

# ROTEM®

Control & Management

## Communicator



User & Installation Manual

P/N: 110048

[www.rotem.com](http://www.rotem.com)

# Take Control®

## Warranty & Limitation of Liability

1. ROTEM warrants that the product shall be free of defects in materials or workmanship and will conform to the technical specification for a period of 1 (one) year from the date of initial installation on site (the "warranty period").
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**Software Version: 3.05**

**Document Version: 3.7**



# ATTENTION!

The Communicator is the central communication center and provides critical alarm warnings.

**THEREFORE IT IS CRITICAL THAT YOU CARRY OUT THE FOLLOWING MAINTENANCE CHECKS ACCORDING TO THE RECOMMENDED SCHEDULE:**

1. Daily (minimum weekly) alarm tests. Refer to Setting the Test Schedule, page 21.
2. Monthly battery (minimum between flock) test.
  - a) Disconnect power to Communicator
  - b) Ensure Communicator transmits SMS and voice alarms.
  - c) Wait one hour, and confirm that Communicator continues to transmit alarms.
  - d) Restore power to Communicator.
3. Test the Alarm Backup Batteries monthly (refer to page 47).

**WARNING! Communicator does not support pre-paid SIM cards. Use a regular card only!**

**CAUTION Use an exclusive phone line for the Communicator!**

**NOTE:** Sometimes using a phone line via private switchboard might interfere with communication. Rotem recommends using a different line to the Communicator.

**CAUTION As a backup to the Communicator, Rotem recommends installing an Emergency Light and Siren system. If the Communicator is unable to transmit alarms via SMS or the telephone (for example there is a complete power failure), the Emergency Light and Siren system sounds an alarm.**

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# 1 FRONT MATTER

This section includes information on the manual and general information.

## 1.1 Introduction

Rotem manuals provide easy-to-use information regarding the installation, operation, long/short term planning and parts listing (this manual may not deal with all of the above subjects). The table of contents is an outline of the relevant information in this manual.

Read this manual before operating your Rotem product. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury. If you have any questions or comments regarding your product please contact your local Rotem dealer.

## 1.2 Conventions

**NOTE:** Notes provide important details regarding specific procedures.

**CAUTION** Cautions alert you to potential damage to the controller if the procedures are not followed carefully.

**WARNING!** Warnings alert you to potentially hazardous situations that if not avoided could result in death or personal injury.

## 1.3 Contact Information

Rotem Control and Management: Email: [support@rotem.com](mailto:support@rotem.com) URL: [www.rotem.com](http://www.rotem.com)

## 1.4 Document Information

| Revision Level / Date | Section Affected                           | Description  |
|-----------------------|--|--|
| 2.1                   | Hardware Installation                      | Board 3.1 added  |
| 2.2                   | 4.3.1.2/ 4.3.1.3/ 4.1.15/<br>4.3.2.2/ 12.3 | Cellular dial out test/ Status reports / SMS ringtones, Installation summary provided          |
| 2.3 / July 2011       | 9/ 13 / 15.3/ 16                           | Added support information, updated troubleshooting, added compatibility issues, added appendix |
| 2.4 / May 2012        |  | Formatting   |
| 2.5 July 2012         | 10.5                                       | Formatting, battery test   |
| 2.6 / Jan 2013        | Appendix                                   | Added pager codes  |
| 2.7 / Feb 2013        | 3.3  | Added section  |
| 2.8 / August 2013     | 6.3.1/Appendix B                           | Added ISO485 wiring diagram.   |
| 2.9 / August 2013     |  | Added Appendix B, updated cellphone card info  |
| 3.0 / October 2013    | 14   | Correct product pictures   |
| 3.1 / December 2013   | 5.4.2                                      | Added message options  |
| 3.2 / February 2014   | Appendix B/4.7                             | New alarms, Portuguese language support  |
| 3.3 / April 2014      | 10.5                                       | Edited procedure   |
| 3.4 / Sept 2014       | 3.4.2                                      | Added installation information   |
| 3.5 / Dec 2014        | 6.4  | Wiring diagrams  |
| 3.6 / Jan 2015        | 6.1.2/6.4                                  | RF connections   |
| 3.7 /Sept 2015        |  | Formatting/updating installation drawings  |

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## 2 PRECAUTIONS

Observe the following precautions when using your unit.

- Keep the controller as far as possible from heavy contactor boxes and other sources of electrical interference.
- Do not connect communication wire shields, which go from one house to another at both ends. Connect them at one end only. Connection at both ends can cause ground loop currents to flow, which reduce reliability.
- The COM connection for communications is not the shield wire. The COM, RX and TX wires must connect to each other at all controllers.

## 3 INTRODUCTION TO THE ROTEM COMMUNICATOR

ROTEM Communicator, Version 3.05 is a state-of-the-art alarm and communication center used by farmers to monitor and control their Rotem Controllers and accessories.

The Communicator has a user friendly interface with an alfa-numeric keypad, 20 character by 4 line LCD and indicative LED.

- Main Features
- Choosing Communication Cards
- User Interface

### 3.1 Main Features

- Supports connectivity of several contacts simultaneously on various communication devices (such as dial-up, internet, GSM, USB)
- Voice Solution Plug-in: Supports incoming and outgoing phone calls for alarms and status reports. Voice messages can be edited according to personal preference.
- Remote access via dial-up connection
- Send and receive functional text messages (GSM networks)
- Pager support
- 3 dry contact, output relays 5 Amp
- 8 digital inputs
- Battery backup

### 3.2 Choosing Communication Cards

The Communicator supports the following cards:

- **Line modem:** Supplies remote communication and voice alarms via a phone line.
- **Ethernet:** Supplies remote communication via Internet (does not support alarms).
- **GSM-S/GSM-W:** Supplies text alarms and text messages only.

**NOTE:** GSM cards do not support voice, but if equipped with a SIM card, they support the Voice Dial-In function (Configuring the Telephone Modem, page 27).

The Communicator has positions for two cards. Before ordering a unit, the user along with a dealer must define which cards meet his needs and are supported by local infrastructure.

### 3.3 User Interface

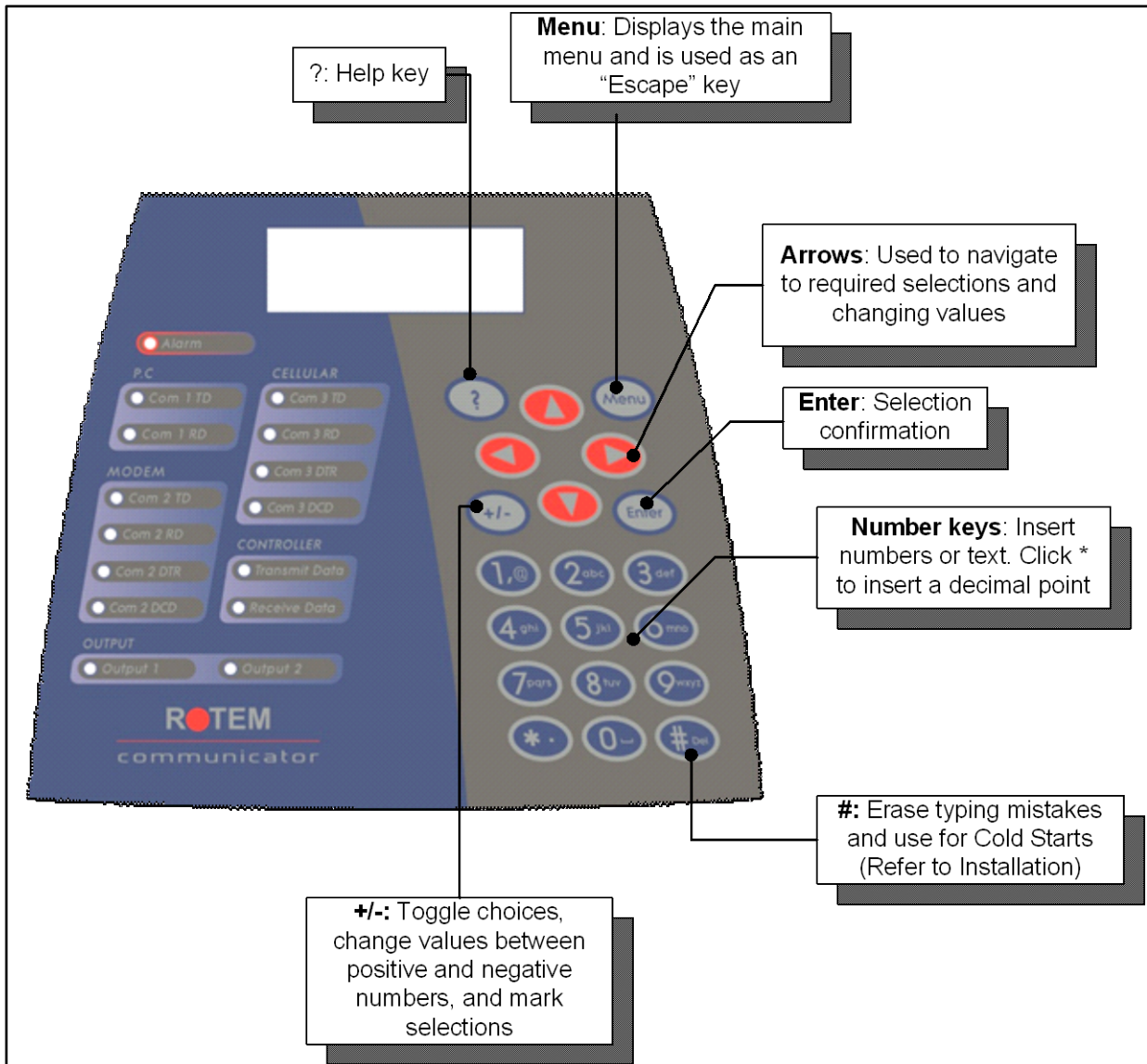
The following sections detail how to access and use the Communicator user interface.

- Front Panel, page 9
- Menu Tree, page 10



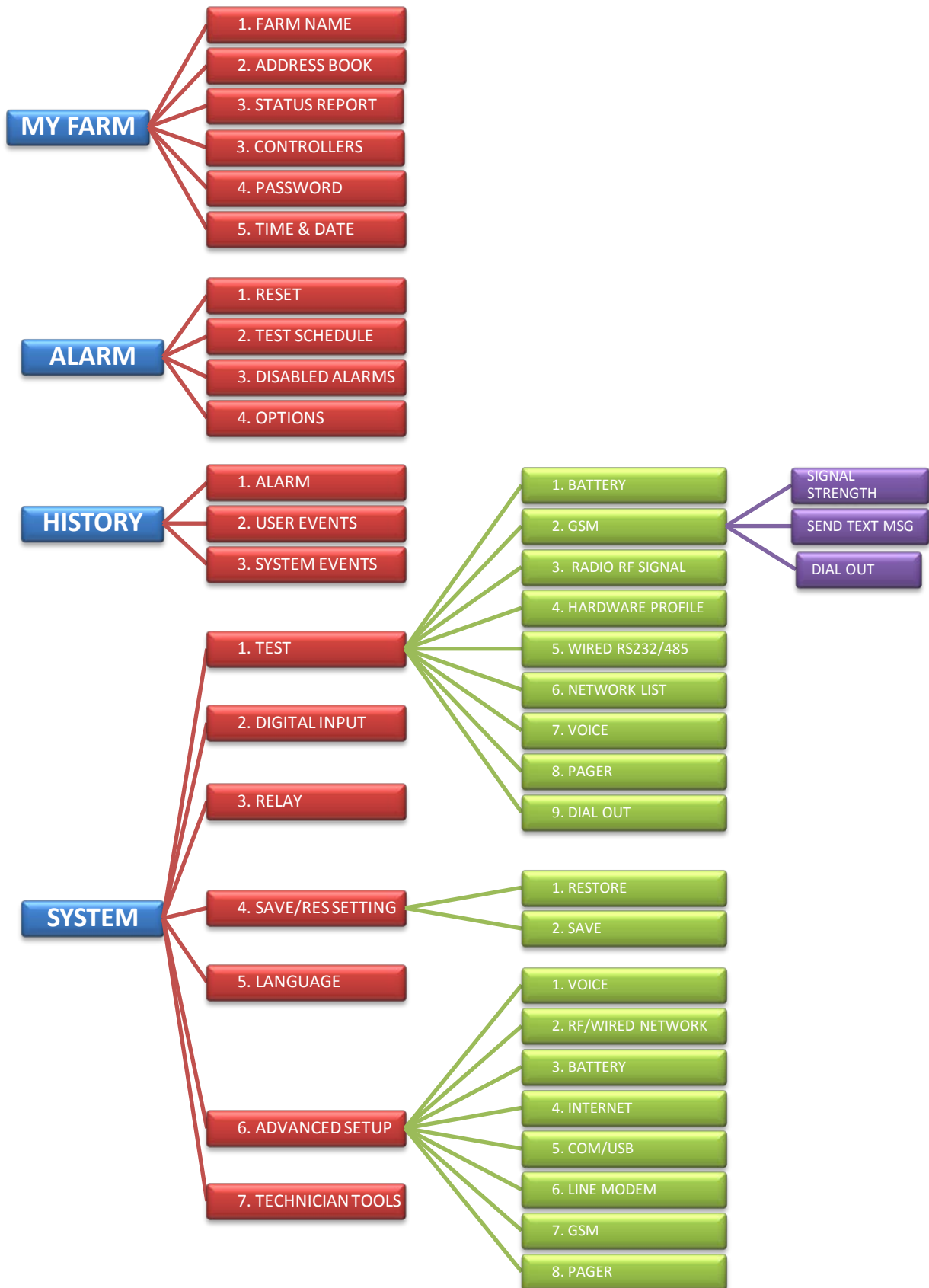


### 3.3.1 Front Panel



| LED                                   | Function   |
|---------------------------------------|--|
| PC Com 1 TD/RD                        | PC is transmitting/receiving data to/from the Communicator   |
| Modem Com 2 TD/RD                     | Modem is transmitting and receiving data                     |
| Modem Com 2 DTR/DCD                   | Data transmitter ready/Data carrier detect (technician only) |
| Cellular Com 3 TD/RD                  | Cellular modem is transmitting and receiving data            |
| Controller Transmit Data Receive Data | Controller relays are transmitting and receiving data        |
| Output 1 Output 2                     | Non-functional   |

**3.3.2 Menu Tree**



## 4 INSTALLATION

The following sections detail how to install the Communicator.

**CAUTION** Rotem recommends that only an authorized technician install and configure the Communicator unit.

- Hardware Installation, page 11
- Connecting the Communicator to a Controller, page 14
- Completing the Installation, page 18

### 4.1 Hardware Installation

The following sections detail how to perform the Communicator's physical setup.

- Preliminary Steps, page 11
- Connecting the Communicator to External Components, page 13
- USB Driver Installation, page 14

#### 4.1.1 Preliminary Steps

1. Open the Communicator and verify that all required components are physically installed. Figure 1 illustrates sample Communicators and their components.

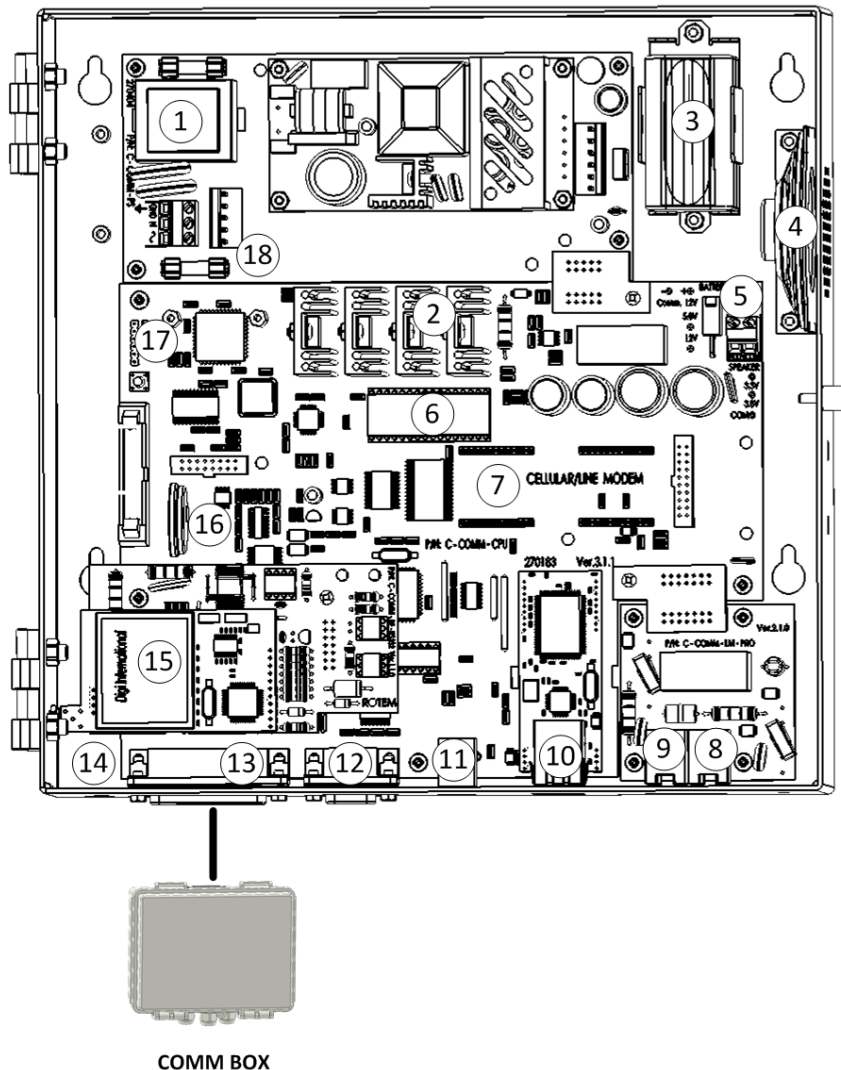


Figure 1: External Connection Box Connector and Internal Components (Sample) Board

| Figure 1 key |   |    |                        |
|--------------|---|----|------------------------|
| 1            | Power supply card                         | 10 | Ethernet Cable         |
| 2            | Switching PS Main Fuse 2A                 | 11 | USB Local PC Port      |
| 3            | Backup Batteries                          | 12 | PC Port                |
| 4            | Speaker                                   | 13 | External Connection    |
| 5            | Battery Connector<br>(-) Black<br>(+) Red | 14 | 230 or 115 VAC         |
| 6            | EPROM Software                            | 15 | Communication Card     |
| 7            | Cell Modem                                | 16 | CPU battery            |
| 8            | Phone port                                | 17 | Voice card             |
| 9            | Line Port                                 | 18 | 12V Main Fuse 100 mA T |

2. Connect the ground cable to the dedicated ground terminal (Figure 2).

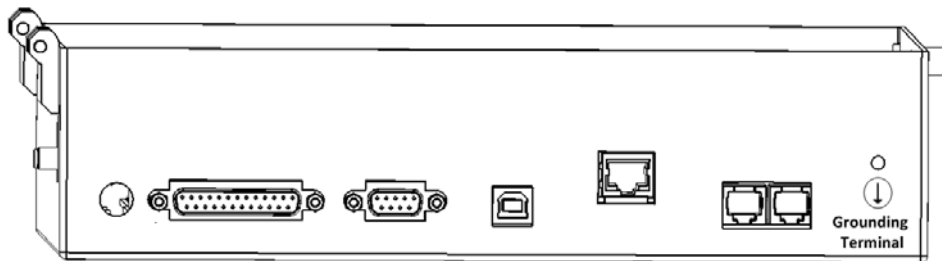


Figure 2: Grounding Terminal

**CAUTION** The Communicator must be grounded at all times!

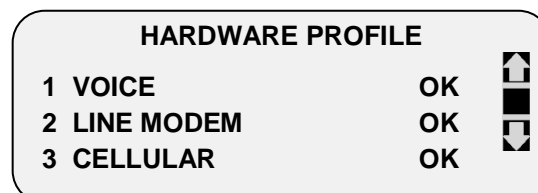
3. Apply power while pressing  until the *Cold Start* screen appears.



