GreenNet/
CommBox

Installation and User Manual

Green Net & CommBox

Controller Software

Ag/MIS/UmEN-2740-05/19 Rev 1.5

P/N: 116793

Munters

Green Net & CommBox

Installation and User Manual

Rev 1.5, 12/2021

This manual for use and maintenance is an integral part of the apparatus together with the attached technical documentation.

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1 Introduction

1.1 Disclaimer

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1.2 Introduction

Congratulations on your excellent choice of using the Green Net software and CommBox Communication Device!

In order to realize the full benefit from this product it is important that it is installed, commissioned and operated correctly. Before installation or using the device, this manual should be studied carefully. It is also recommended that it is kept safely for future reference. The manual is intended as a reference for installation, commissioning and day-to-day operation of the Munters equipment.

1.3 Notes

Date of release: July 2019

Munters cannot guarantee to inform users about the changes or to distribute new manuals to them.

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2 CommBox

CommBox provides complete access to your Munters controllers, including monitoring and control capabilities, from any computer.

2.1 Junction Box

Connecting a CommBox directly to a controller requires a Junction Box. Refer to Connecting the CommBox to a Controller, page 8.

- P/N: 904-99-00037 COMMBOX -POU- JUNCTION BOX RS485

2.2 What Comes in the Package

- CommBox
- Junction Box
- Power supply cables 115VAC and 230VAC
- Ethernet cable

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3 CommBox Hardware Installation

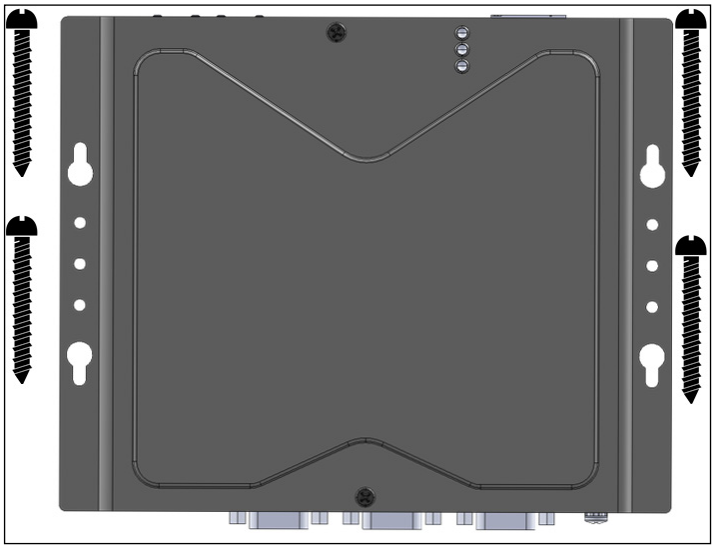
This document details how to install Munters' CommBox unit. Installation consists of:

- Mounting the CommBox
- Grounding
- Connecting the CommBox to the Internet
- Connecting the CommBox to a Peripheral Device
- Connecting the CommBox to a Controller

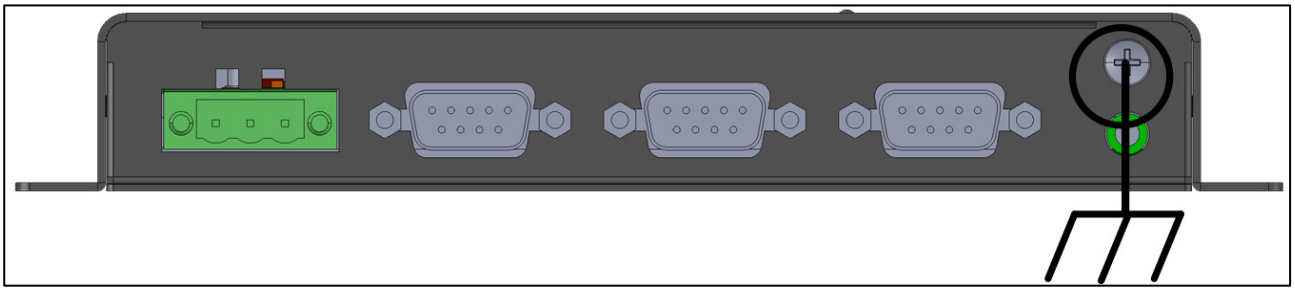
NOTE No software installation is required.

3.1 Mounting the CommBox

- Using the screws provided, mount the unit.

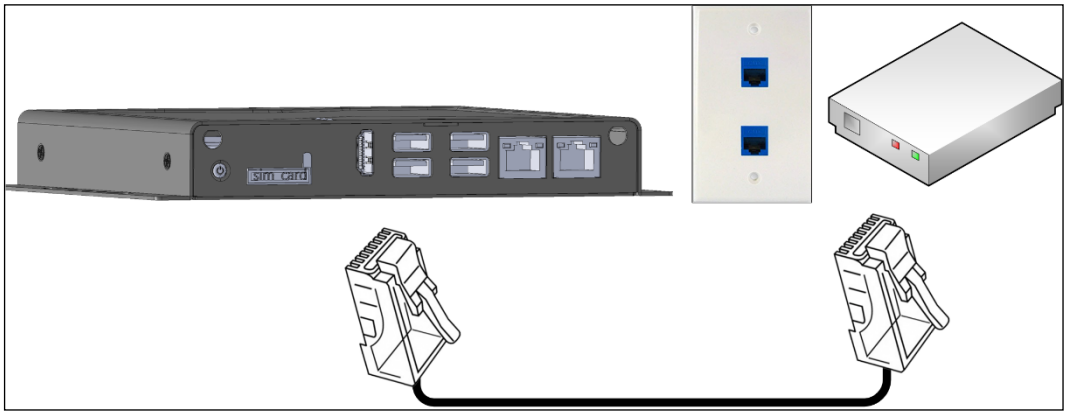


- Connect the ground cable to the dedicated ground terminal.



3.3 Connecting the CommBox to the Internet

- Connect the CommBox to your Internet connection/modem.



If required, connect a screen, keyboard, or mouse to the CommBox (via the USB/HDMI ports).

NOTE Connect the screen to the CommBox using an HDMI cable only. Do not use any other type of cable and an HDMI adapter.

The only step in installing a CommBox that requires wiring is if the CommBox is connected directly to a controller (instead of to a communication unit). In this situation the CommBox must be wired to the controller communication card.

WARNING! Disconnect the power before beginning!
WARNING! Only an authorized electrical technician may perform this procedure!

- Controller to Junction Box Wiring
- CommBox to Junction Box Wiring

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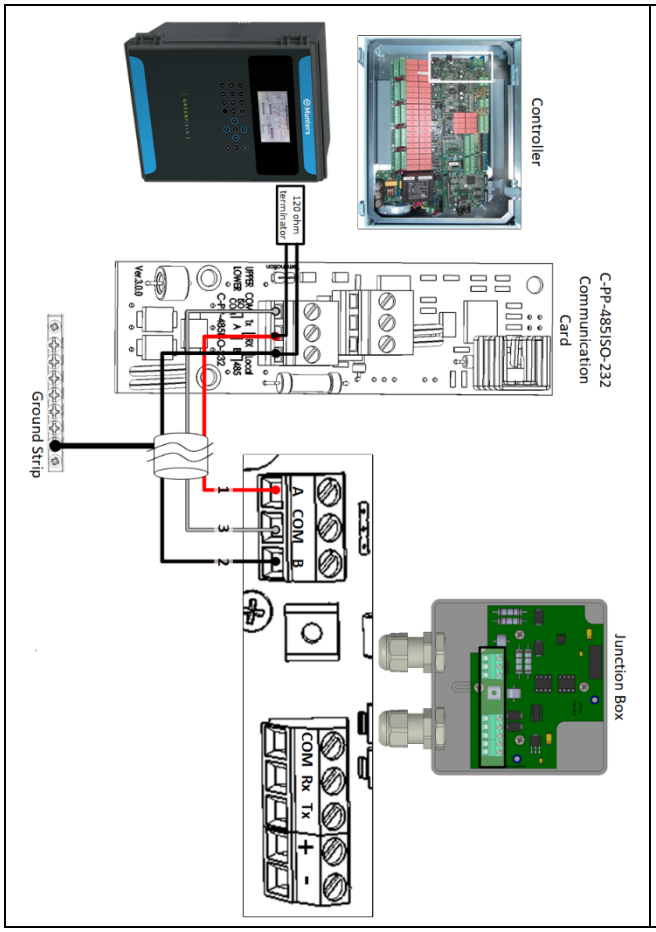
3.5.1 CONTROLLER TO JUNCTION BOX WIRING

- In the controller, connect the CommBox to the controller's communication card. Refer to the following illustrations.



1. The cable between the external connection box and the controllers should be a 3 wire twisted shielded cable (22 or 24 AWG).
2. Connect the wiring as follows:
   - COM to COM
   - The CommBox A port is connected to Controller's A port.
   - The CommBox B port is connected to Controller's B port.
3. The final controller in any chain or branch requires a 120 ohm terminator.
4. Connect the cable shield wire to the controller ground strip.

Figure 1: RS-485 Wiring

- The CommBox comes with the power supply wired to the unit. See Figure 2.

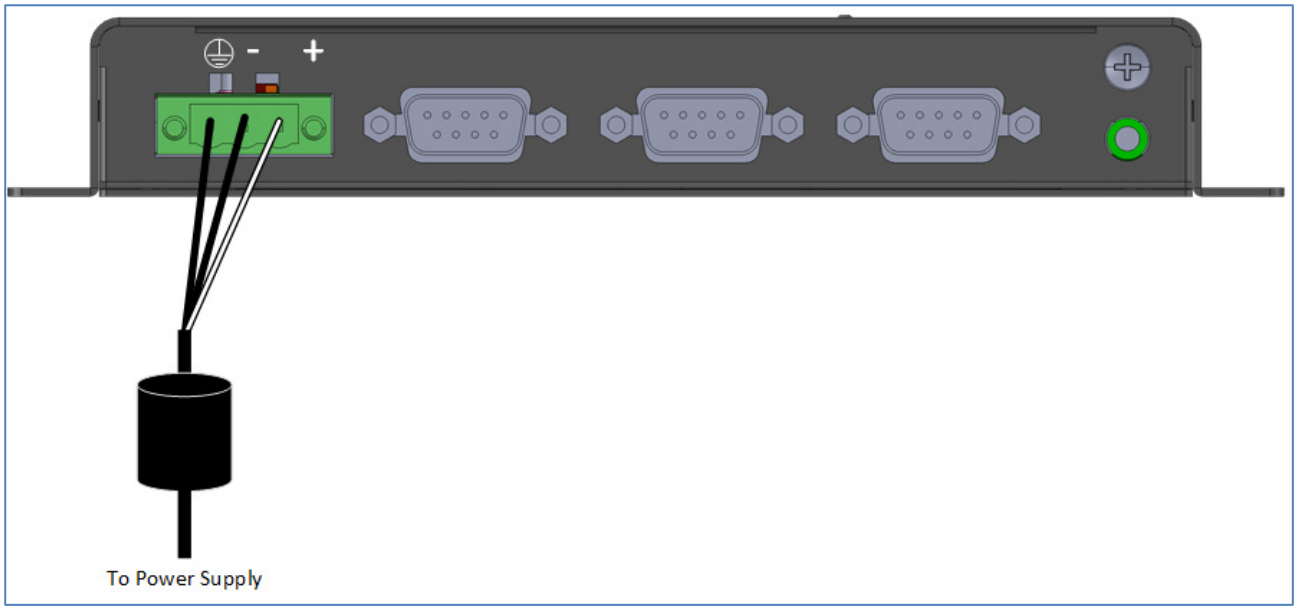


Figure 2: CommBox power supply wiring

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1 Insert the Junction Box 9-Pin Connector into COM1 (see Figure 3).

