

ORM Admin User Guide

ORM Admin User Guide

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Chapter 1. Introduction

ORM Admin is an onsite configuration tool for ORM CM. Its main purpose is to configure, manage and test ORM CM settings locally, by connecting a laptop to the ORM CM.

In short, there are two ways to make the ORM CM settings by using ORM Admin:

1. You can use the settings wizard to make ORM Admin settings in a pre-defined step-by-step procedure.

For more information on the settings wizard, see Section 2.1, “Start”.

2. You can use the menus and submenus in ORM Admin to make the settings in any desired order. The menus and submenus are explained in the various chapters of this manual.

Tip

If you would like to run your own application software on ORM CM, refer to the ORM CM Programmer's Guide.

1.1. User Interface

When you login to ORM Admin, the start screen will open. The ORM Admin start screen is depicted below:

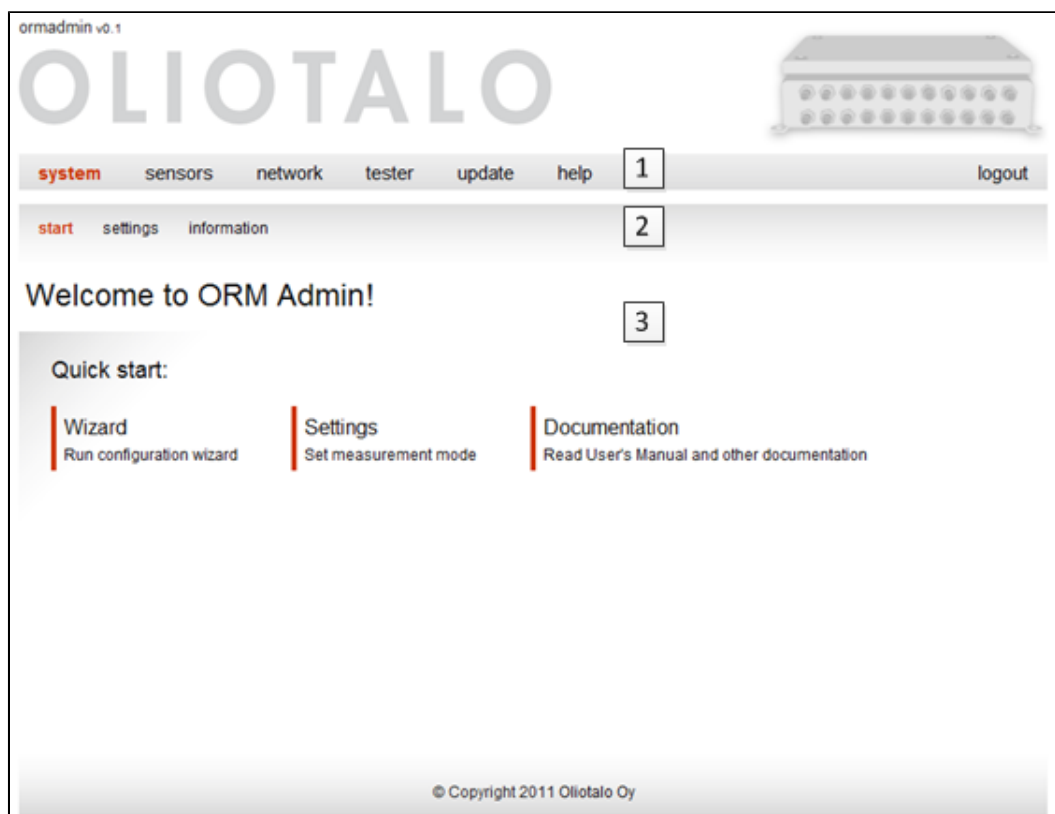


Figure 1.1. ORM Admin Start Screen

The ORM Admin start screen consists of three areas (also numbered in the figure above) as follows:

1. The *Main menu* contains the ORM Admin menu items. For example, you can access the ORM Admin start screen through the system→start menu selection.
2. The *Submenu* contains submenu items for the ORM Admin main menu items. For example, the **system** main menu contains the following submenu items: **start**, **settings** and **information**.

3. The *Application area* contains the actual contents of the selected menu and submenu item. For example, the system→start application area contains three quick start applications described in more detail in Section 2.1, “Start”.



Note

If you use ORM Admin to make changes to the ORM CM configuration, the changes will be synchronized with the dOGMA on the server, and vice versa, provided that:

- ORM Admin is operating in the online mode.
- ORM CM is connected to the dOGMA Remote Condition Monitoring System server.
- dOGMA measurement software is enabled on ORM CM (system→settings).

1.2. System Status Messages

When you make various actions in ORM Admin, the system displays different colour-coded system status messages relating to the results of the action that you have carried out. The colour codes are:

- *Green* - The green colour indicates that the action was completed successfully. A status message is included in the notification area.
- *Orange* - The orange colour indicates neither a success nor failure. A general informative message is included in the notification area.
- *Red* - The red colour indicates that the action failed. A status message indicating the possible reason for the failure is included in the notification area.

Chapter 2. System

This chapter describes the pages under the **system** menu.

2.1. Start

The **start** page contains three ORM Admin quick start applications, which are provided to make the configuration of the ORM CM easier and faster.

The **start** page is depicted in Figure 1.1, “ORM Admin Start Screen”.

The quick start applications are:

- **Wizard** - You can use the settings wizard to perform ORM Admin settings in a guided step-by-step process. If you use the wizard to make the settings, you can modify the settings later through the menus and submenus in ORM Admin.

The wizard walks you through the following steps:

1. System settings. For more information on this step, see Section 2.2, “Settings”.
 2. Analog sensor settings. For more information on this step, see Section 3.1, “Analog”.
 3. Network settings. For more information on this step, see Section 4.1, “General”.
- **dOGMA** - You can set the dOGMA measurement mode through this quick start application. Practically speaking, this application is used to switch the dOGMA measurement software on or off. For more information on this application, see Section 2.2, “Settings”.
 - **Documentation** - You can download this manual in the PDF format through this quick start application.

