Pro Control User Manual

Version 1.2 2010.08

Contents

1. Operating Pro Control

- **1.1. Document History**
- 1.2. Pro Control Main Menu
- 1.3. Root List
- 1.4. Start the Main Window
- **1.5.** Change the Display Language
- 1.6. Standby Mode
- 1.7. Changing an Inverter's Name
- 2. Connecting your PV Inverter(s)
 - 2.1. Direct Serial Connection
 - 2.2. Serial Connection via Modem
 - 2.3. Serial and Ethernet Communication Settings
 - 2.4. Hardware wiring and RS485 settings
 - 2.5. Connecting multiple PV Inverters
 - 2.6. Troubleshooting your Connection
- 3. Inverter Parameter and Data
 - 3.1. Adjusting inverter parameters
 - 3.2. History Graphs
 - **3.3.** Real Time Graph
 - 3.4 Energy Graph
 - 3.5. Start/Stop Recording
 - **3.6.** Setting the Recording Interval
 - **3.7.** Inverter Channels

4. History Data Record

- 4.1. Inverter Data Log
- 4.2. Export/Import History Data
- 5. Error Message Report
 - 5.1. What Happens When an Error Occurs?
 - 5.2. How do I Export or Import Error History?
- 6. Message Report Settings
 - 6.1. Configuring Reports
 - 6.2. Mail Report Format

1. Operating Pro Control

1.2

T.T. Document mistory			
Version	Date	Description	
1.0	16-Dec-2009	The First official release of	
		this document.	
1.1	26-Jan-2010	Pro Control :	

1.1. Document History

26-Aug-2010

After installing Pro Control, locate its icon or the desktop shortcut and double-click to start the program.

EZ Logger Lite:

Ver.2.5.0.6

EZ Logger Lite:

Pro Control :

Ver.2.5.1.0

Ver.3.1.CV93.EZ.NOB.9917

Ver.3.1.CV93.EZ.NOB.0305



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Figure 1-1 Pro Control Icons

1.2. Pro Control Main Menu



Figure 1-2 Main Menu

The following table introduces the main menu and toolbar shortcuts.

Table 1-1 Pro Control Main Menu and Toolbar		
Field	Definition	
File	Use this menu to export or import inverter data, view the error history, or exit this program.	
Setting	Use this menu to configure the communication methods, change the language, choose a background images, configure how Pro Control sends reports, and send test Mail, SMS, and FAX alerts.	

Inverter	Use this menu to remove or reconnect networked inverters, change the monitored channels, define group settings and view group graphs, directly edit parameter settings on the inverter itself, generate real-time and history graphs, assign an alias for the current inverter, or reset the total converted energy and the hours of operation of operation counter for the currently selected inverter.
Record	Use this menu to set the sampling rate and schedule for recording inverter data, and start and stop recording.
EZ Logger	Use this menu for the currently selected EZ Logger, to connect, backup or restore recorded data, clear recorded data, display the available memory, or assign an alias description.
View	Use this menu to customize the displayed toolbars.
Help	Use this menu to open this help file or view software version information.
	Click this button to export/import the selected inverter's data
	Click this button displays the error history for the current inverter
*	Click this button change report settings
	Click this button change inverter parameters
	Click this button generate a graph of the current inverter data
\bigcirc	Click this button change the record settings
11	Click this button backup/restore EZ Logger data
	Click this button view EZ Logger memory status
	Click this button generate an energy graph of the current inverter data

1.3. Root List

Currently connected inverters are displayed in the Root-List on startup. The following figure displays the root list populated with inverters.

🔆 Pro Control				
File Setting Inverter Record Ez-Logs	ger View Help			
💥 Main				
 ➡ Root ➡ 2 3927070187(99% Free) ➡ Q RQT0712204 ➡ Q RQT0712251 ➡ Q RQT0712253 ➡ Q RQT0712255 	RCT0712004 Pac 10008 W Vac 221.8 V E-Total 22644.3 kWh Mode Normal Vpv1 691.6 V	ROT0712251 Pac 9968 W Vac 216.9 V E-Total 22272.9 kWh Mode Normal VprI 726.8 V	RQT0712253 Pac 8911 W Vac 218.8 ∨ E-Total 72194.3 kWh Mode Normal Vpv1 709.0 ∨	RQT0712255 Pac 10030 W Vac 219.0 V E-Total 30657.7 kWh Mode Normal Vpv1 712.5 ∨

Figure 1-3 Overview

1.4. Start the Main Window

After starting the program, the Main window is blank. Select an inverter from the Root-List. The right panel displays that inverter's information.