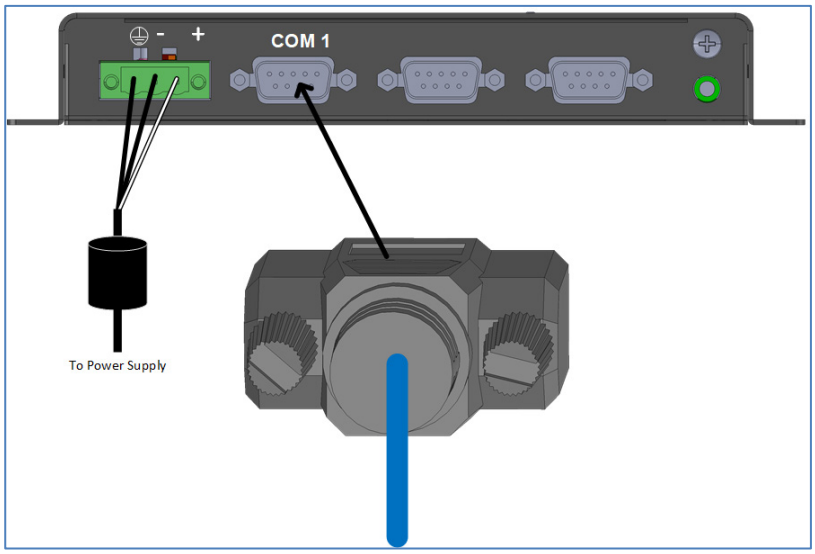

Figure 3: Insert 9 Pin Connector

2. Insert the two wires coming from the Junction Box cable into the ports (see Figure 4 and Figure 5).

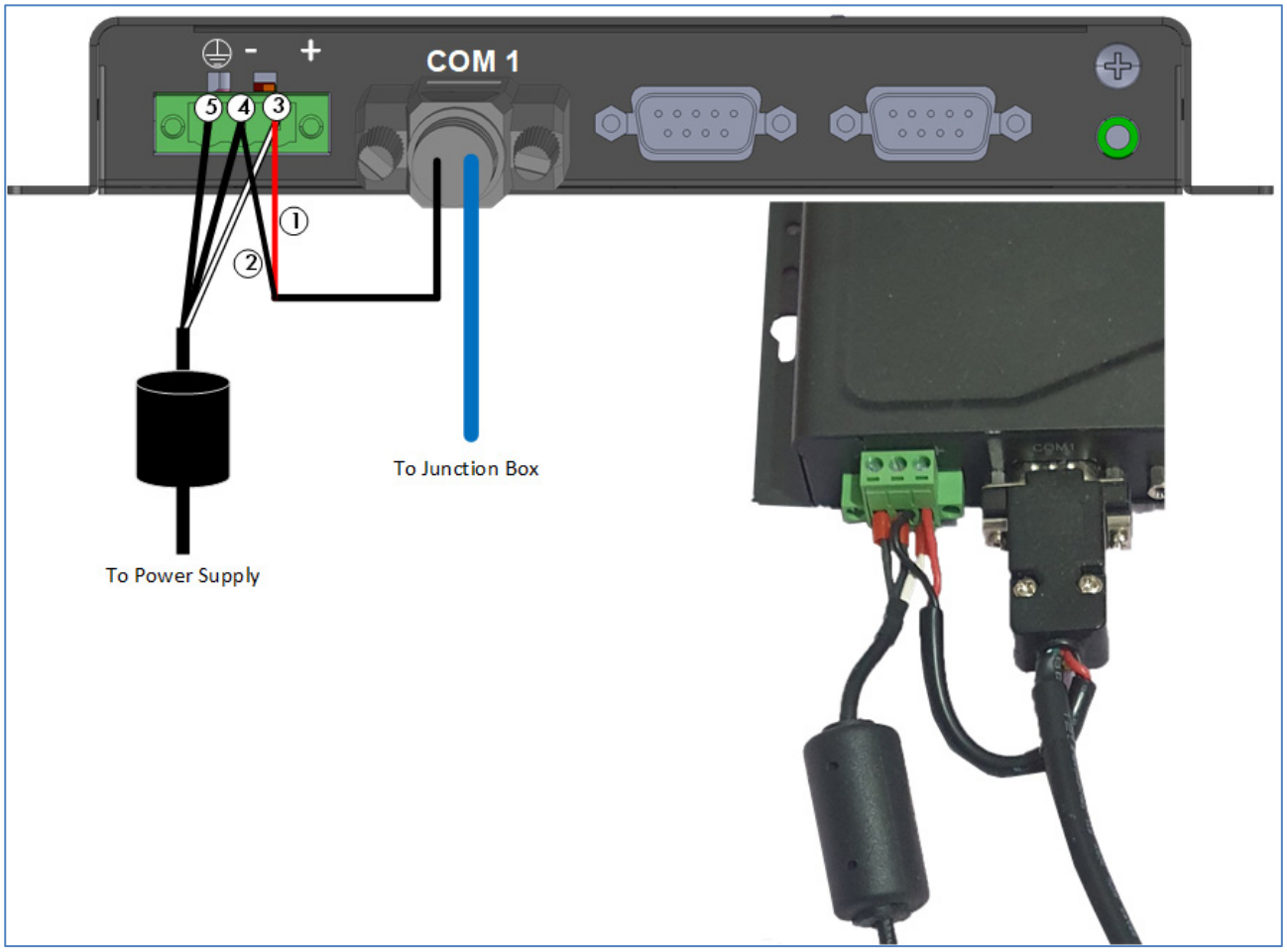

Figure 4: Junction Box Wiring to CommBox

Table 1: Wiring Details

Cable source	Color	Function	Number
Junction Box Cable	Red	+VCC (24 DC)	1
	Black	-VCC (Junction Box)	2
Power Supply Cable*	White	+VCC (Junction Box) (24 DC)	3
	Black	-VCC	4
	Black	Ground	5

*These wires come preconnected to the CommBox. In the event that they need to be reattached, place the white cable (#3) in the port as shown in Figure 4. Place both black cables into the ports as shown in Figure 4; either cable can be placed in either port.

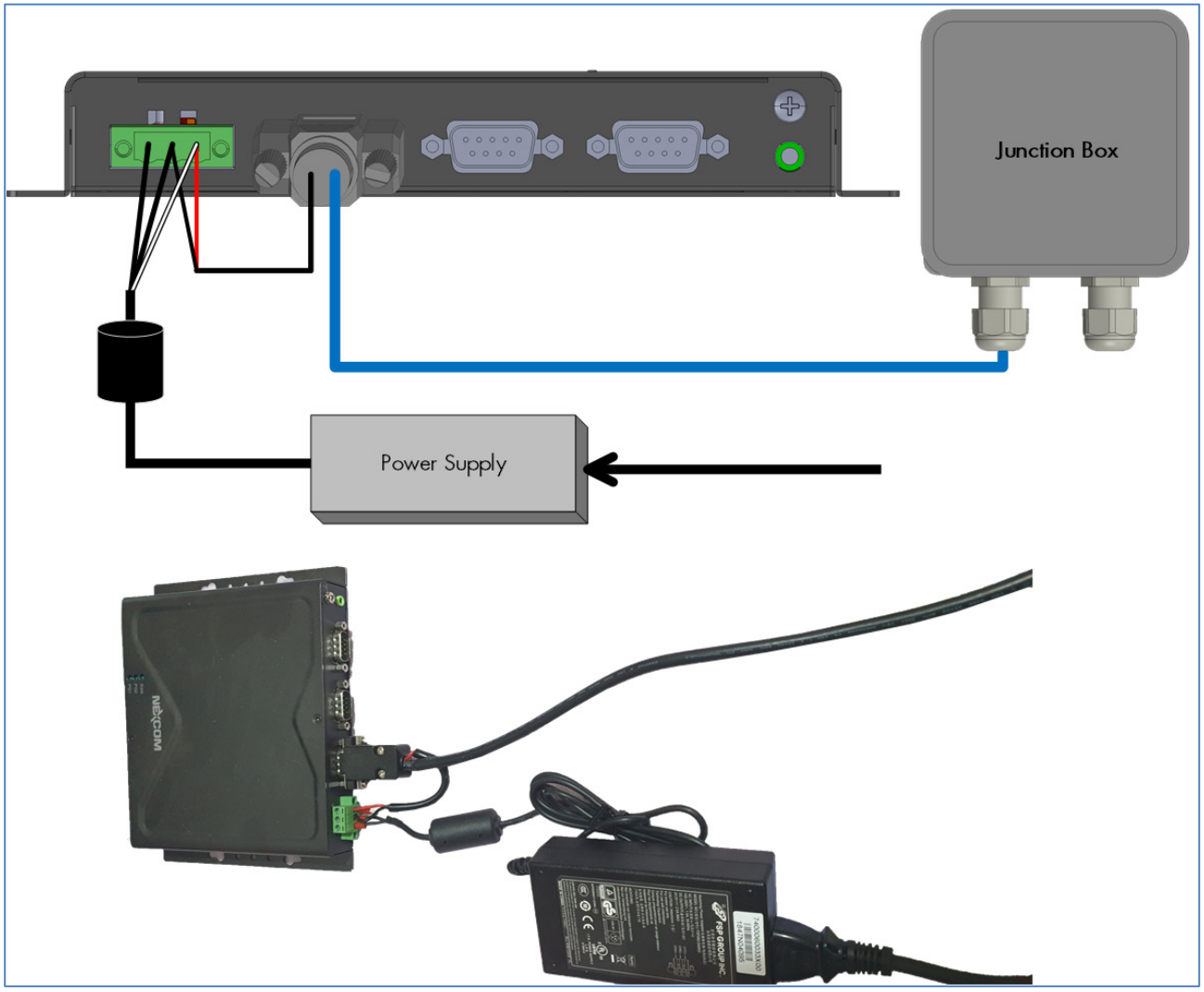

Figure 5: Power Supply – CommBox – Junction Box Setup

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4 Technical Data

4.1 CommBox

Power Supply	
Power Input	• 24V DC +/-20% • 1 x 24V, 60W power adapter
CAUTION Unit shuld be powered by LimitedEnergy Source per IEC 61010-1 or Limited Power Source per IEC 60950-1 or IEC 62368-1	
Temperature Range	
Operating Temperatrure Range	0° to +50° C / 32° to 125° F
Storage Temperature Range	-10° to +70° C / 14° to 158° F
Environmental Specifications	
• **Indoor use only** • Altitude: -400 m to 2000 m • Relative Humidity: 0 – 95% • Main supply voltage fluctuation up to 5% • Overvoltage category: OVCII • Pollution degree: PD2 • Ingress Protection: IPXO	
Housing	
Metal Box Dimensions (W x H x D)	162 x 26 x 150 mm (without wall-mount bracket)
Certification	

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4.2 Junction Box

Power Supply	
Junction Box Power Input	24 VDC, 30 mA
CAUTION Unit shuld be powered by LimitedEnergy Source per IEC 61010-1 or Limited Power Source per IEC 60950-1 or IEC 62368-1	
Temperature Range	
Operating Temperature Range	0° to +45° C / 32° to 113° F
Storage Temperature Range	-10° to +70° C / 14° to 158° F
Environmental Specifications	
• **Indoor use only** • Altitude: -400 m to 2000 m • Relative Humidity: 0 – 90% • Main supply voltage fluctuation up to 5% • Overvoltage category: OVCII • Pollution degree: PD2 • Ingress Protection: IP50	

5 CommBox Communication

Each CommBox unit comes with two software packages installed (Munters provides the license for both packages):

- GreenNet
- TeamViewer

There are two ways to enable the CommBox to communicate to controllers (via the GreenNet software):

- TeamViewer via an existing LAN
- TeamViever via a modem and a data SIM card

5.1 TeamViewer Definition

*CAUTION Munters recommends testing the connection via Teamviewer **before installing the CommBox in the field by an authorized technician only!***

Green Net is installed on your CommBox. The following chapter describes how to connect to your Green Net program.

- Setting up TeamViewer: Silver Sticker ID
- Setting up TeamViewer: Retrieved ID
- Technical Support

5.1.1 SETTING UP TEAMVIEWER: SILVER STICKER ID

CommBox is an industrial PC that can work:

- Locally, using a keyboard and screen (refer to Connecting the CommBox to a Peripheral Device, page 8)
- Remotely via TeamViewer.

TeamViewer requires an ID number (the Partner ID). On the package in which your CommBox arrives is a silver sticker. The unit's Partner ID appears on this sticker.

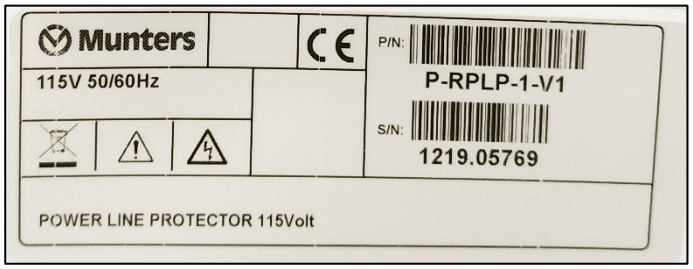
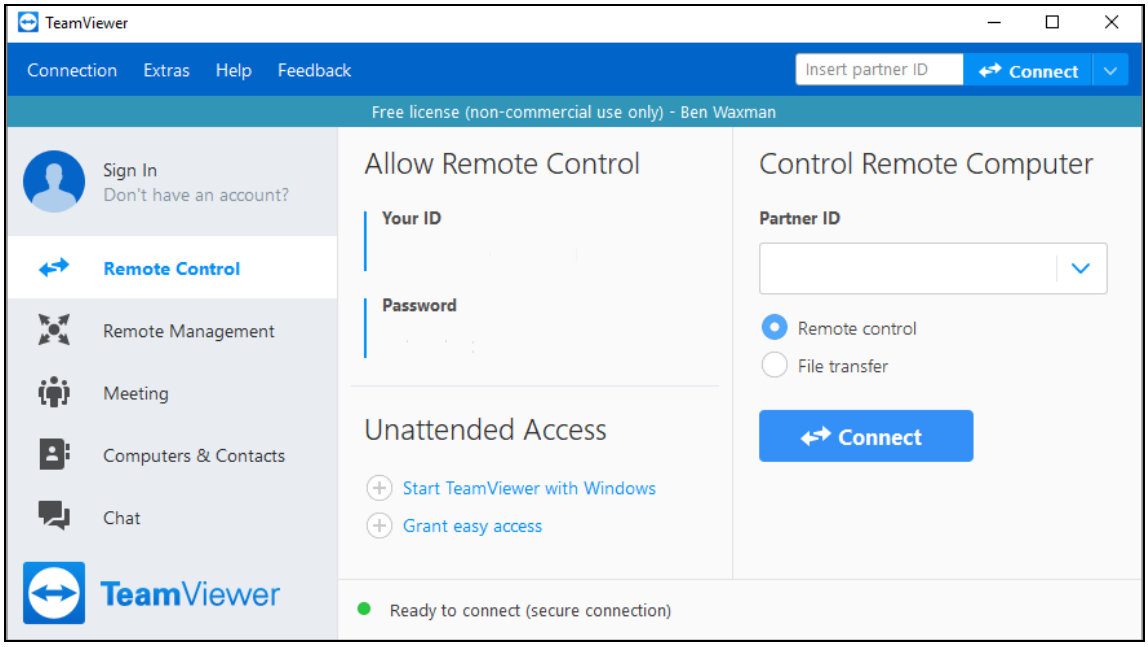


Figure 6: Silver Sticker Sample

Use this ID number when connecting via TeamViewer.

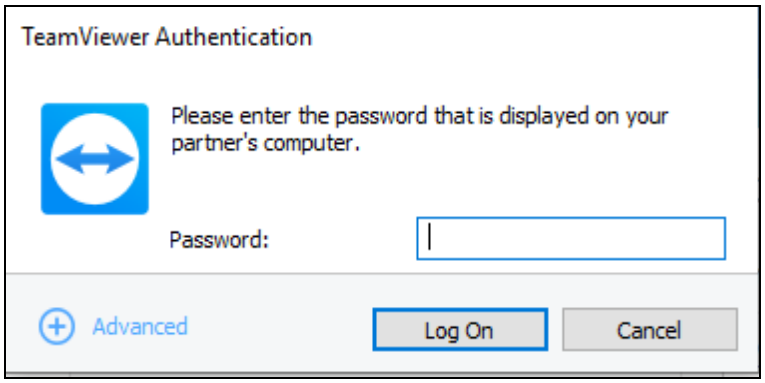
1. Download and install TeamViewer from the web onto your remote PC.
    - Download the Personal Use version.
    - Do not install the program on more than five computers!

- Run the Basic Installation. The following screen appears:



- The Remote Control ID and Password can be used on other computers to remotely access the CommBox.

