IMSE
Ultra

User manual

UltraBase30

Manual version 1.03

Abelko INNOVATION

www.abelko.se

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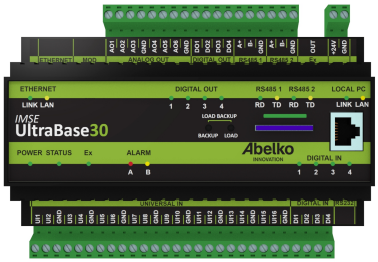
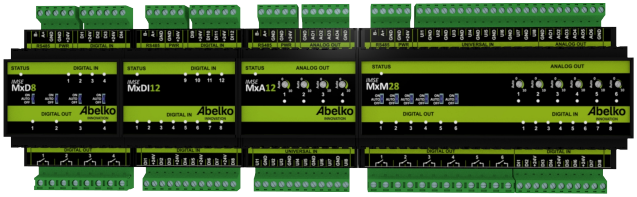
1 Introduction

Welcome to IMSE Ultra. This series of products consists of the control unit IMSE UltraBase30 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 1.02, 2015-02-27: First draft of this manual.

Version 1.03, 2015-09-10: Second draft of this manual.

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.ultra.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 Web Interface

The start page can either be a summary or an overview, which are created by the one who configured the system. Summaries and overviews will make it quick and easy to read and set valueas. If there are no summaries or overviews, the list of active alarms will function as the start page. You can set the start page under the menu **System**, **Settings**.

There are two buttons 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. By clicking on these, you will be directed to more detailed information.

To understand how all the inputs, outputs etc. belong together, you may view the **node tree** (located to the left). The node tree contains all the elements in the system, arranged in hierarchical order. If you open an application, you can see what is in it, and further, if you fold out a subapplication, you can see what is in the subapplication.

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.

2.1 Menues

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**

- **Portal update**

Configuration

- Graphical programming
- Summaries
- Overviews

- In- & outputs
- External units
- Web shares

- Applications & resources

- Backup applications

System

- **Notes**
- **File manager**
- **Users**
- **Settings**
- **Backups & update**

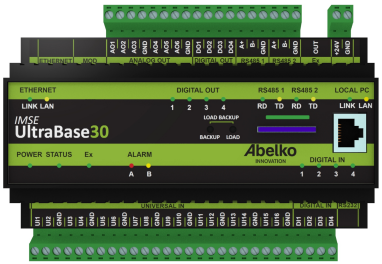
- **Information**

Help

- **Manuals**
- **Support**

2.2 UltraBase30

IMSE UltraBase30 is a web based control unit with a total of 30 inputs and outputs.



LOCAL PC (right of the front) is used only for direct connection to a PC. This has the address **https:\\192.168.142.1**.

The Local PC port has a DHCP server. It provides a connected PC network setting, which gives direct access to web pages without manually changing the network settings. **This means that you should never connect this**

port to a fixed network. The port is slower than the one labeled Ethernet, and should only be used to configure the regular network connection.

These have two LEDs each. **LINK** shines yellow when the Ultra 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 chapter **Backup & updates** 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.

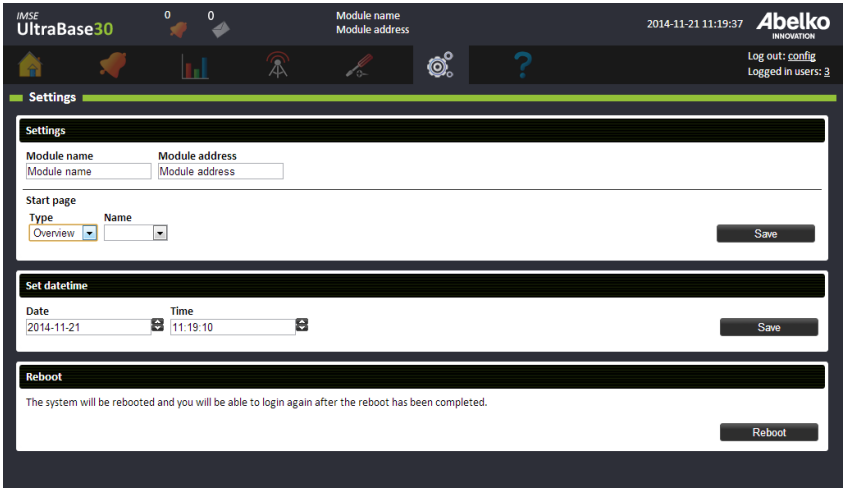
An overview is created with the overview tool (located under the menu **Configuration**, **Overviews**). The overview consists of values, symbols and graphs which show current values (updated every 3rd second).

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.

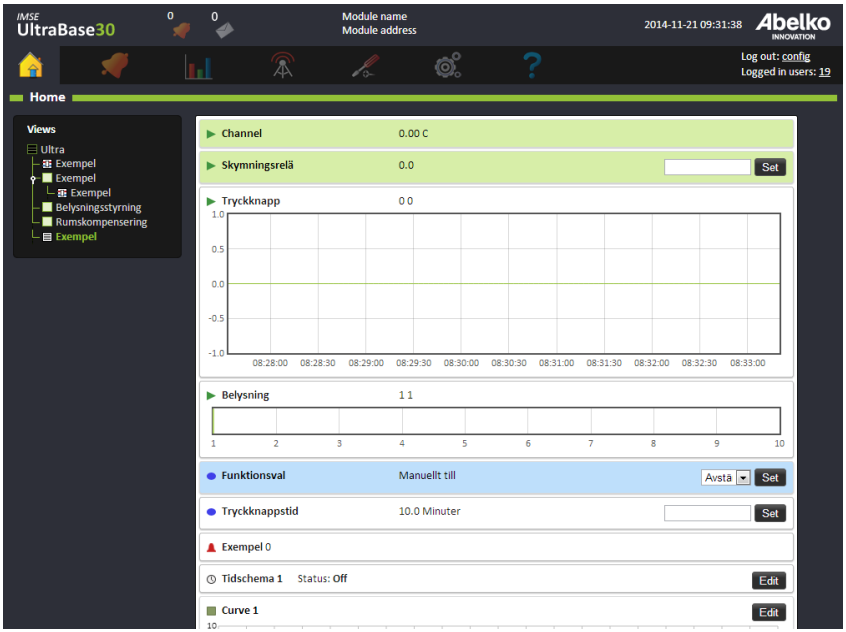
Click on a resource to change settings, see alarm limits and more depending on resource type.

