main companion device that can show all information.

A main companion can display information from up to ten other devices. These are configured to connect to the main companion, and give it information access. A user that logs in at the main companion automatically has access to settings in all companions with the same access level.

When companions are configured they exchange cryptographic keys in a pairing procedure. After that, both sides can be sure of the identity of the other side when they henceforth connect automatically. The communication is encrypted and is safe to use over public networks.

An IMSE Ultra device can be simultaneously be a main companion for ten devices, and share information as a companion to ten other devices.

7.9.1 Showing alarms

With active companions, the appearance of the Active alarms and Alarm history pages will change. There will be check boxes for each companion device, including the main device you are logged in to, above the alarm lists. You can use them to filter which devices you want to see alarms from.

There is also a new column in the list, Device Name, to show which device an alarm belongs to. The names used in the table and for the check boxes are the devices settings for Module name. It is set in the menu System / Settings, and is the name showed in top row of the web page.
7.9.2 Home, overviews and summary pages

On the home page there is normally a tree view that enables access to overviews and summary pages. When companions are active, there is an additional tree for each companion device. For each companion there is also a counter for active alarms in that device. These tree menus works just as normal, and are shown as they are shown in the devices they originally come from.
8 System

This chapter will explain the note tool and the file manager. You will also learn how to create backups and update the system.

8.1 Notes

In Notes, you can create notes and see changes made in the system. If you have made changes in the system that you want the other users to know of, you can create a note about it here. A new note is indicated by the mail icon on top of the interface for the other users. Click on the icon to view the note or open the menus System and Notes.

1. Click Create new.

2. Add a note and your name. You can mark the note as High priority. This means that it will be placed at the top of the list with an exclamation mark.

3. When you click save, all users will have a new note to read.

Click on a note in order to read the whole note.

By clicking Mark all as read the letter symbol for new messages will be turned off for the user who is logged on.
8.2 File Manager

All system files are available in the *File manager*. You can copy a file to the PC from the system by clicking on the *Download*-icon.

![File Manager Interface]

Upload files to the system through the predefined folders.

**Images**: upload images for overviews and other pages. The recommended formats are jpeg, png and gif. It is also possible to upload pdf-files or other files that you want to create links to from the summary pages.

Templates: upload application templates that were created in an Ultra. All templates that were created in the device can be found here. You can download the files to your computer by clicking on the file name.

**Backups**: upload application backups containing parameter banks (no user settings, IP address or network settings) from an Ultra. All backups that were created in the device can be found here. You can download the files to your computer by clicking on the file name.

**Sensor definitions**: upload definitions for sensors and actuators.

Component definitions: upload components to use in the graphical programming.

**Symbols**: upload symbols to use when you create overviews.

**Communication definitions**: upload definitions for external units and expansion modules. Usable definitions are available at [script.abelko.se](http://script.abelko.se).
8.3 Users

Create and edit users.

![User Management Interface]

**Change password**

1. Click **Edit**.
2. Enter your new password and click **Save**. If you click **Cancel**, your old password will still be valid.

**Create new user**

1. Click **New user**. Only a configurator can create new users.

![Create User Dialog]

2. Add a **username** and a **password**. Select a **user level** and also an access level (the user level required to edit the user).
3. Click **Save**.

**User levels**

- **Configurator**: has full rights, can configure the whole device, upgrade the software, restore backups, and more.
- **Operator**: may change settings and is intended for those who will take care of the facility.
- **View**: allows the user to view the user interface, but not to change anything.
Password status indicates that the standard password has not been changed. If it has not been changed, a warning triangle is shown, otherwise, the text OK is shown.

Limited view means that the user can only see the following menus:
- Home: Overviews and summaries
- Alarm: Active alarms, Alarm history and Alarm list
- Data: Data logs
- System: Notes and Information
- Help: Manuals and Support

8.4 Settings

Enter the name and the address of the module under the menus System and Settings.
Here you can select a start page, choose between overviews and summaries. You can also reboot the system if needed.
8.5 Backups

Here you can upload, create, export and restore **application backups** and **system backups**.

**Application backups**: an application backup contains all files and settings that determine what the device does. This means all applications in graphical programming, application settings, summaries and overviews, configuration of inputs and outputs, and more.

An application backup does **not** include network settings, logged data, alarm history, and notes. You can use an application backup to reset settings before changes were made or to create a new device with the same function.

**System backups**: a system backup is a complete backup of all data and settings in the device. It also includes network settings, logged data, alarm logs and notes. The system backup is intended to be used to restore a replaced or broken device. It requires considerably more space than an application backup. On a UltraBase30 an external SD-card is used to store system backups. On a UltraBase20 one gigabyte of internal flash is used for a partition to store backups.

When you restore a system backup, the network settings are overwritten. If the backup contains settings that do not match the location of the device, you may lose contact with the device. User settings will be overwritten so user names and passwords may be changed. Logged data, alarm history and notes will also be overwritten. This means that, all information that was generated after the backup was created, will be lost.
8.5.1 Create a new application backup

1. Click Create new.
2. Name the backup and add a short description.
3. Click Create new.

The backup is saved in the system and is added in the list of existing backups that you can delete, export and restore.