4. Select **YES**.

**NOTE:** The COLD START resets the Communicator to original factory settings and erases previous history. Perform COLD START when installing new hardware, changing the software version, or if instructed by a ROTEM technician.

5. Go to *SYSTEM > Test > Hardware Profile*.



6. Ensure that Communicator recognizes the components.

7. Go to *SYSTEM > Test > Battery*.



**BATTERY TEST**  
 - ■■■■■■■■■■■■+ 100%  
**Charger active**

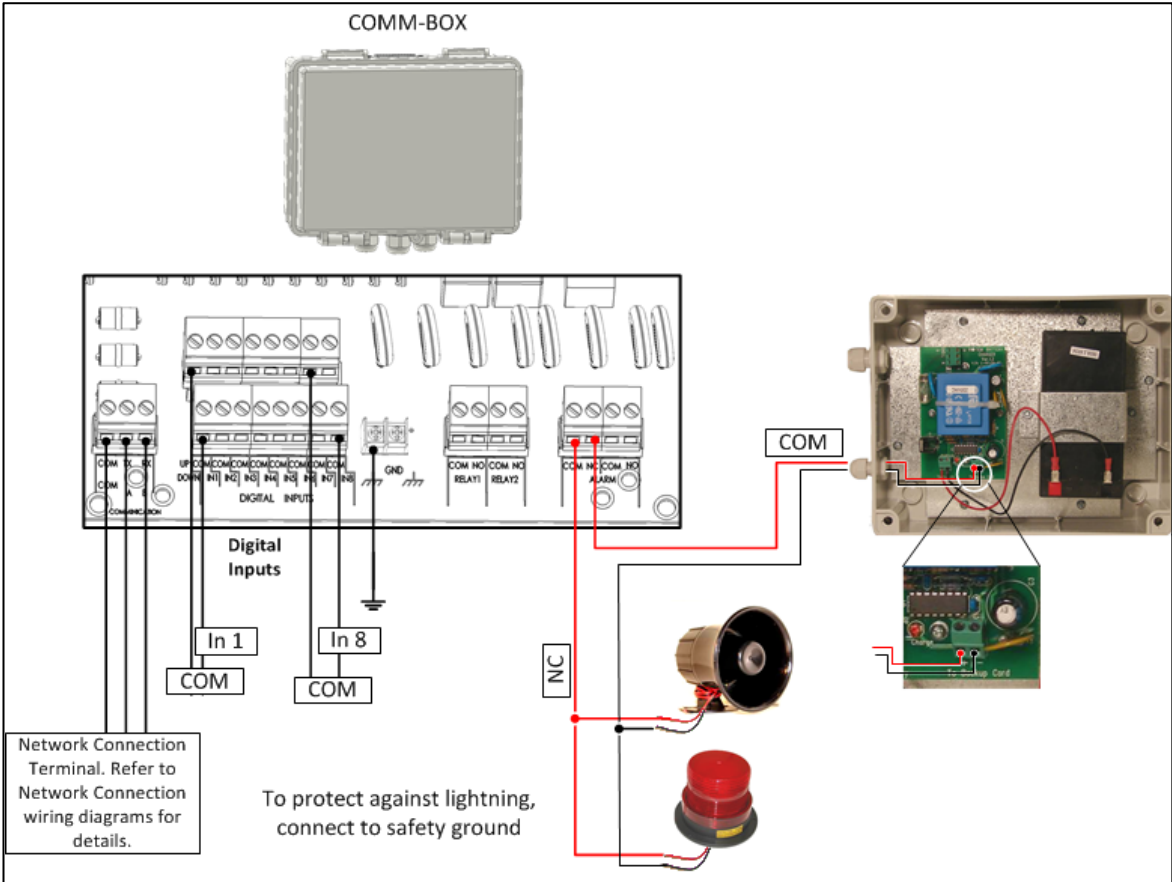
8. Check for battery recognition and charging. As long as the communicator unit is plugged in, the charger inactive note is displayed.
9. Install the communication software using the accompanying CD (for installation instructions, refer to USB Driver Installation, page 14).

**4.1.2 Connecting the Communicator to External Components**

1. Connect the External Connection Box to the Communicator using the 25 pin connector as shown in Figure 1.
2. If required, connect the External Connection Box to external devices and an ELS system (Figure 3).
3. Connect the local computer by via the PC Port or a USB cable.

**NOTE:** If you use the USB drive, install the Rotem driver (refer to USB Driver Installation, page 14).

4. Connect the line and phone cables.
5. Connect the ethernet cable to ethernet access point; for example an ADSL modem/router.



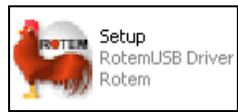
**Figure 3: External Communication Box Wiring Diagram with ELS**



### 4.1.3 USB Driver Installation

The following procedure details how to install R-USB Driver version 5.00. This driver must be installed before plugging in the USB cable between the host computer and the R-USB plug.

1. Ensure that the USB cable is disconnected from Communicator before installing the driver.



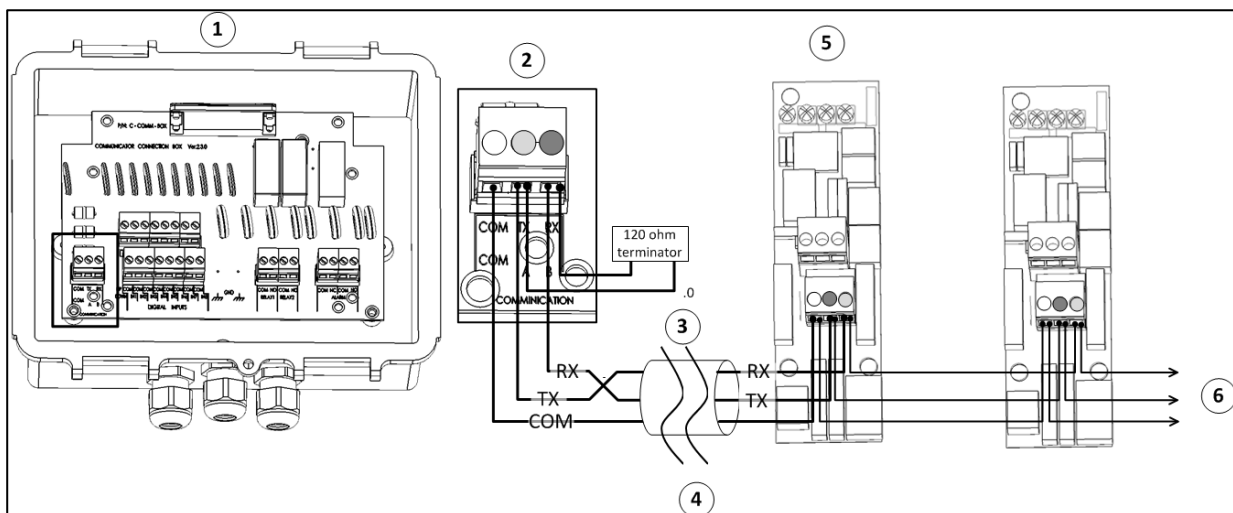
2. On the CD, click
3. Click
4. Follow the instructions.
5. Restart the computer.
6. Connect a USB cable from the Communicator to the computer.

**NOTE:** If older versions of the driver exist on the computer, the installation program must delete them. Click **Yes** if prompted.

## 4.2 Connecting the Communicator to a Controller

### 4.2.1 RS-232 Connections

The following sections detail how to set up an RS-232 connection between the Communicator and the controllers.



**Figure 4: Connecting the External Connection Box to Controllers via RS-232 Cards**

| Figure 4 key |  |   |  |
|--------------|--|---|--|
| 1            | Communicator External Box  | 4 | See Approximate Distances and Baud Rate, page 16 |
| 2            | Box communication ports  | 5 | Controller communication card (example)          |
| 3            | Connect one end of the cable's shield only. Each controller should be chain connected to the same wire, resulting in a long ground cable without ground loop | 6 | Other controllers                                |

- The cable between the external connection box and the controllers should be a 3 Wire Shielded Cable (22 AWG minimum).
- This cable is daisy-chained to all controllers and to the communication line of the external connection box in the following manner:



- The COM wire is connected to the COM port in the communication terminal of the controller.
- The Communicator External Box TX in the connection box, is connected to RX in the Controller.
- The black wire, RX in the connection box, is connected to TX in the Controller.
- The shield should be connected to the earth (safety ground).

**CAUTION** Connect the shield (safety ground) only on one side!

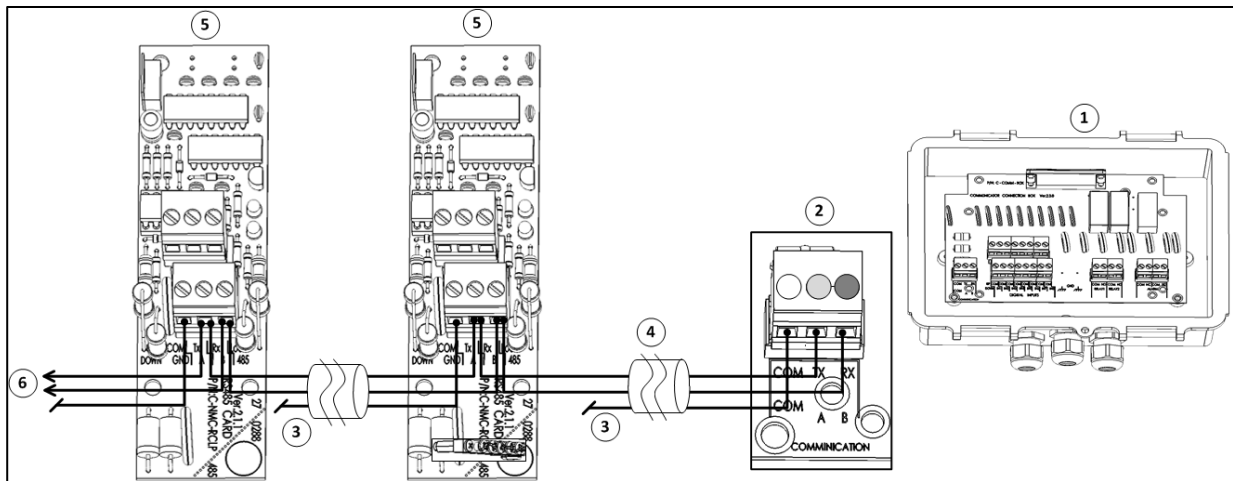
## 4.2.2 RS-485 Connection

The following sections detail how to set up an RS-485 connection between the Communicator and the controllers.

Communicator supports two types of RS-485 connections:

- RS-485 Cards (Figure 5)
- RS-ISO485 Cards (Figure 6)

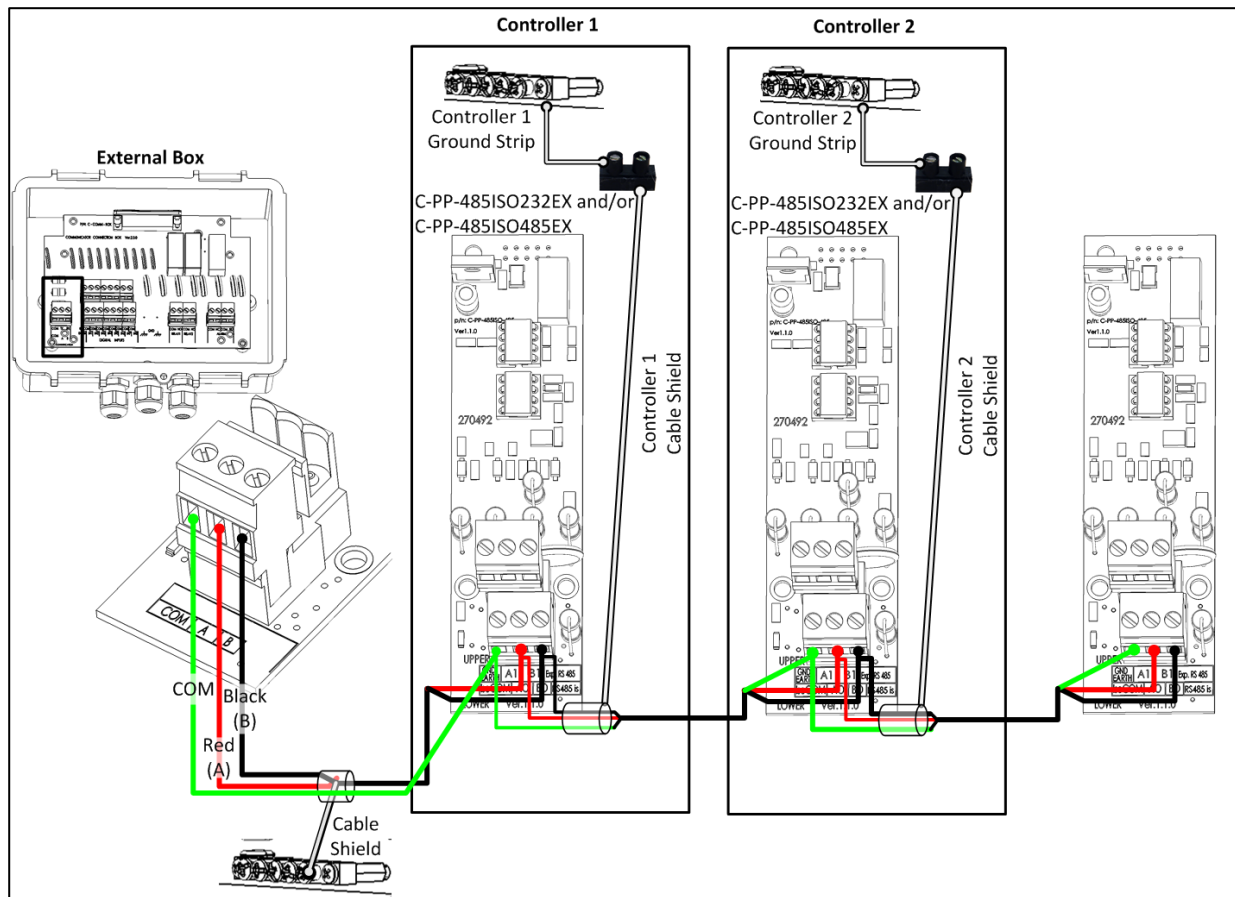
**NOTE:** The cards shown are controller cards.



**Figure 5: Connecting the External Connection box to Controllers via RS-485 Cards**

| Figure 5 key |   |   |  |
|--------------|---|---|--|
| 1            | Communicator External Box   | 4 | See Approximate Distances and Baud Rate, page 16 |
| 2            | Box communication ports   | 5 | Controller communication card (example)          |
| 3            | To prevent ground loops, connect the shield wire at one end only. | 6 | Other controllers                                |

- The cable between the external connection box and the controllers should be a 2-wire shielded cable.
- This cable is daisy-chained to all controllers and to external connection box:
  - Connect the shield to the COM terminal of the controller on one side and leave unconnected on the other side.
  - Red wire to terminal A of the controller and terminal A of the external connection box.
  - Green wire to terminal B of the controller and terminal B of the external connection box.



**Figure 6: Connecting the External Connection box to Controllers via RS-ISO485 Cards**

- The cable between the external connection box and the controllers should be a two pair twisted shield cable.
- This cable is daisy-chained to all controllers and to external connection box.
  - 1<sup>st</sup> pair:
    - Red wire to the controller's terminal A and the external connection box's terminal A.
    - Black wire to the controller's terminal B and the external connection box's terminal B.
  - 2<sup>nd</sup> pair:
    - Green wire to the controller's COM terminal and the external connection box's COM terminal.

### 4.2.3 Approximate Distances and Baud Rate

- For one controller:
  - ~2000 meters (~6500 feet): 9600 Baud
  - ~2500 meters (~8200 feet): 4800 Baud
  - ~3000 meters (~9800 feet): 2400 Baud
- For 10 controllers:
  - ~1200 meter (~4000 feet): 9600 Baud
  - ~1800 meter (~6000 feet): 4800 Baud
  - ~2400 meter (~7870 feet): 2400 Baud

**NOTE:** Baud rate depends on cable length and on the number of controllers.

**Take Control**



## 4.2.4 RF Connection

The following sections detail how to set up an RF connection to the controllers.