2. Enter your Partner ID (found on the silver sticker on the CommBox carton): The following screen appears:



3. Enter the password: $Rfgt5. The following screen appears:

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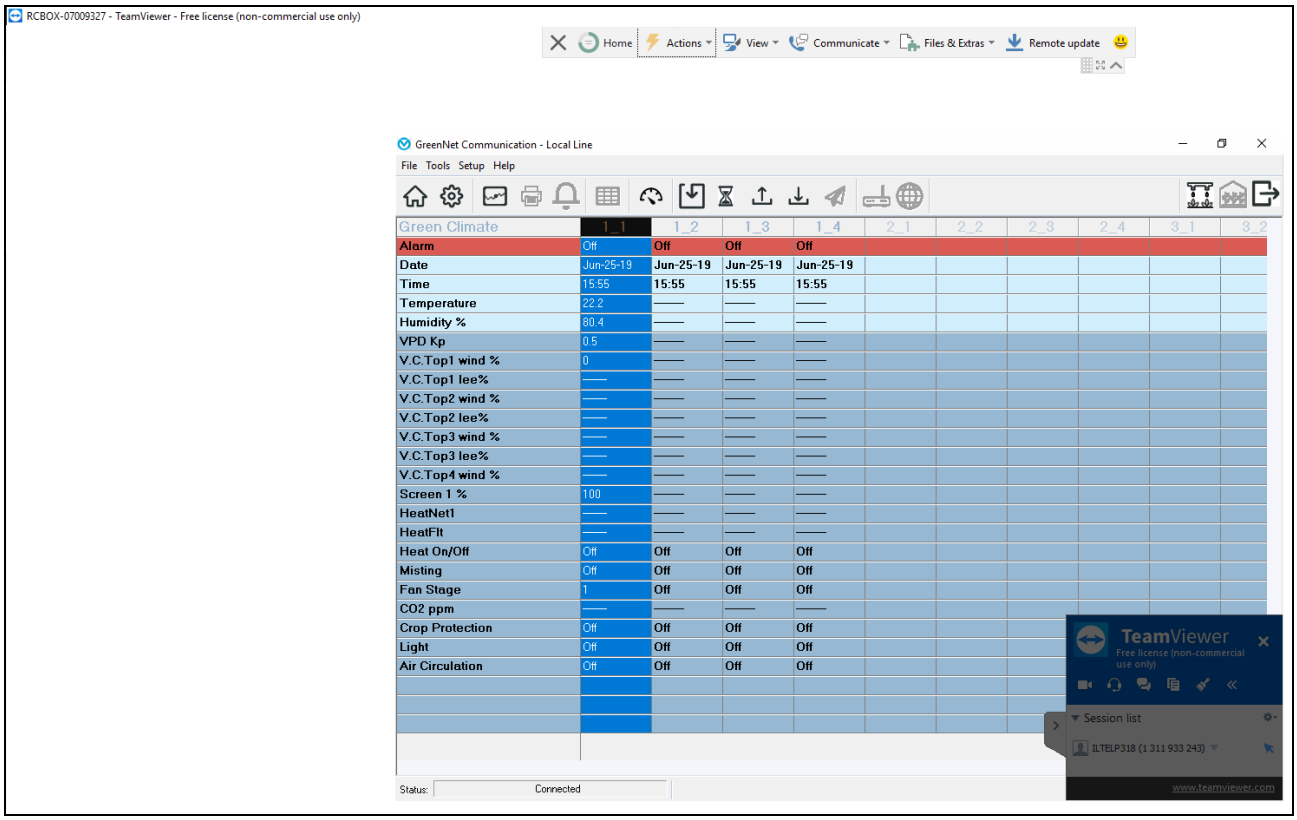
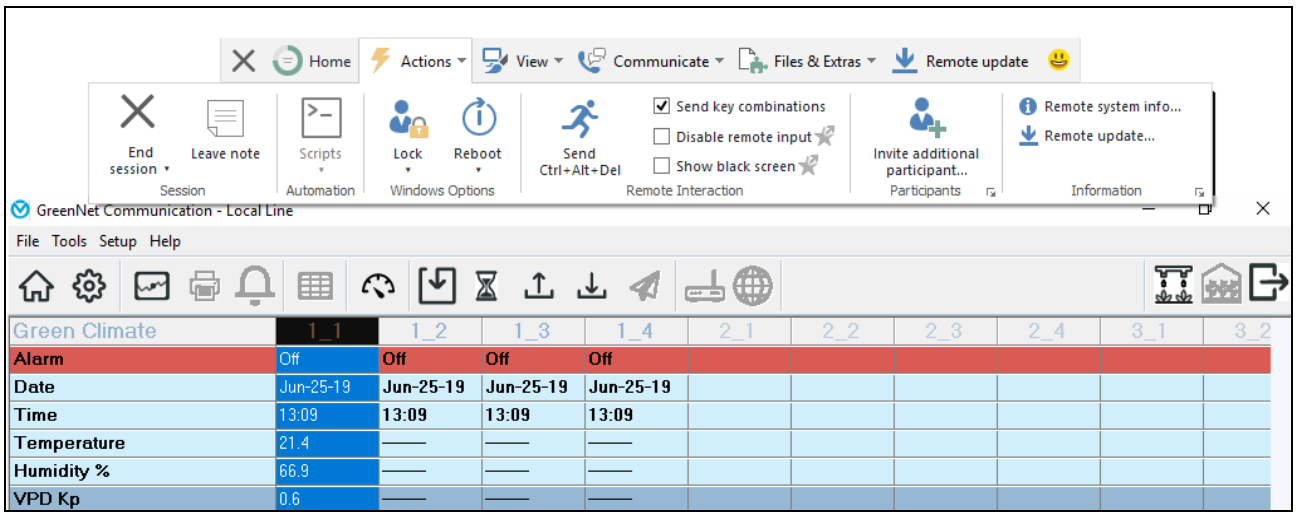


This is the Green Net program as viewed through TeamViewer.

4. To simplify moving through screens, Munters recommends clicking on the Actions tab and checking the **Send key combinations** checkbox.



5.1.2 SETTING UP TEAMVIEWER: RETRIEVED ID

In the event that the Silver Sticker ID does not work, the following procedure explains how to find the CommBox' ID number.

To retrieve the Partner ID:

1. Connect the CommBox to a keyboard and screen and apply power.

Figure 7: CommBox set up

The following screen appears:

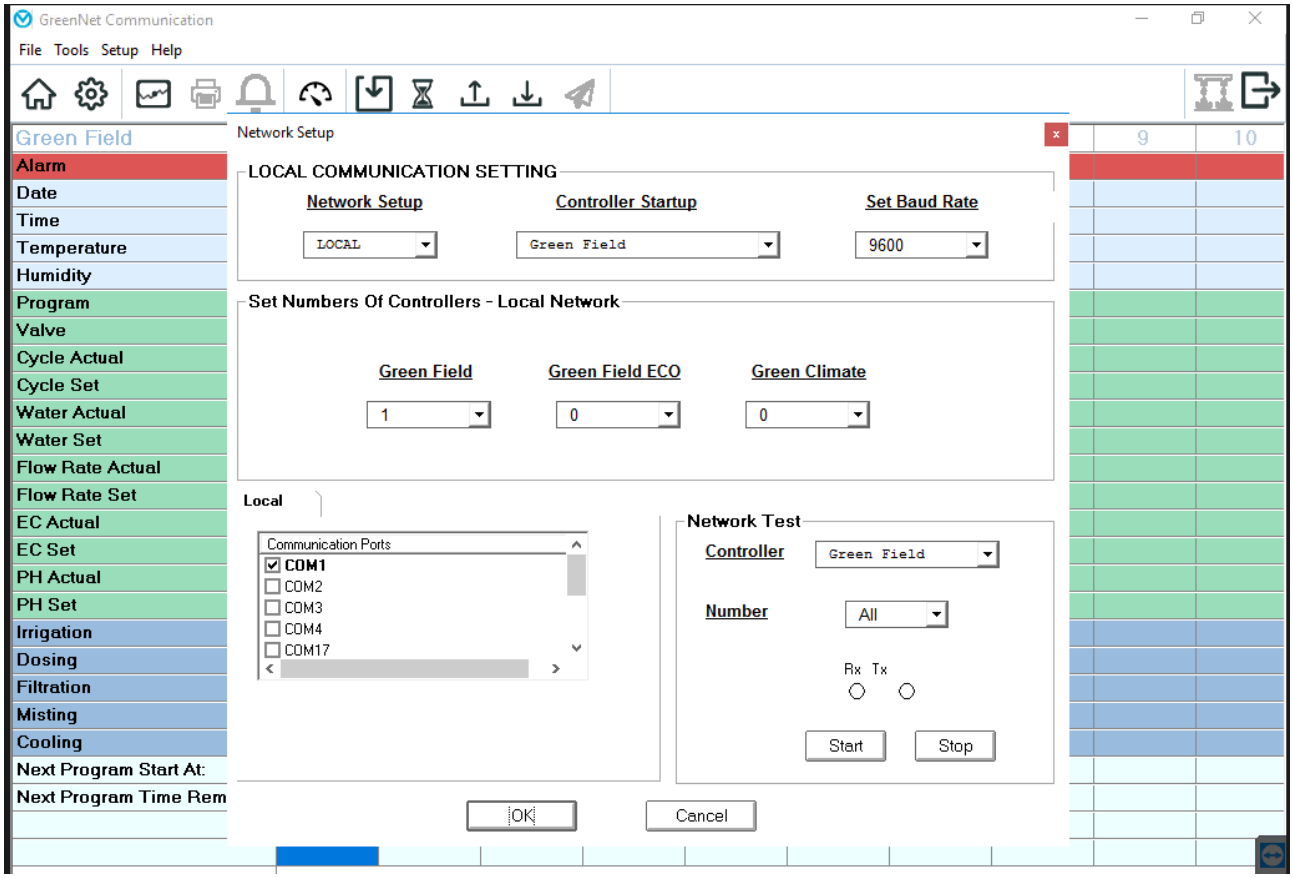


Figure 8: Controller Definitions

2. In this screen:
    - In Controller Startup > Network Setup Controller Startup select a controller type (Green Field or Green Climate).

NOTE It does not matter which controller you select. The user can change this definition.

- In Set Numbers of Controllers, select the number of controllers.
- Click OK. The following screen appears:

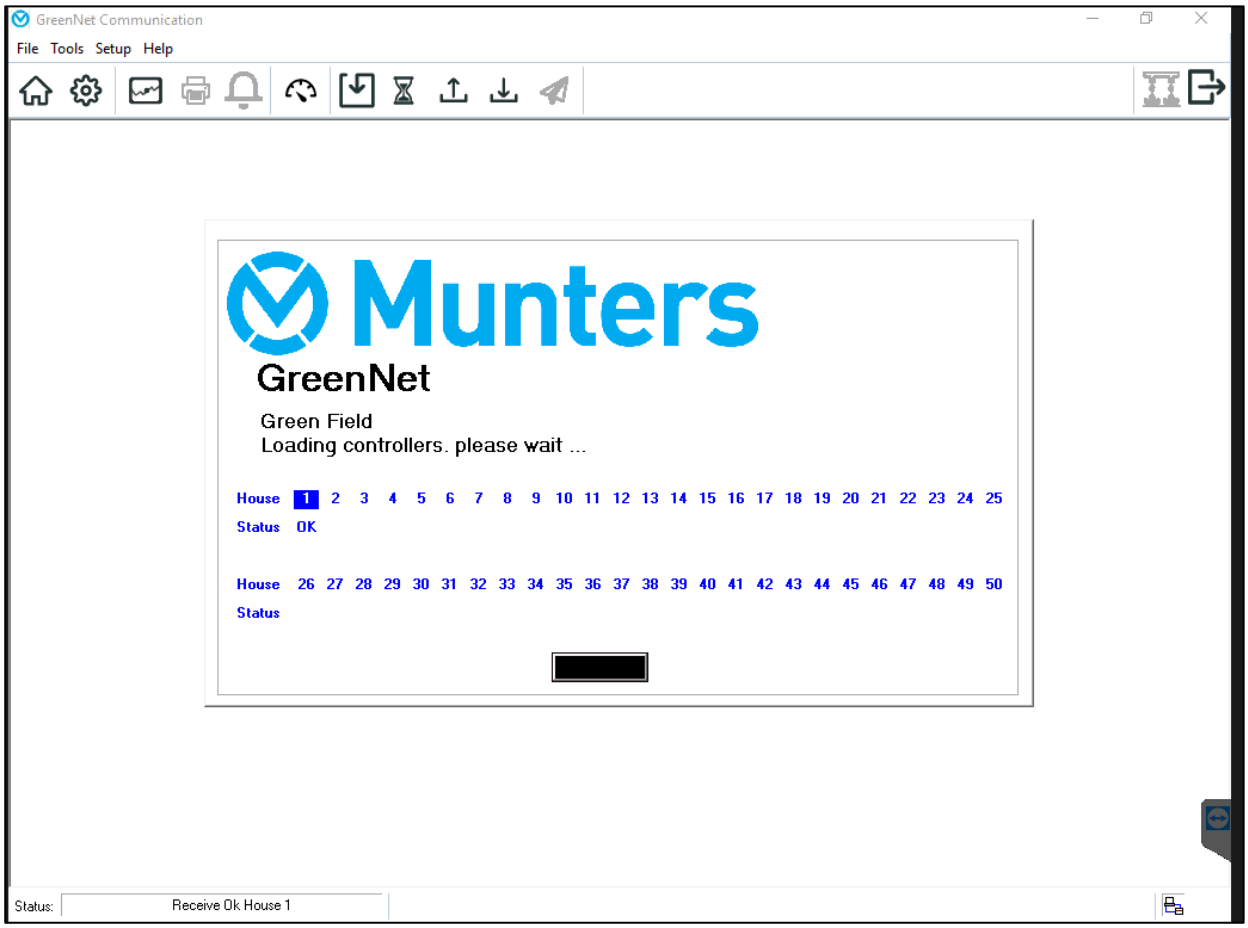


Figure 9: Controller Scan

3. When the screen appears, click "r" five times (rrrrr). There is no need to wait until the scan finishes. The following screen appears.

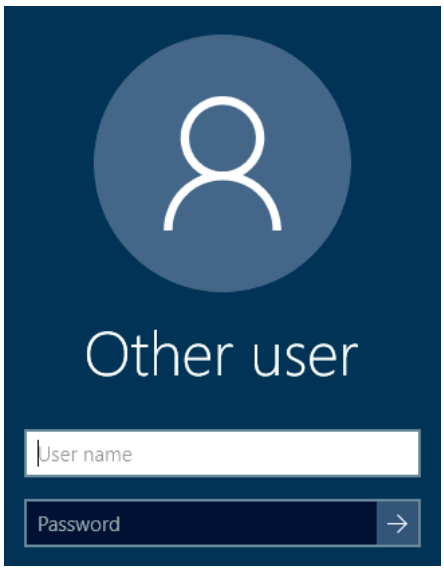


Figure 10: Sign in screen

4. Fill in the fields (case-sensitive):
    - User name: support
    - Password: support
    - The unit ID number (Partner ID) appears.