2.2. Settings

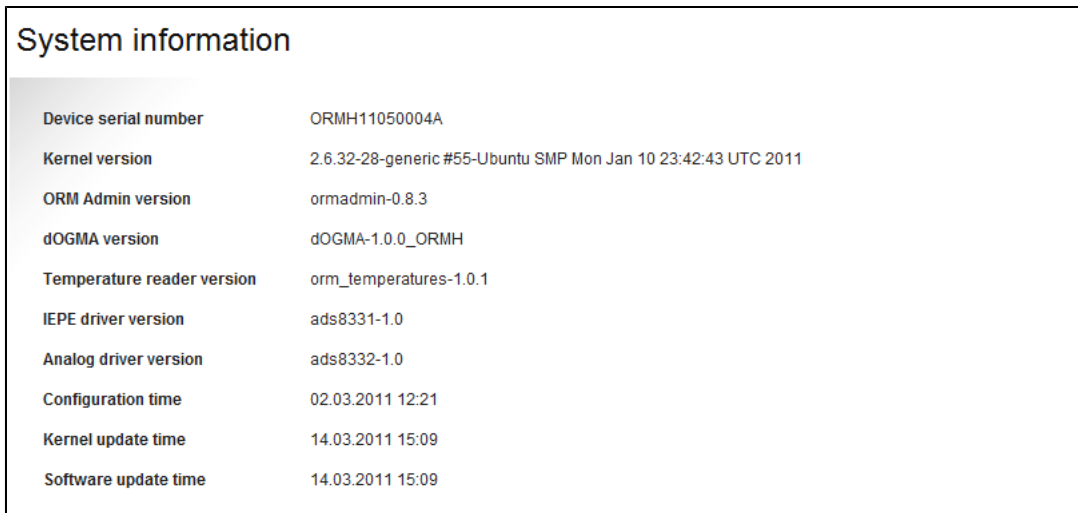
You can use the **settings** screen to quickly select the measurement mode for the ORM CM. To select the measurement mode, proceed as follows:

1. Select system→settings
2. Select the **Measurement mode**, by selecting the radio button for the desired mode. The possible options are:
 - **dOGMA enabled** - ORM CM collects data, establishes a connection to the dOGMA Remote Condition Monitoring System (or to a customer specific measurement software) and sends the data to the server, provided that the ORM CM is in the online mode and the network settings are correct.
 - **dOGMA disabled** - This option switches off the dOGMA measurement software on ORM CM.
3. When done, press the Save button.

2.3. Information

You can use the **information** screen to view information on the connected ORM CM.

The figure below depicts an example of the **information** screen:



System information	
Device serial number	ORMH11050004A
Kernel version	2.6.32-28-generic #55-Ubuntu SMP Mon Jan 10 23:42:43 UTC 2011
ORM Admin version	ormadmin-0.8.3
dOGMA version	dOGMA-1.0.0_ORMH
Temperature reader version	orm_temperatures-1.0.1
IEPE driver version	ads8331-1.0
Analog driver version	ads8332-1.0
Configuration time	02.03.2011 12:21
Kernel update time	14.03.2011 15:09
Software update time	14.03.2011 15:09

Figure 2.1. Information Screen

information is provided as follows:

- **Device serial number** - This value shows the serial number of the ORM CM.
- **Kernel version** - This value shows the ORM CM operating system kernel version.
- **ORM Admin version** - This value shows the ORM Admin software version.
- **dOGMA version** - This value shows the dOGMA measurement software version which is running on the ORM CM.
- **Temperature reader version** - This value shows the version of the temperature reader which is used on the ORM CM.
- **IEPE driver version** - This value shows the driver version of the analog IEPE driver which is used on the ORM CM.
- **Analog driver version** - This value shows the driver version of the analog driver which is used on the ORM CM.
- **Configuration time** - This value shows the date and time when the ORM CM configuration was made.
- **Kernel update time** - This value shows the date and time when the ORM CM operating system kernel was last updated.
- **Software update time** - This value shows the date and time when the ORM CM application software was last updated.

Chapter 3. Sensors

This chapter describes the pages under the **sensors** menu.

For easy navigation, the sensors which are connected to the selected ORM CM are also presented in the **Components** tree structure to the right of the sensors screen. You can click the tree branches to view information and make changes to the selected sensor or sensor variables.

The figure below depicts the tree that is used in the example figures for analog sensors in this document.

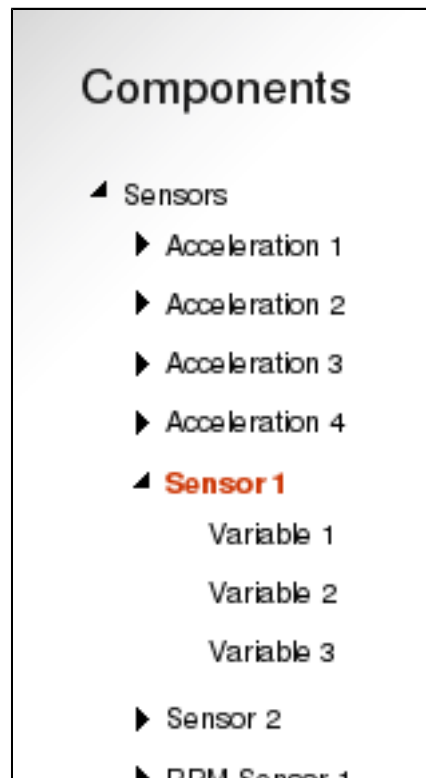


Figure 3.1. Components Tree

3.1. Analog

Analog sensors refer to the analog sensors configured for the selected device. Open the analog sensor list by selecting sensors→analog. The figure below depicts an example of an analog sensor list.

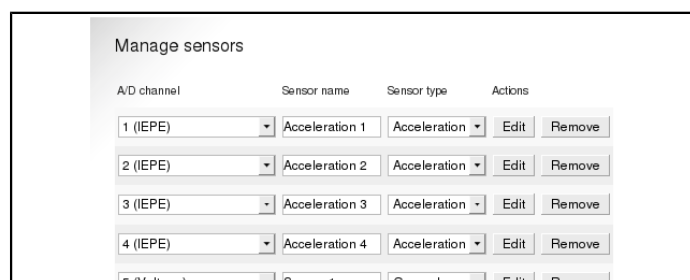


Figure 3.2. Analog Sensors View

You can configure 21 different A/D channels for each ORM CM terminal.