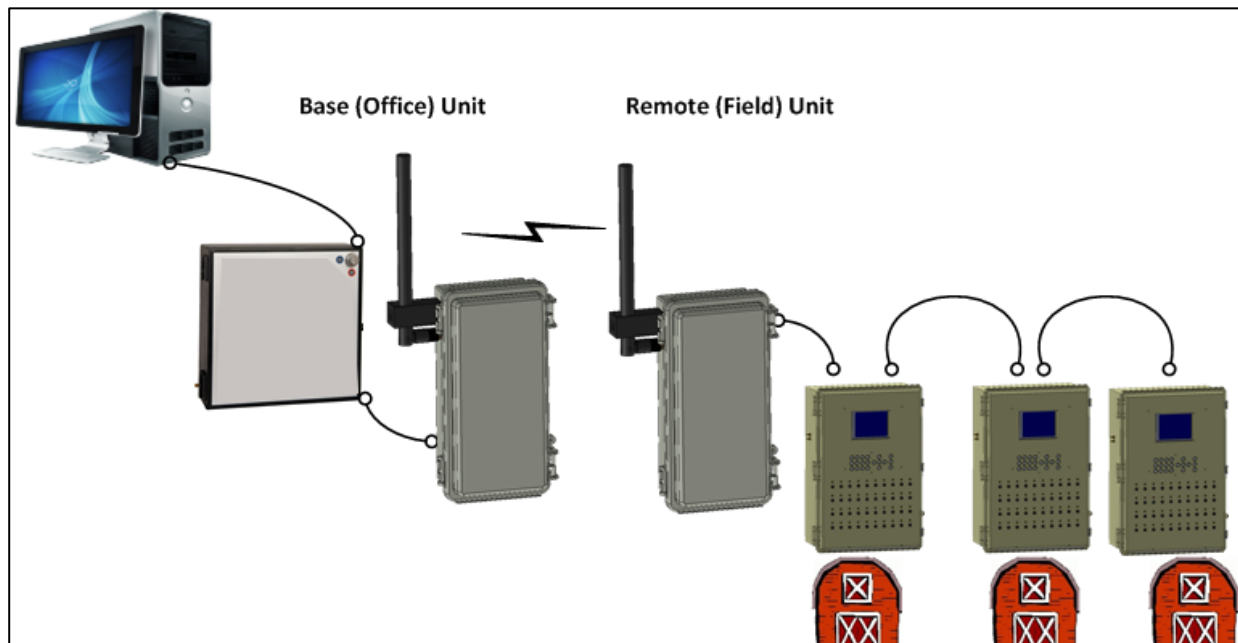


Figure 7: Communicator – RLINK – Controller Setup

- ➔ Install and wire the base RLINK to the Communicator External Box. Disconnect the base RLINK's power before beginning the following procedure.
- ➔ Install the remote RLINK.
  1. In the Communicator unit, go to *System > Advanced Setup > RF/Wired Network*.
  2. Configure the settings as required (refer to *Configuring the Channel Settings*, page 36 for details).
  3. Apply power to the base RLINK.
  4. Disconnect the Communicator's power.
  5. Apply power to the Communicator:
    - In **new installations**, perform a **Cold Start**.
    - In **existing installations**, go to *System > Save/Res Setting > Restore* and run the function.

**Communicator automatically configures the base unit's settings; there is no need to configure this unit's DIP switches.**

**CAUTION** Resetting the Communicator or disconnecting the power only is insufficient!

6. In the **remote** unit, move DIP Switch 1 to **ON**.
7. **Match the remote unit's channel and baud settings to the Communicator's settings.**
8. **DIP Switch 4 and DIP Switch 5:**
  - **Set both switches to OFF (RLINK 900 MHz 1 Watt).**
  - **Match the Communicator's address setting exactly (RLINK 2.4 GHz / 900 MHz 100 mWatt) (when configuring the address, refer to *Configuring the Channel Settings*, page 36.)**
9. Press the **Reset** button. The LED blinks for 4 - 12 seconds and turns off.
10. Return DIP Switch 1 to **OFF**. The LED turns on.
11. Repeat for each remote RLINK unit.

## 4.3 Completing the Installation

The following section summarizes the steps needed to complete the installation. Refer to the relevant sections in the manual for further details.

**NOTE:** Before beginning, verify that all cables are connected properly (refer to Hardware Installation, page 11).

- Configuring the Communication to Outside Devices, page 18
- Setting Up an Internet Connection, page 18
- Setting Up a Network Using RotemNet, page 20

### 4.3.1 Configuring the Communication to Outside Devices

1. Set the baud rate to the controllers (refer to Routing Methods, page 35).
2. Test the connection to each controller (refer to Displaying the Controllers, page 37).
3. Test the communication channel to each controller (refer to Channel/Signal Tests, page 38).
4. Set the baud rate to the local computer (refer to Defining the Communication Speed with the Local PC, page 39).

### 4.3.2 Setting Up an Internet Connection

Accessing the Communicator and controllers via a web browser enables **viewing** the controller parameters.

**NOTE:** For full control, use RotemNet (refer to Setting Up a Network Using RotemNet, page 20).

Internet is supported by:

- Communicator, software version 3.0 and higher
- Platinum Controllers, software version 3.0 and higher
- Rotem Net, version 1.3.17 and higher

**NOTE:** This section refers to Communicator Version 3.1 only equipped with Ethernet mode cards. Users having Version 2.3 should contact technical support.

1. In the Communicator screen, select *SYSTEM > Advanced Setup > Internet > My Account*.
2. Write down the Ethernet device serial number.
3. On the Ethernet cable port (Figure 1), verify that:
  - the green lights remains on
  - the yellow light blinks
4. Set the Communicator Internet settings.
  - a. In a web browser, go to <http://www.myrotem.net>.
  - b. In the Account Name field, type **Rotem**.
  - c. In the Password field, type **1**.

The **Register** page appears.

- d. Fill out all of the fields.

**NOTE:** The Allowed S/N is the Device S/N found in *SYSTEM > Advanced Setup > Internet*.

**NOTE:** If you want to add a picture to your Internet account, click **Browse** and select the file.

- e. Type the CAPTCHA letters.
- f. Click **Submit**.

A confirmation message will be sent to you.

5. In *SYSTEM > Advanced Setup > Internet > My Account*

- a. Edit the **IP** number or address (myrotem.net) and **PORT** number as required.



- b. In the **Name** field, type the name.
- c. In the **Account** name, type the account name that you chose on the myrotemnet page.
- d. In the **Users** field, type the maximum number of users that can simultaneously access the network.
- e. Click **Save**.

**INTERNET**

**DEVICE SN: 140011BD**  
**[SERVER]**  
**IP: 80.179.187.139**

---

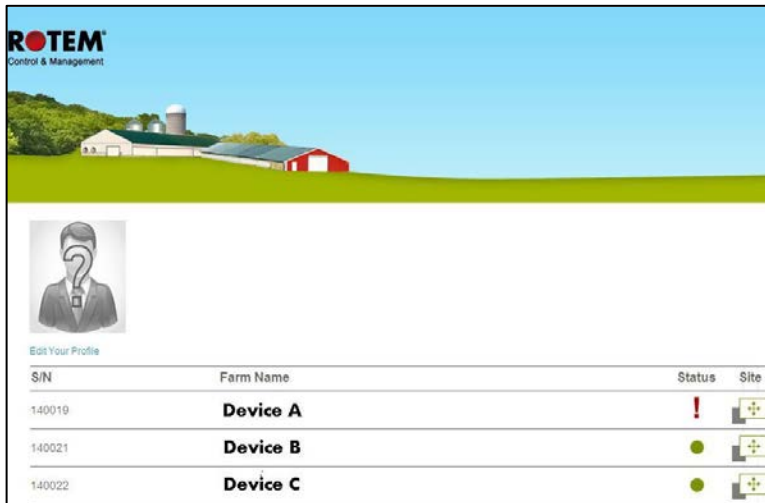
**Port: 1500**  
**Name: Rotem**  
**Account: <Farm 1**  
**Users: 03**

The Internet connection is now configured.

6. In a web browser, go to <http://www.myrotem.net> and login using the name and password that you chose.

Figure 8 appears

- If the Communicator is defined correctly, it is displayed on the site with its name and its status is a green circle.
- If the Communicator is not defined correctly, it does not appear on the screen.
- The red exclamation mark (!) indicates that the chip is not online. This means that there is a connectivity problem, lost internet connection, or other possible problems. It does not mean that the Communicator is not defined properly.



**Figure 8: My RotemNet Home Page (Example)**

7. Click  to view the controller details. Figure 9 appears.



Figure 9: Controller Data (Example)

- Rotem recommends the following resolutions when viewing the web:
  - PC: 1280/1024 Text size medium
  - Laptop: 1024/768 Text size medium

### 4.3.3 Setting Up a Network Using RotemNet

Accessing the Communicator or controllers via RotemNet enables **local and remote management** of your equipment. The following is a summary of the steps needed to setup a network using the RotemNet software. For complete instructions, refer to the *RotemNet* manual.

- Using the provided CD, install and run RotemNet.
- Refer to the following sections:
  - Local Network
  - Remote Network

#### 4.3.3.1 Local Network

- Under Network Setup, select *Local Network*.
- Select the required baud rate.

**NOTE:** The selected baud rate must be the same as the rate selected in the Communicator.

- Select the communication port.

**NOTE:** If the connection is via the USB port, select Communicator.

- Select the number of controllers and the controller type.
- Press **Start Scan**.  
RotemNet scans the system and lists the controllers.

#### 4.3.3.2 Remote Network

- In RotemNet, select *Internet* and click **OK**.
- In the Internet Communication window set the:
  - Farms account name
  - Account Name
  - Chip serial number

**NOTE:** This information must be the same as the data entered in Communicator.

- If you are configuring multiple farms:
  - Enter a name for each farm.
  - Enter an Ethernet chip number for each farm.
  - Configure the controller setup for each farm.
- To connect to a farm, click **Connect**.

**NOTE:** Refer to Initial Configuration, page 21.



## 5 INITIAL CONFIGURATION

This section describes how to configure the Communicator's initial settings.

- Communication Recommendations, page 21
- Setting the Test Schedule, page 22
- Setting the Language, page 22
- Setting the Farm Site Name, page 22
- Identifying the Controllers, page 23
- Setting the Time & Date, page 23
- Adding Names to the Address Book, page 23
- Setting the Password, page 24

**CAUTION** Many of these settings are critical in ensuring the safety and well-being of your stock. These settings must be made as soon as Communicator is installed.

Refer to Physical Installation, page 49 for complete installation instructions.

Refer to the sections listed below for information on other functions:

- Communicator to User Functions, page 25
- Communicator to Controller Functions, page 35
- Communicator to PC Configuration, page 39
- Configuring the Dry Contact Card, page 40
- Communicator Functions, page 41
- Alarms, page 43

**NOTE:** Before installing a SIM card, disable the PIN code (if the card has this code). Communicator text functions are disabled if the SIM card has a PIN code.

### 5.1 Communication Recommendations

Rotem strongly recommends:

- enabling both the telephony and SMS functions to transmit alarms (via voice and SMS)
- enabling SMS alarm acknowledgment
- employing a secondary alarm system to act as a backup to Communicator's primary monitoring and alarm system

**WARNING!** BECAUSE OF LIMITATIONS BUILT INTO SMS DELIVERY SYSTEMS, THERE MAY BE DELAYS IN THE ACTUAL SMS DELIVERY TIME. BY DEFAULT A REMINDER SMS IS TRANSMITTED AFTER TWO MINUTES. IF THE MESSAGE DELIVERY IS DELAYED FOR ANY REASON, INCLUDING DELAYS CAUSED BY THE INFRASTRUCTURE, A REMINDER SMS IS SENT. THEREFORE INCREASING THE DELAY TIME FOR A REMINDER PLACES YOUR LIVESTOCK AT RISK.

## 5.2 Setting the Test Schedule

1. Go to *ALARM > Test Schedule*.
2. Configure the parameters.

| ALARM TEST |       |
|------------|-------|
| FREQUENCY  | DAILY |
| AT         | 12:00 |
| DAY        | SUN   |

- **FREQUENCY:** Daily, weekly, disabled
- **AT:** Time of day to perform the alarm test
- **DAY:** Define the day of the week to perform the alarm test (*this is required only when FREQUENCY=WEEKLY*)

**WARNING!** ROTEM STRONGLY RECOMMENDS REGULAR TESTING OF THE ALARMS., DO NOT DISABLE THIS TEST UNLESS THE HOUSE IS EMPTY!

## 5.3 Setting the Language

1. Go to *SYSTEM > Language*.
2. Configure the parameters.

| LANGUAGE |         |
|----------|---------|
| LANGUAGE | ENGLISH |
| REGION   | US      |

- **LANGUAGE:** Select the required language for the user interface.
- **REGION:** Select the site location.

**CAUTION** Select the correct region! The modem functions correctly only when the correct region is selected!

## 5.4 Setting the Farm Site Name

- Go to *MY FARM > Farm /Site Name*.

| FARM/SITE NAME |
|----------------|
| NAME:          |
| NUMBER:        |

Define the site's name and reference number. PC network software employs these parameters when sending an alarm. In case several Communicators are present, this will help in identifying each one separately.

**CAUTION** Each Communicator must have a unique name and number.





## 5.5 Identifying the Controllers

1. Go to *MY FARM > Controllers*.
2. Identify controllers that are present within the network.

| CONTROLLERS   |       |
|---------------|-------|
| PRIMARY UNITS | 1     |
| SECONDARY     | 0     |
| FOUND-PRIM 0  | Sec 0 |

- **PRIMARY UNITS:** Select the number of master controllers the site contains (for example Platinum/AC-2000)
- **SECONDARY UNITS:** Select the number of slave controllers the site contains (for example PigGuard)
- **FOUND-PRIMARY/SECONDARY:** Displays the number of controllers the Communicator was able to locate (*read-only*)

## 5.6 Setting the Time & Date

1. Go to *MY FARM > Time & Date*.
2. Adjust the time and date in this menu.

| TIME&DATE |           |
|-----------|-----------|
| CLOCK:    | 12:18     |
| DATE:     | 07-FEB-10 |

- **CLOCK:** hh:mm: (24 hour format; for example 2:15 PM = 14:15)
- **DATE:** dd-mmm-yy: (for example 14-JAN-10)

## 5.7 Adding Names to the Address Book

- Go to *MY FARM > Address Book*.

| ADDRESS BOOK     |             |
|------------------|-------------|
| =====USER-2===== |             |
| NAME             | John Smith  |
| VOICE            | 9,555555    |
| TEXT             | 9005555554  |
| PAGER            | 9,555555,,, |
| Msg By           | idle        |
| FROM             | 00:00       |
| TO               | 0:00        |

The address book contains the contact information of up to eight users. Communicator contacts these users in the event of an alarm. Priority of contacts is defined by the user number (1-16). Top priority contacts should be entered into the address book first.

**CAUTION** Rotem strongly recommends entering contact information immediately.

Contact list fields:

- **NAME:** Enter the contact name using the keypad.
- **VOICE:** Enter the phone number for receiving the **VOICE CALL** service (refer to Setting the Voice , page 25 and Testing the Voice Call Service, page 26 for advanced settings and

testing).

- **MOBILE NUMBER:** Enter the mobile number for the text message service.
- **PAGER:** Enter the pager phone number. Refer to Pager Setup, page 29 for options and testing. In addition, refer to Configuring the Dial Delay, page 29.

**NOTE:** When entering the above numbers, refer to Phone Number Structure, page 24.

- **MSG BY:** Define which services the contact receives (*Idle, Voice, Text, Voice+Text, Pager*).
- **FROM/TO:** Time frame for receiving messages/calls (*Default – FROM: 0:00; TO: 00:00 – time frame is 24 hours, meaning always receiving messages*).
- **LANGUAGE:** Select the language in which SMS messages are written: *English, Turkish, Russian, Spanish, Portuguese, Thai or Hebrew*.

**NOTE:** Distribution of the alarm messages is according to the address book list, contact by contact. Each user receives all forms of communication that are selected (**Msg. By** option) before continuing to the next user.

The first user does NOT have a "FROM" or "TO" field to ensure there is always someone that receives the notification from Communicator.

### 5.7.1 Phone Number Structure

When entering the voice, mobile and pager numbers the phone number structure is:

- 9 (outside line, if needed), # # # # # # #,,

The commas are the dial delay. Refer to Configuring the Dial Delay, page 29.

**NOTE:** To enter a comma, press and hold the "1" button.

## 5.8 Setting the Password

1. Go to *MY FARM > Password*.
2. Define a password and confirm it (*to disable, type "0"*).

**SECURITY**  
**TYPE NEW PASSWORD:**

If selected, a password is required for:

- **Locally:** Using the menu items
- **Remotely:** Acknowledge/disabling of alarms via phone

**NOTE:** If a password is defined, the Communicator locks the system when idle for five minutes or if you press "9" from the main menu.





## 6 COMMUNICATOR TO USER FUNCTIONS

The following sections detail how to use the:

- Voice, page 25
- Pager, page 28
- Text, page 30
- Common Functions, page 33

### 6.1 Voice Functions

The following sections detail Communicator's basic and advanced Voice functions.

- Basic Voice Functions, page 25
- Advanced Voice Functions, page 26
- Responding to an Audio Alarm Message, page 27

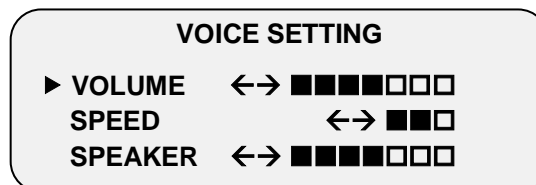
#### 6.1.1 Basic Voice Functions

This section details the basic Voice functions.

- Setting the Voice Parameters, page 25
- Testing Voice Quality, page 25
- Testing the Voice Call Service, page 26
- Testing the Cellular Signal Strength, page 26
- Receiving a Status Report, page 26

##### 6.1.1.1 Setting the Voice Parameters

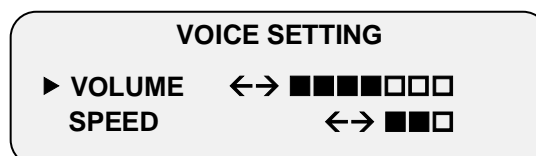
1. Select *SYSTEM > Advanced Setup > Voice*.



2. Define the speech **VOLUME** and **SPEAKER** volume and it's **SPEED** (if using a TTS voice card).
3. Scroll down to **TEST** and press **ENTER** to hear the selected settings.