Figure 11: Partner ID (example)

5. Click X on the top right. The screen closes and CommBox automatically restarts.
6. In TeamViewer, use this ID number and password **$Rfgt5.**

5.1.3 TECHNICAL SUPPORT

In the event that you need technical support and do not remember the Partner ID:

1. On the keyboard connected directly to the CommBox, press the "**R**" key five times. The following screen appears:

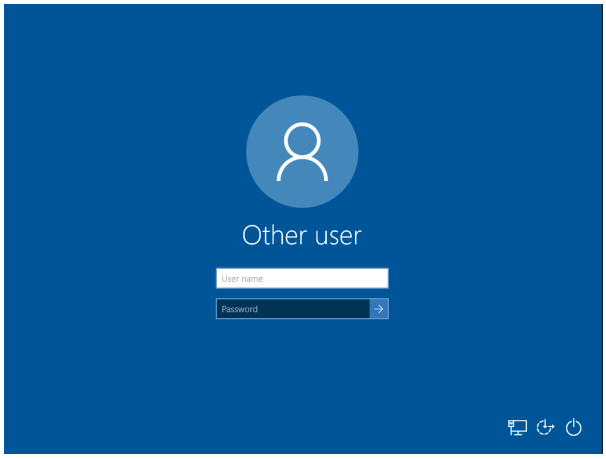


Figure 12: Sign in screen

2. Enter the following in lower case letters:
    - User name: support
    - Password: support

The following screen appears:

Figure 13: Partner ID (example)

3. Provide the SessionID number to technical support. This will allow tech support to log on to your system and provide you with assistance.

5.2 SIM Card and Modem Definition

If the CommBox includes a Quectel modem, define the modem.

1. Place SIM card in a smart phone. Allow the phone to identify the card.
2. Remove the sim card and place it in the CommBox.

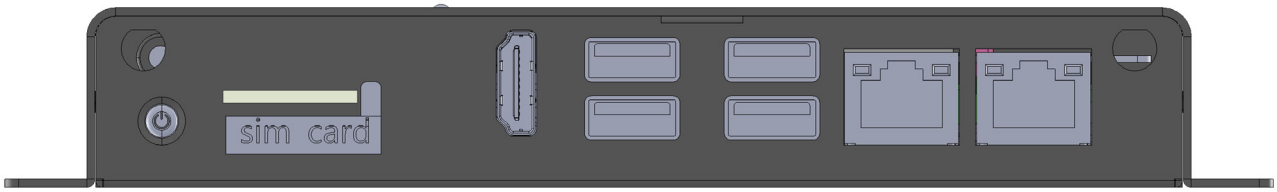
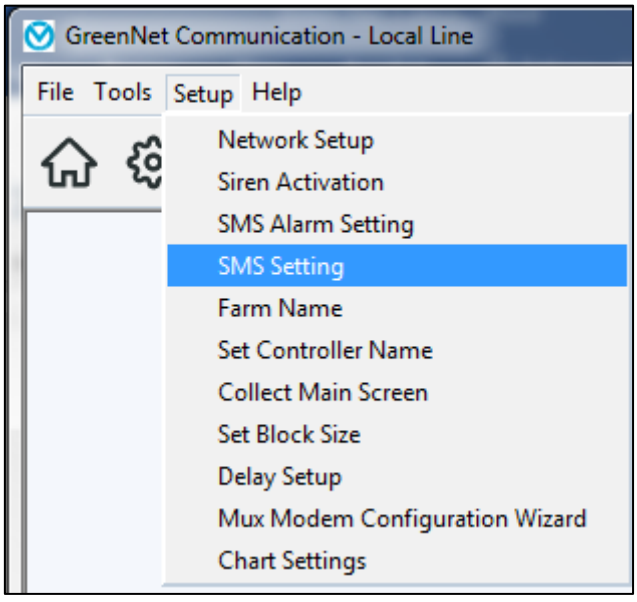


Figure 14: SIM Card Slot

3. Go to Setup > SMS.



The following screen appears.

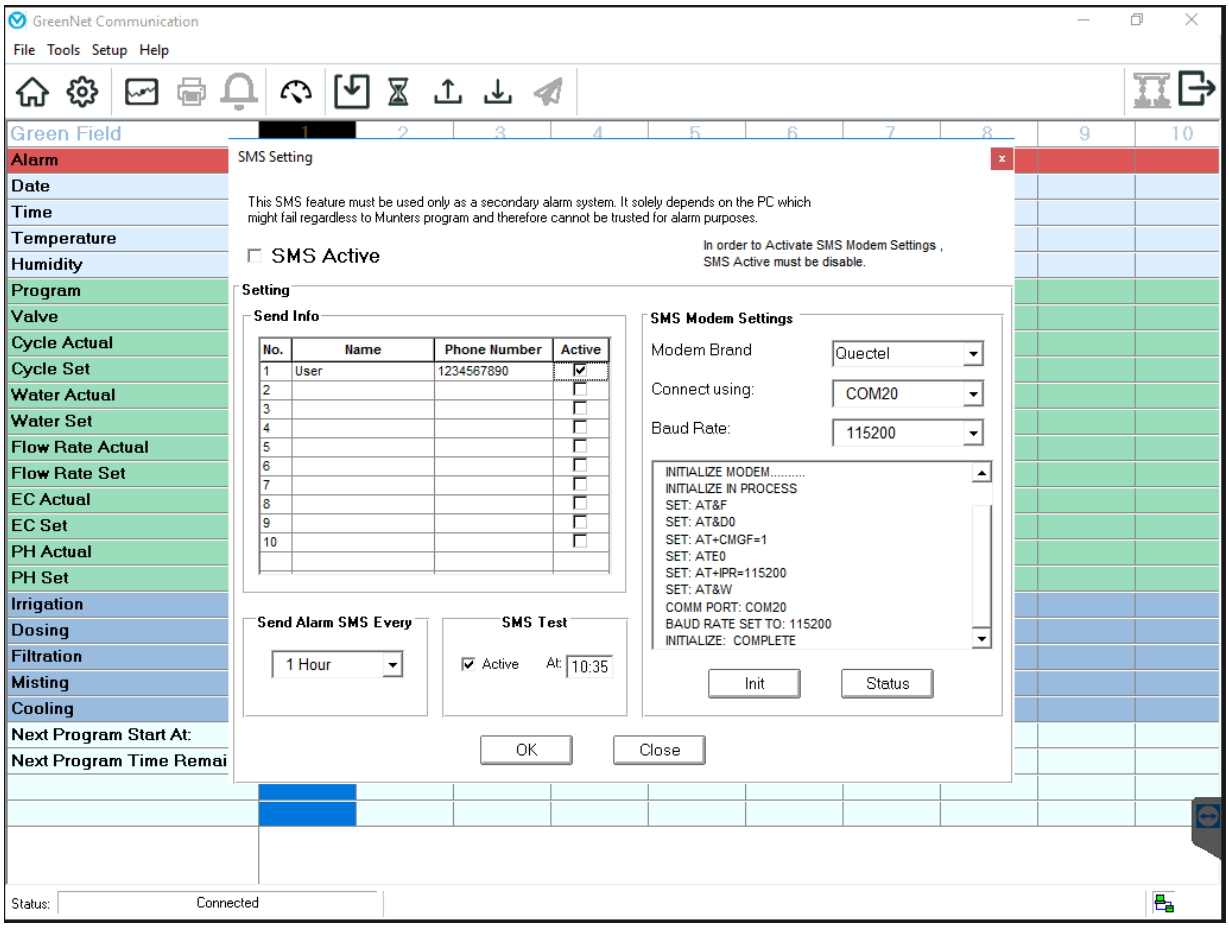


Figure 15: Modem Definition

4. In SMS Modem Settings:
    - Select Quectel in the Modem Brand drop down list.
    - Define the baud rate as 115200.
5. In Setting > Send Info, add a user and phone number.
6. Click Init. The following screen appears.

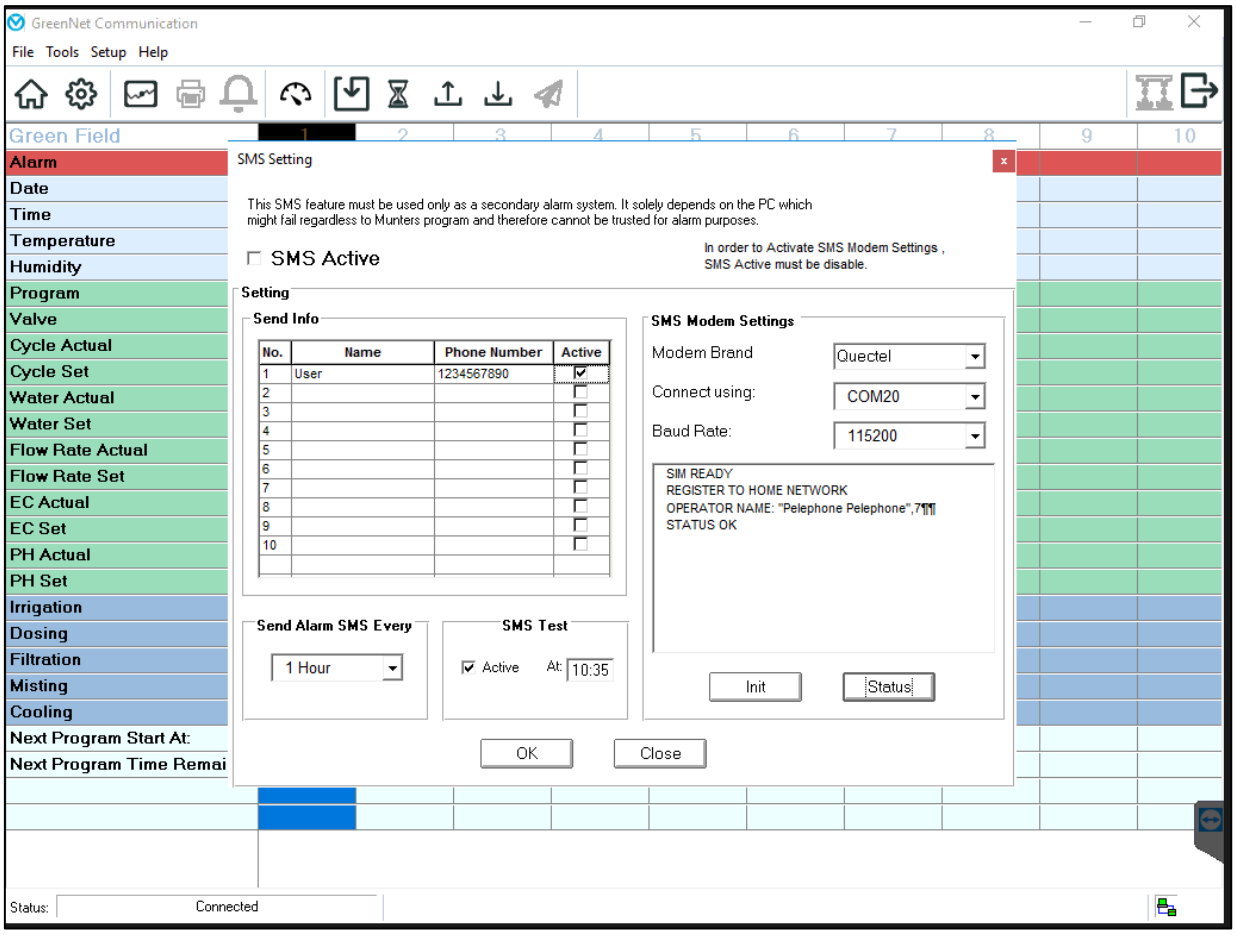


Figure 16: Test Screen

6 Network Setup

The following sections detail how to set up local and remote networks. The appropriate screen is displayed.

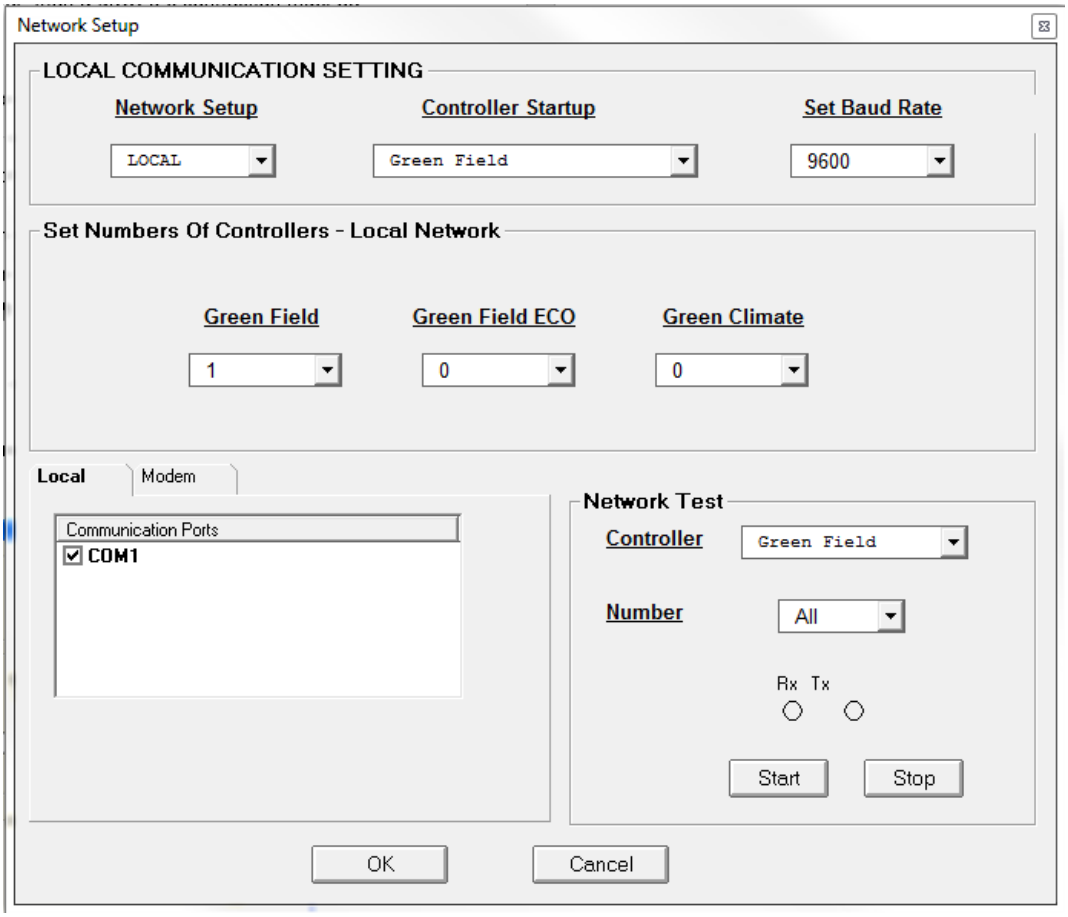


Figure 17: Local Communication Setting Screenshot – Part 1

- **Controller Startup**: Choose the required controller (Irrigation or Climate).
- **Set Baud Rate**: Set the baud rate according to the settings on the controllers.
- **Set Number of Controllers**: Set the number of controllers of each type connected to the communication program.
- **Communication Ports**: Select the communication port from the available ports.
- **Network Test**: The RX TX lights indicate the communication status:
  - A green RX LED indicates an answer from a controller.
  - A red TX LED indicates a lack of communication.
  - The communication test is performed on different types of controllers separately, choose type of controller and press start.