All backups are also available under the menu System and File manager in the Backups folder. There you can download an application backup to your computer or upload a previously saved backup to make a copy of an application.

8.5.2 Create a new system backup

To create a system backup on a UltraBase30, you need an SD card in the SD card holder on the front of your.

1. Click Create New. Here you can see how much free space is left on the SD card. Keep in mind that it may take a while to create a system backup. In a hard working device it may take more than an hour.
2. Click Create New.

The backup is saved on the SD card and is added in the list of existing backups that you can delete, export and restore.

8.5.3 Create an automatic system backup to SD card

An Ultra can be set up to periodically create a system backup. On a UltraBase30 this requires an SD-card.

1. Specify how often the backup should be created. Keep in mind that it may take a while to create a system backup. In a hard working device it may take more than an hour.
2. Click Save.

To make space for new backups the oldest automatically created backups will be deleted when necessary. If not enough space can be generated, or there is no SD-card, no backup will be generated.

8.5.4 Front panel buttons for SD-card on UltraBase30
At the front of an UltraBase30, there are two buttons to interact with the SD-card without using a PC. You can create and restore system backups, and update firmware form a SD.card using these buttons.

Note! If someone else is working on the device through the interface, the light above the SD card will flash green. Do not touch the SD card or the backup buttons during this process since it may interrupt their work.

Create a system backup with the buttons on the front
1. To create a system backup of the systems data to the SD card, hold the BACKUP button until the light above the SD-card starts to flash green.
2. The light above the SD-card will flash green during the whole process.
3. When the process is complete, the light will shine green for 5 seconds. Now the backup is finished.

If an error should occur, the light will flash red for 15 minutes. A file will be transferred to the SD card with information concerning the error (as long as the card is not write-protected).

Note! SD-cards are not recommended for long term data storage. It is safer to transfer the backup file to a computer or similar.

Load a system backup with the buttons on the front
You can load a system backup into the system. The backup is usable when you, for example, want to replace an unit and need an exact copy.
1. To load a system backup, hold the buttons LOAD + BACKUP until the light above the SD-card starts to flash green.
2. When the process is completed, the light will shine green for 5 seconds. Now the full backup is done.

If an error should occur, the light will flash red for 15 minutes. A file will be transferred to the SD card with information about the error (as long as the card is not write-protected).

If there is only one backup file on SD-card (in the file system root) it will be restored. If there are automatically generated backups the latest backup will be
restored.

**Execution of a load-file from SD-card (for example an update)**

The file must be of type .load and may contain a software upgrades, parameter bank scripts and more. A .load file is created by Abelko on request.

1. To run a .load file, hold the **LOAD** button until the LED flashes green.
2. Depending on execution, the unit can be restarted. The LEDs will then go out for a few minutes.
3. When the process is complete, the light will shine green for 5 seconds. Now it’s finished.

If an error should occur, the light will flash red for **15 minutes**. A file will be transferred to the SD card with information about the error (as long as the card is not write-protected).
8.6 Update

To update using the interface, go to the Update menu under the System menu.

1. Select a firmware file.
2. Click Update. (Note: you can also update an UltraBase30 using an SD-card.)
3. You will soon see a new window with update information.
4. When the system has updated everything, you will be able to log in again.

8.7 Operator panel

Under the menu System and Operator panel, you can see status of the operator panel (if anyone is installed), edit password and language, and also customize the menus of the operator panel.

8.8 Information

Under the menu System, Information, you can view information about the system and its operation.
9 Help

9.1 Manual
Here you can download manuals for the Ultra. The manuals are also available at www.abelko.se

9.2 Support
Here you can find contact information for support.
10 The unit UltraBase30

1. **ETHERNET** is used to connect to the network.
2. Place for SD card.
3. **Ex Out** is used to connect to expansions modules.
4. **LOCAL PC** is used only for direct connection to a PC with the address https:\192.168.142.1.
5. **POWER** shines green when the unit is powered.
6. **STATUS** shines green when the unit is running. It may take a little while before **STATUS** lights up when the unit is powered. If it does not light up, inputs and outputs are not working.
7. **Ex** shines green when all the expansion modules that should be connected are running.
8. **ALARM** has one red LED for **A-alarms** and one yellow LED for **B-alarms**.
9. **BACKUP** is used to create a full backup of the system to the SD card.
10. **LOAD** is used to execute a .load file stored on the SD card. There may only be one .load file on the card. A .load file can contain a software upgrade or other commands that will be executed.
11. **LOAD + BACKUP** is pressed simultaneously to restore the latest backup stored on the SD-card.
The unit UltraBase20