##### 6.1.1.2 Testing Voice Quality

1. Select *SYSTEM > Test > Voice*.
2. Define speech **VOLUME** and **SPEED**.
3. To test, press **ENTER**.

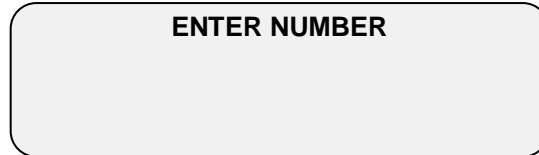


**NOTE:** Voice Setting and Test Voice perform the same functions.

### 6.1.1.3 Testing the Voice Call Service

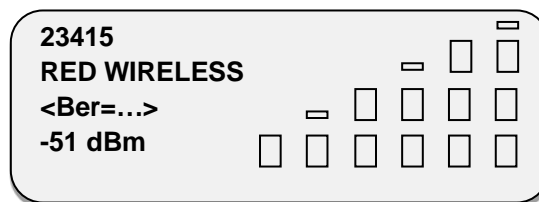
This menu tests the **VOICE CALL** service.

1. Select *SYSTEM > Test > Dial Out*.
2. Enter the required phone number to receive the "Test Call".
3. Press **ENTER**.



### 6.1.1.4 Testing the Cellular Signal Strength

- Select *SYSTEM > Test > GSM*.



This screen displays the cellular service provider's Received Signal Strength Indicator. This screen displays the cellular service provider's number, name, BER (Bit Error Rate (if available)), the reception bar graph as well as the measured signal reading.

**NOTE:** Signal strength must be between -113 dBm to -51 dBm.

### 6.1.1.5 Receiving a Status Report

You can receive a status report over the phone. Refer to Status Report, page 30 for details on the function.

**To hear the status report:**

1. Call the Communicator phone number.
2. When prompted, select Status report.

## 6.1.2 Advanced Voice Functions

This section details Communicator's advanced Voice functions.

**CAUTION** Rotem recommends that only trained, authorized technicians configure these functions.

- Configuring the Telephone Modem, page 27
- Defining when Communicator Answers Incoming Calls, page 27

### 6.1.2.1 Configuring the Telephone Modem

- Select *SYSTEM > Advanced Setup > Line Modem*.

| LINE MODEM       |     |
|------------------|-----|
| AUTO ANSWER      | 4   |
| LINE TEST        | YES |
| DIAL DELAY ( , ) | 2   |
|                  |     |
| INPUT GAIN       | 70  |
| VOICE DIAL-IN    | YES |

This screen defines the line modem specifications.

- **AUTO ANSWER:** Number of rings before the Communicator automatically answers a dialed-in call. For example: if set to **4** the Communicator answers a call after four rings.
- **LINE TEST:** Monitors the phone line and activates an alarm in case of disconnection. Default: YES.
- **INPUT GAIN:** For factory use only. If your Communicator is unable to connect your voice dial in phone line, consult your local dealer regarding this feature.
- **VOICE DIAL-IN:** This option enables the user to call in at any time and receive information from the communicator regarding alarms. To receive the information in voice mode only:
  1. Call the controller, wait for one ring less than the AUTO ANSWER set parameter number and hang up.
  2. Wait at least five seconds (but no longer than 60 seconds) and then call again. Follow the instructions given by the controller.
- If the AUTO ANSWER parameter is set to zero (0), then the Communicator answers in voice mode.
- If the AUTO ANSWER parameter is set to zero and the VOICE DIAL IN parameter is set to **YES**, the controller answers in voice mode every time.

### 6.1.2.2 Defining when Communicator Answers Incoming Calls

1. Select *SYSTEM > Advanced Setup > GSM*.
2. In Auto Answer, define the number of rings until the Communicator answers through the cellular modem.



### 6.1.3 Responding to an Audio Alarm Message

The Voice Dial Out service transmits audio alarm message, via telephony, from Communicator to the contacts entered in the Address Book (page 23). This section details the procedure to follow when an audio alarm is received.

**NOTE:** This service is provided by the Communicator ONLY if the Address book is properly defined with contacts and the "VOICE" service selected per contact.

**CAUTION** Communicator only broadcasts its alarm message AFTER someone speaks into the phone. Any word or sound is sufficient.

The following illustrates the sequence of **ALARM messages**:

"**Good** <Morning / Afternoon / Evening> farm <#> **active alarm**.  
Please, press 1 to listen."



"House <#> has <#> alarm message<s>."

- Alarm messages for the first house are played and then the following options are available:



- Enter password (if acknowledging for the first time this call) and press \*.
- "Please wait... Reset for house <#> successful. <Next Message / Goodbye>."
- Right after "Please wait" is heard, press \* to access the ALARM OPTIONS MENU.

"Entering alarm options for House <#>"

- System reports alarm and then offers the following options:



**NOTE:** Disabling alarms disables them until 12:00 PM the following day.

- "**Disable** <confirmed / failed>!" message is repeated and returns to **House Alarm Messages**

**NOTE:** If at any time an incorrect key is pressed or if nothing is pressed, the system repeats itself three times and then ends the call.

**NOTE:** To change the number of times that Communicator retries to contact a recipient, refer to Message Options, page 33.

## 6.2 Pager Functions

The following sections detail the Communicator's basic and advanced Pager functions.

- Basic Pager Functions, page 28
- Advanced Pager Functions, page 29

### 6.2.1 Basic Pager Functions

This section details the basic Pager functions.

- Pager Setup
- Pager Test



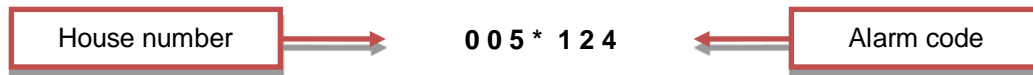
### 6.2.1.1 Pager Setup

1. Go to *SYSTEM > Advanced Setup > Pager*.
2. Define the pager type, either **BASIC** or **ENHANCED** by using the +/- key.

**PAGER SETUP**

Pager Type                      basic

- **BASIC:** Pages are per house in the following format:



**NOTE:** If a house has more than one alarm active, then the multiple alarms code is sent (code: 255).

- **ENHANCED:** Pages are per house and can contain multiple alarms per page in the following format:

**HHH\*AAA\*AAA\*AAA\*\*HHH\*AAA\*AAA**

- HHH: House number (two stars separate between houses)
- AAA: Alarm code

### 6.2.1.2 Pager Test

1. Go to *SYSTEM > Test > Pager*.
2. Enter the pager phone number and press **ENTER**.

**ENTER NUMBER**

This feature tests the **PAGER** service. The pager number should include a dial delay. When dialing a pager service, there is usually a delay between the moment when the call is answered and when the message is recorded. For example: “*Leave a message for Mr. Smith*” takes about three seconds. The Dial Delay parameter is the amount of time that Communicator waits before transmitting its pager alert. Refer to Configuring the Dial Delay, page 29 for more information. Delay is also required when dialing for an outside line.

For example: If the required delay is three seconds and delay is set to two seconds, then two commas are required. The phone number structure is:

- 9 (outside line, if need), ###-####,,

**NOTE:** To enter a comma, press and hold the “1” button.

## 6.2.2 Advanced Pager Functions

The following section details the advanced Pager functions.

### 6.2.2.1 Configuring the Dial Delay

- Go to *SYSTEM > Advanced Setup > Line Modem*.

When dialing a pager service, some services require additional tone menu browsing (interactive voice response). Use this feature to set a delay between the phone number and the tone browsing. Each “,” represents the number of seconds in delay between the phone number and the next browsing number. Refer to Pager Test, page 29 for more information.

## 6.3 Text Functions

The following sections detail the Communicator basic and advanced Text functions.

- Basic Text Functions, page 30
- Advanced Text Functions, page 31
- Text Message Responses, page 32

### 6.3.1 Basic Text Functions

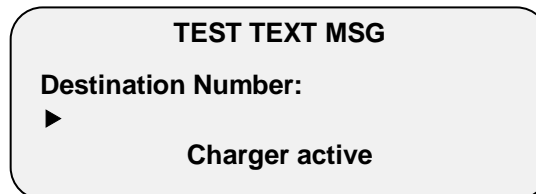
The following sections detail the basic Text functions.

- Testing the Text Function, page 30
- Testing the SMS Ringtone, page 30
- Status Report, page 30

#### 6.3.1.1 Testing the Text Function

This menu enables testing the text function.

1. Go to *SYSTEM > TEST > GSM/ > SEND TEXT MSG.*

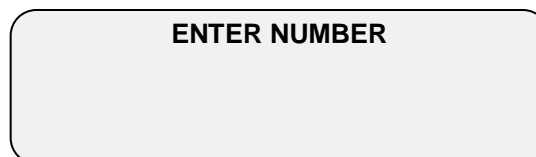


2. Enter in the required mobile phone number to receive the “Test Text” and press ENTER.
3. Confirm that the mobile phone received the following text message:  
“Your Communicator is ready to send alerts via text messages.”

#### 6.3.1.2 Testing the SMS Ringtone

This menu tests the **SMS ringtone** service.

1. Go to *SYSTEM > Test > Dial Out.*
2. Enter the required phone number to receive the “Test Call”.
3. Press **ENTER**.



#### 6.3.1.3 Status Report

Upon a user request, Communicator sends a status report on basic house functions and animal statistics. The report includes the following specifications:

- Target Temp
- Average Temp
- Vent Level
- Vent Mode (minimum ventilation, natural, tunnel)
- Humidity
- Weight (current average animal weight)
- Pressure (static pressure)
- Water Control (daily water consumption)



- Feed Count (daily feed consumption)
- Mortality

By default, the report only includes Target Temperature, Average Temperature, Vent Level and Humidity.

**NOTE:** Platinum Controllers, Version 3.0 and higher, support this function.

**To select the parameters:**

1. Go to *SYSTEM > Advanced Setup > GSM*.
2. Use the **+/-** key to select the required parameter.
3. Press **Enter** to select/deselect the parameter.
4. Press Save.

The parameters are configured.

**To receive a status report:**

- **Receiving the Report for One House**

**?SX** > 'Send SMS' to the Communicator cell phone number.

? = Start of message

S = Status report

X = Represents house number (can be any positive number from 1 - 64)

- **Receiving the Report for Several Houses**

**?SX#X#X** > 'Send SMS' to the Communicator cell phone number

? = Start of message

S = Status report

X = Represents house number (can be any positive number from 1-64)

# = Sign separates between every house number

## 6.3.2 Advanced Text Functions

The following sections detail the advanced Text functions.

- Defining Who Can Text Communicator
- Configuring an SMS Ringtone

### 6.3.2.1 Defining Who Can Text Communicator

1. Go to *SYSTEM > Advanced Setup > GSM*.

| CELLULAR MODEM |            |
|----------------|------------|
| TEXT FROM      | Addr. Book |
| TEXT PRECALL   | Yes/No     |
| PRECALL TIME   | 5          |
| Auto Answer    | 2          |
| Operator       | STD        |

This menu defines which cell phones can send messages to the Communicator via text.

2. In the *Text From* field, choose:
  - **Addr. Book** (only those addresses which are text enabled) or
  - **Any** (enables sending text via any cell phone).

**NOTE:** Acknowledgement messages are only sent when Addr. Book is selected.



### 6.3.2.2 Configuring an SMS Ringtone

If desired, a ringtone can play when an SMS message from Communicator arrives, thereby alerting you of an upcoming message.

1. Go to *SYSTEM > Advanced Setup > GSM*.
2. In the Text Precall field, select **Yes**.
3. In the Precall time, enter the time (in seconds). This parameter ensures that there is sufficient time for the phone to ring before the SMS tone plays.

### 6.3.3 Text Message Responses

This section details how to respond to a text message sent from Communicator to a mobile phone. The response can reset a siren, an alarm, or acknowledge the messages.

Event Codes, page 44 lists the events corresponding to the codes sent in a text message.

- Resetting the Siren, page 32
- Resetting the Alarm, page 32
- Acknowledging a Message, page 33

#### 6.3.3.1 Resetting the Siren

**NOTE:** After typing the text message, press the 'Send' button to send it to the Communicator.

In the procedures below, the **highlighted text** shows the SMS text to be sent.

- **Resetting the Siren of One House**

**!RX** > 'Send SMS' to the Communicator cell phone number.

! = Start of message

R = Reset

X = Represents house number (can be any positive number from 1-64)

- **Resetting the Siren of Several Houses**

**!RX#X#X** > 'Send SMS' to the Communicator cell phone number

! = Start of message

R = Reset

X = Represents house number (can be any positive number from 1-64)

# = Sign separates between every house number

- **Resetting the Siren for All Houses**

**!RALL** > 'Send' to the Communicator cell phone number

! = Start of message

R = Reset

**ALL** = Can be typed both in capital letters or small letters.

#### 6.3.3.2 Resetting the Alarm

To reset all the alarms, send the following text message:

**!C** > 'Send' to the Communicator cell phone number

! = Start of message

C = Communicator





### 6.3.3.3 Acknowledging a Message

If Message Repeat is enabled (refer to page 45), Communicator continues to send alarms until an acknowledgement is sent.

- **Requesting a Response for Every Sent Text Message**

**!AON** > 'Send' to the Communicator cell phone number

! = Start of message

A = Acknowledgement

- **Canceling a Response for Every Sent Text Message**

**!AOFF** > 'Send' to the Communicator cell phone number

! = Start of message

A = Acknowledgement.

## 6.4 Common Functions

The following sections detail the technician tools.

- Go to *SYSTEM > Technician Tools*.

| TECHNICAL TOOLS |     |
|-----------------|-----|
| TEST            | 4   |
| MESSAGE OPTIONS | 1   |
| HYPER TERMINAL  | YES |
| MONITOR         | 2   |

This menu provides testing tools used by an **authorized** technician only.

- Test
- Message Options

### 6.4.1 Test

- **PHONE LINE:** Measures the line voltage.
- **INTERNET:** (TBD).
- **RELAYS:** Toggle Relays 1, 2 and Alarm relay status by pressing ENTER.
- **DIGITAL INPUT:** Displays the status of the eight digital inputs.
- **MEMORY:** Performs EEPROM test by pressing the MENU key.
- **KEYBOARD:** Tests the functionality of each key. Test keys by pressing them and verifying visually that the right key is displayed on the screen.

### 6.4.2 Message Options

This parameter specifies the number of times Communicator places a call to a recipient (until the recipient presses "1").

- Under Call ACK Retries, enter the required numbers.
  - **Range:** 1 – 10
  - **Default:** 1

### 6.4.3 Hyper Terminal

This is a dedicated function for system integrators ONLY!

**6.4.4 Monitor**

TBD



# 7 COMMUNICATOR TO CONTROLLER FUNCTIONS

The following sections detail how to configure the connections between Communicator and the controllers (local communication).

- Network Connection Configuration, page 35
- RS-485 Connection, page 15
- Channel/Signal Tests, page 38
- RS-232 Connection, page 14
- RF Connection, page 17

## 7.1 Network Connection Configuration

The following sections detail how to configure the baud rate and communication between the Communicator (master) and its subunits (slaves). Communication can be via RS-232, RS-485, or RF.

- Routing Methods, page 35
- Configuring the Channel Settings, page 36
- Displaying the Controllers, page 37
- Listing the Network Devices, page 37

### 7.1.1 Routing Methods

There are two common routing methods for running the communications connections; Daisy Chain (recommended) and Star connection (not recommended).

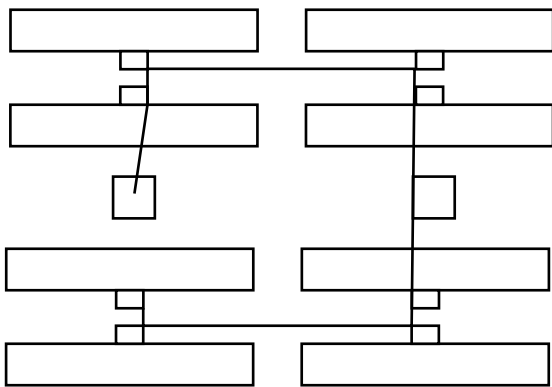


Figure 10: Daisy Chain

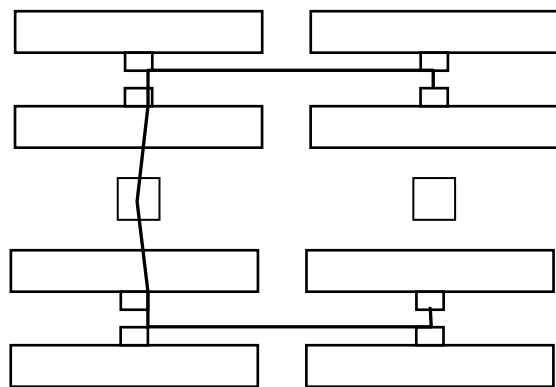


Figure 11: Daisy and Star Combination

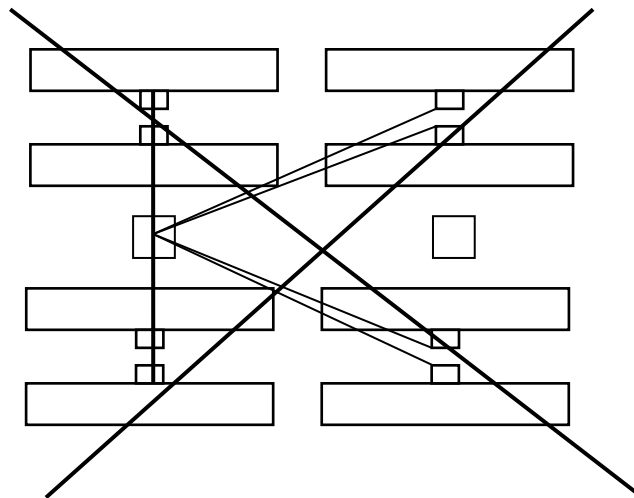


Figure 12: Star Routing

**NOTE:** Employing a Rotem RS-232 or RS-485 Repeater enables Star routing. Refer to the relevant manuals for details.

## 7.1.2 Configuring the Channel Settings

- Go to *SYSTEM > Advanced Setup > RF/Wired Network*.

| SERIAL PORT |      |
|-------------|------|
| BAUD RATE   | 9600 |
| CHAN(6-7-8) | □□□  |
| ADDR(4-5)   | □□   |

This menu defines data rate and settings between the Communicator and its subunits.

**NOTE:** This menu does **not** define the data rates to the PC.

- Baud Rate:** This sets the communication rate between the Communicator and the controllers. For communication to operate properly, set all controllers to the same Baud Rate.
  - Since faster rates and longer transmission distance mean a greater chance of transmission errors, reduce the baud rate as you increase the distance.
  - In any case where there are transmission errors, reduce the baud rate.
  - Communicator, RLINKs (if used), and controllers must have the same baud rate!