Overviews and summaries are located to the left on the start page. If you want to change the **start page** go to the menu **System**, **Settings**.



4 Summaries

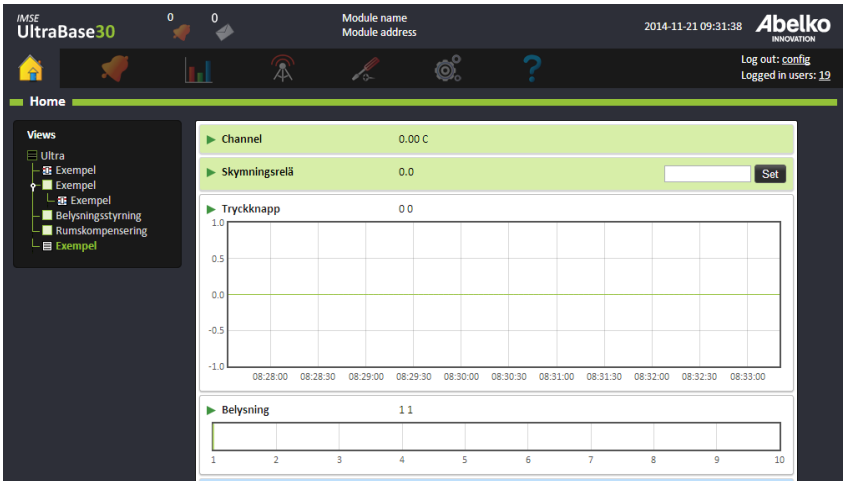
Summaries are menu pages with added resources to see and edit, such as channels, parameters, alarms and more. Summaries are created by the person who configured the system.



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 Timeschedules

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.

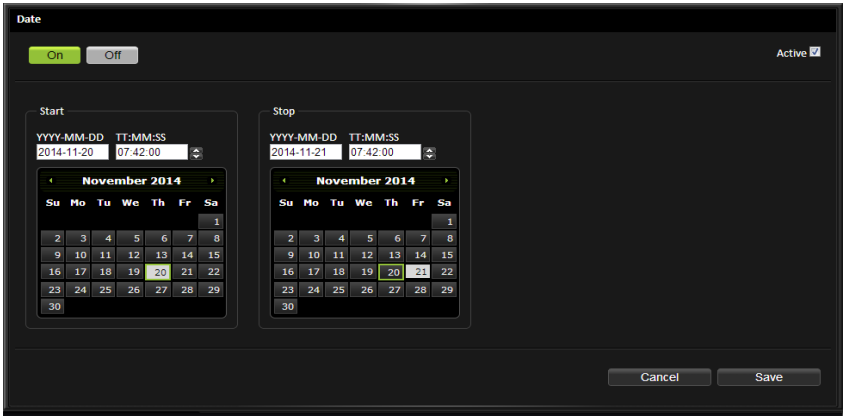
- If the rule **enables** objects and is currently **active**, the light shines **green**.
- If the rule **disables** objects and is currently **active**, the light shines **red**.
- If the rule is **not active**, it will be **grey** regardless if it enables or disables objects.

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.

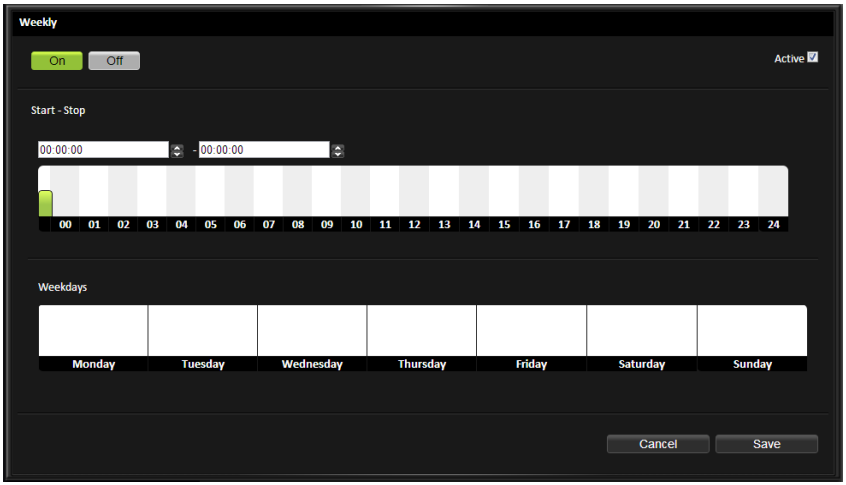
The rule will automatically be set to **Active**. You can **Inactivate** it by using the checkbox up in the corner. If you click **Cancel**, you will leave you the page without saving the changes you have made.

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.