*NOTE The network test is an endless loop and only stops by pressing the **Stop** button. (The loop is on controllers 1-50).*

Figure 18 displays a drop down list from which the required controller start up is selected.

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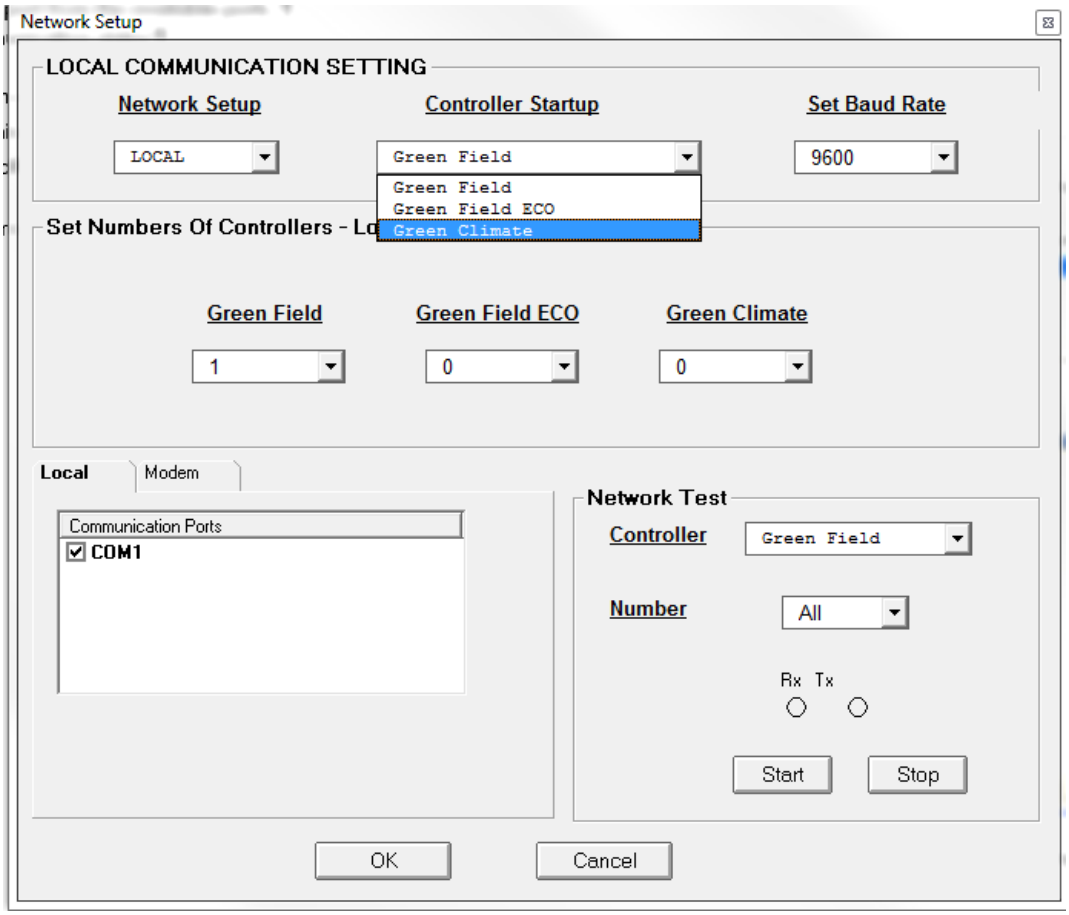

Figure 18: Local Communication Setting screenshot – part 2

7 PC Software Configuration

NOTE This section does not describe the actual functionality of the Green Field, Green Field ECO, or Green Climate controllers. Refer to the user manuals for that information.

- Tools
- Quick Access Buttons

7.1 Tools

The tools menu enables changing the language and display colors.

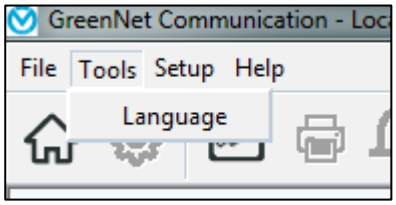

Figure 19: Tools Menu List

- Language
- Setup Menus
- Network Setup
- Siren Activation
- SMS Alarm Setting
- SMS Setting
- Farm Name
- Set Controller Name
- Collect Main Screen
- Setting Block Size
- Delay Setting

7.1.1 LANGUAGE

- From the dropdown list, select the required language.
- Click OK.

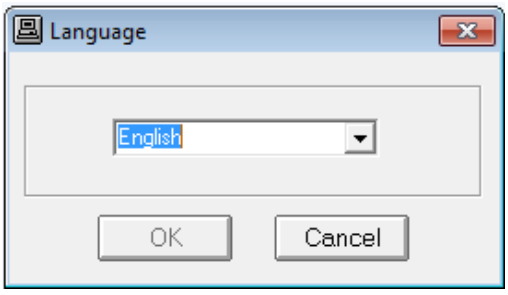

Figure 20: Language Selection Box

7.1.2 SETUP MENUS

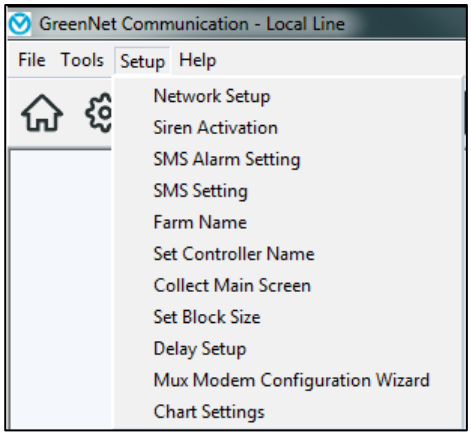

Figure 21: Setup Menu List

7.1.3 NETWORK SETUP

Refer to the Network Setup section, page 23.

7.1.4 SIREN ACTIVATION

Selecting the siren function enables a siren sound to be played on your PC if an alarm is activated.

7.1.5 SMS ALARM SETTING

The Cellular modem sends SMS alerts and messages from the PC to the cellular phone and vice versa. Mark the alarms you would like sent by SMS. The available message types are:

- Different types of alarms
- Main screen status
- Message to reset an alarm
- A message is generated automatically when there is no communication and another message when communication is re-established.
- NO PC Communication software has to operate in order to receive this message.
- When the Software does not operate there are no SMS messages.

Select Setup > SMS Alarm Setting. The SMS Alarm Setting window opens. Select which messages to receive. Otherwise, clicking on the Select All button marks all alarms.

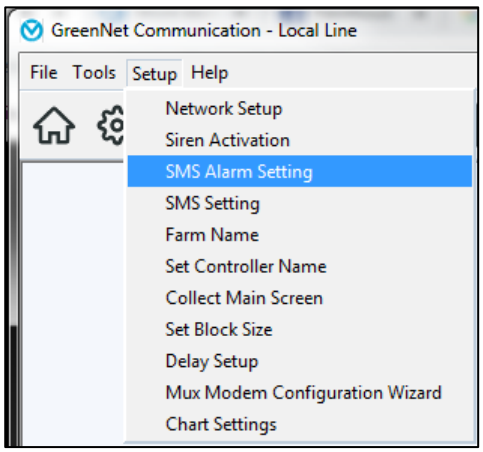

Figure 22: SMS Alarm Setting Selection

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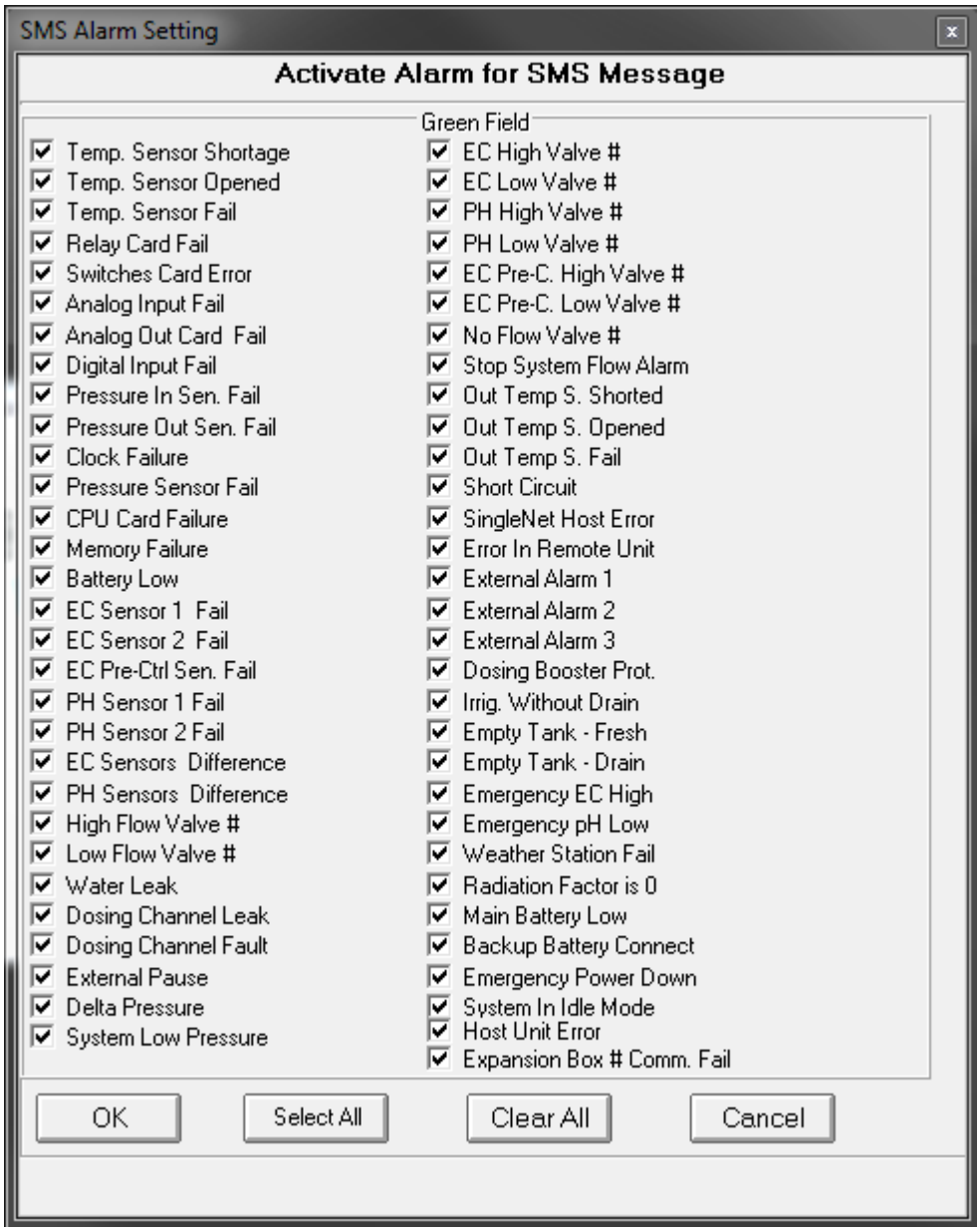

Figure 23: SMS Alarm Setting

NOTE Figure 23 is an example only; the actual screen depends on which controllers are configured in your system.

7.1.6 SMS SETTING

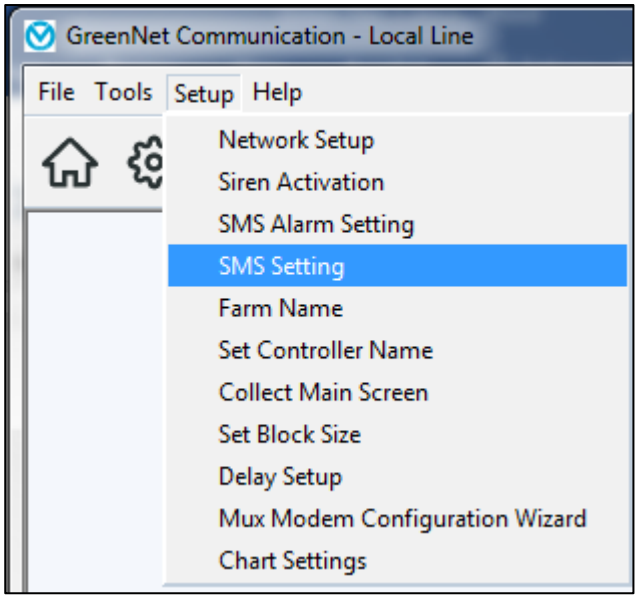

Figure 24: Setup Menu List

SMS Setting screen is used to define to whom you would like to send SMS messages.

Note that there is no connection to the controller's type.