**NOTE:** Incorrect definitions can result in alarms for missing controllers and communication from unidentified controllers.

- CHANNEL:** This parameter sets the communication channel between the Communicator and an RLINK; it sets the module's hopping channel number. A channel is one of three layers of addressing available to the XStream radio modem. For modules to communicate with each other, they must have the same channel number since each network uses a different hopping sequence. Different channels should be used to prevent modules from listening to transmissions from one another in the same network.

**Table 1: Channel States**

| Square 1 | Square 2 | Square 3 | Channel |
|----------|----------|----------|---------|
| unmarked | unmarked | unmarked | CHAN-0  |
| marked   | unmarked | unmarked | CHAN-1  |
| unmarked | marked   | unmarked | CHAN-2  |
| marked   | marked   | unmarked | CHAN-3  |
| unmarked | unmarked | marked   | CHAN-4  |
| marked   | unmarked | marked   | CHAN-5  |
| unmarked | marked   | marked   | CHAN-6  |
| marked   | marked   | marked   | CHAN-7  |

**CAUTION** If a neighboring farm is using RLINK, ensure that you use a different channel number.

- ADDRESS:** The address is a second layer used to set up a secure communication layer to an RLINK, in combination with the Channel or alone.

**Table 2: Address Configuration**

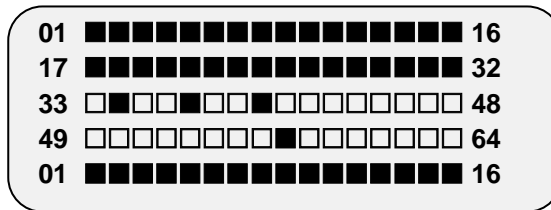
|           | Square 1 | Square 2 |
|-----------|----------|----------|
| Address 0 | OFF      | OFF      |
| Address 1 | ON       | OFF      |
| Address 2 | OFF      | ON       |



|           |                 |                 |
|-----------|-----------------|-----------------|
|           | <b>Square 1</b> | <b>Square 2</b> |
| Address 3 | ON              | ON              |

### 7.1.3 Displaying the Controllers

- Press 



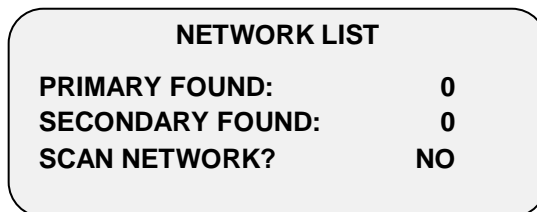
This screen displays all the controllers that are connected to the system.

- - Represents a recognized controller
- - No controller is recognized

**NOTE:** The letter 'F' indicates that communication to that house has been lost. The 'F' continues to appear until the unit is reset (disconnect and reconnect the power).

### 7.1.4 Listing the Network Devices

- Go to *SYSTEM > Test > Network List*.



- **PRIMARY FOUND:** Displays the number of primary units found in the network.
- **SECONDARY FOUND:** Displays the number of secondary units found in the network.
- **SCAN NETWORK?:** Use +/- key to select YES or NO and then press **ENTER** to scan the network to find/remove primary or secondary units.

## 7.2 Channel/Signal Tests

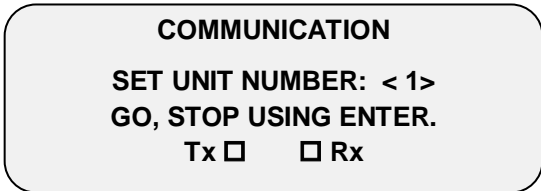
The following sections detail how to test the controller communication channels.

- Testing the RS-232/485 Channel
- Testing the Radio RF Signal

### 7.2.1 Testing the RS-232/485 Channel

This menu tests the RS-232/485 communication channel.

- Go to *SYSTEM > Test > Wired 232/485*.

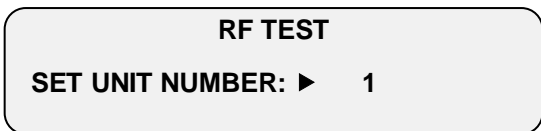


Enter the required unit number and press **ENTER** to start and stop the test. The screen displays a shaded box in the Tx when transmitting and a shaded box by the Rx when receiving (when functioning properly the shading switches back and forth between the two boxes).

**NOTE:** If the checkbox remains blank, check all connections between the Communicator and the controller.

### 7.2.2 Testing the Radio RF Signal

- Go to *SYSTEM > Test > Radio RF Signal*.



This menu tests the RF communication channel.

Enter the required unit number and press **ENTER**. The screen displays the reception bar graph as well as the measured signal reading once available (testing is continuous until exiting this menu).

Refer to RF Connection, page 17 for information on configuring the RF network.



## 8 COMMUNICATOR TO PC CONFIGURATION

The following sections detail the communication between the Communicator and the PC.

- Defining the Communication Speed with the Local PC
- Configuring the Data Connection

### 8.1 Defining the Communication Speed with the Local PC

- Go to *SYSTEM > Advanced Setup > COM/USB*.

| COM/USB   |      |
|-----------|------|
| BAUD RATE | 9600 |

This screen defines the communication speed (**BAUD RATE**) corresponding with the local PC.

### 8.2 Configuring the Data Connection

- Go to *SYSTEM > Advanced Setup > Line Modem > Advanced*.

| DATA CONNECTION |        |
|-----------------|--------|
| MODULATION      | AUTO   |
| COMPRESSION     | ENABLE |
| DATA FLOW       | 2      |

The Communicator can compress data and send it faster. Use this screen to increase the transfer rate between the Communicator and a remote modem.

- **MODULATION:** Auto or V34 transmission. During connect negotiation at which the modems have determined which modulation and rate will be used, meaning before any error.
- **COMPRESSION:** Enables or disables data compression performed by the modem, also known as hardware compression. It reduces the amount of time required to transfer data. Make sure the modem you are connected to can read and decompress the received data.
- **DATA FLOW:** This feature enables the hardware to vary the data transmission rate.

**CAUTION** Rotem recommends that the user leave the Advanced menu items at their default settings.

## 9 CONFIGURING THE DRY CONTACT CARD

The following section details how to set up the dry contact cards. Communicator supports an eight dry contact digital input card that can be programmed as a normally open / close dry contact input. These inputs can be connected to a wide variety of sensors such as generator operation, magnetic door or window, thermostat, etc.

1. Go to *SYSTEM > Digital Input*.

| DIGITAL INPUT |             |       |
|---------------|-------------|-------|
| #             | MESSAGE     | [ N ] |
| 1 ▶           | door opened | 1     |
| 2 ▶           |             | 0     |

2. Use the alphanumeric keypad to enter in the message and press **ENTER**.
3. Define **[N]** as **1** or **0**

The '[N]' column's two possibilities:

- **0**: Represents the open contact (Normally Open). If there is a change from the usual state (closed state), an alarm occurs.
- **1**: Represents closed contact (Normally Closed). If there is a change from the usual state (opened state), an alarm occurs.

The figure above serves as an example of a digital input program. The programmed line No. 1 is set as normally closed for the house door. The message for this program is "door opened". If the door opens, the dry contact is disconnected and changes from 1 to 0. This change triggers the alarm and the message "door opened" is sent to all addresses programmed in the Adding Names to the Address Book (page 23).





# 10 COMMUNICATOR FUNCTIONS

The following sections detail functions which relate to the Communicator hardware and software.

- Saving and Restoring System Settings, page 41
- Viewing Relay Settings, page 42
- Test Functions, page 41

## 10.1 Saving and Restoring System Settings

- Go to *SYSTEM > Save/Res Setting > Restore*.
  - **RESTORE:** Use this feature to restore all settings that were previously saved (*restore point is the date of the last save performed*).



- Go to *SYSTEM > Save/Res Setting > Save*.
  - **SAVE:** Use this feature to save all settings (*once a SAVE is performed, this is the new RESTORE point*).



## 10.2 Test Functions

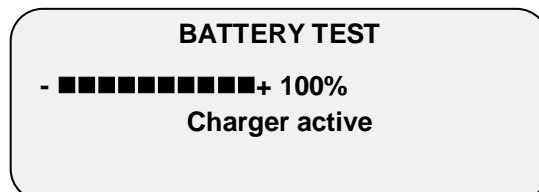
The following section details how to test Communicator functions.

- Testing the Backup Battery, page 41
- Viewing Device Status, page 42
- Viewing the Software and Hardware Version, page 42

### 10.2.1 Testing the Backup Battery

This section details the Backup Battery test.

- Select *SYSTEM > Test > Battery*.



**To test the battery:**

1. Unplug the unit.
2. View the battery test.

**CAUTION** In addition to this test, refer to *Testing the Alarm Backup Batteries, page 47*.


### 10.2.2 Viewing Device Status

- Select *SYSTEM* > *Test* > *Hardware Profile*.

| HARDWARE PROFILE |    |
|------------------|----|
| 1 VOICE          | OK |
| 2 LINE MODEM     | OK |
| 3 CELLULAR       | OK |

View functionality status of all possible installed devices.

### 10.2.3 Viewing the Software and Hardware Version

- Press 

| http://www.rotem.com |           |
|----------------------|-----------|
| SOFTWARE             | 3.00r01-b |
| HARDWARE             | 2.04      |
| U1                   | 1.00      |

This screen displays the software and hardware version numbers.

## 10.3 Viewing Relay Settings

| RELAYS SETTING |          |
|----------------|----------|
| CODE           | TIME (s) |
| RLY1           | 0        |
| RLY2           | 0        |

- Select *SYSTEM* > *Relay*.

TBD



# 11 ALARMS

This section details how to:

- Configure advanced alarm settings.
- View the history of alarms and events

Basic Alarm functions are defined in Initial Configuration, page 21.

- Introduction to Alarms and Responses, page 43
- Event Codes, page 44
- Advanced Alarm Settings, page 44
- Alarm and Events History, page 46

## 11.1 Introduction to Alarms and Responses

Figure 13 illustrates the alarm sequence. The flow ends when an alarm is acknowledged or is no longer active.

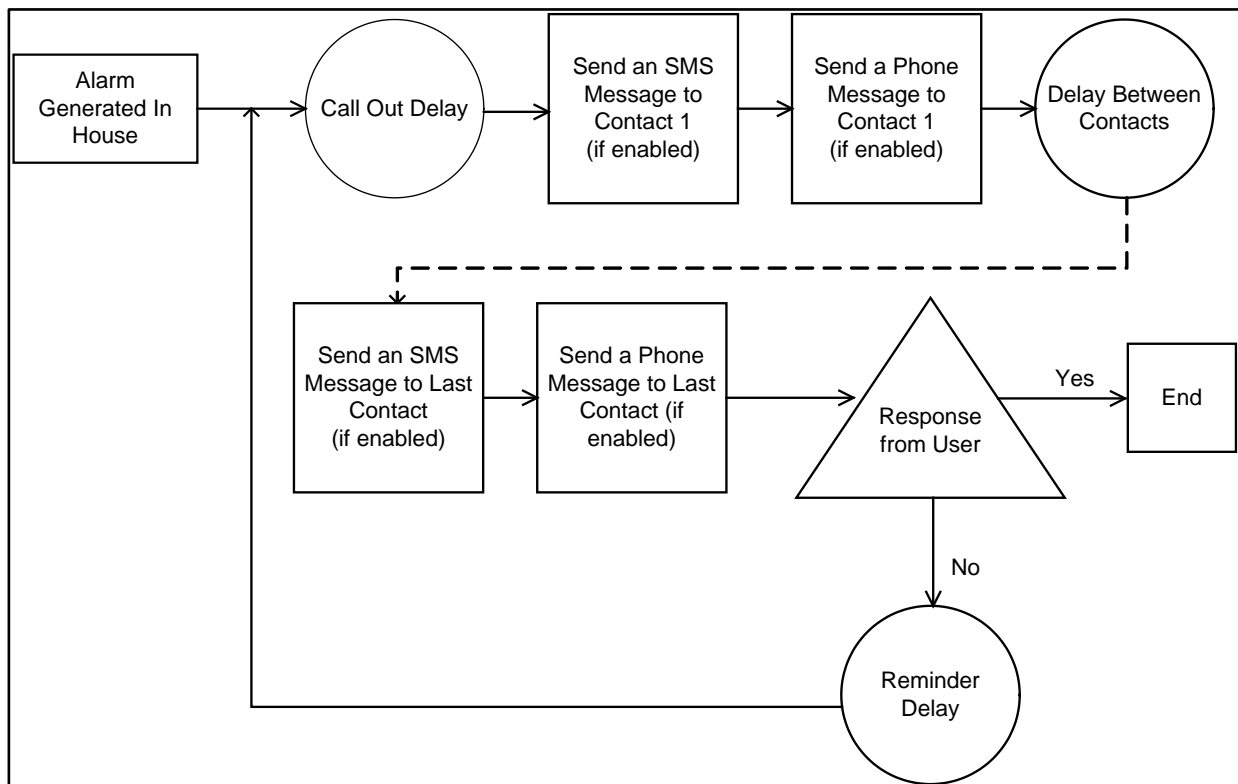


Figure 13: Alarm Flow Chart

Responding to alarms can be done over:

- **Land line:** Via verbal and interactive messaging
- **Cellular:** Via text messaging

**NOTE:** Communicator does not support verbal and interactive messaging via cell phones.

## 11.2 Event Codes

Table 3 lists the event codes sent in text messages.

**Table 3: Event Codes**

| Event Code                   | LCD Message      |
|------------------------------|------------------|
| 1                            | "power off "     |
| 2                            | "power on"       |
| 3                            | "cold start"     |
| 4                            | "error-01"       |
| 5                            | "test running"   |
| 6, 7 , 9, 10, 11, 12, 16, 17 | "fail"           |
| 8, 13                        | "no answer "     |
| 14                           | "page sent "     |
| 18                           | "text sent "     |
| 19, 20                       | "ack alarm "     |
| 21                           | "disable alarm " |
| 22, 23, 24                   | "low signal"     |



## 11.3 Advanced Alarm Settings

The following sections detail the advanced alarm functions. Basic alarms are set up in Initial Configuration.

- Resetting the Alarms, page 44
- Disabling Alarms, page 45
- Defining the Message Delay, page 45
- Defining the Message Repeat Parameter, page 45
- Defining the Internal Alarms, page 45
- Defining the Internal Alarms, page 45
- Defining the Battery Alarm, page 46

### 11.3.1 Resetting the Alarms

- Go to *ALARM > Reset*.

**SELECT UNIT (+/- KEY)**  
**TO RESET PRESS ENTER**  
**UNIT = 4**

This menu resets the alarms of any controller that exists within the network. The Communicator's unit number is **0**.

Use the **+/-** key to navigate to the required unit number.

### 11.3.2 Disabling Alarms

- Go to *ALARM > Disabled Alarms*

| DISABLE ALARMS |         |      | DISABLE ALARMS |  |
|----------------|---------|------|----------------|--|
| HOUSE          | DISABLE | CODE | MESSAGE        |  |
| 23             | YES     | 185→ |                |  |
| 25             | YES     | 155→ |                |  |

View disabled alarms and re-enable these alarms.

**NOTE:** : Alarms are disabled until 12:00 PM the following day.

- Scroll right to view message.
- Press +/- to re-enable the alarm and then press ENTER.

**NOTE:** Alarms that are re-enabled are cleared from the list.

### 11.3.3 Defining the Message Delay

- Go to *ALARM > Options*.

| OPTIONS              |    |
|----------------------|----|
| ==MESSAGE DELAY==    |    |
| Call Out (s)         | 60 |
| Between Users (s)    | 60 |
| TEXT                 |    |
| ==MESSAGE REPEAT==   |    |
| Voice                | 20 |
| Pager                | 35 |
| Text                 | 35 |
| ===INTERNAL ALARM=== |    |
| Delay(s)             | 60 |
| Reminder (m)         | 60 |
| Power Resto.Msg      | NO |

This menu defines the waiting times between an alarm event and its reporting.

- CALL-OUT (seconds):** Define the waiting time before the communicator begins the reporting sequence.
- BETWEEN USERS (seconds):** Define the waiting time before contacting the next user within the address book.

### 11.3.4 Defining the Message Repeat Parameter

- Go to *ALARM > Options*.

By default, when an alarm is sent, it must be acknowledged by one of the contacts. If there is no acknowledgment, Communicator resends the alarm (refer to Acknowledging a Message, page 33). This menu defines the waiting time before Communicator reinitiates the reporting (VOICE, PAGER, TEXT).

**NOTE:** Enter 0 to disable this option.

### 11.3.5 Defining the Internal Alarms

- Go to *ALARM > Options*.

Internal alarms are generated by the Communicator unit (external alarms are generated by the controllers). This menu defines:

- **DELAY (seconds):** Define the waiting time before the communicator generates an internal message.
- **REMINDER (minutes):** After an alarm has been acknowledged but not dealt with, the communicator recreates an internal message according to the amount of time defined. Define the time in this option.
- **POWER RESTORE MESSAGE:** Define YES/NO for a message to be sent after a Power Restore event

### 11.3.6 Defining the Battery Alarm

- Go to *SYSTEM > Advanced Setup > Battery*.

This menu defines the hold time (in seconds) before the communicator generates an alarm message regarding the battery charge.

| POWER OPTION   |    |
|----------------|----|
| ALARM DELAY(S) | 60 |

## 11.4 Alarm and Events History

This section details how to view records of alarms and events.

- Displaying the Alarm History, page 46
- Displaying the User Events, page 46
- Displaying the System Events, page 47

### 11.4.1 Displaying the Alarm History

- Go to *HISTORY > Alarms*.

| LOG [SORT BY: H] |        |       |
|------------------|--------|-------|
| HOUSE            | DATE   | CODE  |
| 1                | 07-FEB | 240 → |
| 2                | 05-FEB | 240 → |
| 3                | 07-FEB | 240 → |
| 3                | 06-FEB | 240 → |
| 4                | 07-FEB | 240 → |
| 5                | 06-FEB | 240 → |

This screen displays alarms from all houses as well as the Communicator (Communicator: 0 and Houses: 1 – 64).

- Use +/- to toggle the SORT BY option from: H=House; D=Date; and C=Code.
- Scroll right to view message.

### 11.4.2 Displaying the User Events

- Go to *ALARM > User Events*.



| USER EVENTS |       |      |
|-------------|-------|------|
| DATE        | TIME  | CODE |
| 18-JAN      | 16:16 | 2 →  |
| 07-FEB      | 11:47 | 2 →  |

Any changes or events created by users from the address book appear in this table.

