Conext[™] CL-60 EasyConfig Tool

Owner's Guide

975-0773-01-01 Revision B 08-2017

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i	iguration and firmware update conext CL-60 inverters	Electric Solar Password Language



http://solar.schneider-electric.com

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About This Guide

Purpose

The purpose of this Owner's Guide is to provide procedures for installing and using the Conext CL-60 EasyConfig Tool for Conext CL-60 grid-tie PV inverters only.

Scope

The Guide provides general information about the CL-60 EasyConfig Tool, as well as information about installing and using the tool to set parameters for the Conext CL-60 grid-tie PV inverter. It does not include information on how to use other Schneider Electric products.

Software Version and Download

To view the latest available software version online, go to:

- NA https://solar.schneider-electric.com/product/conext-cl-60-a-stringinverter/, go to DOWNLOADS -> Firmware
- IEC https://solar.schneider-electric.com/product/conext-cl-60-stringinverter/, go to DOWNLOADS -> Firmware

Audience

The Guide is intended for use by qualified technicians and engineers who are authorized to set parameters on the Conext CL-60 grid-tie PV inverters by using the CL-60 EasyConfig Tool.

Organization

This Guide is organized into the following five chapters:

Chapter 1, "Introduction"

Chapter 2, "Software Installation"

Chapter 3, "Software Operation"

Chapter 4, "Setting Inverter Parameters and Upgrading the Firmware (RS485)"

Chapter 5, "Setting Inverter Parameters and Upgrading the Firmware (Modbus TCP)"

Abbreviations and Acronyms

DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
EMI	Electromagnetic Interference
LAN / WAN	Local Area Network / Wide Area Network
LED	Light Emitting Diode (used for indicator lights)
POA	Plane of Array
PV	Photovoltaic (or Solar)
TCP/IP	Transmission Control Protocol/Internet Protocol

Related Information

You can find more information about Schneider Electric as well as its products and services at http://solar.schneider-electric.com.

Important Safety Instructions

READ AND SAVE THESE INSTRUCTIONS - DO NOT DISCARD

This document contains important safety instructions that must be followed during installation procedures (if applicable). **Read and keep this Owner's Guide for future reference.**

Read these instructions carefully and look at the equipment (if applicable) to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

A A DANGER

DANGER indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING indicates a potentially hazardous situation, which, if not avoided, can result in death or serious injury.

CAUTION indicates a potentially hazardous situation, which, if not avoided, can result in moderate or minor injury.

NOTICE

NOTICE indicates important information that you need to read carefully.

Safety Information

- Before using this software application, read all instructions and cautionary markings on the unit (CL-60E/CL-60A), in the Owner's guide for the CL-60A/ CL-60E inverters, the Conext CL-60 Firmware Upgrade Process Application Note, and all appropriate sections of this manual.
- 2. Use of accessories not recommended or sold by the manufacturer may result in a risk of fire, electric shock, or injury to persons.

WARNING

HAZARD OF PHYSICAL INJURY AND UNEXPECTED OPERATION

Refer to detailed information in this guide when making any changes to settings or sending commands to the unit (CL-60E/CL-60A). Commands sent from this software application may affect other components in the system. Ensure that anyone working with the system is aware of the result of your changes before sending a command.

Failure to follow these instructions can result in death or serious injury.

Lock-Out Tag-Out (LOTO) Procedure

Lock-out refers to the practice of preventing de-energized circuits from being reenergized by putting locks on the disconnecting devices, holding them open. Tag-out refers to the practice of attaching a tag to the disconnect-device locks warning others not to operate the disconnect device and containing information relating to the lock-out, such as the person responsible, the reason, and the date and time. Combined these two practices are called the lock-out and tag-out (LOTO) procedure.