🔁 Pro Control						
File Setting Inverter Record Ez-Log	ger View Help					
🕞 🛆 🤜 🐐 🜌	🥝 📁 🌒 💷					
🙀 Main						
	RQT0712004	Inverter Full View				
 ■ 32.00.0187(99% Free) ■ 62.8 RQT0712004 ■ 63. RQT0712251 ■ 64. RQT0712253 ■ 64. RQT0712253 ■ 64. RQT0712255 	Pac 7743 W Vac 222.3 V E-Total 2293.6 kWh Mode Normal Vpv1 726 6 V	Information Serial No. Temperature : Vpv1/2/3 : Ipv1/2/3 : Ppv1/2/3 : Pac 1/2/3: Pac 2/2/3: Pac 1/2/3: Pac 1/2/3: Pac 2/2/3: Pac 1/2/3: Pac 1/2/3: Pac 2/2/3: Pac 1/2/3: Pac-Min 1: Pac-Max: Pac-Max: Pac-Max: Pac-Max: Pac-Max: Pac-Max: Pac-Max: </th <th>RQT0712004 58.7 726.6/730.1/7 5.7/ 3.7/ 6.0 4141/ 2701/ 11.7/12.6/11 222.3/220.8/22 60.06 7743 NA 22393.6 101.00 2652 Normal 350.0 30 200.0 248.5 59.35 60.45 0 0</th> <th>30.5 4383 8 20.8 7 Time to conn Minimum op Maximum op Maximum op Maximum op Maximum op Maximum op</th> <th>Inverter serial number "C: Inverter internal temperature V: PV voltage A: PV current W: PV power A: Current to grid V: Grid voltage Hz: Grid frequency W: Power to grid mOhm: Grid Impedance KM: Total energy to grid KM: Total energy to grid Hr: Total Operation hours Operation Mode ottage (300-800/350)V tect grid (30-250/30)Sec erational grid voltage (240-277/253)V erational frequency (60.10-65.00/60.45)Hz erational frequency (60.10-65.00/60.45)Hz erational grid impedance NA mOhm tita Zac of operation NA mOhm</th> <th>OK</th>	RQT0712004 58.7 726.6/730.1/7 5.7/ 3.7/ 6.0 4141/ 2701/ 11.7/12.6/11 222.3/220.8/22 60.06 7743 NA 22393.6 101.00 2652 Normal 350.0 30 200.0 248.5 59.35 60.45 0 0	30.5 4383 8 20.8 7 Time to conn Minimum op Maximum op Maximum op Maximum op Maximum op Maximum op	Inverter serial number "C: Inverter internal temperature V: PV voltage A: PV current W: PV power A: Current to grid V: Grid voltage Hz: Grid frequency W: Power to grid mOhm: Grid Impedance KM: Total energy to grid KM: Total energy to grid Hr: Total Operation hours Operation Mode ottage (300-800/350)V tect grid (30-250/30)Sec erational grid voltage (240-277/253)V erational frequency (60.10-65.00/60.45)Hz erational frequency (60.10-65.00/60.45)Hz erational grid impedance NA mOhm tita Zac of operation NA mOhm	OK
	Over View Group View R	Real Time Graph Co	omm status			

Figure 1-4 Main Window

1.5. Change the Display Language

The software interface supports multiple languages option. To change the language, select the **Setting** menu and then **Language** to see a list of available languages.

🋱 P	ro Control	
File	Setting Inverter	ecord Ez-Logger View Help
	Communication	
	Language	English 🎾 💯 💙 🛄
	Background	🕨 German
,	Report	Spanish
	Test Mail	French
	Test SMS	
ľ '		-

Figure 1-5 Changing Language

→ Back

1.6. Standby Mode

After a long period of inactivity, most computers will enter a power saving mode, and switch off the hard disk. This program will stop recording when your computer enters standby mode. For continuous monitoring you need to disable your computer's standby mode. To disable your computers standby mode, click the Start Menu->Settings->Control Panel->Power Options.

→<u>Back</u>

1.7. Changing an Inverter's Name

Inverters are listed under their serial number. You may want to change the serial number to a meaningful name such as the inverter type or location. Double click the left mouse button over the desired inverter, and then type in the new alias. Now press the 'enter' or 'return' key to keep the new name.