- Scroll right to view alarm and user number.
- Code is the alarm code.

### 11.4.3 Displaying the System Events

- Go to *ALARM > System Events*.

| SYSTEM EVENTS |       |      |
|---------------|-------|------|
| DATE          | TIME  | CODE |
| 18-JAN        | 16:16 | 2 →  |
| 07-FEB        | 11:47 | 2 →  |

This menu displays all Communicator system events.

- Scroll right to view message.

## 11.5 Testing the Alarm Backup Batteries

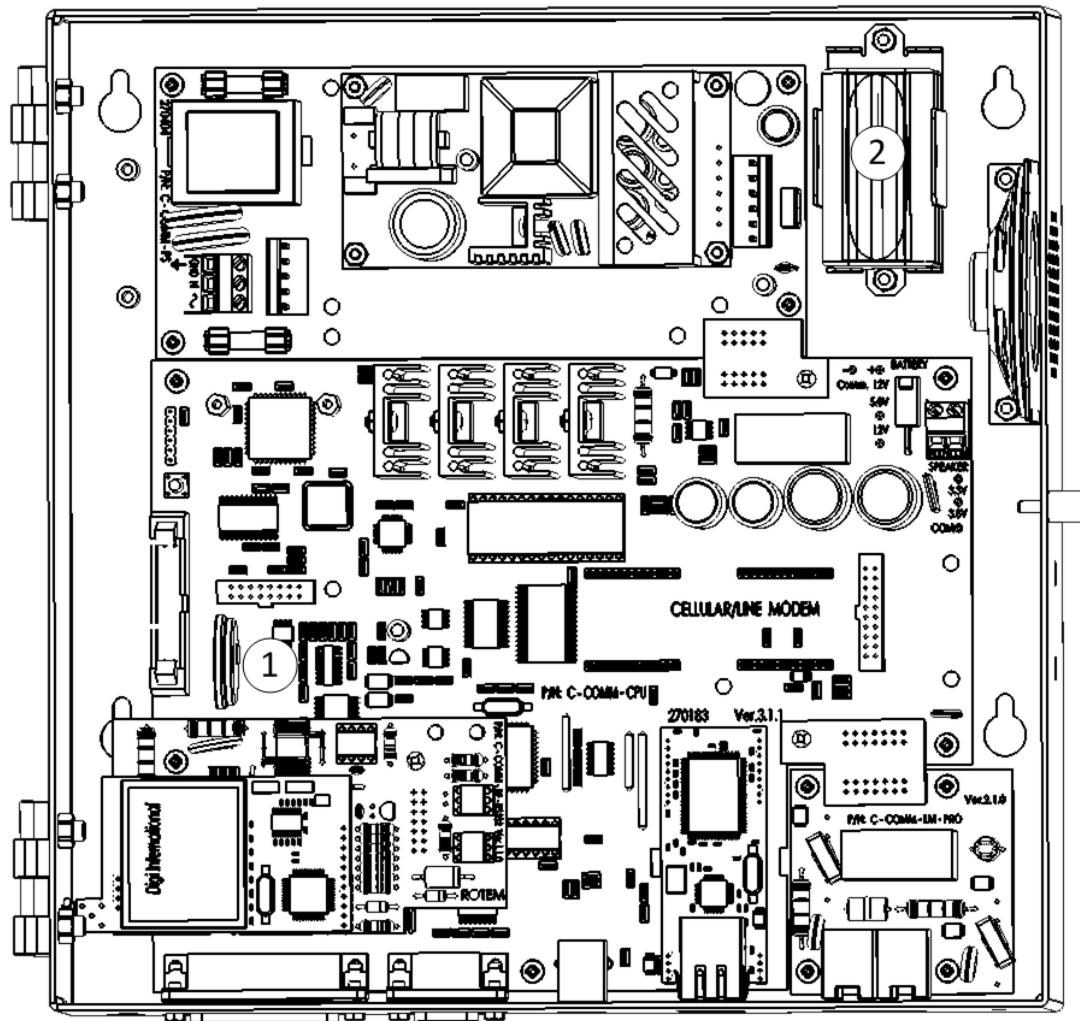
To ensure that the Communicator continues to broadcast alarms in the event of a power outage, the unit comes equipped with a set of 12 V backup batteries. These batteries must be kept properly charged at all times.

**WARNING!** Failure to test your pack regularly and change the pack as required can result in losses in the event of a general power failure!

Rotem strongly recommends:

- Checking the backup battery pack once a month (see the procedure below).
- Replacing the battery pack once a year, regardless of the test results.





**Figure 14: Communicator Battery Packs**

The following two tests provide accurate data regarding the backup battery pack's charge level. Rotem recommends performing both tests.

If you need to replace the battery, order a Communicator Battery Pack (P/N: SP-COMM-BA).

**NOTE:** Rotem recommends keeping a spare pack in stock to avoid any shipping delays.

### 11.5.1 Dial-Up Test

- Unplug the unit.
  - If the batteries are charged, Communicator sends an SMS/voice/pager alarm message to the numbers configured in the Address Book. The message should arrive within several minutes.
  - If the batteries are not charged, Communicator does not send an alarm message. In addition, an alarm message appears on the screen.

### 11.5.2 Voltage Test

1. Remove the battery pack.
2. Using a voltmeter, test the pack. The voltage of a new charged battery pack ranges between 7.2 V and 7.6 V. The voltage of a battery pack that has been in use for an extended period of time will be 7.2 V or lower.
  - If the power is above 7.0 volts or higher, continue using the battery pack.
  - If the power is below 7.0 volts, replace the pack immediately.

**Take Control**



## 12 PHYSICAL INSTALLATION

## 13 TROUBLESHOOTING

The following section details common troubleshooting procedures.

- Hardware, page 50
- Communication to Controllers/PC, page 50
- Cellular Modem, page 52
- RF Communication, page 53
- Voice Card, page 54
- Alarm, page 55
- Line Modem, page 55

**NOTE:** Lists of part numbers and their descriptions are located in Ordering Information, page 59.

### 13.1 Hardware

**Connected hardware is not recognized in the hardware profile list under system Menu (voice, cell modem, Line modem)**

Refer to Viewing Device Status, page 42.

The Communicator displays O.K. for an installed device and N/A for a device that is not available.

1. Reset the hardware: Turn the battery switch OFF and unplug the power source.
2. Reconnect the power and switch the battery ON so that the unit rescans the hardware.
3. Open the Communicator and check that the device is installed properly.
4. If still not operating, replace the device.

**Battery failure alarm is received**

1. Make sure the Communicator is connected to an electric power supply.
2. In '**Battery Test**' menu (page 41), check the battery and charger status.
3. Open the Communicator's box and check the battery's wiring (Figure 1, page 11 ).
4. If the wiring connections are OK, replace the battery pack. (Part number: SP-COMM-BAT).

**NOTE:** If you replace the voice card, Ethernet card, line modem or cell modem, perform a Cold Start after replacing the device (Section 4.1, page 11).

### 13.2 Communication to Controllers/PC

**NOTE:** Refer to Displaying the Controllers, page 37 to display the controller.

**Not all units found due to updating primary units.** In other words, the number of controllers is not identical to the number of controllers entered in the Controllers menu (Identifying the Controllers, page 23).

1. Make sure the Communicator is connected to an electric power supply.
2. Press **Hot Key 0** (page 37) and check if either some of the controllers are missing (empty squares), or all of them.
3. Check communication with the missing unit:
  - If the system has a wired connection, refer to Channel/Signal Tests, page 38.
  - If the system has an RF link, refer to page 38.
4. Check Baud Rate (refer to the relevant section in Network Connection, page 35) on both sides if using 232/485 communication card.
5. Go over the number of controllers and make sure there is no conflict between the units (make sure that two units do not have the same configuration number).
6. If all above are OK:



- a) Check the wiring for 232/485 communication card.
- b) Check RF card signal strength (refer to Testing the Cellular Signal Strength, page 26).

#### **'Lost unit number' alarm**

1. Verify that the Communicator is connected to a power supply.
2. Press **Hot Key 0** (page 37) and check if either some or all of the controllers are missing (empty squares).
3. Verify communication with the missing unit:
  - a) If the system has a wired connection, go to *System – Test – Wired RS232/485* (refer to page 38).
  - b) If the system has an RF link, go to *Radio System – Test Radio RF Signal* (Refer to page 38).
4. If you are using a 232/485 communication card, check the Baud Rate on both sides (refer to Routing Methods, page 35).
5. If an RF communication card is being used, check Additional Channel Setting (refer to Routing Methods, page 35).
6. Go over the controller numbers and make sure there is no conflict between the units (make sure two units do not have the same configuration number).
7. If all above are Ok:
  - a) Make sure the wiring is OK for communication card 232/485.
  - b) Check signal strength for RF card (refer to Testing the Cellular Signal Strength, page 26).

#### **No local communication with PC**

1. Ensure that the serial port Baud Rate matches the PC baud rate (refer to Routing Methods, page 35).
2. Go to Computer Port list. 'Com 1 RD' LED should flash on the front panel. Test the communicator through RotemNet software.

---

**NOTE:** If the LED does not flash, it is not the right computer port.

---

3. If using a USB cable, reinstall the driver from the CD (refer to USB Driver Installation, page 14).

### 13.3 Cellular Modem

Problem in signal strength

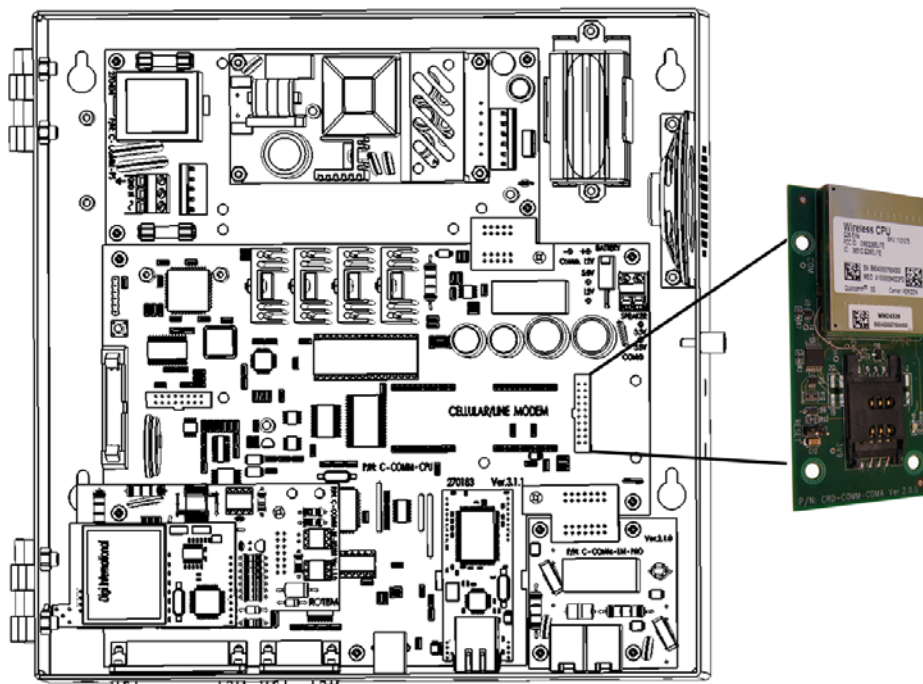


Figure 15: Cell Modem Card Location

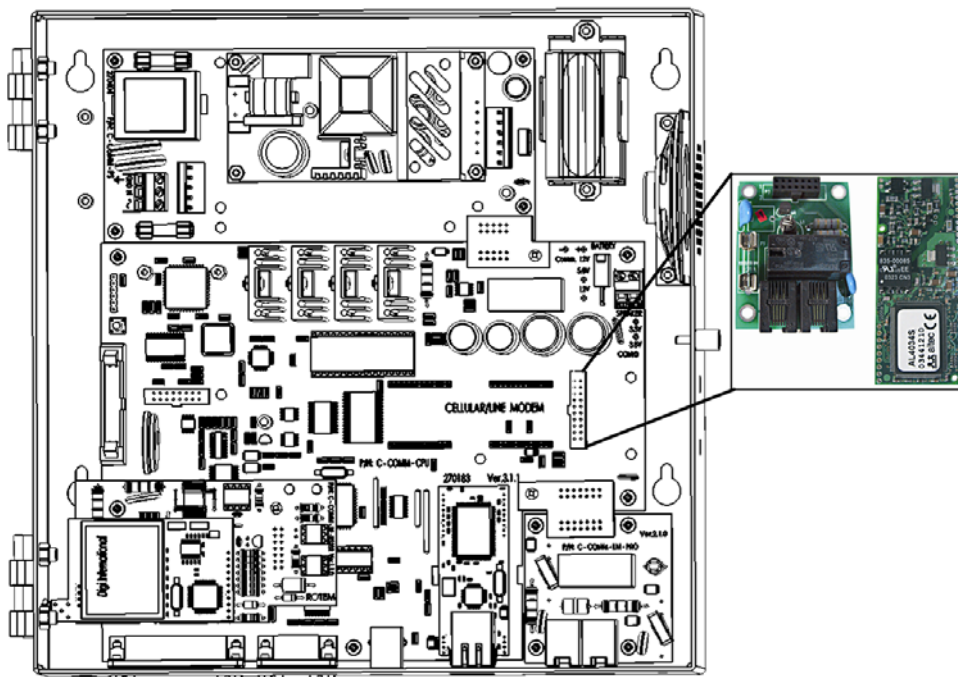


Figure 16: Line Modem Card Location

The modem has to be placed in a way that ensures sufficient signal strength.

- To improve signal strength, the antenna can be moved to another position. Signal strength may depend on how close the modem is to a radio base station. You must ensure that the location, at which you intend to use the modem, is within the network coverage area.
- Reboot through unplugging the power.
  1. If signal does not improve, insert the SIM card into a cell phone and check the signal (GSM only).
  2. If the signal is weak, check with your service provider.



3. If the signal is OK, change the module.
4. If no signal exists:
  - a) Check antenna connection.
  - b) Check connection to the module (GSM).
  - c) Check the wiring. If there is a problem, contact the dealer.

Refer to the appropriate section in Appendix A: replacing communication cards and Modems, page 64 for detailed instructions on exchanging the modem.

- Text test failure in menu (refer to Testing the Text Function, page 30).

The modem has to be placed in a way that ensures sufficient signal strength. To improve signal strength, the antenna can be moved to another position. Signal strength may depend on how close the modem is to a radio base station. You must ensure that the location, at which you intend to use the modem, is within the network coverage area

## 13.4 RF Communication

### No RF connection

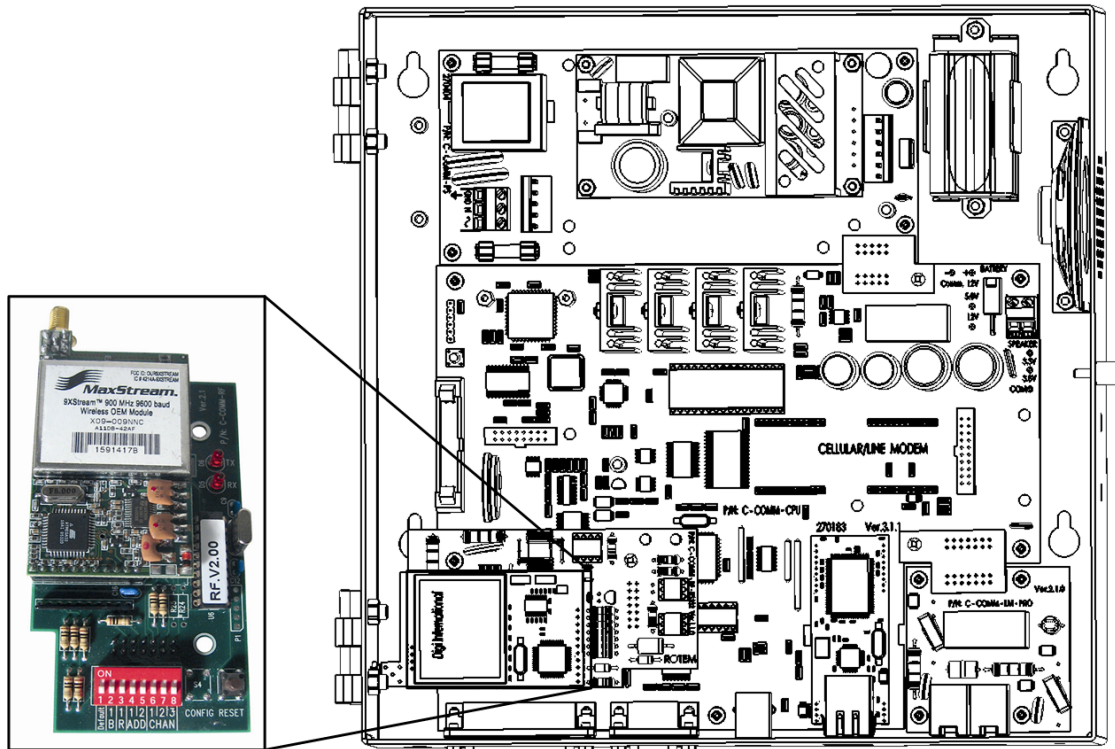


Figure 17: RF Card Location

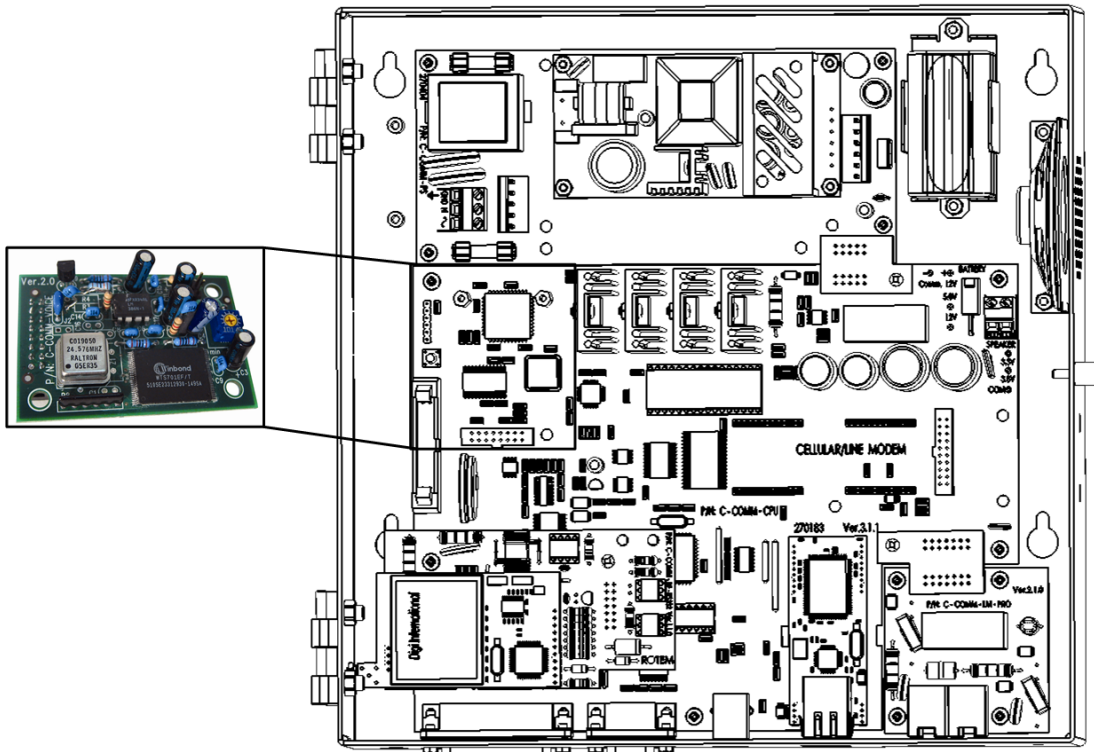
- Check the signal strength (refer to Testing the Radio RF Signal, page 38).
  - If it is weak, change the antenna location.
  - If the strength is zero:
    1. Check the baud rate and the channel address (refer to Configuring the Channel Settings, page 35). Correct if needed.
    2. Ensure that the Communicator's baud rate matches the controllers' baud rate.
- Check RF card configuration:
  - Try to change the baud rate and channels on both sides (refer to Configuring the Channel Settings, page 35).