A A DANGER

ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH HAZARDS

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must only be installed and serviced by qualified electrical personnel. Access to live parts shall be limited to suitably qualified electrical personnel. See installation instructions before connecting to the supply.
- Never operate energized with covers removed.
- Always use a properly rated voltage sensing device to confirm all circuits are de-energized.
- Replace all devices, doors, and covers, before turning on power to this equipment.
- Before opening the cover identify the power source (see **A**), de-energize (see **B**), lock-out and tag-out (see **C**), and wait 10 minutes for circuits to discharge (see **D**).

Failure to follow these instructions will result in death or serious injury.



Figure 1-1 Single Line Diagram for CL-60

- **A** 1. Identify any disconnect device upstream from the CL-60 unit.
- **B** 2. Open the disconnect device that connects to the CL-60 to cut off DC power.
- **C** 3. Turn the CL-60's DC Switch to OFF position.

- 4. Lock-out and tag out the external DC disconnect device.
- 5. Remove all PV string connectors from the DC terminals.
- A 6. Identify the AC Panel Breaker downstream from the CL-60 unit.
- **B** 7. Open the AC Panel door.
 - 8. Turn Off the AC Panel Breaker (open the switch) that connects to the CL-60 to cut off AC power.
 - 9. Close the AC Panel door.
- **C** 10. Lock-out and tag out the AC Panel.
- **D** 11. Wait 10 minutes for the circuits in the CL-60 to discharge.
 - 12. Check that the inverter is in zero energy state before performing work.
 - 13. Open the CL-60 enclosure and commence service and maintenance activities.

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Introduction

Chapter 1 contains general information about Conext CL-60 EasyConfig Tool Features.

Introduction

The Conext CL-60 EasyConfig Tool is used for firmware upgrade and configuration of Conext CL-60 grid-tie PV inverters. The tool facilitates access to single or multiple inverters by using computers to connect over Modbus RS485 or Modbus/TCP.

Once the software is installed on a computer, inverters can be configured locally by logging in to the application.

This tool provides single-point access to configuration set up for all the inverters installed in the plant. The tool also provides a means to upgrade firmware on the inverter (CL-60E/CL-60A) when new firmware is available with features and country grid-code compliance.

Features

- Firmware upgrade
- Daisy chain connection over Modbus RS485 or Modbus TCP
- Local monitoring of individual inverters
- Configuration of anti-islanding protection settings and Active-Reactive Power control parameters



Software Installation

Chapter 2 contains information about:

- System Requirements
- Software Installation

System Requirements

Item	Minimum Requirement	Recommendation
CPU	2 GHz	Dual-core, > 2 GHz
RAM	2G	> 2G
Hard disk	250G	> 250G
Display	SVGA/1024 x 768	SVGA/1024 x 768
Operating System	Windows 7/Windows 10	Windows7/Windows 10
Mouse	Windows compatible	Windows compatible
Serial port	RS485 to USB adapter	RS485 to USB adapter
	TCSMCNAM3M002P or equivalent	TCSMCNAM3M002P or equivalent
Ethernet	10 M/100M	1000 M

The Conext CL-60 EasyConfig Tool requires the following:

Software Installation

To install the Conext CL-60 EasyConfig Tool:

1. Double-click the **setup.exe** file in the installation package to run the installation program. The Setup Wizard dialog window opens.



Figure 2-1 Setup Wizard

2. Click the **Next** button to proceed. The Select Installation Folder dialog window opens.

	Folder	-
e installer will install Co	next CL60 EasyConfig to the follo	owing folder.
install in this folder. clic	:k "Next". To install to a different	t folder, enter it below
click "Browse".		
Eolder:		
C:\Schneider Electric\(Conext CL60 EasyConfig\	Browse
		Disk Cost
		()
nstall Conext CL60 EasyConf	ig for yourself, or for anyone who uses th	his c <mark>ompute</mark> r:
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nstall Conext CL60 EasyConf	ig for yourself, or for anyone who uses th	his computer:

Figure 2-2 Select Installation Folder

- 3. On the Select Installation Folder page, do the following:
 - (optional) To install to a different location, click the **Browse...** button.
 - (optional) To find out how much disk space is required, click the **Disk Cost...** button.
 - Specify who can access the Conext CL-60 EasyConfig Tool installation:
 - To apply the installation across all users of the computer, select **Everyone**.
 - To apply the installation to the current user, select **Just me**.
 - Click the **Next** button to install the Conext CL-60 EasyConfig Tool.