🙀 Pro Control	🔆 Pro Control
File Setting Inverter Record Ez-Logger View Help	File Setting Inverter Record Ez-Logger View Help
📙 🛆 🤜 🖐 🕢 🥹 🖉 🖉 և	🕞 🛆 🛹 🍍 🗠 🥝 📁 🌔 և
🔆 Main	💥 Main
Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Pac 9714 W Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second syst	★ Root RQT07122004 ■ ● 3927070187(99% Free) Pac 10005 W ■ ▲ RQT0712251 Vac 221.6 V ■ ▲ RQT0712253 E-Total 22394.8 kWh ■ ▲ RQT0712255 Wode Normal ▶ Vy1 703.3 V V

Figure 1-6 Changing an Inverter's Name

2. Connecting your PV Inverter(s)

Every inverter is equipped with a serial port. Directly connect your inverter to your PC via a serial cable and the RS232 ports on the corresponding devices. Alternatively, you can use the RS232 port to connect the inverter to a modem.

2.1. Direct Serial Connection

Connect an RS232 cable from the serial port on your computer to the corresponding port on your inverter.

The default settings of Pro Control are already optimally configured for most equipment. It is recommended that these settings with exception to the Com Port remain unchanged. To display or edit these settings please see Serial and Ethernet Communication Settings.

→Back

2.2. Serial Connection via Modem

Connect the modem to your PC via the RS232 port. Select **Modem**, in the communication settings. Now enter the dial number of the receiving modem connected to the inverter. After connection is established, available inverters display in the Root List.

The cable to connect inverter to modem is a dedicated female-to-female type. Please contact your local dealer to obtain this cable.

2.3. Serial and Ethernet Communication Settings

To configure Pro Control for Ethernet or serial (RS232) connection, click **Setting** from the main menu, and then select **Communication**. The following window displays.

🔆 Pro Control	
File Setting Inverter Record Ez-Log	ger View Help
Language	🥝 📁 🌔 💷
Background	
Test Mail	
Test SMS	Communication Setting
	RS232 Com Port : Baud rate : Auto Parity : None Image: Composition of the state of the s
	I Enable Media: O Direct C Modem Dial No:
	Status : Offline
	Ethernet IP Address list 192,166.1.4:5050 IP Address : 192.168.1.4:5050 192.168.1.4 Remove> Port No. : 5050 5050
	Domain name list Domain name < Add
	Cancel OK

Figure 2-1 Communication Setting

The following table describes the fields in this screen.

Table 2-1 Communication Settings			
Field	Definition		
RS232			
Com Port	Select Com Port connected from your PC to the modem.		
Enable	Click to enable serial communication		
Baud Rate	This field specifies the maximum number of bits transmitted per second. The default Baud Rate setting is set to AUTO . However, if the Pro Control cannot find your inverter, select the lowest Baud Rate. Once connection is established, you can try faster rates to obtain the best connection.		
Parity	Setting the parity is optional and used for error checking. Select from odd , even , or None (default).		
Data Bits	This field specifies how many bits are sent with each packet of data. The default value is 8 and corresponds to the same settings on the remote inverter.		
Stop Bits	The stop bit duration indicates the end of data transmission (default setting is 1).		
Media			
Direct	Select the method of connection to your inverter. Use Direct if the inverter is connected to your PC with a serial cable. Select Modem if your inverter is remotely connected via a network.		
Modem			
Dial No.	Enter the number of the receiving modem.		
Status	This field displays the inverter connection status.		
Ethernet			
Multiple inverters can address of each inver	be monitored remotely over an Ethernet network. You need to know the IP rter you wish to connect.		
< Add / > Remove	To add a remote inverter to the list of remote inverters, type its IP Address and then click < Add .		
	To remove an entry from the list of remote inverters, select the inverters IP address and then click > Remove .		
IP Address	Enter the IP address of the remote inverter and click < Add to append that inverter to the list of remote inverters.		
Port No	The default port settings for all inverters is 5050		
Cancel	Click this button to exit the current window without saving.		
Ok	Click this button to save your settings and exit the current window.		

2.4. Hardware wiring and RS485 settings

RS485 interface uses a higher voltage than RS232, and therefore it is recommended for use over long distances between inverters and PC.

There are four pins in a RS485 card, T+, T-, R+, and R-. If you want to link each inverter by a four-wire cable, be sure to make the correct connections.

You can also link each inverter via the telephone line (recommended).

→Back

2.5. Connecting multiple PV Inverters

If you want to connect multiple inverters, the optional RS485 card (optional) for each inverter is required. The RS485 card allows connection of multiple inverters in series. The first inverter connects your computer via an RS485-to-RS232 converter. The next inverter connects to the RS485 card of the first inverter. Subsequent inverters are daisy chained in the same fashion.