**NOTE:** In this situation, lower the baud rate.

- Improve the antenna's location.
- Replace P-COMM-RF10-9-S COMMUNICATOR RF (Refer to Replacing the RF-Card,

### 13.5 Voice Card

Voice does not function



**Figure 18: Voice Card Location**

1. Refer to Testing Voice, page 25 and perform a voice test.
2. Change the parameters as required (refer to Testing Voice Quality, page 25).

**NOTE:** Do not forget to confirm by moving the cursor to the 'TEST' parameter and pressing 'ENTER'.

3. Verify speaker cable is connected.
4. Turn the volume trimmer on voice card until required volume is reached (Figure 19) (Refer to Figure 1, page 11 to see the voice card location).
5. If none of the above helps, contact your dealer.



To adjust the volume, move turn the screw left (minimum) or right (maximum )

**Figure 19: Volume Trimmer**


  
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## 13.6 Alarm

### **No messages are being received from the Communicator**

1. Verify active alarms are not defined as disable state (refer to Setting the Test Schedule, page 21).
2. Go over the contact group, make sure the users are not set to 'idle' (refer to Adding Names to the Address Book, page 23) and that the contact information is entered correctly.
3. Verify that the controllers are functioning properly (meaning are transmitting alarms or messages).

### **Alarm LED is ON but the siren does not operate**

1. Check the siren's connection to the relay with battery (see Figure 3, page 13).
2. Perform an alarm relay test found in *SYSTEM->Technician Tools->Test->Relays* (refer to Test, page 33).

## 13.7 Line Modem

### **'No dial tone' alarm**

1. Verify that there is a line by using a phone connected to the phone jack.
2. Perform **PHONE LINE VOLTAGE** test, (*SYSTEM – Technician Tools – Test – Phone Line* (page 33)). Voltage should be above 40 V (normally it is 48 V or more).
3. If it is above 40 V, connect a regular phone for testing.
4. If the line is not operating, check with your service provider.
5. If the line is operational, perform power cycle for Communicator (turn device off and then back on). Allow a few minutes until the Communicator recovers.

### **Dial Out is not functioning**

1. Insert extra delay by adding commas (refer to Configuring the Dial Delay, page 29).
2. If you have an ADSL modem on the same line, verify that your ADSL line filter meets your service provider's specifications (high quality line balanced).
3. Contact technical support.

## 13.8 Battery

### **'critical error/check battery wiring' alarm appears**

1. Check the backup battery wiring; verify that all connections are in place.
2. If the pack is correctly wired, the battery pack does not hold a charge. Replace the pack.

## 14 SPECIFICATIONS

### Power Supply

|                           |  |
|---------------------------|--|
| Mains Voltage             | Single Phase 230 VAC (outside the US & Canada) |
| 115 VAC                   | 0.5 A (US & Canada)                            |
| Mains Frequency           | 50/60 Hz                                       |
| Maximum Power Consumption | 40 W   |

### Main Fuses

|                            |                     |
|----------------------------|---------------------|
| Main Fuse (12 V)           | 125/250 V, 100 mA T |
| Main Fuse (Switching P.S.) | 125/250 V, 2 A T    |

### Connection Box Peripherals

#### Digital Inputs

|                  |                         |
|------------------|-------------------------|
| 8 Digital Inputs | Dry Contact, 5V /2 mAmp |
|------------------|-------------------------|

#### Relays Outputs

|   |                 |
|---|-----------------|
| N.C/N.O. (OMI) Blue Small Low Power Relay | 5 Amps, 250 VAC |
|---|-----------------|

#### Alarm Output

|                                       |                 |
|---------------------------------------|-----------------|
| N.O and N.C (Double) (OMI) Pilot Duty | 5 Amps, 250 VAC |
|---------------------------------------|-----------------|

#### Housing

|                                  |                   |
|----------------------------------|-------------------|
| Metal Box Dimensions (L x W x H) | 262 x 262 x 80 mm |
|----------------------------------|-------------------|

#### Ambient Climate

|                             |                                |
|-----------------------------|--------------------------------|
| Operating Temperature Range | 0° to +50° C / 32° to 125° F   |
| Operating Humidity Range    | 0% to 95%                      |
| Storage Temperature Range   | -10° to +70° C / 14° to 158° F |

#### Certification



CB

CE



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# 15PARTS CATALOG

The following sections illustrate the components that come with the Communicator.

- Standard Components, page 57
- Additional Components, page 58
- Ordering Information, page 59
- Compatibility Issues with the Communicator CPU, page 61








## 15.1 Standard Components

The following components are included in every order.

|   |   |  |   |
|---|---|--|---|
|   |   |   |    |
| <b>Power Line Protector</b>   | <b>Communicator</b>   | <b>Keys</b>  | <b>External Connection Box</b>  |
|  |  |  |  |
| <b>Modem Line Cable</b>   | <b>External Connection Cable</b>  | <b>PC Cable</b>  | <b>USB Cable</b>  |

## 15.2 Additional Components

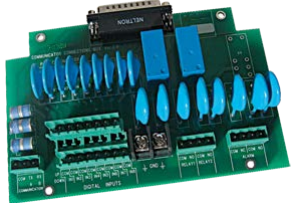

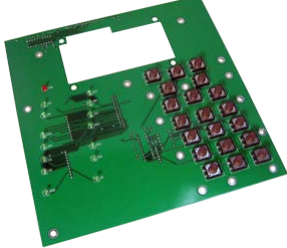
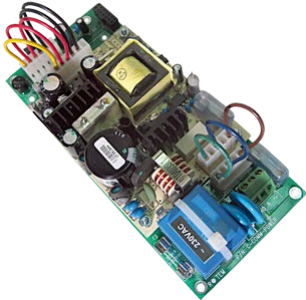
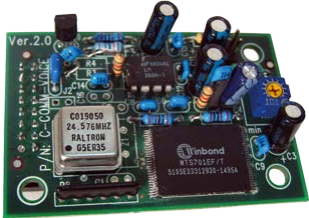




The following components are specific for each installation.

|  |  |   |
|--|--|---|
|   |   |    |
| <p><b>P-COMM-RS485</b><br/>Communicator RS-485 Card</p>  | <p><b>P-COMM-RS232</b><br/>Communicator RS-232 Card</p>                            | <p><b>P-COMM-LM-S</b><br/>Communicator Line Modem Set</p>   |
|   |  |    |
| <p><b>P-COMM-RF5-24-S</b><br/>Communicator RF 50 mW 2.4 GHz Set</p> <p><b>P-COMM-RF10-9-S</b><br/>Communicator RF 100 mW 900 MHz Set</p> | <p><b>P-COMM-RF232-S2</b><br/>Communicator RF &amp; RS232 900 MHz Set</p>          | <p><b>A-RF5-24-AN-D</b><br/>RF 2.4 GHz Directional Antenna</p> <p><b>A-RF10-9-AN-D</b><br/>RF 900 MHz Directional Antenna</p> |
|   |  |   |
| <p><b>P-COMM-GSM-S</b><br/>Communicator GSM modem Set</p>  |  |   |



## 15.3 Ordering Information

The following tables list every Communicator component. The **basic unit** includes the following parts list.

|   |  |  |  |
|---|--|--|--|
|    |   |  |   |
| 1   | 2  | 3  | 4  |
|   |  |  |  |
| 5   | 6  | 7  | 8  |
|  |  |  |  |
| 9   |  |  |  |

**Table 4: Basic Unit Part Number: P-COMM-V1**

| # | Part #          | Description                             |
|---|-----------------|---|
| 1 | C-COMM-BOX      | Communicator Connection Box Card        |
| 2 | C-COMM-CPU      | Communicator CPU Card                   |
| 3 | C-COMM-KBD      | Communicator Keyboard Card w/o Display  |
| 4 | C-COMM-PS-V1    | Communicator Power Supply Card 115 Volt |
| 5 | C-COMM-VOICE    | Communicator Voice Card                 |
| 6 | SP-COMM-BAT     | Communicator Battery Pack               |
| 7 | SP-COMM-LCD     | Communicator Display                    |
| 8 | SP-COMM-SPEAKER | Communicator Voice Speaker              |
| 9 | C-COMM-RJM10    | Communicator Power To CPU Jumper Card   |

| #  | Part #          | Description                             |
|----|-----------------|---|
| 10 | C-COMM-LM-RJM10 | Communicator Protect To CPU Jumper Card |
| 11 | SP-COMM-F       | Communicator Flat Cable                 |

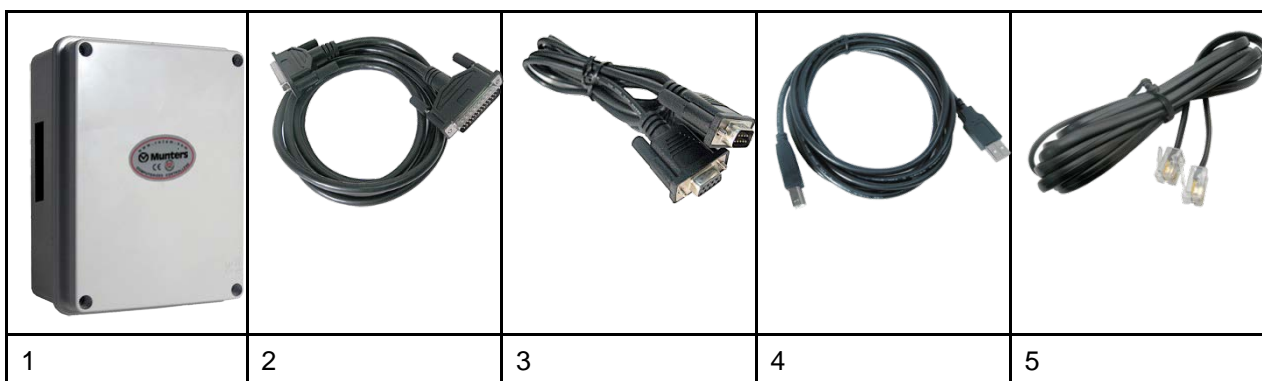
Table 5 lists the part number of kits containing the basic unit along with additional components.

**Table 5: Basic Unit and Additional Units**

| # | Part #          | Description   |
|---|-----------------|---|
| 1 | P-COMM-232-S-V1 | Communicator Set 115Volt (LM, RPLP, RS232)<br>Communicator basic unit + Line Modem, RPLP-1, and RS-232 Card   |
| 2 | P-COMM-RF-S-V1  | Communicator Set 115Volt (LM, RPLP, RF, C15)<br>Communicator basic unit + Line Modem, RPLP-1, and RF Card with 15 meter (50 feed) cable and Antenna |
| 3 | P-COMM-485-S-V1 | Communicator Set 115Volt (LM, RPLP, RS-485)<br>Communicator basic unit + Line Modem, RPLP-1, and RS-485 Card  |

**Table 6: Cables and Communicator Box**

| # | Part #       | Description                             |
|---|--------------|---|
| 1 | A-COMM-BOX   | Communicator Connection Box             |
| 2 | A-COMM-C-CB  | Cable For Connection Box                |
| 3 | A-COMM-C-PC  | Serial DB9 Cable For PC                 |
| 4 | A-COMM-C-USB | USB Cable For PC                        |
| 5 | A-COMM-LM-C  | Communicator Line Modem Telephone Cable |

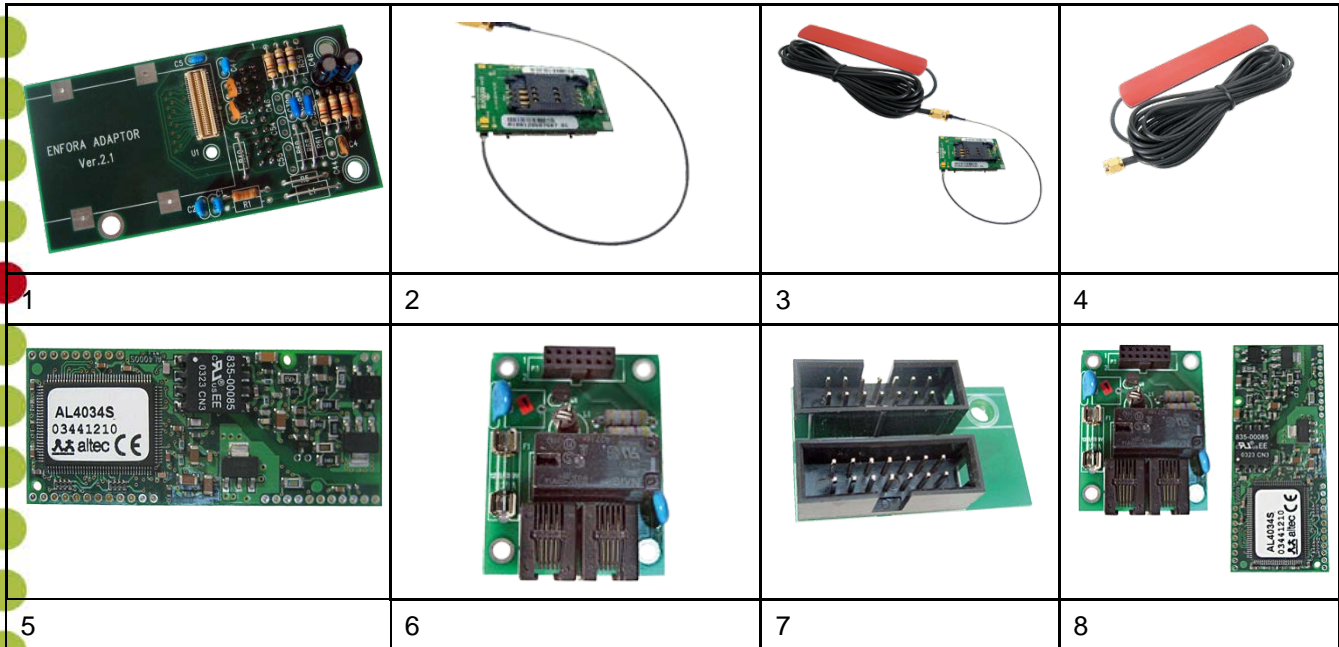


**Table 7: Accessories List**





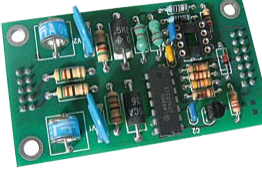

| # | Part #                       | Description  |
|---|------------------------------|--|
| 1 | C-COMM-GSM-AD                | Communicator GSM Adaptor Card w/o Module                                 |
| 2 | C-COMM-GSM-M                 | Communicator GSM Module Only   |
| 3 | P-COMM-GSM-S<br>C-COMM-GSM-S | Assembled Communicator GSM Modem Set<br>Spare Communicator GSM Modem Set |
| 4 | A-COMM-GSM-AN                | Call Antenna   |
| 5 | C-COMM-LM-M                  | Communicator Line Modem Module Only                                      |



| #  | Part #  | Description  |
|----|---|--|
| 6  | C-COMM-LM-PRO   | Communicator Line Modem Protect Card   |
| 7  | C-COMM-LM-RJM14   | Communicator Protect To CPU Jumper Card  |
| 8  | P-COMM-LM-S<br>C-COMM-LM-S                              | Assembled Communicator Line Modem Set<br>Spare Communicator Line Modem Set   |
| 9  | P-COMM-ETH-UPG  | Communicator Ethernet Upgrade Kit  |
| 10 | C-COMM-RF-AD  | Communicator RF Adapter Card w/o Module  |
| 11 | C-COMM-RF10-9-M   | Communicator RF 100 mW 900 MHz Module Only   |
| 12 | P-COMM-RF109AUS   | Communicator RF 915MHz AUS ASS.SET+ANT   |
| 12 | P-COMM-RF10-9-S   | Assembled Communicator RF 100 mW 900 MHz SET<br>Spare Communicator RF 100 mW 900 MHz SET   |
| 13 | A-RF-AN-2-C6-58<br>A-RF-AN-2-C15-58<br>A-RF-AN-2-C23-58 | RF 6 M RG58 Cable & Clip for 2 dBi Antenna<br>RF 15 M RG58 Cable & Clip for 2 dBi Antenna<br>RF 2 3M RG58 Cable & Clip for 2 dBi Antenna |
| 14 | C-COMM-RS232  | Communicator RS232 Card  |
| 15 | C-COMM-RS485  | Communicator RS-485 Card   |
| 16 | A-RF10-9-AN-2   | RF 900 MHz 2 dBi Antenna   |





|  |   |  |   |
|--|---|--|---|
|    |  | <p>No picture</p>  | <p>No picture</p>   |
| <p>9</p>   | <p>10</p>   | <p>11</p>  | <p>12</p>   |
| <p>No picture</p>  |  |  |  |
| <p>13</p>  | <p>14</p>   | <p>15</p>  | <p>16</p>   |
|  |   |  |   |
| <p>17</p>  |   |  |   |



## 15.4 Compatibility Issues with the Communicator CPU

There are occasions when upgrading or replacing the Rotem Communicator CPU in which the replacement unit does not support the existing hardware.