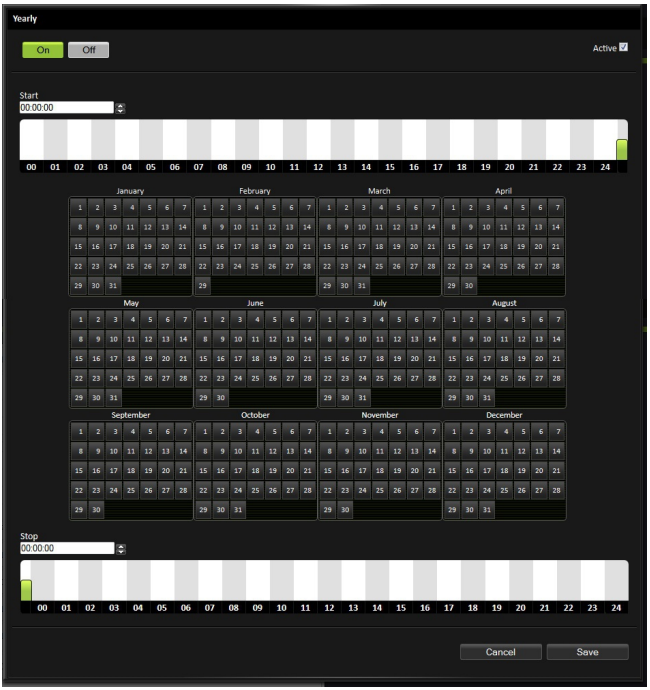
3. Mark the date in the calendar.

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.

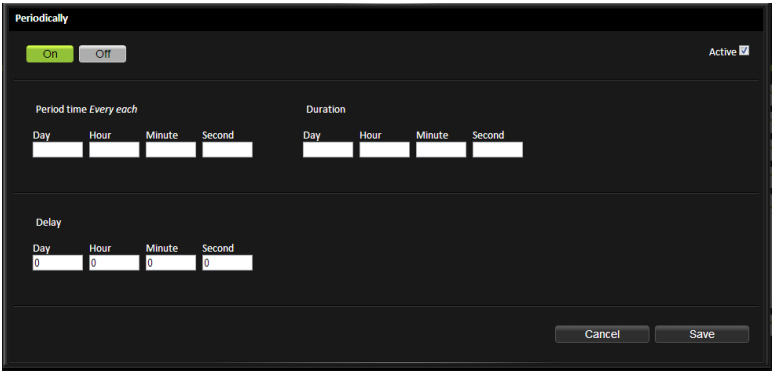
3. Mark the date in the calendar.

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**.

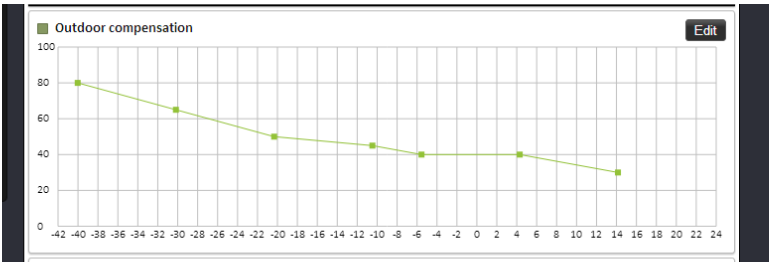
This means that it will be active every third day during 05:00 and 07:00.

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.

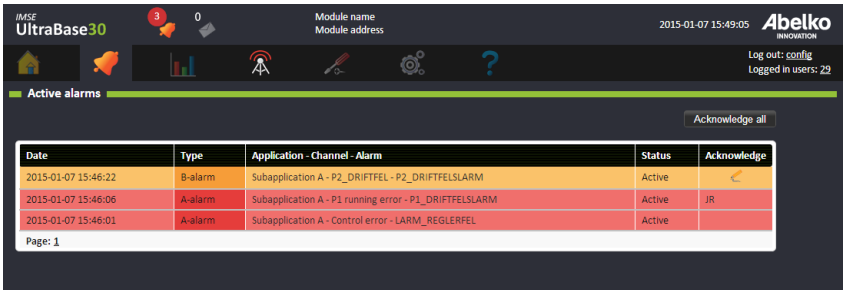
Click **Edit** to change settings. You can edit the curve directly in the graph or use the table under the graph. Add a new data point by double-clicking in the graph. A double-click on a data point will erase it.

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**.

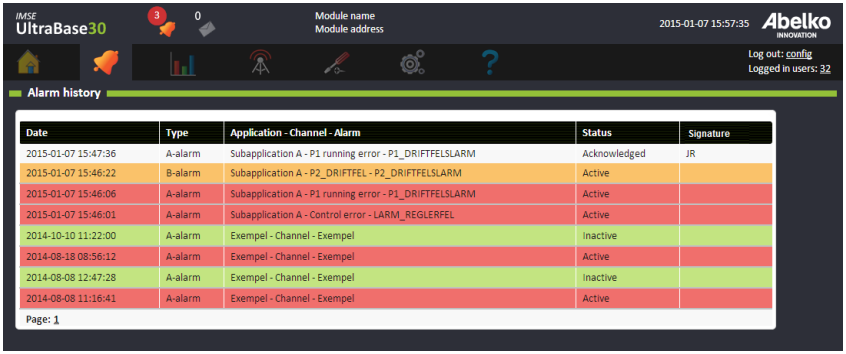
The number of active alarms will also be indicated on the top of the web interface.

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.

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 (abs (value) > 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 (abs (value) < 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 (limit 1 < value < limit 2)**: the alarm is activated when the value is between the values entered under Limit 1 and Limit 2.
- **Outside (limit 1 < value or value > 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:

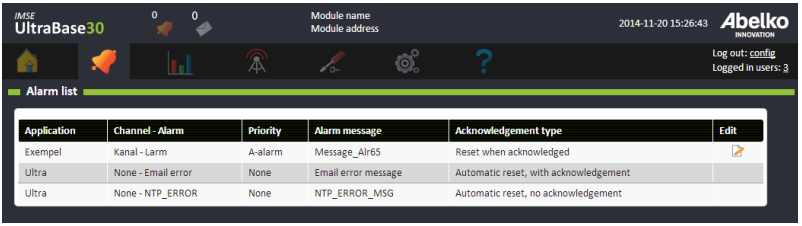
- **Reset when acknowledged**: the alarm remains active until a user acknowledges it. If the error remains after the alarm is acknowledged, it will remain active until the error is cleared, including the delay and hysteresis.
- **Automatic reset, with acknowledgment**: the alarm reset itself when

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.