For more detailed information please refer to the RS485 card's manual.

→<u>Back</u>

2.6. Troubleshooting your Connection

If the Root-List is empty then no inverter is detected. Please see the following procedure:

- a) RS232 ConnectionCheck the cable connections between inverter and computer. Make sure both ends are well
- Onect the cable connections between inverter and computer. Make sure both ends are were connected.
 Make sure there is no card in the BS485 expansion slot as it disables communication with
- Make sure there is no card in the RS485 expansion slot as it disables communication with RS232.
- b) RS485 Connection
- Check the RS485 card on each inverter is inserted correctly.
- Check the connection between inverters. The four wires on each terminal blocks (R+, R-, T+, T-) are fully secured.
- Check the wire connections on the RS485-to-RS232 converter. The terminals (R+, R-, T+, T-) on RS485 card must be connected to (T+, T-, R+, R-) respectively on the converter as the following table displays.

Table 2-2 Wire Communication Exchange			
RS485-to-RS232 converter	The inverters communication card		
R+	T+		
R-	T-		
T+	R+		
T-	R-		

- c) Check the COM PORT settings in Pro Control are correct; see Serial and Ethernet Communication Settings
- d) Click **Inverter** from the main menu, and then **Connection**. Now select "Re-register All" to refresh the connections to your inverters.



Figure 2-2 Troubleshooting Inverter Connections

e) Please close Pro Control and then restart the program.

→<u>Back</u>

3. Inverter Parameter and Data

3.1. Adjusting inverter parameters

The parameters of each inverter can be adjusted remotely with Pro Control. In the Root-List select the desired inverter to change. Click **Inverter** in the main menu and then **Parameter**, to enter the parameter settings window.

🔆 Pro Control				
File Setting Inverter Record Ez-Lo,	gger View Help			
Connection Channel Inverter Group	2 💴 🌔 💷			
Main Parameter Graph Roat Graph Reame Inverter Reset F. Total/h. Total Negrovies Rot0712253 ROT0712255	RQT0712004 Pac 9586 W Vac 222.7 V E-Total 22402.8 kWh Mode Normal Vpv1 692.1 V Parameter Setting : [RQ10" -Parameter Parameter Vpv-Start (V): 350.1	RQT0712251 Pac 7564 W Vac 216.9 V E-Total 22084.5 KWh Mode Normal Vpri 727.7 V 712004]	Pac 8236 W Vac 220.2 V E-Total 72051.7 kWh Mode Normal Vpv1 709.2 V	RQT0712255 Pac 9690 W Vac 220.4 V E-Total 30415.5 kWh Mode Normal Vp/1 710.8 V
	T-Start (Sec): 30 Vac-Min (V): 2001 Vac-Max (V): 248.5 Fac-Max (V): 59.3 Fac-Max (Hz): 60.4	• 30 Sec 250 Sec • 184.0 V 220.0 V • 240.0 V 277.0 V • 55.00 Hz 59.90 Hz • 60.10 Hz 65.00 Hz	30 Sec Time to connect grid 196.0 V Minimum operational grid vc 253.0 V Maximum operational grid vc 59.35 Hz Minimum operational freque 60.45 Hz Maximum operational freque Default	itage oltage ency ing OK

Figure 3-1 Parameter Setting

The following table describes the parameters in this screen.

Table 3-1 Parameter Setting			
Parameter	Definition		
Vpv-Start(V)	This is the voltage required to start the inverter.		
T-Start(Sec)	This is the time delay between reconnecting to the grid (i.e. after a fault)		
Vac-Min(V)	This is the minimum voltage that the inverter maintains grid connection.		
Vac-Max(V)	This is the maximum voltage that the inverter maintains grid connection.		
Fac-Min(V)	This is the maximum frequency that the inverter maintains grid connection.		
Fac-Max(V)	This is the maximum frequency that the inverter maintains grid connection.		
Zac-Max(mOhm)	This is the maximum impedance that the inverter maintains grid connection		
Dzac(mOhm)	This is the maximum rate of change of impedance allowed by the inverter		
	to maintain grid connection.		

To avoid accidental alteration of parameter settings, a password is required. To obtain this password please contact your local dealer.

nput password		>
Please input p	assword :	
	Capaci	
	Cancel	ОК

Figure 3-2 Password

→<u>Back</u>

3.2. History Graphs

To display the data history graph for an inverter, first select the inverter's name in the Root List. Now go to the main menu and select **Inverter** and then **Graph**. Choose **History Graph** to plot inverter data over a specified period.