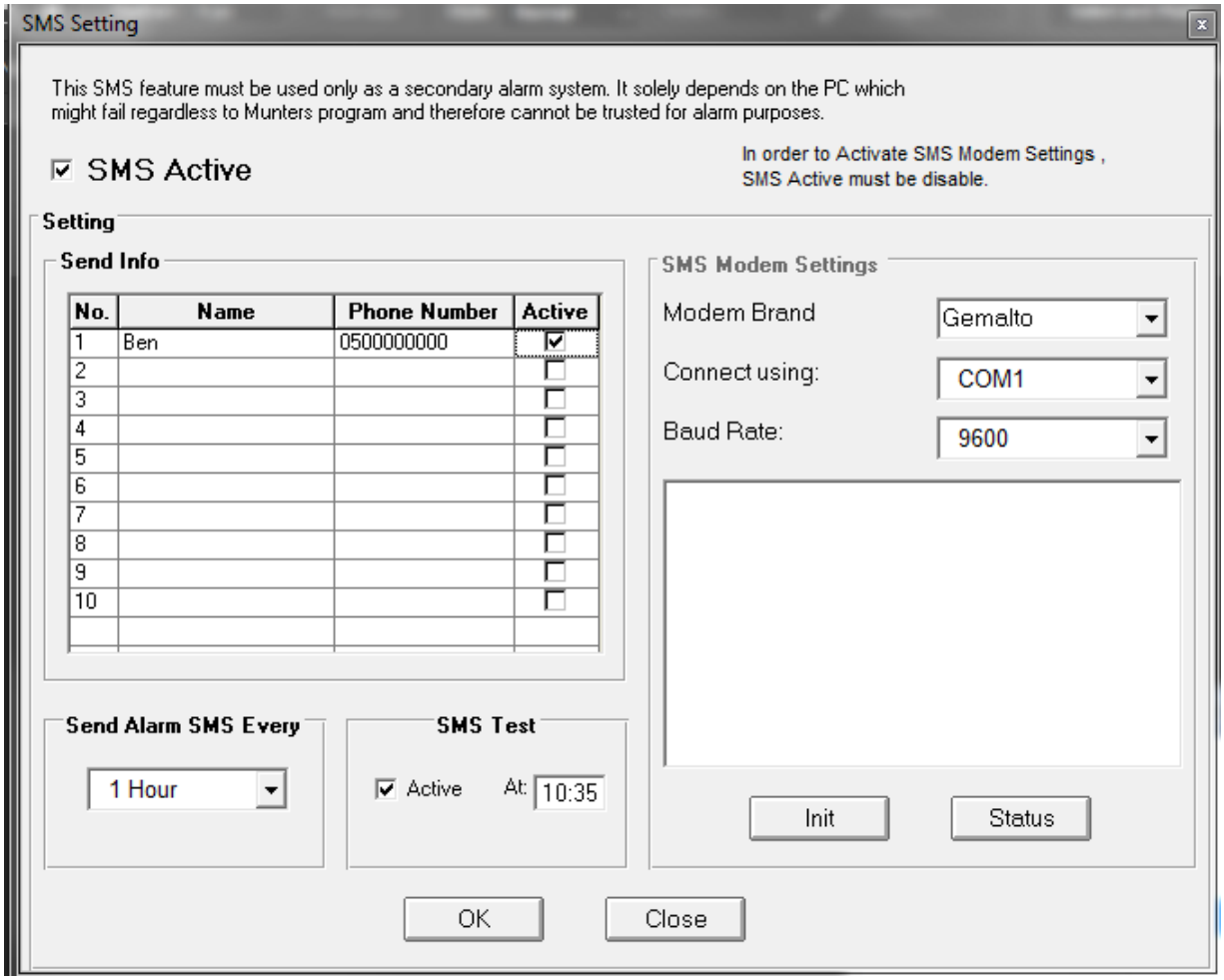

Figure 25: SMS Setting Screen

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- **SMS Active:** Check the **SMS Active** box to activate SMS sending.
- **Modem Brand:** Select the type of modem for sending SMS.
- **Connect using:** Select the modem comm. port from the dropdown list.
- **Send Alarm SMS Every:** Set the time in minutes between SMS messages. Alarms that remain active are re-sent to the cell phone according to this setting.
- **Send Info:** In the *Send Info* list, enter the names and phone numbers of the persons to receive the SMS. Mark the **Active** check boxes next to names of persons whom you would like to send SMS messages. Only selected lines are active.

7.1.6.1 Communicating via Cellular or Mobile from your Cellular Phone

To reset the alarm, write RESET on your cellular phone followed by the controller signal (See explanation below) and the house number. For example RESETJ2 (controller number 2 of Green Field ECO Irrigation). Then send the message. The Modem will confirm the message on the cellular phone upon successful completion of the message.

To request main screen data, write STATUS on your cellular phone followed by the controller signal and the house number. For example STATUSJ2 (controller number 2 of Green Field ECO Irrigation) and send the message from the cellular phone to the modem. Data will be sent after a few seconds and a message will appear on the cellular.

- Controller Signal:
- **I** –Green Field
- **J** – Green Field ECO
- **P** – Green Climate

7.1.7 FARM NAME

User defined farm name. Use a name that will help you to identify the farms easily.

Figure 26: Farm Name Entry Box

All data will be collected to the Farm Directory when the Local Connection is selected.

*NOTE **GREENNET** Farm name must be in English in order for an SMS be delivered properly.*

7.1.8 SET CONTROLLER NAME

User defined House name. Use a name that will help you to identify the houses easily and will be used as the directory name for collected Data.

*NOTE **GreenNet** Forbidden characters: \ / * ? < >*

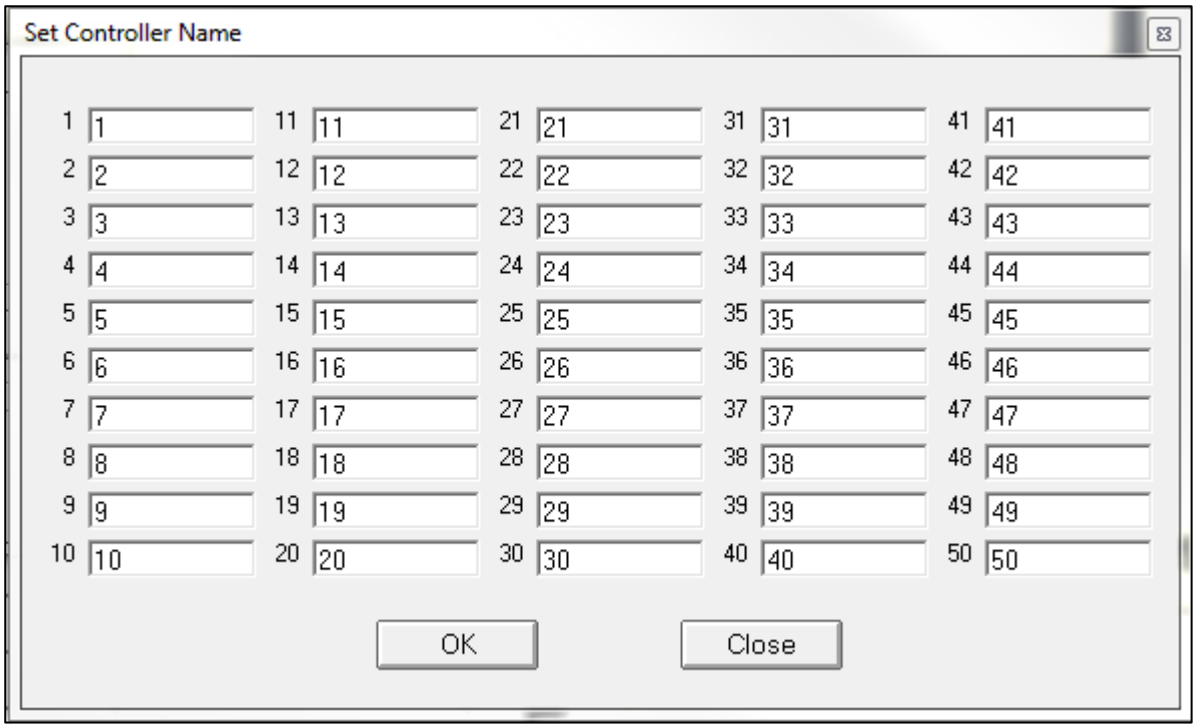


Figure 27: Available House Number Window

7.1.9 COLLECT MAIN SCREEN

Enables collecting data presented on the main screen, how often and where to save it. The data is saved in CVS format, and can be viewed using Microsoft Excel.

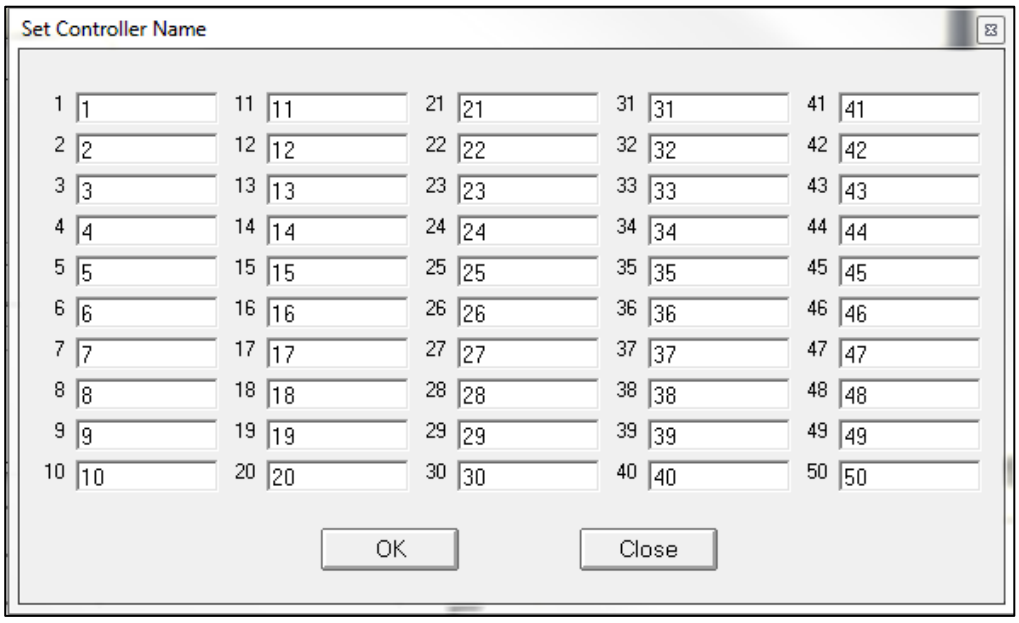


Figure 28: Collect Main Screen Settings Window

7.1.10 SETTING BLOCK SIZE

When working with RF communication it is a custom to operate using 64 bytes rather than 255 bytes. When functioning in bad conditions, it is possible to decrease the block size.

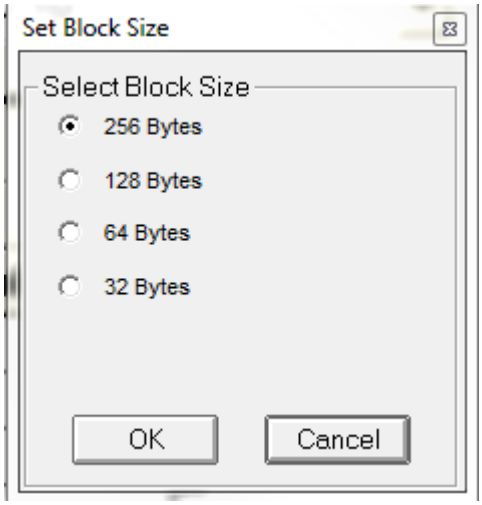


Figure 29: Set Block Size – Screenshot

7.1.11 DELAY SETTING

When functioning using bad communication (using either wrong modem or wrong cellular modem), it is possible to increase the delay time from one block to the other.

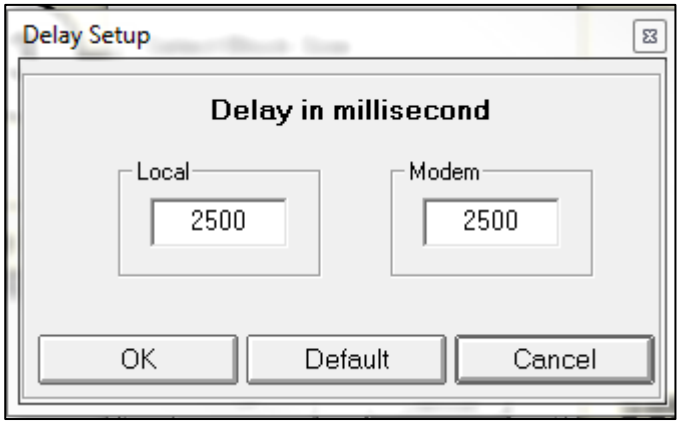


Figure 30: Delay Setup – Screenshot

7.2 Quick Access Buttons

- Main Screen
- Graph
- Print
- Active Alarms
- Zone selection for Green Climate
- Hot Keys
- Collect
- History
- Load Settings to the Controller

- Save Settings from Controllers
- Send To
- Switch Between Controller Types

7.2.1 MAIN SCREEN

Click on the Main Screen button on the tool bar to bring up the Main Screen.

7.2.2 SETTINGS

Select the controller number column and click on the Settings button on the tool bar to access the **Settings** submenu.

Click on any of the submenus to receive information from the controller.

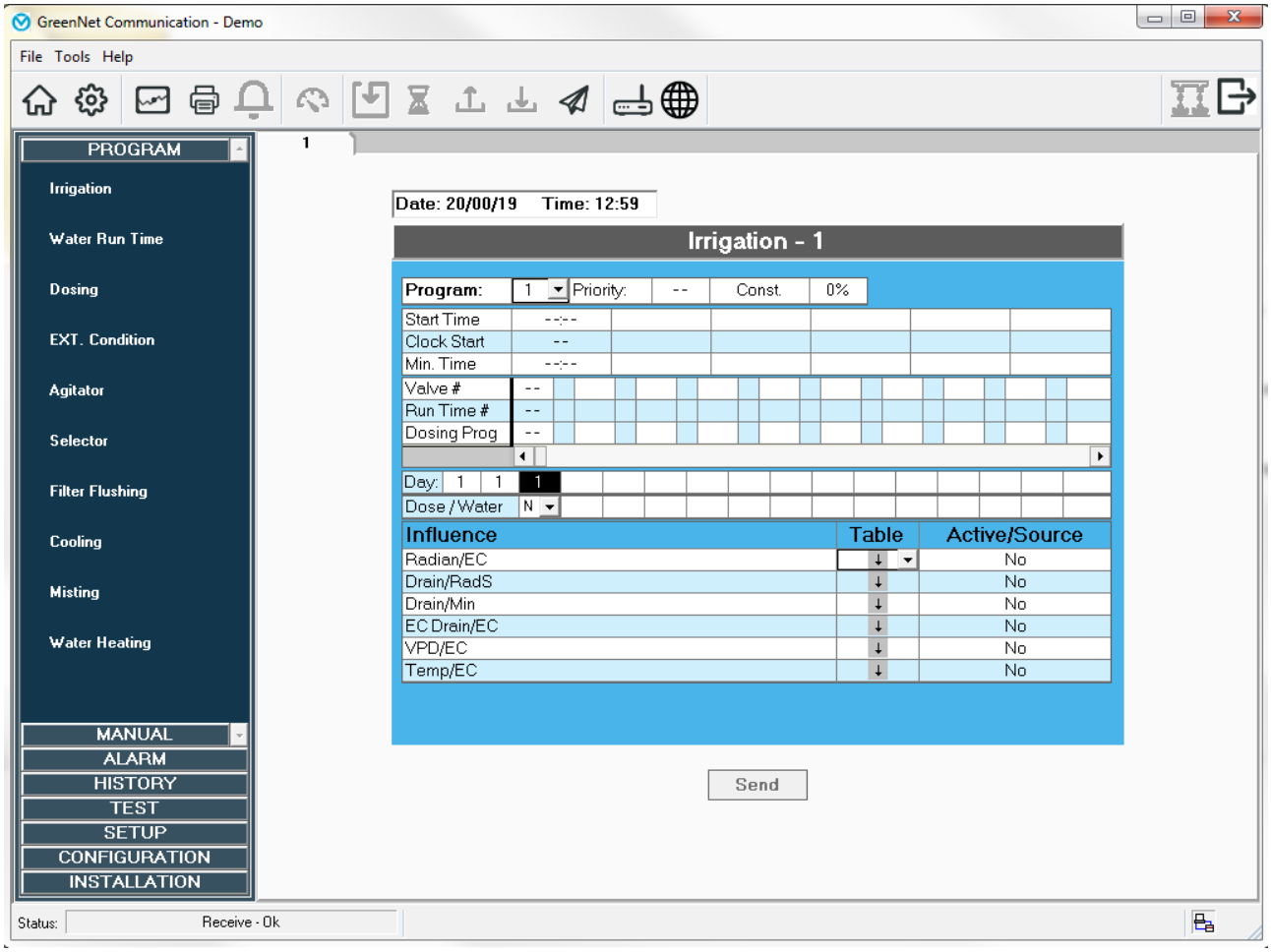


Figure 31: Sample Irrigation Screen

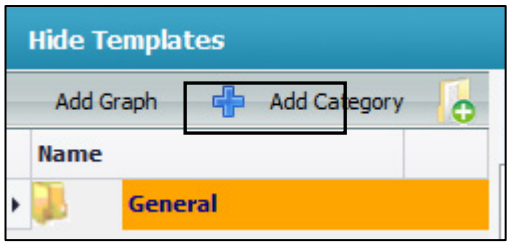
7.2.3 GRAPH

Click the Graph button to view controller data in graphs. The following sections detail the Graph function.