To add or modify an A/D channel, select a channel and fill in the quick channel settings. Select the sensor type from a drop-down menu which is next to the channel name field. The sensor types for the channels are:

- **General.** This is a sensor with a voltage (-10 -- 10 V) or current (0 - 20 mA) signal.

General sensors can only be connected to voltage or current channels.

- **Pt-100.** This is a standard two, three or four wire temperature sensor. For more information, look at the the glossary in the ORM Condition Monitor (ORM CM) Owner's Guide.

Pt-100 sensors can only be connected to Pt-100 channels.

- **Acceleration.** This sensor type is used for vibration measurements.

Acceleration sensors can only be connected to IEPE channels.

- **Rpm.** This input reads current or voltage pulses from a revolution sensor. After you have added the sensor to the dOGMA Condition Monitoring System, you must define the number of pulses that one revolution has. The system collects the pulses per minute and calculates the number of revolutions by dividing the number of collected pulses with the number of pulses that one revolution has.

Rpm sensors can only be connected to voltage or current channels.

There can only be one Rpm sensor in the system. Its read frequency is 309 523 Hz.

The number of pulses that one revolution has is defined as follows:

1. Click the sensor.
2. Select Configuration→Properties.
3. Define the number of pulses that one revolution has in the **Pulse Count** field.
4. Press the Save button.

If you would like to make more detailed sensor settings, click the Edit button for the sensor or select the sensor from the navigation tree. For more information, see Section 3.1.2, “Handling Analog Sensor Variables”.

3.1.1. Handling Analog Sensors

To add an analog sensor, proceed as follows:

1. Choose an unused channel on the A/D channel list.
2. Assign a sensor type for the selected channel.
3. Press the Save button. The new sensor will also appear in the tree structure.

The only modifications that you can do to an analog sensor are:

- Rename an analog sensor. To do this, write a new name for the analog sensor and press the Save button.
- Change the analog sensor type. This option is not available for all channel types. To change the analog sensor type, select the new sensor type from the **Sensor type** drop down menu and press the Save button.

To edit analog sensor variables, see Section 3.1.2, “Handling Analog Sensor Variables”.

To remove an analog sensor, proceed as follows:

1. Choose a channel that has a sensor assigned for it on the A/D channel list.
2. Press the Remove button.

- The selected sensor will be removed. A green status screen will be shown to indicate that the removal was successful.

3.1.2. Handling Analog Sensor Variables

Once you have added an analog sensor, you can add measured variables for it. To add measured variables, proceed as follows:

- Select sensors→analog
- Click the Edit button for the sensor to which you want to add measured variables, or select the sensor from the navigation tree. The screen below will open.

Figure 3.3. Adding Analog Sensor Variables

- Fill in the form fields. The fields are:

- Sensor properties*
 - Name** - This field indicates the sensor name. You can change the name, if necessary.
 - Resolution (mV/g)** - Acceleration sensors have an individual sensitivity value. This value must be entered into the system to calculate the correct acceleration value.
 - Gain** - Vibration inputs are equipped with a software adjustable gain. This enables the use of different sensors and the strengthening of the the sensor signal in cases where it is not strong enough in the first place. The available gain settings are:
 - 1.0 x - This gain value forwards the signal without changes.
 - 2.0 x, 5.0 x, 10.0 x, 20.0 x, 50.0 x and 100.0 x - These gain values increase the signal strength by as much as the multiplier indicates.
 - Sensor type** - This field indicates the sensor type. You cannot change the sensor type in this field. It is defined in the main sensor list.
 - A/D channel** - This field indicates the A/D channel for the sensor.
- Measured variables*
 - Variable name** - This field indicates the name of the measured variable.

- **Variable type** - This field indicates the variable type for the sensor. For additional information, see the section called “General, Pt-100 and RPM Sensors”

4. When done, press the Save button.

To edit an analog sensor variable, proceed as follows:

1. Choose a channel that has a sensor assigned for it on the A/D channel list.
2. Press the Edit button. The selected sensor information and its measured variables, if any, will be shown.
3. Make the necessary changes. For field explanations, see the field explanations above.
4. Press the Save button.

To remove an analog sensor variable, proceed as follows:

1. Choose a channel that has a sensor assigned for it on the A/D channel list.
2. Press the Edit button. The selected sensor information and its measured variables are shown.
3. Press the Remove button for the variable that you want to remove.
4. The selected sensor variable will be removed. A green status screen will be shown to indicate that the removal was successful.

The procedures for configuring measured variables for General, Pt-100 and RPM measurements resemble each other and are described in a common chapter (see the section called “General, Pt-100 and RPM Sensors”). However, the procedure for configuring measured variables for an acceleration sensor differs from these, and this procedure is described in its own chapter (see the section called “Vibration Sensors”).

General, Pt-100 and RPM Sensors

To add a General, Pt-100 or RPM sensor variable, proceed as follows:

1. Select the sensor and the desired variable. The screen below will be shown:

Measured variable properties	
Variable name	Variable 1
Variable type	Custom
Unit	mV
Factor	1.0
Offset	0.0
Read interval	3600 s
Read interval (A/D)	10
Record interval	3600 s
Report interval	9200 s
Sensitivity	0.0
Save	

Figure 3.4. Adding General, Pt-100 and RPM Variables

2. Fill in the fields, as follows:



Note

If you set any field value to zero, the parameter will not be used.

- **Variable name** - The variable name.
- **Variable type** - The variable type parameter indicates whether the read signal unit is of a known type. The user interface uses this information. If, for example, the user settings indicate that the user is from Finland, the temperature unit which is used in the trend graphs will be Celsius, but if the user settings indicate that the user is from the USA, the temperature unit which is used in the trend graphs will be Fahrenheit.