Figure 3-3 History Graph

The following table describes the buttons in this window.

Table 3-2 History Graph			
Button	Definition		
Print	Click this button to print the current graph		
Prev	Click this button to scroll the timeline backwards to an earlier record.		
Next	Click this button to scroll the timeline forwards to a later record.		

3.3. Real Time Graph

Select an inverter from the **Root** list, and then click **Real Time Graph** on the main panel. The following graph displays the current voltage and power output to the grid according to a time interval set in the **Record Settings** screen (see Setting the Recording Interval)



Figure 3-4 Real Time Graph

→ Back

3.4. Energy Graphs

To display the output power for an inverter or multiple inverters, first move the cursor to screen, double click right key of mouse and select EZ -Logger then inverter.





Figure 3-5 Energy Graph

3.5. Start/Stop Recording

After starting Pro Control, the program automatically records the inverter data. To manually begin or end a recording select the **Record** menu and then select **Start Record** or **Stop Record**.



Figure 3-6 Start/Stop Recording

3.6. Setting the Recording Interval

Select the **Record** menu and then **Record Setting**. To change the frequency of recording samples, change the value (seconds) in the "Real Time Sampling Interval" field.

M n n n n		
Pro Control		
File Setting Inverter	Record Ez-Logger	View Help
🗐 🛆 🤜	Record Setting Start Record) 📁 🌔 📖
🙀 Main	Stop Record	
		Record Setting Real Time Sampling Interval 30 (10~30) Seconds Data Recording Interval Auto Manual From : 05:00:00 ÷ To : 19:00:00 ÷ History Data Sampling Interval Daily 180 Sec. vVeekly 21 Monthly 1 Hour Default Cancel OK

Figure 3-7 Record Setting

Table 3-3 Record Setting				
Field	Definition			
Real Time Sampling Inter	rval			
(1~1000) Seconds	Enter the delay in seconds between data record entries.			
Data Recording Interval				
Auto	Select this option to have Pro Control automatically record inverter			
	data during periods of activity (i.e. sunlight).			
Manual	Select this option to set a fixed time period to record inverter data.			
From	Enter the time in 24-hour format for Pro Control to start monitoring			
	inverter data.			
То	Enter the time in 24-hour format for Pro Control to stop monitoring			
	inverter data.			
History Data Sampling In	terval			
Daily	Select the period in seconds to display the Daily history graph.			
Monthly	Select the period in hours to display the Monthly history graph.			
Weekly	Select the period in minutes to display the Weekly history graph.			
Yearly	Select the period in hours to display the Yearly history graph.			
Default	Click this button to return the Record Settings back to their original			
	values.			
Cancel	Click this button to close this window without saving.			
OK	Click this button to save the current settings and close this window.			

3.7. Inverter Channels

Available inverters are displayed on the main screen on a grid of summary boxes that displays the inverter identity and fields that contain information about the internal status. The displayed fields are called channels. There are 18 channels available, from which 5 are displayed on the summary box. Displayed channels can be customized with the channel selection window.

Select **Inverter** from the main menu, and then click **Channel** to view the channel selection options.

🙀 Pro Control				
File Setting Inverter Record Ez-Log	ger View Help			
🛃 🛆 🤜 🐐 🜌	🕙 📁 🌔 LiL			
🔆 Main				
	RQT0712004 Pac 9871 W Vac 221 6 V E-Total 22408 5 kWh Mode Normal Vpv1 695.6 V	ROT0712251 Pac 7650 W Vac 215 V ETotal 2288 4 kWh Mode Normal Vpr/ 729.0 V	RQT0712253 Pac 7862 W Vac 217 9 V E-Total 72055 2 kWh Mode Narmal Vpv1 716.5 V	ROT0712255 Pac 9695 W Vac 218 8 V E-Total 30421 2 kWh Mode Normal Vpr/ 712.7 V
		Available Charnels Vec Fac Pac Zac Charnel selection for Charles selection for Charles selection for C This device C All devices of same model	Selected Channels Vac Pac E-Total Mode Vpv1 Cancel	

Figure 3-8 Inverter Channels

The following table describes the fields in this screen.