The **Confirm Installation** dialog window opens.



Figure 2-3 Confirm Installation

4. Click the Next button to proceed.

The program will be installed on the computer. Monitor the progress bar.

Installing Conext C	L60 EasyConfig	
Conext CL60 EasyConfig is	being installed.	
Please wait		
	Cancel	< Back Next >

Figure 2-4 Installation Progress

The Installation Complete dialog window appears.



Figure 2-5 Installation Complete

5. Click the **Close** button to exit the installation wizard. A shortcut icon for the program will appear on the desktop.



3

Software Operation

Chapter 3 contains information about:

- Starting the CL-60 EasyConfig Tool
- Closing the CL-60 EasyConfig Tool

Starting the CL-60 EasyConfig Tool

To start the CL-60 EasyConfig Tool, use either method below:

- Click Start -> Programs -> Conext CL EasyConfig -> Conext CL60 EasyConfig
- Double-click the Conext CL-60 EasyConfig Tool icon on the desktop



Closing the CL-60 EasyConfig Tool

To close the CL-60 EasyConfig Tool, use either method below:

- Press **ESC**.
- Click the Kentury button on the upper right corner of any window.

4

Setting Inverter Parameters and Upgrading the Firmware (RS485)

Chapter 4 contains information about:

- Connecting the Serial Adapter
- Logging In
- Search Process
- Main Window
- Searching for Devices (Inverters)
- Managing Devices
- Viewing Device Information
- Setting Inverter Parameters
- Setting Running Parameters
- Setting Protection Parameters
- Upgrading the Inverter Firmware

Connecting the Serial Adapter

To connect the serial adapter:

- 1. Ensure the inverter is completely de-energized.
- 2. Connect the serial adapter as described in the "Communication Connection" section of the *Conext CL 60 Owner's Guide*.
- 3. Ensure there are no PLCs or other Modbus master devices in the Modbus network.
- 4. Replace the cover on the inverter.
- 5. Energize the inverter by applying DC power.
- 6. Determine the COM port of the adapter through Windows Device Manager.



Figure 4-1 Device Manager window showing the available COM ports

Logging In

After starting the CL-60 EasyConfig Tool successfully, the **Login** window appears.

To log in:

- 1. Select the Access mode: COM (default) or Ethernet.
- 2. Enter the Level 1 Password: 111111.

For the Level 2 password, contact your Sales Application Engineer.

- 3. Select the preferred Language: English (default).
- 4. Click the **Login** button.

Access mode	COM	•
Password	*****	
Language Login	English	
	Password Language	Password ***** Language English

Figure 4-2 CL-60 EasyConfig Tool Login Window

Search Process



Figure 4-3 Search Process

Searching for the First Time

The first time you search for devices, the CL-60 EasyConfig Tool does not check for previous connections.

To search for a device for the first time:

 Log in to the CL-60 EasyConfig Tool. See "Logging In" on page 4–3. After a successful log in, the following dialog window appears.



2. Click the **YES** button.

The CL-60 EasyConfig Tool displays the Search window.

Device number:		1	*							
COM select:	© СОМЗ	Baud rate:	9600	•	0	COM12	Baud rate:	9600	•	
	COM1	Baud rate:	9600	•	0	COM2	Baud rate:	9600	•	

Figure 4-4 Search Window

3. In the Device Number field, enter the number of devices and, under COM select, select the COM port/ baud rate that you want to search for. Then, click the **Search** button.