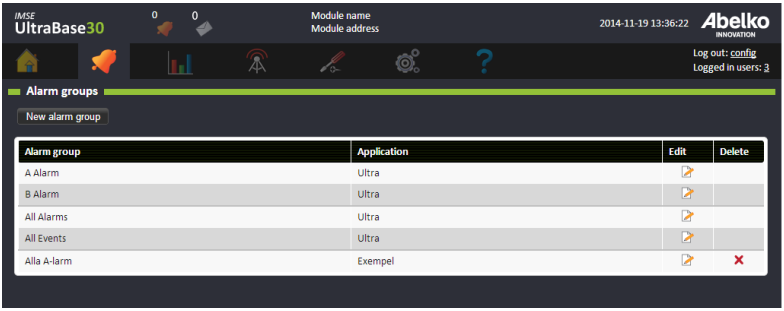
5.4 Alarm List

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).



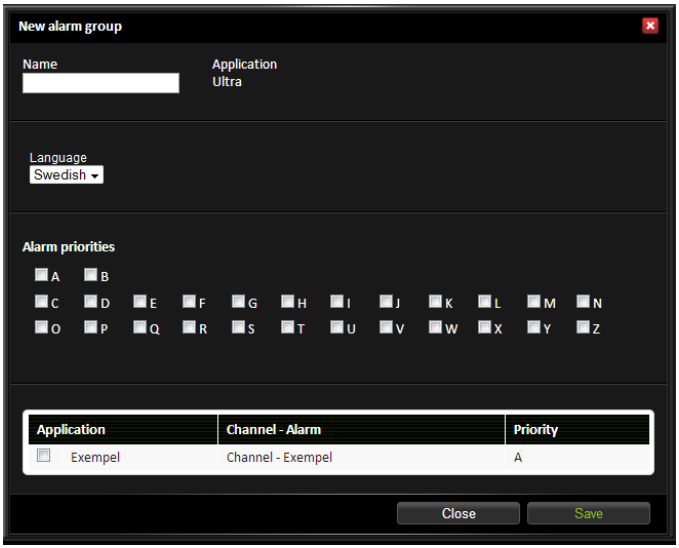
Create a new alarm group

1. Click **New alarm group**.

2. Name the alarm group.

3. Select which alarms you want in the alarm group by clicking the box next to the alarms.

4. 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.

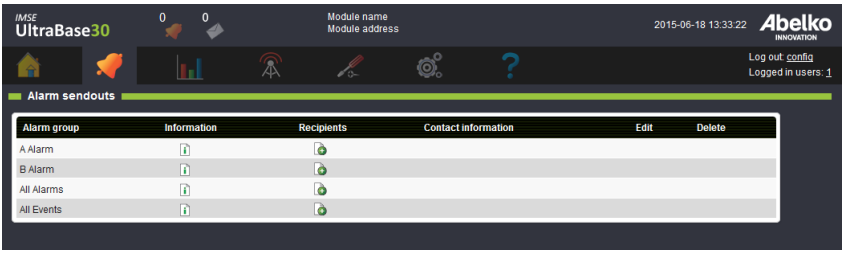


5. Click **Save**.

Text and email settings for sendouts are configured under the menu **Alarm**, **Alarm sendouts**.

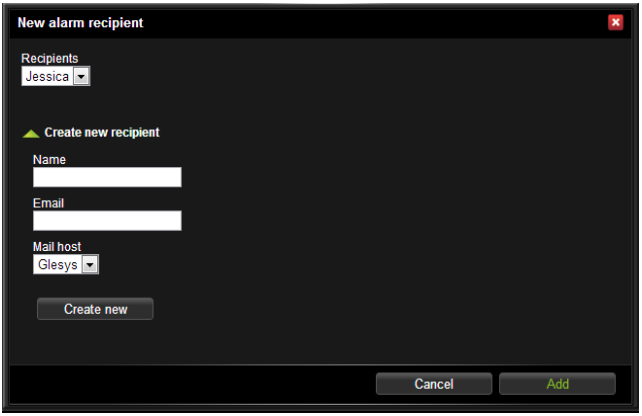
5.6 Alarm Sendouts

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**.

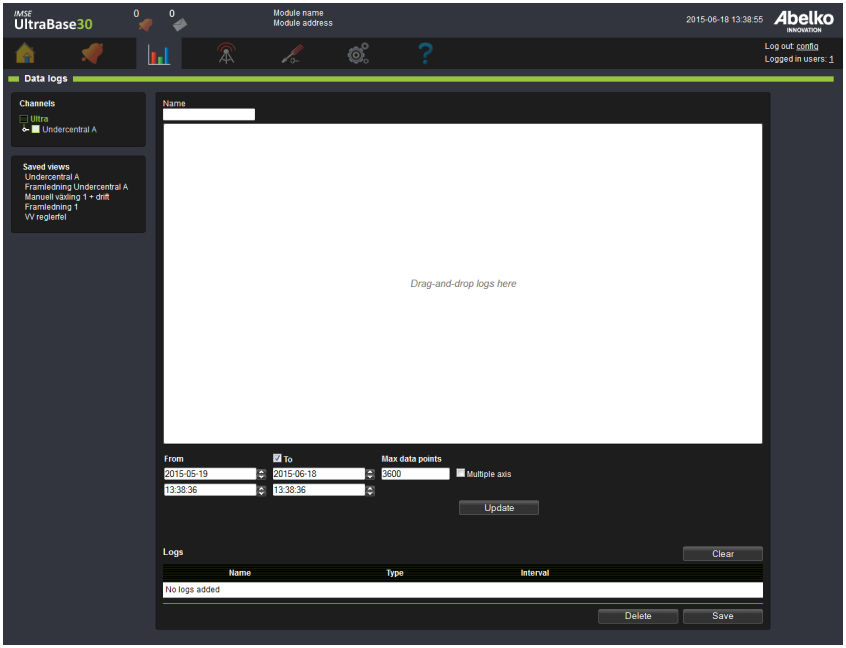
6 Data

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.