Table 3-4 Inverter Channels			
Field	Definition		
Overview			
Selected Channels	This field lists the channels that display on the inverter summary box.		
>	Select a channel in the Selected Channel list or the		
<	Available Channel list, and then click < or > to add or remove that channel.		
Default	Click this button to return the channel lists back to their original settings.		
Channel Selection For			
This device	Enable this field to apply the Selected Channel list to the currently selected inverter from the Root List.		
All devices of (model)	Enable this field to apply the Selected Channel list to all inverters of the same model as the currently selected inverter from the Root List.		
Available Channels			
Vpv1	PV1 voltage		
Vpv2	PV2 voltage		
Vpv3	PV3 voltage		
lpv1	PV1 current		

lpv2	PV2 current
Ipv3	PV3 current
lac	Grid current
Vac	Grid voltage
Fac	Grid frequency
Pac	Power supplied to the grid
Zac	Grid impedance
E-Total	Total energy supplied to the grid
h-Total	Total operating hours
Temp-inv	Inverter internal temperature
Temp1	External temperature sensor 1
Temp2	External temperature sensor 2
RAD1	Irradiance sensor 1
RAD2	Irradiance sensor 2
Cancel	Click this button to close this window without saving.
ОК	Click this button to save the current settings and close this window.

4. History Data Record

4.1. Inverter Data Log

After executing this program, inverter data are automatically stored in the folder X:\Program Files\Pro Control\HistLog. Where "X" indicates the drive that Pro Control is installed. However, this data can only be read by Pro Control. If you want to export this data for other applications such as MS EXCEL, please refer to Export/Import History Data.

→ Back

4.2. Export/Import History Data

Use this function to **Export** data to your computer, or **Import** existing data from your computer. In the main menu select **File**, now select **Export/Import**. The following figure displays.

Choose an inverter from the **Inverter** list box, and then select the date range to export. Click **View** to see the results. Now click **Export** to save that data in a **CSV** file. Enter a file name you can remember.

le :Pro Co Time 09/12/16 11:14:42 09/12/16 13:03:32 09/12/16 13:06:32 09/12/16 13:09:32	Temp-in 59.8 60.8 60.7 60.6	Daily/RQT0 Vpv(V) 706.4 713.2 709.9	712255.da lac(A) 15.6 14.5	t Vac(V) 218.4	Date Fro Fac(Hz) 60.00	m: 2009/ Pac(VV)	12/10 ÷ T	o : 2009/12/ E-Total(k/Vh)	17 : E-Today(k
Time 09/12/16 11:14:42 09/12/16 13:03:32 09/12/16 13:06:32 09/12/16 13:09:32	Temp-in 59.8 60.8 60.7 60.6	Vpv(V) 706.4 713.2 709.9	lac(A) 15.6 14.5	Vac(V) 218.4	Fac(Hz) 60.00	Pac(VV)	Zac(mOhm)	E-Total(kWh)	E-Today(k
09/12/16 11:14:42 09/12/16 13:03:32 09/12/16 13:06:32 09/12/16 13:09:32	59.8 60.8 60.7 60.6	706.4 713.2 709.9	15.6 14.5	218.4	60.00	40040	b10	00404.4	
09/12/16 13:03:32 09/12/16 13:06:32 09/12/16 13:09:32	60.8 60.7 60.6	713.2 709.9	14.5	040.0		10216	NA	30181.1	104.90
09/12/16 13:06:32 09/12/16 13:09:32	60.7 60.6	709.9		210.2	60.09	9485	NA	30198.7	122.40
09/12/16 13:09:32	60.6		14.4	219.0	59.94	9545	NA	30199.2	122.90
		711.2	14.4	219.8	60.16	9538	NA	30199.6	123.4
09/12/16 13:13:01	60.6	710.1	14.7	219.4	60.04	9751	NA	30200.2	124.0
09/12/16 13:16:01	60.5	707.9	15.2	219.6	59.92	10166	NA	30200.7	124.5
09/12/16 13:19:24	60.5	710.5	14.6	219.4	59.96	9667	NA	30201.2	125.0
09/12/16 13:22:24	60.5	711.4	14.7	219.4	60.07	9730	NA	30201.7	125.5
09/12/17 08:57:52	60.4	740.6	0.0	216.3	60.02	0	NA	30392.0	85.4
09/12/17 09:01:21	60.6	718.5	14.5	218.4	60.01	9534	NA	30392.6	86.00
09/12/17 09:04:21	60.7	715.4	14.7	217.9	59.98	9635	NA	30393.1	86.4
09/12/17 09:07:21	60.3	708.8	15.1	217.1	59.91	9922	NA	30393.6	86.9
09/12/17 09:10:21	60.1	710.5	15.2	217.9	59.98	9999	NA	30394.0	87.40
09/12/17 09:13:21	60.0	702.4	16.6	218.4	60.03	10939	NA	30394.6	87.9
09/12/17 09:23:46	i 0.0	0.0	0.0	0.0	0.00	0	NA	0.0	0.0
09/12/17 09:26:46	60.3	713.4	14.9	217.9	60.04	9766	NA	30396.6	90.0
09/12/17 09:29:46	60.3	710.5	14.9	217.1	59.91	9754	NA	30397.1	90.50
09/12/17 09:32:46	60.3	711.4	14.8	218.6	60.01	9745	NA	30397.6	91.00
:									>
Loading 46 rec	ords OK				Dviet	1000		Even	+ 1 04