You can select the variable type parameter value from the drop down list. If the signal unit is not of a known type, use the Custom value.

- **Unit** - The presentation unit of the variable, such as kg or m/s. This quantity is shown in the trend graph.
- **Factor and Offset** - When configuring analog measurements for quantities, the Factor and Offset parameters are used to scale the values from the analog-to-digital converter to the appropriate unit. The ORM CM A/D converter is a 16-bit converter, which means that the values which are received at the dOGMA Condition Monitoring System are in the 0 - 65535 range. ORM CM has two different general measurement types, -10 -- 10 V and 0 - 20 mA. Using this information, the correct factor for the voltage and current would be $20 / 65535 = 0.000305$.

Usually, the sensors measure a quantity other than plain voltage, such as pressure. In this case, the sensor output would be voltage values which represent pressure values and you would have to make another conversion, from voltage to pressure. The Factor would be determined by the A/D -> voltage -> pressure conversion chain.

Occasionally, the read rate that the sensor provides does not start from zero. In these cases, the Offset parameter is required so that the zero point can be moved after the scaling.

The equation which is used to convert the raw analog-to-digital value is shown below:

$$\text{factor} * \text{raw value} + \text{offset} = \text{quantity value}$$

- **Read Interval** - This value defines how frequently the sensor value is read from the flow of values and written into the internal memory. Give the value in seconds. In the example figure, the Read interval (Time) is 3600 seconds, which is one hour.
- **Read Interval (A/D)** - Changes in the flow of values are constantly monitored (at the 10 Hz frequency). Read Interval (Value Change) defines the change in the measurement value (as seen against the previous measurement point) which is required for the sensor value to be read and written into the internal memory. When the sensor value is written into the internal memory, it is also written into the microSD card in the CSV format.

In the example figure, a change in the measurement value required for the sensor value to be read and written into the internal memory is 10 V.

- **Record Interval** - This value defines how often the collected data is written onto the microSD card. Give the value in seconds. In the example figure, the Record Interval is 3600 seconds, which is one hour.
- **Report Interval** - This value defines how often the collected data is summed up for a report and sent from each ORM CM to the dOGMA Condition Monitoring System server. Give the value in seconds.

In the example figure, the Report Interval is 9200 seconds, which is roughly two and half hours. After the report has been sent, the collected sample points are flushed for the next Report Interval.

Reports are explained in more detail in the *dOGMA Condition Monitoring System User's Guide*.

- **Sensitivity** - This value defines the sensitivity thresholds for alarms. The sensitivity is used to prevent the generation of too many alarms, if the measured value dithers above and below the alarm limit. The alarm is not given or cleared before the measured value exceeds or falls below the sensitivity value.

In the example figure, the Sensitivity is 0.0, that is, it is not used.

3. When done, press the Save button.

Vibration Sensors

To add a vibration sensor variable, proceed as follows:

1. Select the sensor and the desired vibration sensor variable.
2. Fill in the fields as described in the list below. This list only covers vibration sensor specific parameters. If a parameter that you are looking for is not listed here, see the section called “General, Pt-100 and RPM Sensors”.

- **Variable name** - Name the variable. You can use, for example, the measurement limits as a name. This parameter does not affect the measurements.
- **Measurement type** - This variable defines the quantity according to which the alarm thresholds are monitored.
- **DC unit** - This variable defines the DC unit in a text format.

In the future, a vibration measurement could also be used to find a DC component of the measured signal. For example, a vibration measurement could be configured to measure the quality of strong current lines performing a DC measurement at the same time with a vibration analysis.

- **Low limit (Hz)** - This field defines the lower limit for the frequency range, which will be analysed. The low limit must, of course, be lower than the high limit.
 - **High limit (Hz)** - This field defines the higher limit for the frequency range, which will be analysed. The high limit must, of course, be higher than the low limit.
 - **Resolution** - This parameter defines the distance between amplitudes in the spectrum. Setting the resolution parameter to 0.0 indicates that the calculation uses an automatic resolution based on the sample count.
 - **Sampling time (s)** - This variable is used to set the minimum sampling time. This value can be automatically increased so that the amount of samples is in the power of two.
 - **Spectrum interval (s)** - This parameter defines how often the spectrum analysis is to be carried out and sent to the server.
 - **Average count** - This variable value is used when counting average values. It defines the number of previous measurements with which the current time domain data is averaged.
 - **Windowing options** - In signal processing, a window function is a mathematical function that is zero-valued outside a chosen interval. By windowing the time domain data in this way, the different characteristics of the data are easier to understand. The windowing options are:
 - *Hann* - This function is used to select a subset of a series of samples for performing a Fourier transform or other calculations.
 - *Hamming* - This function is optimized to minimize the maximum (nearest) side lobes, giving them a height of approximately one-fifth of that of the Hann window.
 - *Rectangular* - This function is constant within the time interval and zero elsewhere.
 - *Flat top* - This function can accurately measure the level of a signal at any frequency, even if the frequency is between the lines of the FFT analysis.
 - **Include time domain data** - If this checkbox is checked, ORM CM will also send the raw data from the time domain.
3. When done, press the Save button.

For more information on vibration measurements and how the parameters are used during the measurement process, see the *DOGMA Condition Monitoring System User's Guide*.

3.1.3. Removing Analog Sensors

You can remove analog sensors by pressing the Remove button for the sensor to be removed. When done, press the Save button.

3.2. Classes

By using classes, you can distribute results into different classes, such as temperatures between 25°C and 50°C or even in relation to other quantities, such as temperature when the revolution per minute exceeds 500rpm.

You can also use classes to reduce the data traffic between the ORM CM and dOGMA Condition Monitoring System. Let us assume, for example, that you have a temperature measurement that measures the value ten times per minute and the reporting period is 24 hours. This comes up to a total of 14 400 values for each reporting period. One option is to transmit all of the results to the dOGMA Condition Monitoring System, but the amount of data is quite large. However, you can use classes to reduce the amount of data. If you distribute the results into different classes, such as temperatures between 0°C - 25°C, 25°C - 50°C and 50°C - 100°C, you only have to transmit the number of hits for each temperature class to the dOGMA Condition Monitoring System.