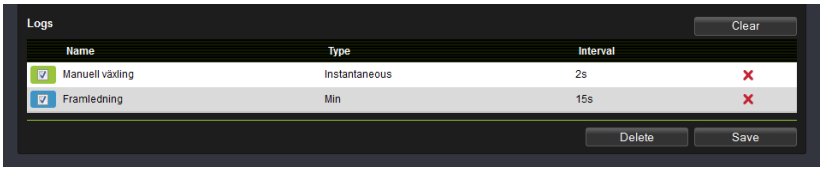
Here you can group logs and save log views.



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

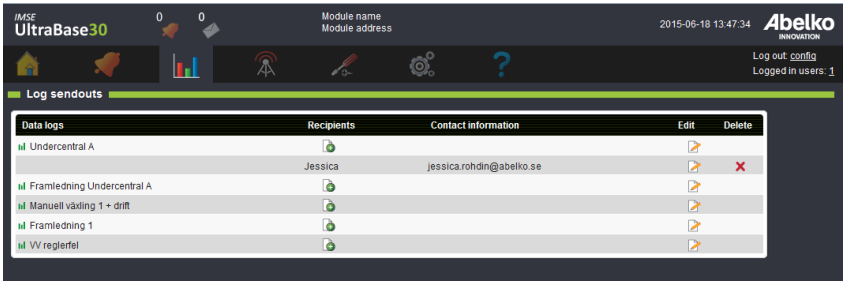
Smart log is a log that compresses the data that comes in. Second values are converted to minute values, and so on. This allows you to store data for a longer period

6.1.2 Periodic Log

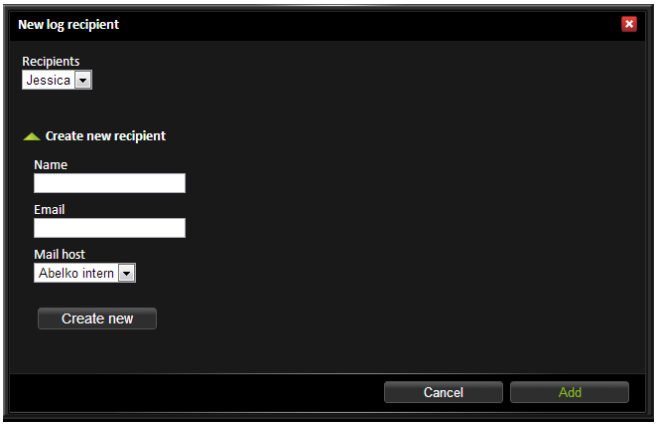
Periodic logs allow you to measure momentary values, which is an instantaneous value. You can monitor statistics by measuring **mean value**, **max value**, **min value** or a **sum of a certain period**. Then select the **range** you are interested in (1 second, 2 seconds, 15 seconds, 1 minute, 5 minutes, 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.

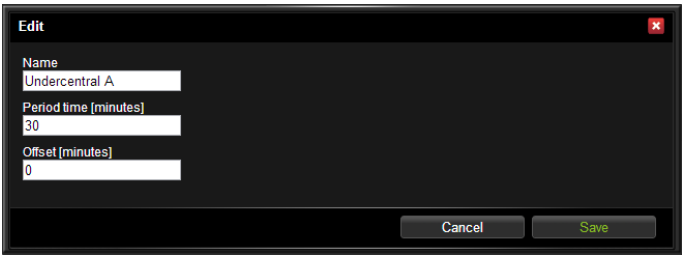


1. Add a new recipient next to the log you want to export.



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.

```
DUC Apartment 4, Abelko house, Luleå
00-30-5E-0B-01-8C
1, Database log
Index   1       2       3       4
Channel number  77      10      11      12
Channel name    GT20 [mean]     GT21 [mean]     GT22 [mean]     GT23 [mean]
Channel unit    °C      °C      °C      °C      °C
2015-07-04 14:54:00     20.881987       20.620169       20.076967       18.460488
2015-07-04 14:55:00     20.881661       20.620006       20.081535       18.458369
2015-07-04 14:56:00     20.881008       20.622453       20.079088       18.459184
2015-07-04 14:57:00     20.883946       20.620658       20.077946       18.458695
2015-07-04 14:58:00     20.882803       20.622779       20.078761       18.459347
2015-07-04 14:59:00     20.885578       20.623106       20.078598       18.460488
2015-07-04 15:00:00     20.885741       20.623758       20.07974        18.459347
2015-07-04 15:01:00     20.887047       20.626043       20.082025       18.460162
2015-07-04 15:02:00     20.887863       20.624574       20.081698       18.460162
2015-07-04 15:03:00     20.889822       20.626859       20.083167       18.460488
2015-07-04 15:04:00     20.891127       20.626206       20.080882       18.45951
2015-07-04 15:05:00     20.890801       20.627185       20.081698       18.461139
2015-07-04 15:06:00     20.890474       20.627185       20.079577       18.459347
2015-07-04 15:07:00     20.891454       20.627185       20.078761       18.458858
2015-07-04 15:08:00     20.890474       20.627185       20.079903       18.459999
2015-07-04 15:09:00     20.890801       20.62849        20.080719       18.459184
2015-07-04 15:10:00     20.89178        20.628164       20.079251       18.456088
2015-07-04 15:11:00     20.891454       20.628817       20.080393       18.457555
2015-07-04 15:12:00     20.893412       20.629796       20.081698       18.457555
2015-07-04 15:13:00     20.895371       20.630612       20.082514       18.458369
2015-07-04 15:14:00     20.895371       20.630938       20.083983       18.458858
```