Figure 4-1 Export/Import History Data

ile :Pro Contr	ol\HistLog\Daily\RQT0712254.dat	Date From: 12/11/2006 🐳 To :	12/18/2009) ÷
Time T			N(KWh) E	-Today(k
08/11/27 08:57:38	Save As	2 🞽	7234.6	55.3(
08/11/27 09:00:41			7234.9	55.60
08/11/27 09:03:46	Save in: 🖾 Daily		7235.2	55.9(
08/11/27 09:06:52	Especar		7235.5	56.20
08/11/27 09:09:56	Jerisor		7235.8	56.50
08/11/27 09:13:02			7236.1	56.8(
08/11/27 09:16:08			7236.4	57.10
08/11/27 09:19:13			7236.7	57.4(
08/11/27 09:22:19			7237.0	57.6(
08/11/27 09:25:25			7237.3	57.9(
08/11/27 09:28:30			7237.5	58.20
08/11/27 09:31:36			7237.8	58.5(
08/11/27 09:34:42			7238.1	58.8(
08/11/27 09:37:48			7238.4	59.1(
08/11/27 09:40:54			7238.7	59.4(
08/11/27 09:44:00	File name: RQT0712254.csv	Save	7239.0	59.7(
08/11/27 09:47:06			7239.3	60.00
08/11/27 09:50:12	Save as type: CSV Files (*.csv)	✓ Cancel	7239.6	60.3(
<				>

Figure 4-2 Export History File

To import data, click **Import**. A window prompts locate the ".CSV" file in your computer. Load the file you want to have Pro Control import data from.



5. Error Message Report

5.1. What Happens When an Error Occurs?

The status box of each inverter displays a color according its operating state. In the event that an inverter error or grid-fault prevents the PV system from supplying power, the status box changes color. The status box is **GREEN** during normal operation.

The status box turns **YELLOW** if the inverter stopped working during the last 2 days but has now returned to normal. If the inverter has not yet returned to normal operating conditions, the status box is **RED**. This indicates the inverter is currently not successfully converting power.

When the status box color is not **GREEN**, the reason for the error is displayed inside the box.

→ Back

5.2. How do I Export or Import Error History?

To see the recorded list of errors, click **File** in the main menu, and then select **Error History**. You can also Export/Import the error history by clicking those buttons.

Pro Control				
ue Setting Inverter Record EZ-Logi	ger view Heip			
🔄 🛆 🤜 🐴 📈	🥝 📁 🌔 💷			
a Main				
🕂 Root	RQT0712004	RQT0712251	RQT0712253	RQT0712255
RQ10712004 RQ10712251 RQ10712253 RQ10712255	Pac 9757 W Vac 222.9 V E-Total 22645.2 kWh Mode Normal Vpv1 706.2 V	Pac 10282 W Vac 217.1 V E-Total 2273.8 kWh Mode Normal Vpv1 724.6 V	Pac 9581 W Vac 220.0 V E-Total 72194.7 kWh Mode Normal Vpv1 703.7 V	Pac 10565 W Vac 220.2 V E-Totai 30658.7 kWh Mode Normai Vpv1 703.3 V
	Date From: 2009/11/18 ÷	To: 2009/12/18 + File : Hi	stLogVnvErr.dat	
	Serial No. Error	Recovery Mode	Error Message	~
	0911CY00 09/12/02 09:14:35	09/12/02 09:18:05 Fault	No-Utility (No grid voltage detected)	
	0911CS0001 09/12/03 10:06:05	09/12/03 10:06:35 Fault	No-Utility (No grid voltage detected)	
	0911CS0001 09/12/03 10:16:05	09/12/03 10:16:35 Fault	No-Utility (No grid voltage detected)	
	0911CS0001 09/12/03 10:26:20	09/12/03 10:26:50 Fault	No-Utility (No grid voltage detected)	
	BQT07122 09/12/03 10:57:56	09/12/03 10:58:26 Fault	Ground I high (Ground current is too high)	
	0911CS0001 09/12/03 11:06:50	09/12/03 11:07:20 Fault	No-Utility (No grid voltage detected)	
	0911CS0001 09/12/03 11:16:50	09/12/03 11:17:20 Fault	No-Utility (No arid voltage detected)	
	RQT07122 09/12/03 11:28:54	09/12/03 11:29:24 Fault	No-Utility (No grid voltage detected)	
	0911CS0001 09/12/03 11:36:50	09/12/03 11:37:20 Fault	No-Utility (No grid voltage detected)	
	00000000 0041044/2044	0040444/2044 Ext#	his Litility (his avid usitions detected)	
		P	rint View Import	Export OK