To add classes, proceed as follows:

1. Select the sensor from the tree and choose the desired variable. The screen below will open:

Class name	Classified with	Lower bound	Upper bound	Actions
Class 1	Variable 2	5	7	Remove
Class 2	Variable 3	3	5	Remove

Figure 3.5. Classes

2. Enter a name for the class in the **Name** field.
3. Select the sensor that will be used as the classification criteria in the **Classified with** field.
4. Select the classification thresholds by entering the lower threshold value in the **Lower Bound** field and the upper threshold value in the **Upper Bound** field.
5. When done, press the Save button.
6. The classes will appear below the sensor in the tree structure.

To remove classes, press the Remove button next to the class definition.

3.3. Alarms

You can add different alarm thresholds for sensors. To add alarms, proceed as follows:

1. Select the sensor variable and scroll down to the **Alarms** area depicted below:

Name	Value	Output control
Damage	10	Open drain 1
Warning	8	Relay 2
Notification	2	Relay 1

Save

Figure 3.6. Alarms

2. Enter the values for **Notification**, **Warning** and **Damage**.
3. Enter the alarm threshold in the **Threshold** field.
4. Select the alarm output from the **Output control** drop down menu.
5. Use the checkboxes in the **Enabled** column to select the alarms that are enabled.
6. When done, press the Save button.

3.4. Data

In the **data** screen, you will be able to export ORM CM data in the CSV format to a file. To export data, proceed as follows:

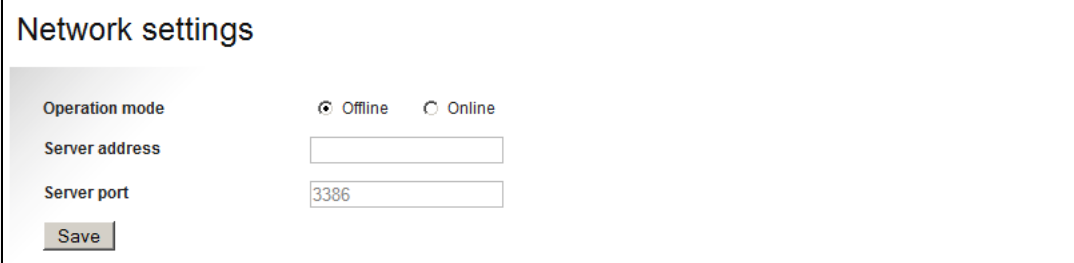
1. Select sensors→data
2. Press the Download button.
3. Select the location for the downloaded file in your file system.
4. When done, press the Save button.
5. The data will now be downloaded to your computer.

Chapter 4. Network

This chapter describes the configuration of network related matters in ORM Admin.

4.1. General

You can use the **general** screen to select the network settings for the dOGMA Condition Monitoring System server. The **general** screen is depicted below:



Network settings	
Operation mode	<input checked="" type="radio"/> Offline <input type="radio"/> Online
Server address	<input type="text"/>
Server port	<input type="text" value="3386"/>
<input type="button" value="Save"/>	

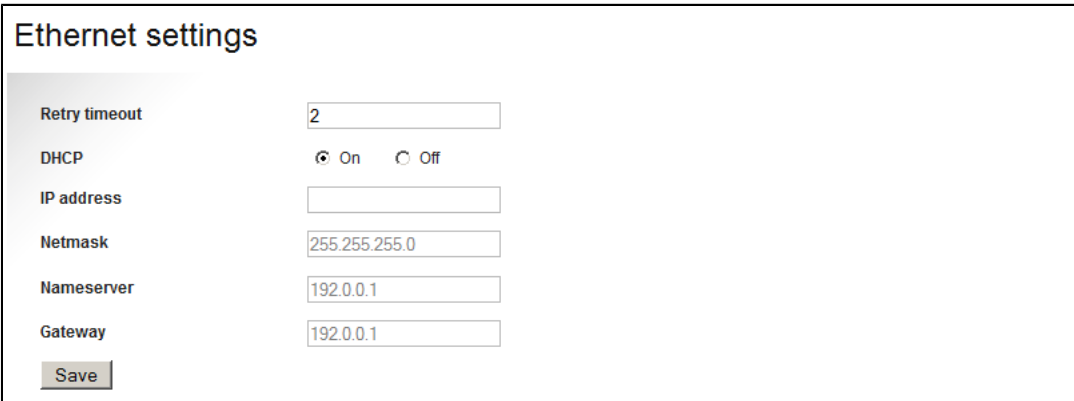
Figure 4.1. ORM Admin General Network Settings

To make the network settings for the dOGMA Condition Monitoring System server, proceed as follows:

1. Select network→general
2. Select the **Operation mode** by selecting the radio button for the desired mode. The possible options are:
 - **Offline** - ORM CM collects data in the offline mode and does not establish a connection to an external server.
 - **Online** - ORM CM establishes a connection to the dOGMA Remote Condition Monitoring System (or to a customer specific measurement software) and sends the collected data to the server, provided that the ORM CM is in the online mode and the network settings are correct.
3. Fill in the form fields. The fields are:
 - **Server address** - Enter the IP address of the server in this field. Here, the server refers to the server receiving data from the ORM CM.
 - **Server port** - Enter the listening port of the server in this field.
4. When done, press the Save button.