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

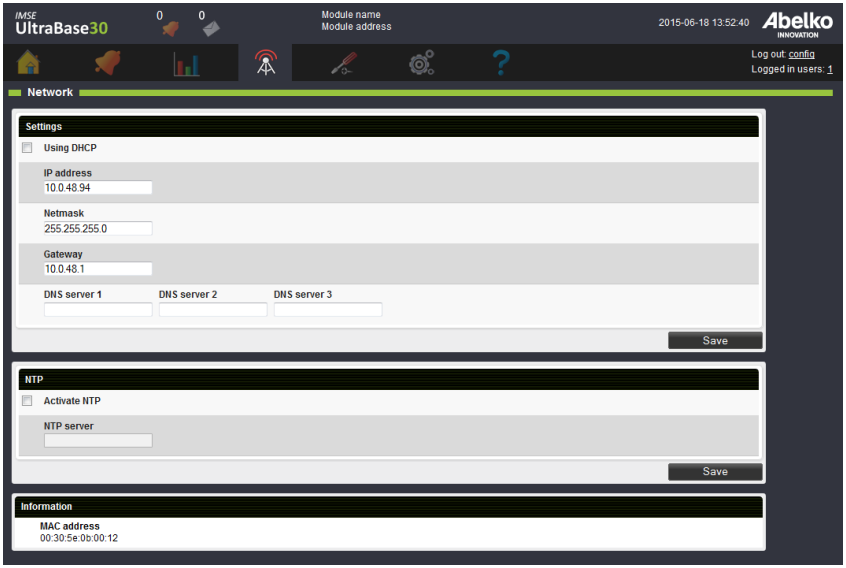
below that, all channel numbers and channel names with units are listed. Under these you can see a timestamp and which value the channel had at that time. There is not always data for each time point for each channel.

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).



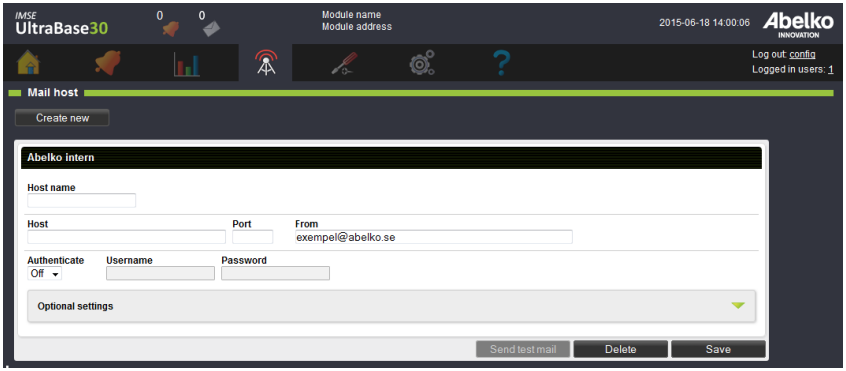
If you change the IP address and click **Save**, you will be logged out from the system. Enter your new IP address up in the address bar in order to log in again.

If you have trouble reaching your UltraBase30 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.

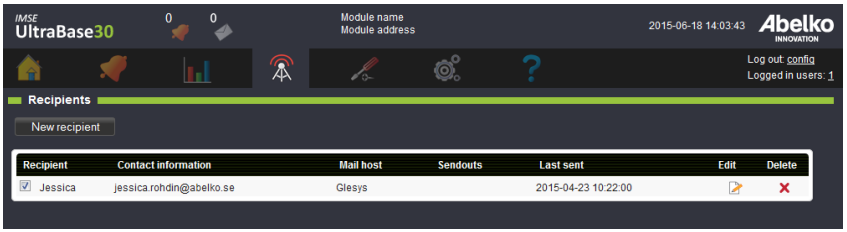
3. Many email servers require **authentication**. Select **Auto** and enter **Username** and **Password** for the email server (this is something you receive from your Internet service provider).

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.

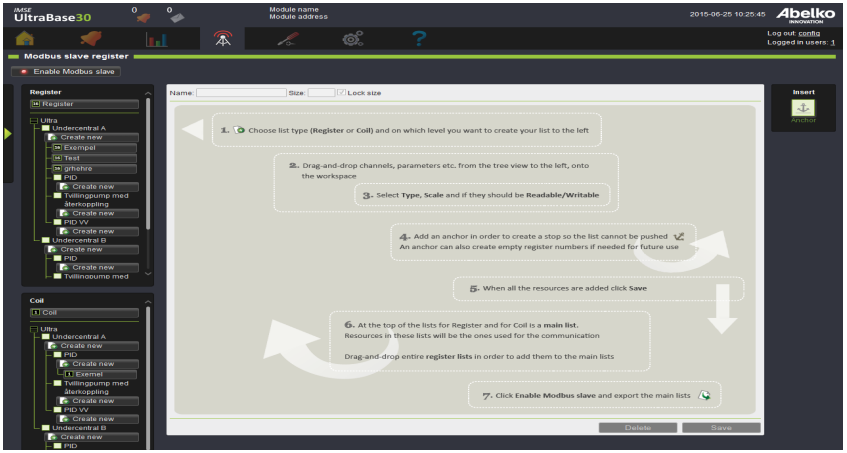


You can inactivate a recipient with the box next to the recipient's name.