- Creating a New Category
- Creating a New Graph
- Editing a Graph

- Sensor Settings in
- Changing the Time Frame
- Saving the Template
- Exporting to Excel
- Saving a the Graph as an Image
- Printing the Graph
- Graph Appearance
- File

7.2.3.1 Creating a New Category

1. Click 

.
2. In the text box, type the category name.
3. Click **OK**.

7.2.3.2 Creating a New Graph

1. Click

.

The Add a New Graph window opens.

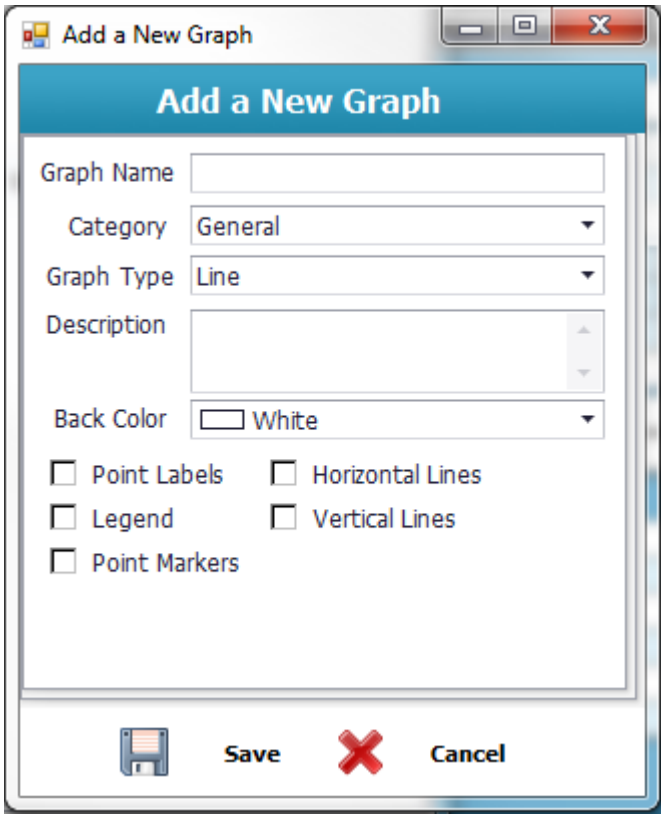


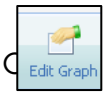
Figure 32: New Graph Properties Window

2. In the Graph Name field, type the graph name.
3. From the Category drop down list, select a category.
4. From the Graph Type drop down list, select the graph type.
5. In the Description text box, add any required text.
6. Select the graph properties:
    - Point labels: Date
    - Legend:
    - Point Markers
    - Horizontal/Vertical Lines: Set up a grid
7. Choose background color.
8. Click **Save**.

The new graph appears.

7.2.3.3 Editing a Graph

The Edit function enables changing the graph appearance.

1. C 

.

The Graph Properties window opens.

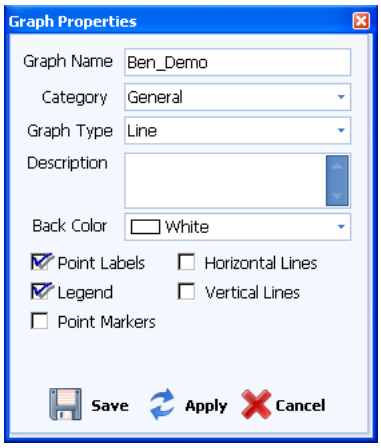


Figure 33: Edit Graph Properties Window

2. Edit the fields as required.
3. In the Description text box, add any required description.
4. Choose background color.
5. The check boxes determine what details appear on the graph. Click the required boxes.
6. Click Save.

The graph displays the new settings.

7.2.3.4 Sensor Settings in GreenNet

- Sensor to Collect
- Time Refresh

7.2.3.4.1 Sensor to Collect

You can determine controllers and sensors to be reported.

To set reporting sensors:

1. Click the **Sensor** icon on the toolbar. The sensors panel appears of the right side of the graph.
2. In the **Controller** field, use the drop down arrow to select the desired controller available. When selected, the **Locations** area appears with a list of the controllers sensors.
3. Select the desired sensors to be shown on the graph.

7.2.3.4.2 Time Refresh

You can determine the time period that the sensors connected to the controllers are reported. You can determine the To and From time period, and the default time frame for each template.

To select the time frame:

1. Click the **Time Frame** icon on the toolbar. The Select Time Frame panel appears on the right of the Graph.
2. In the **From/To** area set the desired day, month year and start and end time using the drop down menus.
3. Click **Apply** to apply the selected dates and times.

NOTE Green Net When selected, this time frame applies to the current session only.

4. In the **Default Time Frame For Current Template** area, set the desired default template time frame.
5. Click **Save** to apply the desired default time template frame.

7.2.3.5 Changing the Time Frame

By default the graph displays data from the current date to the previous seven days. You can change the time frame as required.

1. Click

.

The Time Frame fields appear.

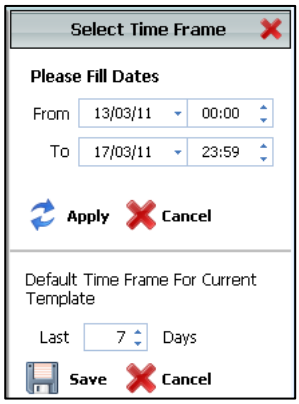


Figure 34: Select Time Frame Window

2. In the From and To fields, select the required dates.
3. Click Apply.
4. If required, change the default time frame.

5. Click Save.

7.2.3.6 Saving the Template

If you change the graph appearance, you can save the settings to the template. The next time that you create a graph, the data appears in the new format.

7.2.3.7 Exporting to Excel

You can export the data to Microsoft Excel.

1. Click

2. Browse to the required directory and save.

7.2.3.8 Saving a the Graph as an Image

You can save an image of the graph as a jpeg file.

1. Click

.
2. Browse to the required directory and save.

7.2.3.9 Printing the Graph

- Click

to print the graph.

7.2.3.10 Graph Appearance

The graphs can appear having:

- All data lines appearing in one graph
- Each data line appearing in a separate graph
- Click

    - To place all data lines in one graph, select .
    - To separate the data lines, select .

7.2.3.11 File

The File menu has the following functions:

- **Load Offline Data Files:** Enables loading offline data files
- **Application Settings:** Enables setting the desired units of measure between the U.S. or Metric system

7.2.4 PRINT

Clicking the print icon will print the current table showing on your monitor.

7.2.5 ACTIVE ALARMS

GreenNet displays the active alarms with a short message describing the alarm type. The alarm icon lights up when an alarm is active and it will automatically pop up a screen showing alarm and cause.

Any change in alarm will pop up that screen. After it is close it can be reopened by pressing the alarm icon. (Up to 9 alarms can be displayed – see the figure below).

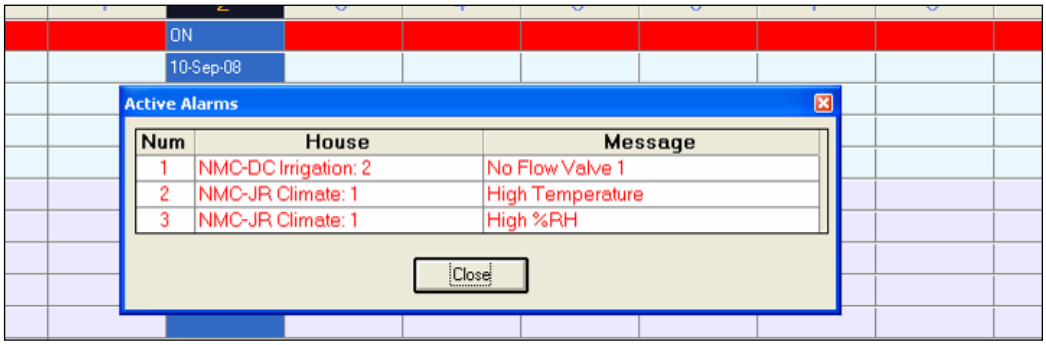


Figure 35: Active Alarm Screenshot

7.2.6 ZONE SELECTION FOR GREEN CLIMATE

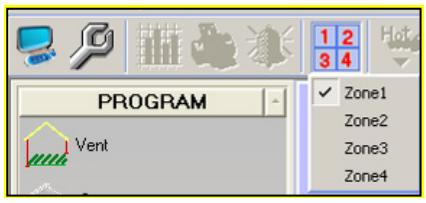


Figure 36: Zone Menu List

7.2.7 HOT KEYS

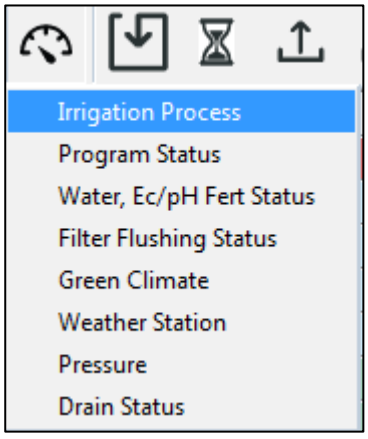


Figure 37: Hot keys Menu List

The Green Net offers several functions located under the ***Hot*** dropdown list icon that enable you easy access to information that pertains to actual and future processes, as well as general conditions.

Simply select one of the functions from the dropdown list to open the appropriate window.

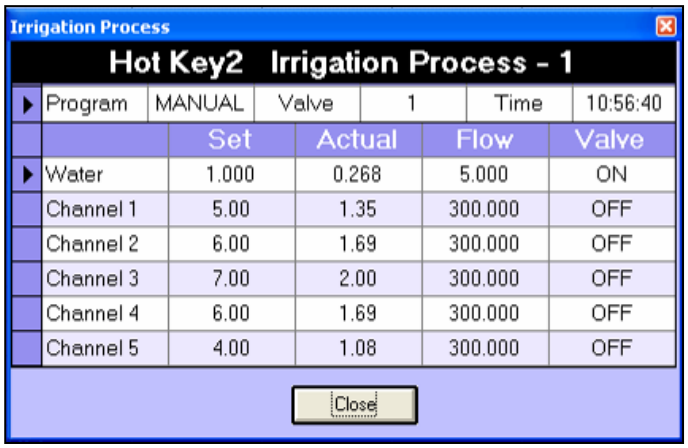


Figure 38: Hot Key 2 (Irrigation Process) Example

7.2.8 COLLECT

The collect button opens a window that allows you to configure the accumulation of history data from each controller, in order to use it for statistics calculations and records of previous years.

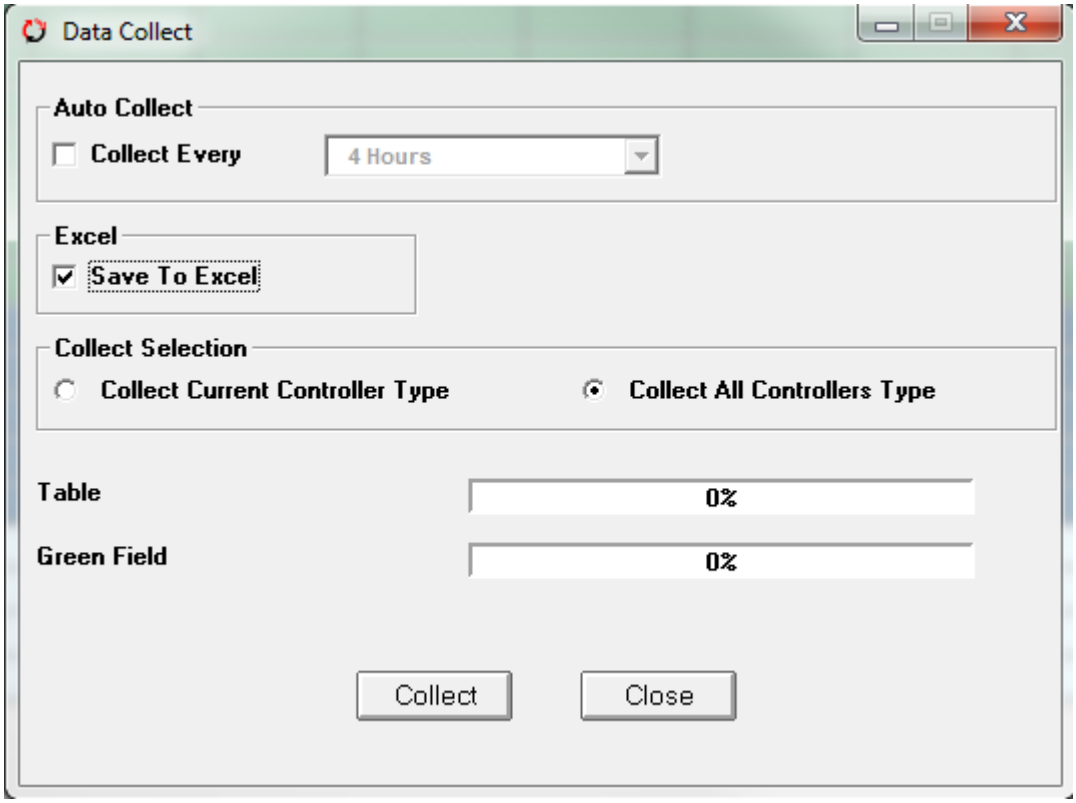


Figure 39: Data Collect 24 hr Format Screen

- **Auto Collect:** Select this option to activate it. Select the data collection interval, and enter an hour in which automatic history collection is performed.
- **Excel:** You can choose to save the data in excel format.