4.2. Ethernet

You can use the **ethernet** screen to select the Ethernet settings for ORM Admin. The **ethernet** screen is depicted below:



Ethernet settings	
Retry timeout	<input type="text" value="2"/>
DHCP	<input checked="" type="radio"/> On <input type="radio"/> Off
IP address	<input type="text"/>
Netmask	<input type="text" value="255.255.255.0"/>
Nameserver	<input type="text" value="192.0.0.1"/>
Gateway	<input type="text" value="192.0.0.1"/>
<input type="button" value="Save"/>	

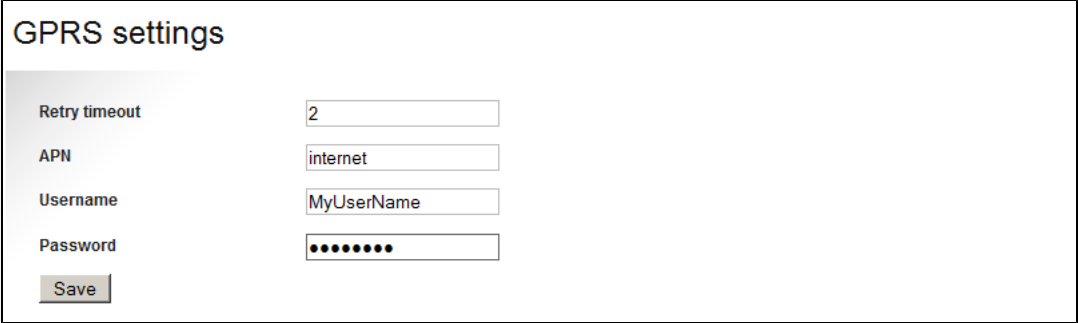
Figure 4.2. ORM Admin Ethernet Settings

To make the Ethernet settings for the dOGMA Condition Monitoring System server, proceed as follows:

1. Select network→ethernet
2. Fill in the form fields. The fields are:
 - **Retry timeout** - This field defines the timeout for how long the ORM CM will attempt to establish a connection to the network. When the timeout expires, the ORM CM will attempt to establish a connection to the network by using GPRS.
Enter the value in minutes.
The GPRS configuration has a similar timeout. For more information, see Section 4.3, “GPRS”.
 - **DHCP** - This field defines whether the network has a DHCP server or not.
If the network has a DHCP server, the fields below will be unavailable. In the same way, if the network does not have a DHCP server, you must fill in the fields below.
 - **IP address** - This field defines the ORM CM IP address in the network.
 - **Netmask** - This field defines the netmask in the network.
 - **Nameserver** - This field defines the name server IP address in the network.
 - **Gateway** - This field defines the gateway IP address in the network.
3. When done, press the Save button.

4.3. GPRS

You can use the **gprs** screen to select the GPRS settings for ORM Admin. The **gprs** screen is depicted below:



GPRS settings	
Retry timeout	<input type="text" value="2"/>
APN	<input type="text" value="internet"/>
Username	<input type="text" value="MyUserName"/>
Password	<input type="password" value="•••••••"/>
<input type="button" value="Save"/>	

Figure 4.3. ORM Admin GPRS Settings

To make the GPRS settings for the dOGMA Condition Monitoring System server, proceed as follows:

1. Select network→gprs
2. Fill in the form fields. The fields are:
 - **Retry timeout** - This field defines the timeout for how long the ORM CM will attempt to establish a connection to the network. When the timeout expires, the ORM CM will attempt to establish a connection to the network by using Ethernet.
Enter the value in minutes.
The Ethernet configuration has a similar timeout. For more information, see Section 4.2, “Ethernet”.
 - **APN** - Access Point Name (APN) is a protocol that allows a computer to access the internet using a mobile phone network. This field defines the APN value for the SIM card, installed onto the ORM CM.

This information is usually available in the documentation which is delivered with the SIM card.

- **Username** - This field defines the user name for the data connection on the SIM card, installed on the ORM CM.

This information is usually available in the documentation which is delivered with the SIM card.

- **Password** - This field defines the password for the data connection on the SIM card, installed on the ORM CM.

This information is usually available in the documentation which is delivered with the SIM card.

3. When done, press the Save button.

4.4. Information

You can use the **information** screen to view the various network settings related to the ORM CM. To view the settings, just select network→information.

The figure below depicts an example of the network **information** screen:

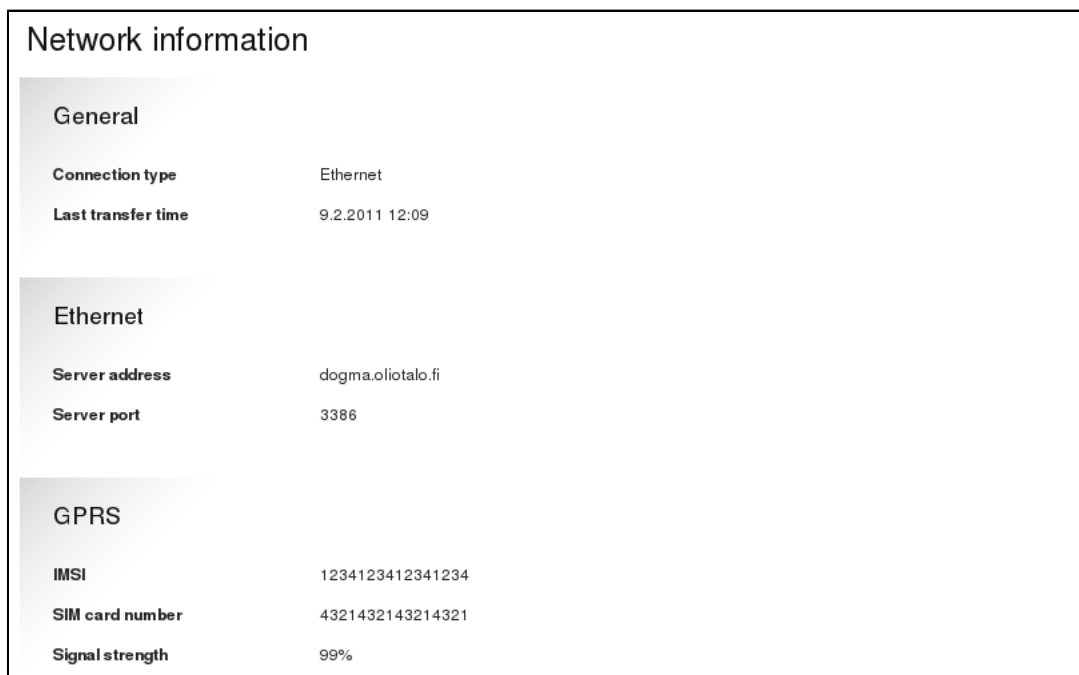


Figure 4.4. Information Screen

Information is provided as follows:

- *General*
 - **Connection type** - This value indicates whether the ORM CM uses an Ethernet or GPRS connection to the Internet.
- *Ethernet*
 - **Server address** - This value indicates the dOGMA Remote Condition Monitoring System server address.
 - **Server port** - This value indicates the dOGMA Remote Condition Monitoring System server port.
- *GPRS*
 - **IMSI** - This value indicates the International Mobile Subscriber Identity (IMSI) number of the SIM card. It is stored in the SIM card inside the phone and the phone always sends the value to the network.
 - **SIM card number** - This value indicates the number of the SIM card which is installed on the ORM CM.