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

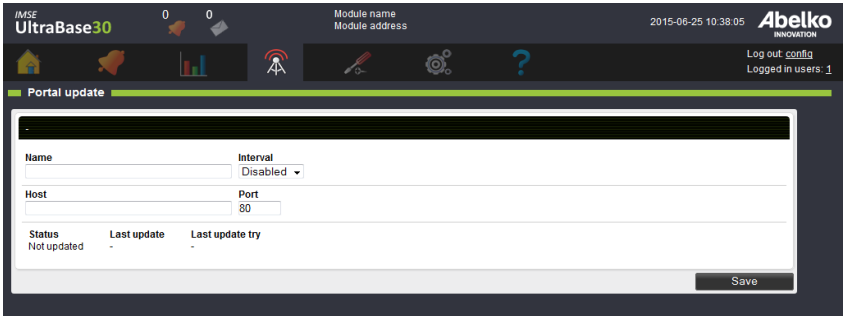
Here you activate and edit the Modbus slave function.

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 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.

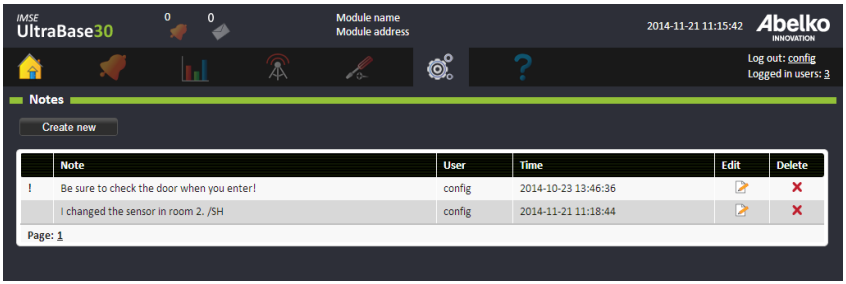
Please note that the portal service only gives you a link to the product, you do not surf through the portal.

8 System

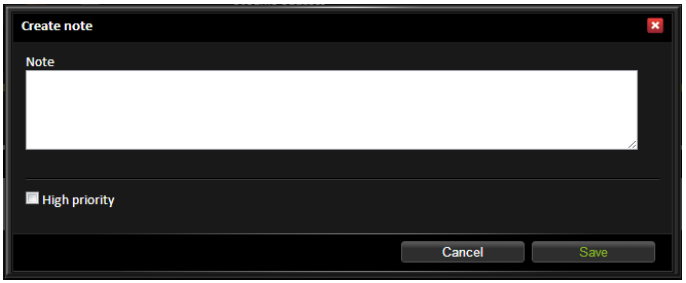
This chapter will explain the note tool and the file manager. You will also learn how to create backups and update the system.

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**.



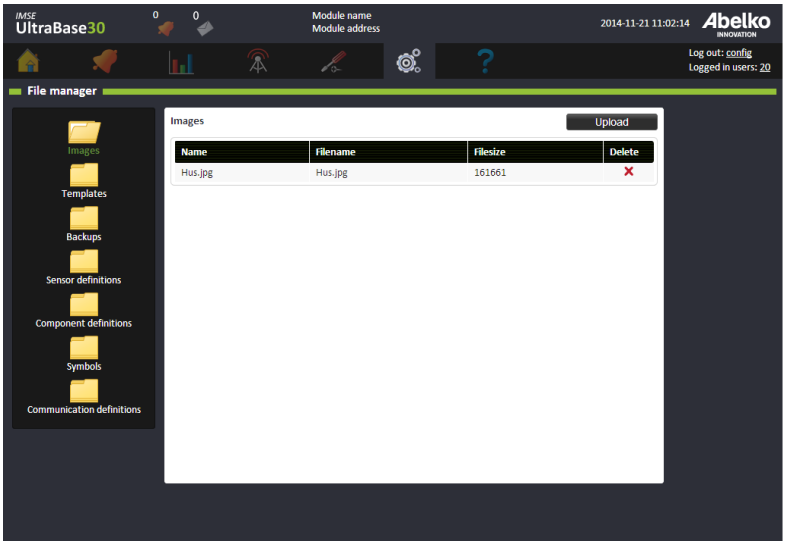
2. Add a note and your name. You can mark the note as **High priority**. This means that it will be placed at the top of the list with an exclamation mark.

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.

8.2 File Manager

All system files, including SD card files, are available in the **File manager**. You can copy a file to the PC or the SD card from the system.



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.

Templates: upload application templates that were created in an Ultra.

Backups: upload application backups containing parameter banks (no user settings, IP address or network settings) from an Ultra.

Sensor definitions: upload definitions for sensors and actuators.

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

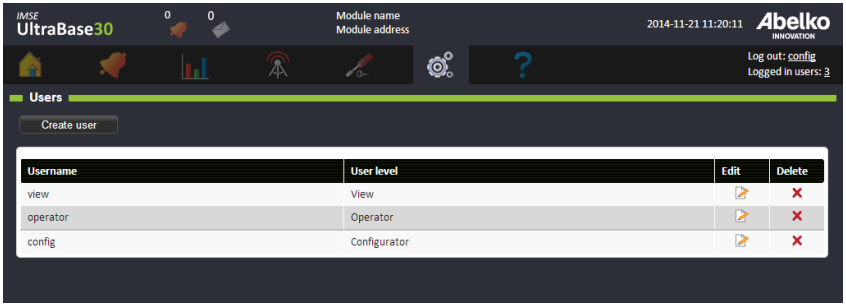
Symbols: upload symbols to use when you create overviews.

Communication definitions: upload definitions for external units and

expansion modules. You can use various communication definitions and Abelkos own software, M-bus device creator. Usable definitions are available at script.abelko.se.

8.3 Users

Create and edit users.