1. **ETHERNET** is used to connect to the network.
2. **ANALOG OUT** manual override. Turn right to activate manual override and increase the output voltage. When the corresponding yellow LED is lit manual override is active. Turn fully left to deactivate.
3. **Ex OUT** is used to connect to expansions modules.
4. **DIGITAL OUT** switch for manual override. Set to AUTO for normal operation. A yellow LED indicates a closed relay output.
5. **LOCAL PC** is used only for direct connection to a PC with address https:\192.168.142.1.
6. **POWER** shines green when the unit is powered.
7. **STATUS** shines green when the unit is running. It may take a little while before **STATUS** lights up when the unit is powered. If it does not light up, inputs and outputs are not working. If the status LED blinks, there is something wrong, go to menu Active Alarm for more information about the error.
8. **Ex** shines green when all the expansion modules that should be connected are running. If it blinks, a module is missing.
9. **ALARM** has one red LED for **A-alarms** and one yellow LED for **B-alarms**. The LEDs blink if there are alarms that need to be acknowledged.
10. **VDC** is used to power the Ultra with 24 V stabilized DC.
11. **24VAC** is used to power the Ultra with 24 V AC power. Ex OUT is not powered on AC power.
12 Term Definitions

Acknowledgment: a confirmation that you have received and noticed an alarm.

Alarm: an alarm is always created based on a channel and monitors the channel’s value according to set conditions and limits. A-alarm has a red indicator and B-alarm has a yellow indicator. In addition to these, you can choose to give an alarm a priority from C-Z and they have a blue indication.

Alarm groups: manages alarm sendouts and makes it possible to create features for multiple alarms at the same time.

Application: builds the functions in the Ultra. An application contains graphical programming or script and resources such as channels, parameters, curves, all of which are visible in the graphical programming. Overviews and summaries are part of an application. An application can contain other applications, which are subapplications. In the graphical programming, an application is represented as a box with inputs and outputs. You can create an application template, which can be useful if you want to create similar applications.

Application backup: a backup with application templates.

Channels: handles all the variable data in the unit. Channels are viewed in overviews and summaries and are logged and monitored by alarms. Channels are used for logs and alarm.

Coils: this is a type of a Modbus register. One coil is a 1 bit word.

Components: primitive function blocks in the graphical programming. Connect these with other resources in order to create programs. They exist only in the graphical programming and cannot be reached from other parts of the system.

Curves: a table that is presented as a configurable curve. Curves are used by controllers to do things like converting an outdoor temperature into a flow temperature.

Events/Errors: a type of alarm that is created by the system. It notifies you when something is wrong in the system that may prevent the unit from functioning.

Expansion modules: used to add more inputs and outputs with different features and communicates automatically with the Ultra. You can connect an expansion module and the system will recognize it and its features.

External units: different types of units that an Ultra can exchange information with, as a master. They can be used for more inputs/outputs, meters and more.
For example, Modbus and M-bus units can be connected as external units.

**File manager**: tool that uploads files to the Ultra. There are predefined folders including sensor definitions, communication definitions and backups.

**Graphical programming**: a tool that creates graphical programs. It enables you to build up an entire system with all of its functions based on the inputs and outputs of the unit.

**Holiday catalogue**: a function usable when working with time schedules. This takes into account weekdays that count as Saturdays and Sundays due to holidays.

**I/O-channels**: software representations of real inputs and outputs, and allows you to set scale factors, offset and conversion functions for sensors and actuators.

**Logs**: store values from selected channels with set intervals. Logged data can be displayed as a plot or exported as a table.

**Messages**: created by script and is stored in the alarm history. An example of a message is that the system has changed into summer operation.

**Modbus**: a protocol that is used to communicate between different units. Values are ordered in numbered registers, which can be read and written by a master.

**Node tree**: contains all the elements in the system arranged in a hierarchical order. If you open an application, you can view what’s in it, and further, if you fold out a subapplication, you can view what’s in the subapplication.

**Overview**: provides a quick overview of the plant. You can add present values, alarms and more to this picture. It also allows easy resource editing.

**Parameters**: store values that are named and set by the user.

**Periodic log**: this is a log that measures with certain intervals (1 second, 2 seconds, 15 seconds, 1 minute, 5 minutes, 15 minutes, 1 hour or 12 hours). These can measure momentary values, mean value, max value, min value or a sum of a certain period.

**Register**: a type of Modbus register; one register is a 16 bits word.

**Sensors and actuators**: physical units that are connected to inputs and outputs.

**Smart log**: a log that compresses the data that comes in. Second values are converted to minute values and so on. This allows you to store data for a longer
period.

**Summary:** a view with selected channels, parameters, alarms, alarm groups, curves, time schedules and databases. Here you can see their values and change their settings.

**System backup (a full backup):** a backup containing all of the system’s settings and databases, including network settings and users.

**Time schedules:** used to set when something should be active or inactive. You can add rules that can be repeated weekly, monthly, early or with a free adjustable interval. You can also select not to repeat the rule at all or only set for a specific date.

**Universal input:** inputs that measure different kind of quantities (resistance, current and voltage).

**Virtual ultra:** a simulated unit. Can be used if you want to preconfigure a system.