- **Signal strength** - This value indicates the signal strength for the SIM card on the ORM CM.

4.5. Ping

You can use the **ping** screen to send a ping message to the dOGMA Condition Monitoring System server or to another network destination to check that the network connection works. The **ping** screen is depicted below:



The screenshot shows a 'Ping' screen with the following elements:

- Target:** Two radio buttons are present. The first is labeled 'dOGMA server' and is selected. The second is labeled 'Custom address' and is unselected.
- Address:** A text input field containing the value 'www.google.com'.
- Request count:** A text input field containing the value '5'.
- Ping button:** A button labeled 'Ping' located at the bottom left of the form area.

Figure 4.5. ORM Admin Ping Test

To make a Ping test, proceed as follows:

1. Select network→ping
2. Fill in the form fields. The fields are:
 - **Target** - Select whether the Ping message will be sent to the **dOGMA server**, or to a **Custom address**.
If you choose to send the Ping message to the **dOGMA server**, the fields below will be unavailable. In the same way, if you choose to send the Ping message to a **Custom address**, you must fill in the fields below.
 - **Address** - This field defines the **Custom address** where the Ping message will be sent to.
 - **Request count** - This field defines the number of ping requests to be sent. The value range is from 0 to 10 000.
3. When done, press the Ping button.

Chapter 5. Tester

This chapter describes how to test various ORM CM connections in ORM Admin.

5.1. ADC (Analog to Digital Converter)

You can use the **adc** (analog to digital converter) screen to view adc related measurement values using ORM Admin. To view the settings, just select tester→adc.

The figure below depicts an example of the **adc** screen:

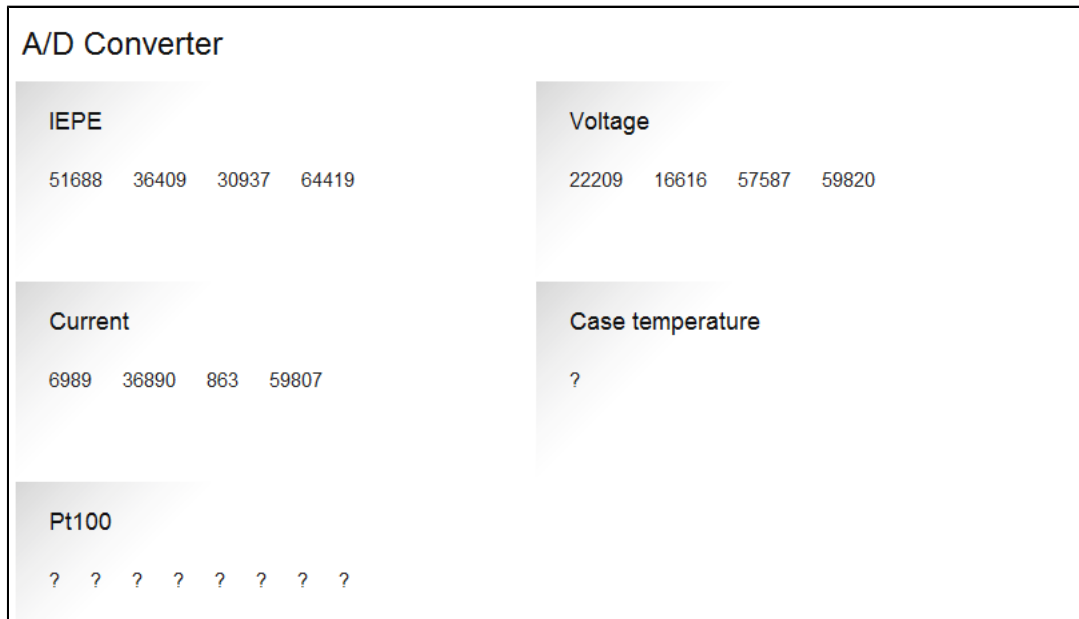


Figure 5.1. adc Screen

5.2. MODBUS

You can use the **modbus** screen to check that a MODBUS slave is present on the MODBUS bus. To view the settings, proceed as follows:

1. Select tester→modbus
2. Select the slave by entering its MODBUS value in the **Slave ID** field.

! Important

The **Slave ID** must be a value between 1 and 246 and it must be given as a hexadecimal number. In the hexadecimal format, the permitted values are between 01 and F6.

3. When done, press the Test button.
4. ORM Admin sends a message to the selected slave on the bus. The possible results are:
 - *Result unavailable, try again later* - This message, displayed with a yellow background colour, indicates that the test cannot be performed, because the device is busy. Try again later.
 - *Slave id test OK* - This message, displayed with a green background colour, indicates that the slave can reply and is working normally.
 - *Slave id test failed* - This message, displayed with a red background colour, indicates that the slave cannot reply to the test message. Check the slave id, the sensor connection and its condition and try again.

The figure below depicts an example of the **modbus** screen:



The screenshot shows a web interface titled "MODBUS". On the left, there is a grey sidebar with the text "Slave ID" and a "Test" button below it. To the right of the sidebar is a text input field containing the number "01".

Figure 5.2. Modbus Screen

5.3. Outputs

You can use the **outputs** screen to test that the relays, the open drain and the leds are working properly. If you use mechanical relays, you may hear them click as you test them. To test the outputs, select tester→outputs and click the On and Off buttons for the relays, open drains and leds.