NOTE: To determine which COM port to select, check **Device Manager > Ports (COM & LPT)**.

A summary window shows the devices found.



Figure 4-5 Devices Summary Window

4. If the search times out before the number of devices specified for the search are found, the following dialog window appears.

Guide	
Do you want	to continue?Auto continue after 5s.
	YES NO

- To stop the search, click the **NO** button.
- To continue searching immediately, click the **YES** button.

If you do not click a button in the dialog, after five seconds, the CL-60 EasyConfig Tool continues searching. This step repeats until all the devices are found or you click the **NO** button.

5. When all devices are found or you click the **NO** button at the previous step, the following dialog window appears.

Config	5			
?	Do you ne	ed auto-assi;	gned address?	
		YES	NO	

- 6. Verify if the Commissioning procedure (*Section F of the Conext CL-60 Quick Install Guide*) was performed before proceeding to the next step.
- 7. In the dialog window, do one of the following:
 - If the Commissioning procedure was not done, click the **NO** button. Proceed to Step 8 without assigning Modbus addresses.
 - Click the **YES** button to automatically assign the device addresses. The **Auto Assigned Address Settings** window (Figure 4-6) appears.

Click the **OK** button. A **Change Completed** dialog window appears. In the dialog window, click the **Confirm** button.

Auto a	assigned	address	settings
Start address	s:	1	
No	SN 🔺	Device address	Deviece new address
1	A1603281668	3	3
2	A1607080044	4	4
			OK Cancel

Figure 4-6 Auto assigned address settings window

8. On the **Country setting** window, select the country and click the **OK** button.

Country setting		
Select a country:	•	
OK		

NOTE: The **Select a Country** drop-down lists includes Great Britain, Germany, France, Italy, Spain, Austria, Australia, Czech, Belgium, Denmark, Greece Land, Greece Island, Netherlands, Portugal, China, Sweden, Romania, Thailand, Tokelau, Canada, America, Japan, and Others. Set the Country according to the jurisdiction where the inverter is installed.

9. If you changed the country setting, restart the CL-60E/CL-60A inverter by power cycling the DC and AC power.

Searching Subsequent Times

If you have previously searched for devices, the CL-60 EasyConfig Tool does not show the history of connections and it automatically displays the **Devices** window. If you are searching for the first time, see *"Searching for the First Time"* on page 4–4.

To search for a device:

After a successful log in, the following dialog window appears.



• Click the **NO** button.

The **Devices** window opens. By default, the **SearchDev** tab will be shown. See the section *"Searching for Devices (Inverters)" on page 4–12* to perform a subsequent search and to detect devices manually.



Figure 4-7 Devices Window

Main Window

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The CL-60 EasyConfig Tool's main window is divided into different sections as shown in Figure 4-8.

Figure 4-8 CL-60 EasyConfig Tool Main Window

Label	Description	Remarks
A	Title Bar	Name of the software and software version information.
		Devices : Search the device.
		SysPara : Set up and read the system parameters of the device.
		RunPara : Set up and read the parameters, including active/reactive power regulation, run time, LVRT, and frequency derating, etc.
В	Navigation Bar	ProtectionPara : Set up and read the protection parameters.
		Debug : Send and receive and display the debug message that is sent manually.
		ViewInfo : Dynamically display the operation information of a single device.
		UpdateSN : Do not use this option.
		Firmware Upgrade : Upgrade the inverter firmware for a single device or for multiple devices.

Label	Description	Remarks
С	Basic Tools	Buttons for minimizing, maximizing, and closing the window.
D	Device Tree	Displays all devices found in the PV system. The tree shows how the devices are interconnected.
E	Menu Bar	Displays the selected tab from the Navigation bar. In some cases, a sub- menu will appear below the Menu bar tab with additional tabs.
F	Settings	Displays the current parameters associated with the selected tab for the selected device.