In addition, there is an automatic data collection to a Microsoft Access - database.

When Local connection is selected all the data will be collected to the Farm Directory that was defined in **Figure 26**.

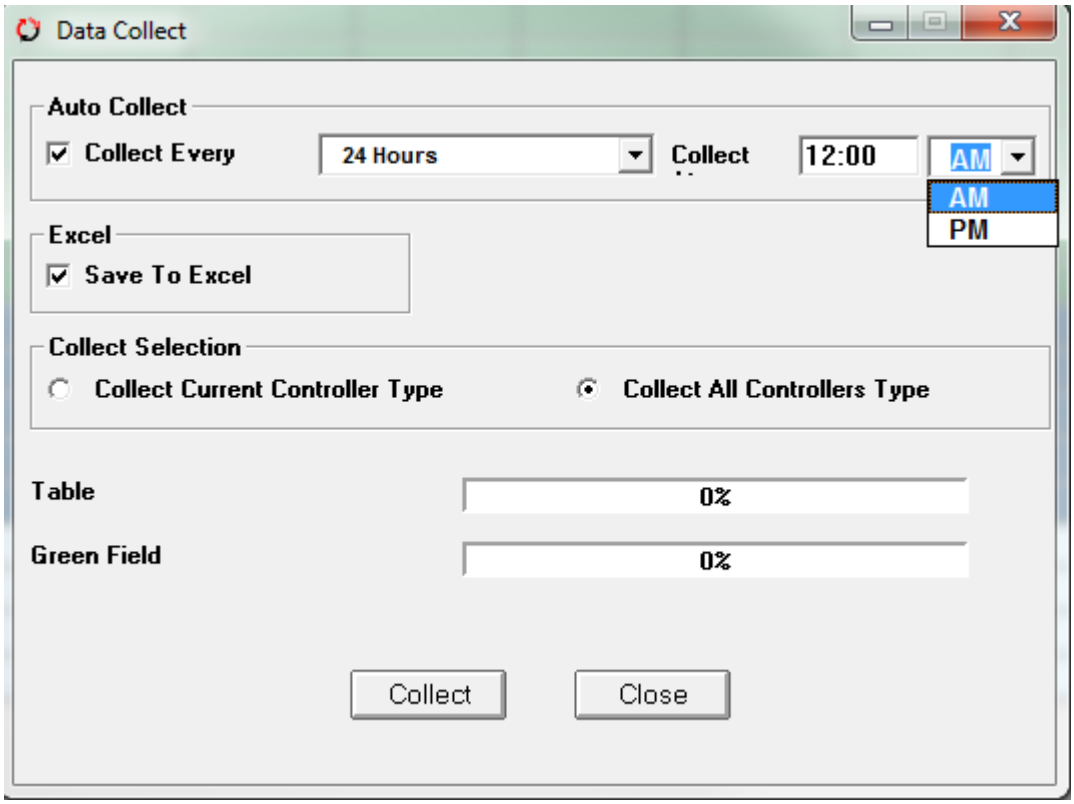


Figure 40: Data collect AM/PM Format Screen

7.2.9 HISTORY

Click on the History button on the tool bar and browse to directory of the saved history file in your PC. Open the history file and view history.

7.2.10 LOAD SETTINGS TO THE CONTROLLER

Load settings to a controller (Figure 41: Select a controller number and the location of the file to load (In order to enter this menu you must enter a password that can only be received from your local dealer).

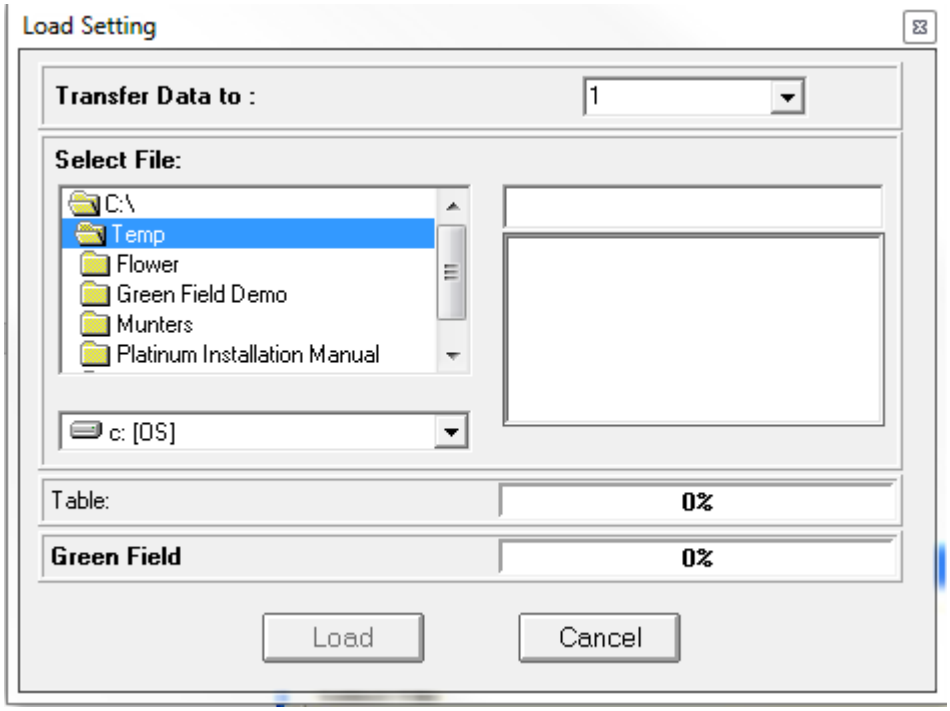


Figure 41: Load Setting to Controller Screen

7.2.11 SAVE SETTINGS FROM CONTROLLERS

Click on the ***Save Settings*** button on the tool bar to download settings from all controllers to a file on your computer (PC).

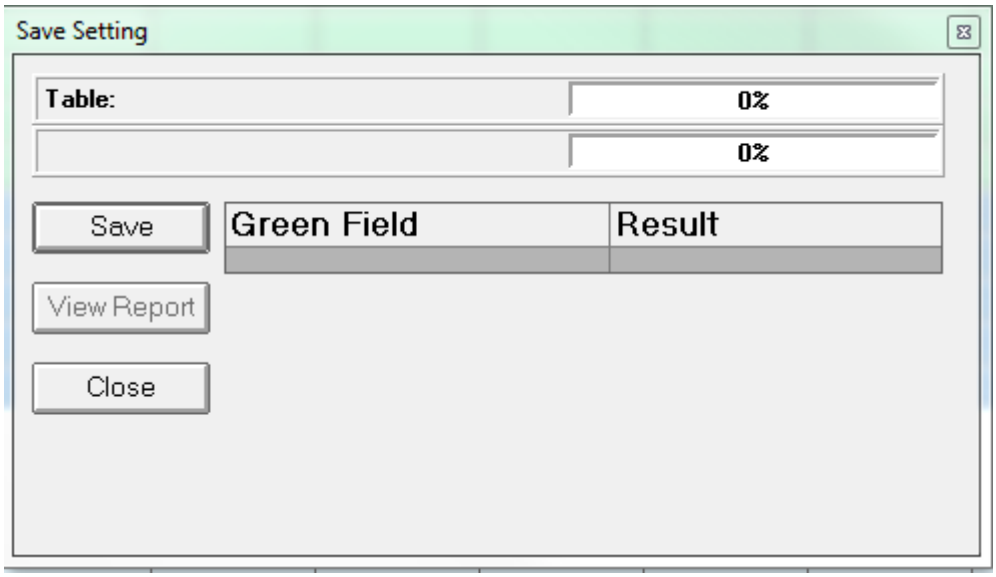
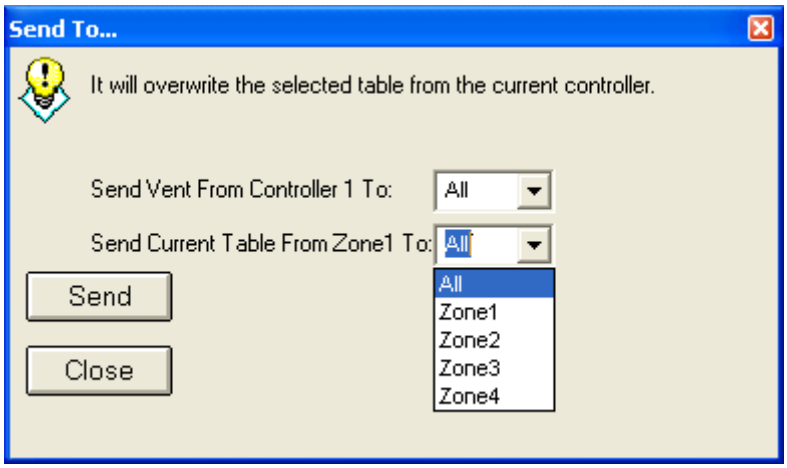


Figure 42: Save Setting Screen

The program creates a different file for each controller. The settings can be transferred to other controllers or serve as backup settings in case of malfunctions.

7.2.12 SEND TO

Send table settings to selected controllers or to all of the controllers.



7.2.13 SWITCH BETWEEN CONTROLLER TYPES

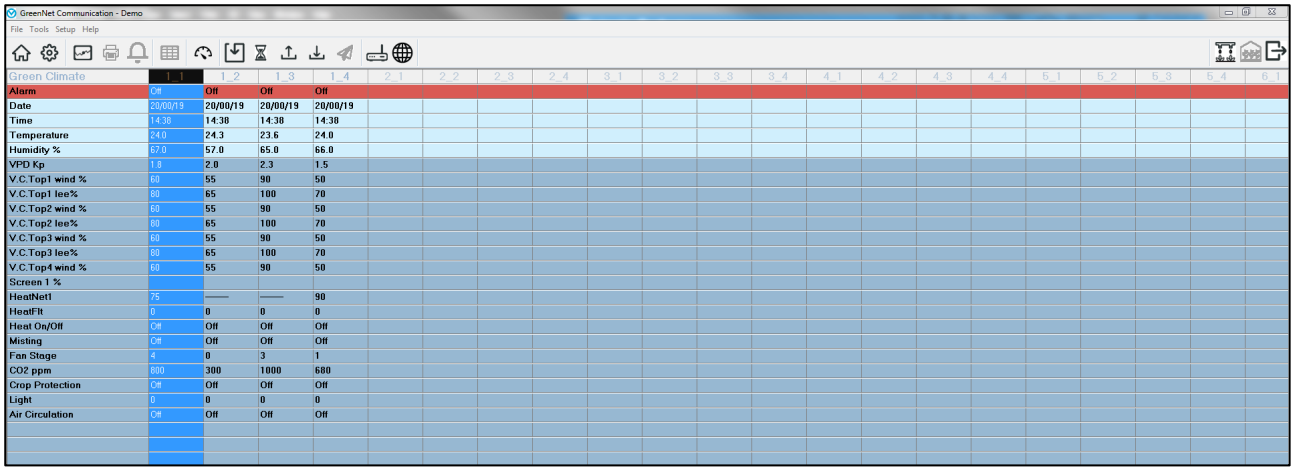


Figure 43: Switch Between Controllers Screenshot

The two icons on the upper right side of the screen (see Figure 43), enable the user to switch to different controllers according to the following:

Switch to Green Field

Switch to Green House

Use the "Switch to ..." buttons to switch between available controller types. When connecting to a specific type of controller, for example Green Field all available Green Field units will be visible.

*NOTE **Green Net** The icons only appear if they exist on the network.*

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8 Warranty

Warranty and technical assistance

Munters products are designed and built to provide reliable and satisfactory performance but cannot be guaranteed free of faults; although they are reliable products they can develop unforeseenable defects and the user must take this into account and arrange adequate emergency or alarm systems if failure to operate could cause damage to the articles for which the Munters plant was required: if this is not done, the user is fully responsible for the damage which they could suffer.

Munters extends this limited warranty to the first purchaser and guarantees its products to be free from defects originating in manufacture or materials for one year from the date of delivery, provided that suitable transport, storage, installation and maintenance terms are complied with. The warranty does not apply if the products have been repaired without express authorisation from Munters, or repaired in such a way that, in Munters' judgement, their performance and reliability have been impaired, or incorrectly installed, or subjected to improper use. The user accepts total responsibility for incorrect use of the products.

The warranty on products from outside suppliers fitted to is limited to the conditions stated by the supplier: all claims must be made in writing within eight days of the discovery of the defect and within 12 months of the delivery of the defective product. Munters has thirty days from the date of receipt in which to take action, and has the right to examine the product at the customer's premises or at its own plant (carriage cost to be borne by the customer).

Munters at its sole discretion has the option of replacing or repairing, free of charge, products which it considers defective, and will arrange for their despatch back to the customer carriage paid. In the case of faulty parts of small commercial value which are widely available (such as bolts, etc.) for urgent despatch, where the cost of carriage would exceed the value of the parts, Munters may authorise the customer exclusively to purchase the replacement parts locally; Munters will reimburse the value of the product at its cost price.

Munters will not be liable for costs incurred in demounting the defective part, or the time required to travel to site and the associated travel costs. No agent, employee or dealer is authorised to give any further guarantees or to accept any other liability on Munters' behalf in connection with other Munters products, except in writing with the signature of one of the Company's Managers.

WARNING: In the interests of improving the quality of its products and services, Munters reserves the right at any time and without prior notice to alter the specifications in this manual.

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The liability of the manufacturer Munters ceases in the event of:

- dismantling the safety devices;
- use of unauthorised materials;
- inadequate maintenance;
- use of non-original spare parts and accessories.

Barring specific contractual terms, the following are directly at the user's expense:

- preparing installation sites;
- providing an electricity supply (including the protective equipotential bonding (PE) conductor, in accordance with CEI EN 60204-1, paragraph 8.2), for correctly connecting the equipment to the mains electricity supply;
- providing ancillary services appropriate to the requirements of the plant on the basis of the information supplied with regard to installation;
- tools and consumables required for fitting and installation;
- lubricants necessary for commissioning and maintenance.

It is mandatory to purchase and use only original spare parts or those recommended by the manufacturer.

Dismantling and assembly must be performed by qualified technicians and according to the manufacturer's instructions.

The use of non-original spare parts or incorrect assembly exonerates the manufacturer from all liability.

Requests for technical assistance and spare parts can be made directly to the nearest Munters office . a

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