The figure below depicts an example of the **outputs** screen:



The screenshot shows a web interface titled "Outputs". It is divided into three sections: "Relays", "Open drains", and "Leds". Each section contains two rows of controls. Each row has a radio button for "On" and a radio button for "Off".

Category	Item	On	Off
Relays	Relay 1	<input checked="" type="radio"/>	<input type="radio"/>
	Relay 2	<input type="radio"/>	<input checked="" type="radio"/>
Open drains	Open drain 1	<input type="radio"/>	<input checked="" type="radio"/>
	Open drain 2	<input type="radio"/>	<input checked="" type="radio"/>
Leds	Led 1	<input type="radio"/>	<input checked="" type="radio"/>
	Led 2	<input type="radio"/>	<input checked="" type="radio"/>

Figure 5.3. Outputs Screen

Chapter 6. Update

This chapter describes how to update various ORM CM software components.

The software updates are available at:

<http://forum.oliotalo.fi>

This forum is the main communication channel between ORM CM user and developers. If you do not have credentials to the service, click the Register link in the main page of the forum and register yourself to the service.

6.1. Software

You can use the **software** screen to update the ORM CM application software. This option only updates the application software and preserves the sensor and other settings on the ORM CM. The **software** screen is depicted below:

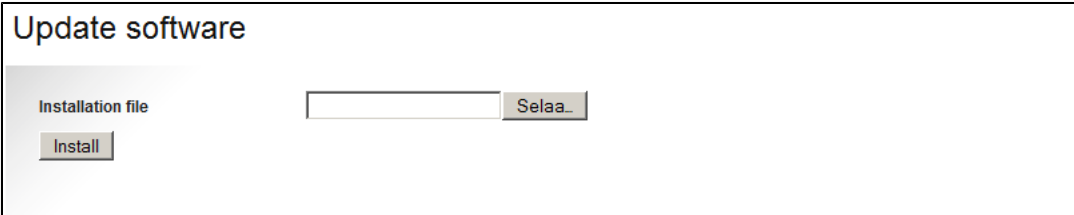


Figure 6.1. Update Software

To make the update, proceed as follows:

1. Select update→software
2. Select the new software file from your computer, by pressing the Browse button.
3. When done, press the Update button.
4. The software update will begin. Do not use the ORM CM until the system indicates that the software update is complete.

6.2. Kernel

You can use the **kernel** screen to update the ORM CM operating system (Linux) kernel. The kernel is the central component of the operating systems. In short, it is a bridge between applications and the actual data processing performed at the hardware level.

The **kernel** screen is depicted below:

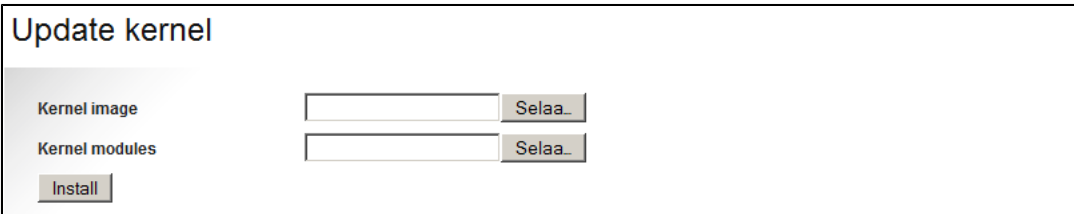


Figure 6.2. Update Operating System Kernel

To perform the update, proceed as follows:

1. Select update→kernel
2. Select the new kernel image from your computer, by pressing the Browse button.

3. Select the new kernel modules from your computer, by pressing the Browse button.
4. When done, press the Update button.
5. The software update begins. Do not use the ORM CM until the system indicates that the software update is complete.

6.3. Upgrade

You can use the **upgrade** screen to upgrade the ORM CM software. The software upgrade is loaded from a microSD card, which is connected to the ORM CM.

The difference between an update and an upgrade is that the update only updates the software and preserves the sensor and other settings on the ORM CM, whereas the upgrade will perform a clean install of the system. However, if the ORM CM dOGMA software is in the online mode, the ORM CM will request the deleted configuration from the dOGMA Condition Monitoring System server, where it is saved. In other words, if the ORM CM dOGMA software is in the offline mode, the upgrade deletes all of the previous settings from the ORM CM.

The **software** screen is depicted below:

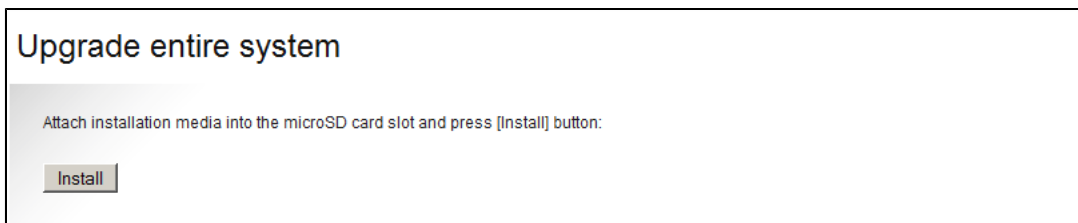


Figure 6.3. Upgrade Software

To perform the upgrade, proceed as follows:

1. Select update→upgrade
2. Ensure that there is a microSD card in the ORM CM microSD card slot.
3. When done, press the Upgrade button.
4. The software upgrade will begin. Do not use the ORM CM until the system indicates that the software upgrade is complete.

Chapter 7. Help

This chapter describes the pages under the **help** menu.

7.1. Wizard

You can use the settings wizard to make ORM Admin settings in a guided step-by-step process. If you use the wizard to make the settings, you can later modify the settings through the menus and submenus in ORM Admin.

The wizard walks you through the following steps:

1. System settings. For more information on this step, see Section 2.2, “Settings”.
2. Analog sensor settings. For more information on this step, see Section 3.1, “Analog”.
3. Network settings. For more information on this step, see Section 4.1, “General”.

7.2. Documentation

You can download this manual in the PDF format on the **documentation** page.

7.3. Contact

You can find Oliotalo Oy contact information on the **contact** page.

7.4. About

You can use the **about** screen to view information on ORM Admin.