Searching for Devices (Inverters)

NOTE: When you search the devices with COM Search, check that all the Modbus addresses on the inverter LCD display are valid and unique.

To search the devices:

1. Click the **Devices** tab.





2. Click the **COM Search** button at the upper-right corner of the window. The **Search** window appears.

Device number:	1 (4)
Start address:	1 $$ End address: 2 $$
COM select:	© COM3 Baud rate: 9600 ▼
	Search

- Select a **Device number** (number of devices to search)
- Specify a range of Start and End addresses
- Specify the Baud rate
- Click the **Search** button.

The CL-60 EasyConfig Tool starts to search for the devices.



3. If the search times out before the number of devices specified are found, the following dialog window appears.

G	uide											
	?	Do	you	want	to	cont	tinue	?Auto	o con	tinue	after	5s.
						YES		N	0			

- To stop the search, click the **NO** button.
- To continue searching immediately, click the **YES** button. If you do not click either button, after five seconds, the search automatically continues. This step repeats until all the devices are found or you click the **NO** button on the dialog window.

4. The summary window shows the devices.



Figure 4-10 Devices Summary Window

Managing Devices

The **Devices** window allows you to:

- Delete all devices
- Delete selected devices
- Modify the device address

Deleting all Devices

NOTE: If devices are deleted, the devices and their corresponding information will no longer be displayed on the window.

To delete all the devices:

• Click the **Delete All** button.

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		2	4/20/6	,M 10/06044	16	(260)

Figure 4-11 Devices Window – Delete All

Deleting Selected Devices

NOTE: If devices are deleted, the devices and their corresponding information will no longer be displayed on the window.

To delete selected devices:

- 1. In the **Select** column, select the device/s that are to be deleted.
- 2. Click the **Delete selected** button.



Figure 4-12 Devices Window - Delete Selected

Modifying a Device Address

To modify a device address:

- 1. In the **Select column**, select the device that is to be modified.
- 2. Change the device address under the **Device address*** column and click the **Modify Address** button.

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	151 2	5.800	[n.iefeftedd	[0	2.48	

Figure 4-13 Devices Window – Address Modify

3. The pop up message will display while changing the device address. Click the **OK** button and confirm that the tool shows the "Change completed" message.
Viewing Device Information

All the devices that have been found will be displayed in a tree hierarchy in the Device tree in the left panel.

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	13	Decentral (2020/03)		1 22	1.1.4 religion in the	254.4
	1.	Frank (Sea)	24		1.41.8 commerciple	5.4
	10	Etciap(8.15)	15.4	51	Typhane Ecoporty 3(2)	90
	11	Transie in the design of the	202	15	1570.21	1441
	15		12	- 22	Stelling annear 1373	9.88
	15	Terrar Tangangapaga (Kg)	99.	- S	String organic S(k)	0
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If no information is displayed for a device, check that the serial port type has been selected.

To view information for a device:

- 1. In the Device tree, click a device.
- 2. In the Menu bar, select one of the following options:
 - To view the running parameters, select RunPara
 - To view the device parameters, select ViewInfo.

Setting Inverter Parameters

You must select one device on this interface. When the window appears, the first device is selected by default. You can select other devices manually as required.

To set system parameters:

1. Select any device in the Device tree.

The system parameters will be displayed in the Settings section of the window.

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	test solet procedure	

Figure 4-15 CL-60 EasyConfig Tool Devices Overview Page

- 2. Set the parameter and click the **Set** button to confirm the setting.
 - To view the old parameter, click the **Read** button.
 - Compare the new parameter with the old to make sure that the new one is valid.

NOTE:

- Parameters are set individually using the **Set** and **Read** buttons that correspond to the specific parameter.
- If more than one device is selected in the Device tree, the **Read** buttons for all parameters are disabled.

Setting Running Parameters

The running parameters include active/ reactive power regulation, run time, LVRT, and frequency derating, etc.