The CPU replacement card is P/N: **COMM-CPU Version 2.3** or **3.1**.

### Supported Hardware:

- Keyboard P/N: COMM-KBD Version 2.3 and higher
- Connection Box P/N: COMM-BOX Version 2.0 and higher

**NOTE:** Version 1.4 is supported but lacks recommended lightning protection. Rotem recommends installing Version 2.0 or higher.

- Line Modem Protection P/N: COMM-LM-PRO Version 2.0 and higher

**NOTE:** Version 1.4 is supported but lacks recommended lightning protection. Rotem recommends installing Version 2.0 or higher.

- Power Supply P/N: COMM-PS. All versions are supported
- RS-232 Communication Card P/N: COMM-RS232 Version 2.1 and higher

**NOTE:** Most Communication Cards, Version 2.0 have a wired correction added to the card. The CPU supports these cards as well. Card lacking the correction are not supported.

- RS-485 Communication Card P/N: COMM-RS485 Version 2.0 and higher
- Voice Card P/N: COMM-Voice Version 2.1 and higher

**NOTE:** Version 2.0 is also supported. However the speaker must be plugged directly into the voice card.

# 16 APPENDIX A: REPLACING COMMUNICATION CARDS AND MODEMS

The following sections illustrate how to replace various communication cards.

**NOTE:** Refer to Choosing Communication Cards, page 8 for further information on Rotem communication cards.

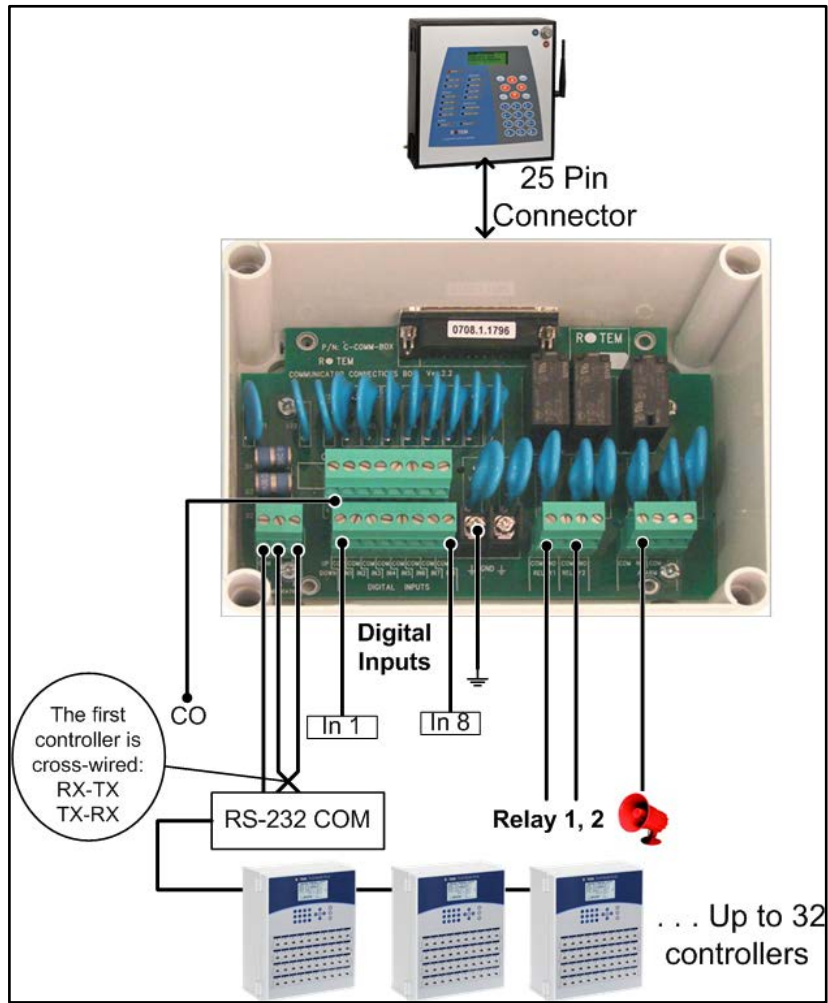
- Replacing the RS-232 Card, page 64
- Replacing the RS-485 Card, page 65
- Replacing the RF-Card, page 66
- Installing a GSM-S or GSM-W Card , page 67

## 16.1 Replacing the RS-232 Card



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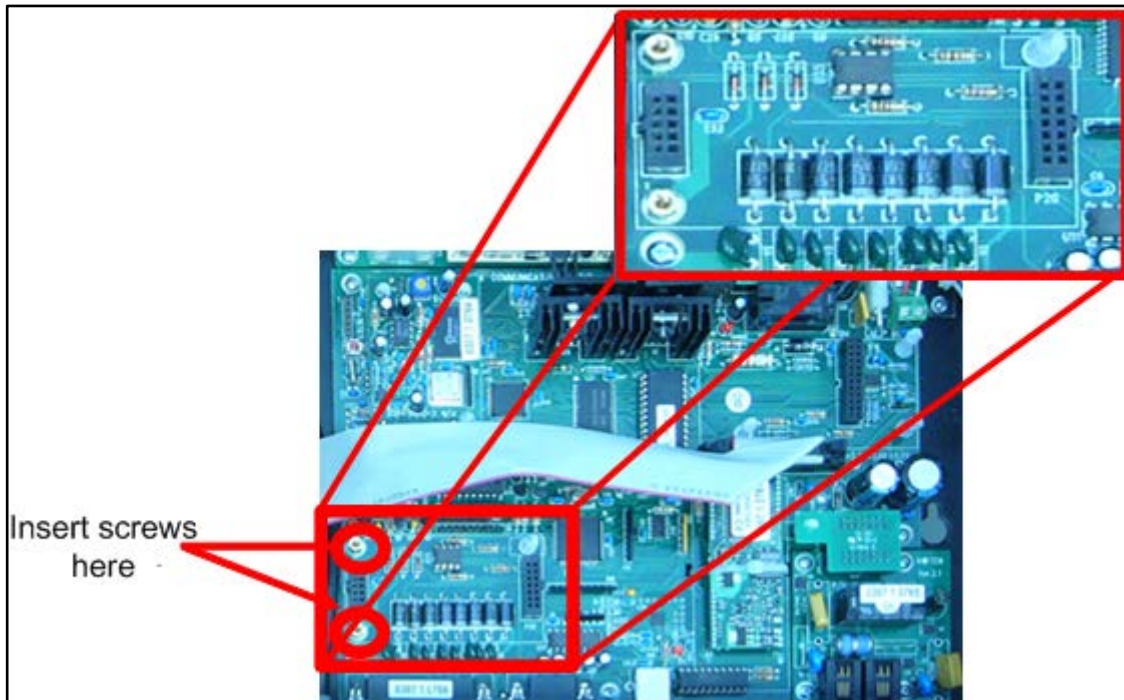
## 16.2 Replacing the RS-485 Card





## 16.3 Replacing the RF-Card

1. Insert the card to its socket in the communicator.



2. Fit the black wire through the hole as illustrated above and connect to the RF card. Screw nuts connected to the RF card (make sure you leave enough slack for antenna cable).
3. Set the dipswitches. Refer to the *RF Communication Card Installation* sheet for more information.

## 16.4 Installing a GSM-S or GSM-W Card

**NOTE:** Before installing a SIM card, disable the PIN code (if the card has this code). Communicator text functions are disabled if the SIM card has a PIN code.

1. Turn off the Communicator and open the cover.
2. Place the card in place.



Insert a SIM card into GSM-S to enable the Voice Dial-In feature.



Insert a SIM card into GSM-W to enable the Voice Dial-In feature.

**NOTE:** Refer to Configuring the Telephone Modem, page 27 for information regarding the Voice Dial-In feature.

**WARNING!** Communicator does not support pre-paid SIM cards. Use a regular card only!

## 17 APPENDIX B: PAGER CODES

| Code | Description                        |
|------|------------------------------------|
| 0    | Unknown Alarm                      |
| 1    | Low Temperature                    |
| 2    | High Temperature                   |
| 3    | Sensor 1 Low Temperature           |
| 4    | Sensor 1 High Temperature          |
| 5    | Emergency 1 Low Temperature        |
| 6    | Emergency 1 High Temperature       |
| 7    | Circuit Breaker High Temperature   |
| 8    | Egg Room Low Temperature           |
| 9    | Egg Room High Temperature          |
| 10   | Temperature Sensor 1 Out of Range  |
| 11   | Difference Between Outside Sensors |
| 12   | Low Relay Current                  |
| 13   | High Relay Current                 |
| 21   | Low Humidity                       |
| 22   | High Humidity                      |
| 23   | Egg Room Low Humidity              |
| 24   | Egg Room High Humidity             |
| 31   | Low Pressure                       |
| 32   | High Pressure                      |
| 33   | Emergency Pressure                 |
| 34   | Low System Pressure                |
| 40   | Valve 1 Low EC                     |
| 41   | Valve 1 High EC                    |
| 42   | Valve 1 Low PH                     |
| 43   | Valve 1 High PH                    |
| 44   | EC Pre-Control Valve 1 Low         |
| 45   | EC Pre-Control Valve 1High         |
| 46   | EC Sensor 1 Failure                |
| 47   | pH Sensor 1 Failure                |
| 48   | EC Pre-Control Sensor Failure      |
| 49   | EC Sensors High Difference         |
| 50   | pH Sensors High Difference         |
| 51   | Emergency Wind Speed               |
| 52   | High Ammonia                       |





| Code | Description                          |
|------|--------------------------------------|
| 53   | Weather Station Lost                 |
| 54   | Low Oxygen                           |
| 55   | Oxygen Sensor Failure                |
| 56   | Radiation Factor Is 0                |
| 82   | Feeder 1 in Overtime                 |
| 83   | Female Auger in Overtime             |
| 84   | Male Auger in Overtime               |
| 85   | Auger 1 In Overtime                  |
| 89   | Low Feed In Female Bin               |
| 90   | Low Feed In Male Bin                 |
| 91   | Low Feed in Bin 1                    |
| 92   | Feed Container Overflow              |
| 93   | Feed Shortage                        |
| 94   | Wind direction sensor failure        |
| 101  | Water Overflow                       |
| 102  | Water Shortage                       |
| 103  | Water meter 1 Leak *                 |
| 104  | Valve 1 High Flow                    |
| 105  | Valve 1 Low Flow                     |
| 106  | Valve 1 No Flow                      |
| 107  | System Stopped by Flow Alarm         |
| 108  | Negative Flow                        |
| 109  | Low Water Pressure                   |
| 111  | Temperature Sensor 1 Shorted         |
| 112  | Temperature Sensor 1 Opened          |
| 113  | Zone 1 Temperature Failure           |
| 114  | Outside Temperature Failure          |
| 115  | Temperature Sensor 1 Failure         |
| 116  | Humidity Sensor 1 Failure            |
| 117  | Pressure Sensor Failure              |
| 118  | Emergency Sensor 1 Shorted           |
| 119  | Emergency Sensor 1 Opened            |
| 120  | Circuit Breaker Temperature Failure  |
| 121  | Emergency Card 1 Temperature Failure |
| 122  | Average Sensors Failure              |
| 123  | Indoor Pressure Sensor Failure       |

| Code | Description                                   |
|------|---|
| 124  | Outside Pressure Sensor Failure               |
| 125  | Outside Temperature Sensor Shorted            |
| 126  | Outside Temperature Sensor Opened             |
| 127  | Short Circuit                                 |
| 128  | Indoor Humidity Failure                       |
| 129  | Outside Humidity Failure                      |
| 130  | Fogger Overflow                               |
| 131  | Feed Bin 1 Failure                            |
| 132  | Feed Container Failure                        |
| 133  | Scale 1 Failure                               |
| 134  | Incompatible Hardware                         |
| 135  | Bird Scale 1 Failure                          |
| 136  | Clock Failure                                 |
| 137  | Damper 1 Failure                              |
| 138  | Memory Failure                                |
| 139  | Potentiometer 1 Failure                       |
| 140  | Fertilizer 1 Failure                          |
| 141  | Switch Card 1 Failure                         |
| 142  | Relay Card 1 Failure                          |
| 143  | Analog Input Card 1 Failure                   |
| 144  | Digital Input Card 1 Failure*                 |
| 145  | Analog Output Card 1 Failure                  |
| 146  | Scale Card 1 Failure                          |
| 147  | Alarm Card Failure                            |
| 148  | Remote Output Key Failure                     |
| 149  | Remote Unit 1 Failure                         |
| 151  | Remote Unit 1 Error                           |
| 152  | Scale Card Plug failure                       |
| 153  | Vent 1 Failure                                |
| 154  | Curtain 1 Failure                             |
| 155  | Extension Box 1 Error                         |
| 156  | Generator Activated                           |
| 157  | GSM Modem Not Powered                         |
| 158  | GSM Modem SIM Not Present                     |
| 159  | GSM Modem Not Registered To Cellular Operator |
| 160  | GSM Modem RF Signal Low                       |



| <b>Code</b> | <b>Description</b>                    |
|-------------|---------------------------------------|
| 161         | Emergency Card 1 Battery Failure      |
| 162         | Emergency Card 1 Low Battery          |
| 163         | Low Battery                           |
| 164         | Battery Failure                       |
| 165         | Power Failure                         |
| 166         | Main Battery Low                      |
| 167         | Backup Battery Connected              |
| 168         | Emergency Power Down                  |
| 169         | IDLE_MODE Due to Low Power            |
| 171         | Bus Failure                           |
| 172         | Lost Communication Port               |
| 173         | Lost Communication To Controller 1    |
| 174         | No Dial Tone                          |
| 175         | Remote Unit 1 Communication Failure   |
| 176         | Single Net Communication Off          |
| 177         | Secondary unit missing                |
| 178         | Extension Box 1 Communication Failure |
| 179         | Single Net Host Error                 |
| 181         | Dosing Channel 1 Leak                 |
| 182         | Dosing Channel 1 Failure              |
| 183         | Dosing Booster Protection activated   |
| 184         | Irrigation Without Drainage           |
| 185         | Fresh Tank Empty                      |
| 186         | Drainage Tank Empty                   |
| 187         | EC Emergency High                     |
| 188         | EC Emergency Low                      |
| 191         | Pressure Sensors Difference           |
| 192         | Auxiliary 1 Activated                 |
| 193         | Emergency Card 1 Active               |
| 194         | External Pause Activated              |
| 195         | External Alarm 1 Activated            |
| 196         | Fail Safe Active                      |
| 201         | Emergency Temperature Settings Error  |
| 202         | Insufficient Number of Tunnel Fans    |
| 203         | No Ventilation Mode Defined           |
| 204         | Sensor 1 Defined Error                |

| Code | Description                       |
|------|-----------------------------------|
| 205  | Temperature Sensor Not Defined    |
| 206  | Switches Changed                  |
| 207  | Memory failure Check All Settings |
| 208  | Egg Sensor Conflict               |
| 209  | Outside Sensor Conflict           |
| 210  | Poultry Inventory not defined     |
| 211  | Outside Temperature Error         |
| 212  | Alarm Definition Conflict         |
| 213  | Insufficient Air supply           |
| 214  | Soft Minimum Sensor error         |
| 231  | Alarm Test                        |
| 232  | Below minimum air                 |
| 233: | Auger is empty                    |



# 18 APPENDIX C: COMMUNICATOR / CONTROLLER CONNECTIVITY

When designing a control system:

- Rotem Communicator supports multiple infrastructure technologies: RS-232 and RS-485.
- Each Rotem Controller has its own specific communication card for any supported communication infrastructure.
- There is specific wiring required for each infrastructure.

This paper details which 1) controller communication cards to install 2) wiring infrastructure to use in order to support each infrastructure technology.

| Infrastructure                          | RS-232 Current Loop                                    | RS-485 Standard                                       | RS-485 Isolated   |
|---|--|---|---|
| <b>Communicator Communication Card</b>  | C-COMM-RS232   | C-COMM-RS485  | C-COMM-485  |
| <b>Controllers' Communication Cards</b> |  |   |   |
| <b>Platinum</b>                         | 232 ISO / 232 Extension Card<br>(P/N: C-PP-RCLP232)    |   | 485 ISO/ 232 Extension Card<br>(P/N: C-PP-485ISO-232)   |
|   | 232 ISO / 485 Extension Card<br>(P/N: C-PP-232ISO-485) | 485 STD/ 485 Extension Card<br>(P/N: C-PP-RCLP485)    | 485 ISO/ 485 Extension Card<br>(P/N: C-PP-485ISO-485)   |
| <b>SuperGuard</b>                       | <b>N/A</b>   | SGP 485 Communication Card<br>(P/N: C-SG-RCLP)        | <b>N/A</b>  |
| <b>Smart 4/8</b>                        | Smart 232 Communication Card<br>(P/N: C-SMART-RS232)   | Smart 485 Communication Card<br>(P/N: C-SMART-RS485)  | Smart 485 Communication ISO<br>(P/N: C-SMART-RS485-ISO) |
| <b>AC-2000 3G Smart 10</b>              | AC-3G 232 Comm. Card<br>(P/N: C-RNET-RS232)            | <b>N/A</b>  | RLINK 485 Comm. ISO<br>(P/N: C-RNET-485)                |
| <b>AC-2000 PL/SE RFS, RSW</b>           | Direct On-Board  | Use an External RS-485 Converter                      | Use an External RS-485 Converter                        |
| <b>Wiring</b>                           |  |   |   |
|   | 3-wire shielded cable                                  | 2-wire shielded cable; must be twisted pair preferred | 4-wire shielded cable; must be twisted pair             |

### Examples:

- To connect a Platinum Controller over RS-232 cable, order a Platinum controller equipped with a 232 ISO / 232 Extension Card or a 232 ISO/ 485 Extension Card. Use 3-wire shielded cable.
- SuperGuard only supports RS-485 cable. Therefore, order a SGP 485 Communication Card and use 2-wire shielded cable (twisted pair).