Figure 5-1 Export/Import Error History

The following table describes the fields in this screen.

	Table 5-1 Error History View
Field	Definition
Date From/To:	This field displays the recording period for this error history.
File	This field displays the file name and location of the current error history.
Serial No	This field shows the identifier of each inverter with an error history entry.
Error	This field displays the date and time of the fault.
Recovery	This field displays the date and time that normal operation resumed.
Mode	This field displays the nature of the error.
Error Message	This field displays the error message. For a list of error messages and their explanations please refer to your PV Inverter manual.
Print	Click this button to print the error history list.
View	Click this button to view the inverter status at the time this error occurred.
Import	Click this button to read and display a previously saved error history.
Export	Click this button to send the error history to a file on your PC.
Ok	Click this button to close the current window.

Back

6. Message Report Settings

In the event of an error or malfunction and you are not in front of your computer, Pro Control automatically generates and transmits the error message by fax, email or mobile phone text message.

6.1. Configuring Reports

Pro Control can send daily or event driven reports by mobile phone text message, fax or email. In the main menu, click **Setting** and then **Report** to configure how you would like to send your reports.

🔆 Pro Control		
File Setting Inverter Record Ez-	-Logger View Help	
File Setting Inverter Record Ez Image: Setting Language Image: Setting Image: Setting Image: Setting Image: Setting Background Image: Setting Image: Setting Image: Setting Image: Setting Image: Setting I	Clogger View Help	
	Password Cancel OK	

Figure 6-1 Report Setting

The following table describes the fields in this screen.

Table 6-1 Report Setting			
Field	Definition		
Report Type			
Routine	Enable this check box to generate daily status reports, and then enter the time to generate daily status reports.		
Warning	Enable this check box to generate reports for faults for recoverable errors such a 'grid fault' or 'impedance fault'.		
Failure	Enable this check box to generate reports for irrecoverable errors such as components failure in the inverter.		
Report To			
SMS	Enable this check box send the report as a text message to your mobile phone. Prefix the report with your own message.		

SMS Center	Enter the number of the SMS service that forwards your text messages.	
Com Port	Enter the serial port number used to communicate with your modem.	
Fax	Enable this check box send the report as a fax. Prefix the report with your own message.	
Com Port	Enter the serial port number used to communicate with your modem.	
Email	Enable this check box send the report as an email. Prefix the report with your own message.	
Mail Server	Enter the web address of your email forwarding service (e.g. mail.foobar.com).	

Mail Report Format: 6.2.

-

The mail report is transmitted via the Internet, and includes all the inverter's information. The following is an example of a standard report.

Inverter Routine Report 2009/12/18 11:31:35			
	Value	Description	
Alias Name	RQT0712004	Inverter alias name or serial number	
Temperatur	55.4	°C: Inverter internal temperature	
¥pv1/2/3	698.2/701.8/702.9	V : PV voltage	
Ipv1/2/3	5.9/4.3/6.2	A : PV current	
Ppv1/2/3	4119.3/3017.7/4357.9	W : PV Power	
Iac 1/2/3	15.2/15.1/15.2	A : Current to grid	
¥ac1/2/3	223.1/220.8/222.3	V : Grid voltage	
Fac	59.99	Hz : Grid frequency	
Pac	10104	W : Power to grid	
Zac	NA	mOhm : Grid impedance	
E-Total	22639.8	kWh : Total energy to grid	
E-Today	112.30	kWh : Today's energy to grid	
h-Total	2677	Hr : Total Operation hours	
Mode	Normal	Operation Mode	
Error			

Figure 6-2 Routine Report