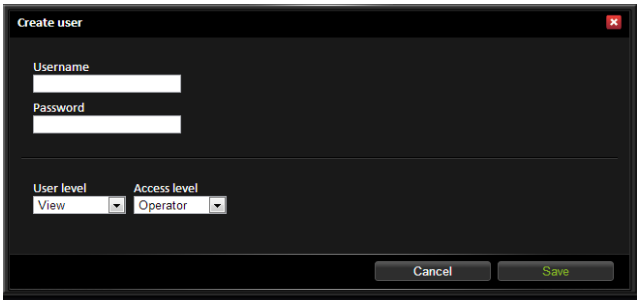
Change password

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.



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

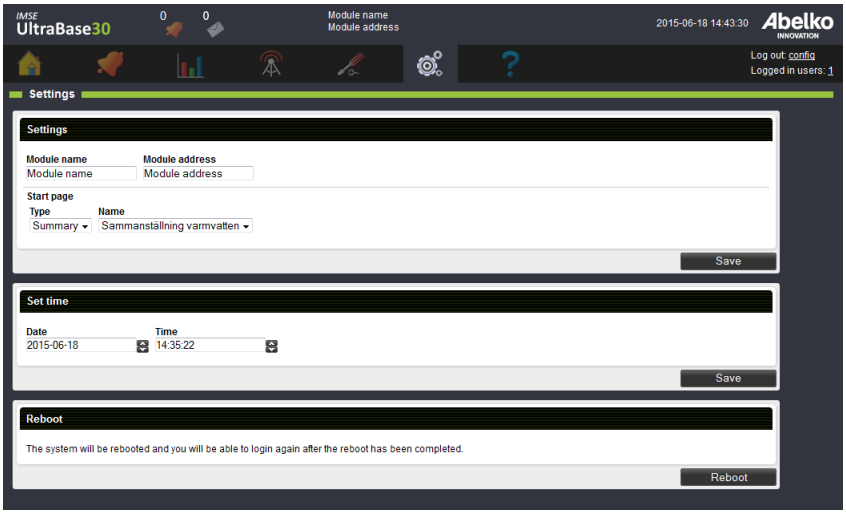
Configurator: has access to all the settings of the system.

Operator: adjusts set points, acknowledge alarms and more, but does not create new applications or upgrade the device.

View: cannot change settings.

8.4 Settings

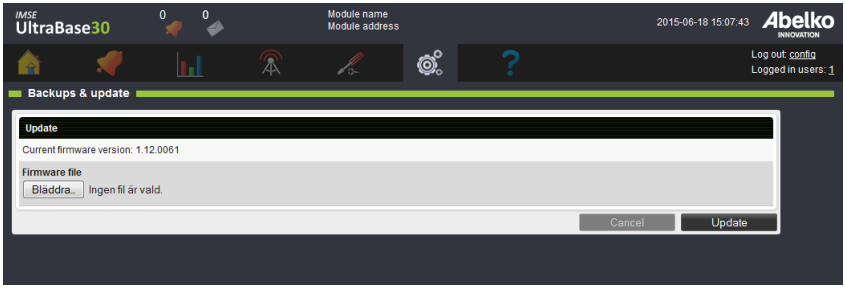
Enter the name and the address of the module under the menus **System** and **Settings**.



You can also select a start page. Choose between overviews and start pages.

8.5 Backup and Updates

To update using the interface, go to the **Backups & update menu** under the **System** menu.



1. Select a firmware file.

2. Click **Update**. **Note** that you can also create a backup through the physical unit.

3. You will soon see a new window with update information.

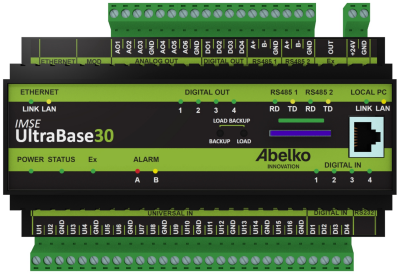
4. When the system has updated everything, you will be able to **log in** again.

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

8.5.1 Via the Unit UltraBase30

At the front of an UltraBase30, there is space for a SD card.

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 full backup

1. To create a full backup of the systems data (settings including network settings and databases with logs - a copy of the unit) to the SD card, hold the **BACKUP** button for **3 seconds**.

2. The light above the SD-card will flash green during the 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 data to a computer or similar.

File transfer

To transfer files, the file should be a zip file and can contain sequence files, clone backup (a backup without databases), software upgrades, parameter bank scripts etc.

1. To transfer a file, hold the **LOAD** button for **3 seconds**.

2. When the process is complete, the light will shine green for **5 seconds**. Now the file is transferred.

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).

Load a full backup

You can load a full backup into the system (settings including network settings and databases with logs). The backup is usable when you, for example, want to replace an unit and need an exact copy.

1. To load a full backup, hold the buttons **BACKUP + LOAD** for **3 seconds**.

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).

8.6 Information

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

9 Help

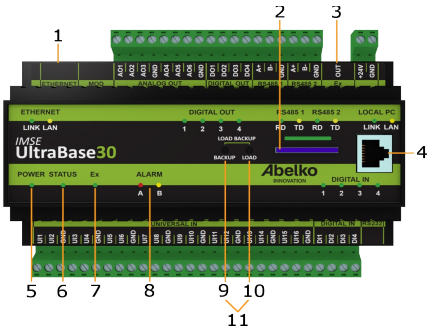
9.1 Manual

Here you can download manuals for the Ultra. The manuals are also available at **www.ultra.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 load a file from the SD card into the unit. The file must be a zip file that can contain sequence files, clone backup (a backup without data bases), software updates, script of the parameter bank and more.
11. **LOAD + BACKUP** is used to load and run a full backup from the SD card to the unit.

11 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.

Full backup: a backup containing all of the system's settings and databases, including network settings and users.

Graphical programming: a tool that creates graphical programs. It enables ypu tp 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.

Spider view: an overview where you can edit all of the unit's inputs and outputs.

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.

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.