To set the corresponding parameters

- 1. In the Navigation bar, click RunPara.
- 2. In the Device tree, select one or more devices.

The default values for the parameters will be displayed in the Settings section.

- 3. On the Menu bar, click one of the following options:
 - Active Adjust
 - Reactive Adjust
 - Run Time
 - LVRT
 - Frequency Derating
- 4. To make a parameter configurable, click the **On** button.
 - To view the old value for the parameter, click the **Read** button
 - To save the setting, click the **Set** button.

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	Renner of exception Units	Evel.
		Sec. Deal connected

Figure 4-16 Running Parameters

NOTE:

- Parameters are set individually using the **Set** and **Read** buttons that correspond to the specific parameter.
- If more than one device is selected in the Device tree, the **Read** buttons for all parameters are disabled.
- A level 2 password is required to view this information. Contact your Sales Application Engineer.

Setting Protection Parameters

The **Protection Parameters** window allows you to set the country, protection stage, and the corresponding protection parameters.

To set the Protection Parameters:

1. In the Navigation bar, click **ProtectPara**. The Protection Parameters window appears. If the selected country supports multiple grid types, the grid types will be shown below the country setting (Figure 4-18).

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Figure 4-17 Protection Parameters Window - with multiple grid types (LV and MV - for Point of connection at MV)

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Figure 4-18 Protection Parameters Window - without multiple grid types protection settings

- 2. On the Protection Parameters window, select the following options:
 - **Country setting**: Select the corresponding country where the device is located.
 - **Grid Type**: Only available for some countries. (Appears by default based on the country grid settings within the Firmware)
 - **Protection level**: Single level or multi level.
- 3. To view the parameter settings, click the **Read** button.
 - 4. Check and confirm the parameters, then click the **Set** button. The settings will be issued to the corresponding device.
 - 5. Follow the message that is displayed for each of the parameters when they are changed.

For example: After a setting the country, the program displays the message **"The country is modified. Please restart the inverter."**.

- 6. When changing the country for a group of inverters, select all the affected inverters on the left panel of the window, then select the country on the right panel, and click the **Set** button.
- 7. Restart the inverter(s) and confirm the country setting.

Optional step

Upgrading the Inverter Firmware

- 1. Perform the Lock-Out Tag-Out (LOTO) Procedure. See *"Lock-Out Tag-Out (LOTO) Procedure" on page vii.*
- 2. Perform the Upgrading CL-60 Inverter Firmware procedure.

Upgrading CL-60 Inverter Firmware

You can use the Conext CL-60 Easy Config Tool to upgrade the CL-60 inverter firmware.

NOTE: Before beginning this process, make sure you have the correct and latest LCD and DSP firmware files from the http://solar.schneider-electric.com website and read the firmware upgrade process associated with the firmware files.

Step 1: Install the Conext CL-60 Easy Config Tool

See "Software Installation" on page 2–1.

Step 2: Run the Conext CL-60 Easy Config Tool and Search for Inverters

♦ See "Searching for Devices (Inverters)" on page 4–12.

Step 3: Upgrade the Inverter Firmware

1. In the Easy Config Tool window, click the Firmware Upgrade tab.

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- 2. In the Device Tree on the left, select the inverters that need a firmware upgrade.
- 3. In the top right of the **Settings** window, click the **Add File** button.

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4. In the **Directory** window, navigate to the folder on your computer where the firmware files are stored.

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NOTE:

- Make sure you have the correct and latest LCD and DSP firmware files from the website (http://solar.schneider-electric.com) and have read the firmware upgrade process associated with the firmware files.
- Use both LCD and DSP firmware files with an **.sgu** extension and select one file at a time for the upgrade.

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5. Select the LCD firmware file and insert it in the Files Manage view.

NOTE: If you need to delete an incorrect file, click the **Delete** button in the Operating column next to the file.

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6. Click the **Upgrade** button and monitor the progress of the firmware upgrade.

The upgrade should take 5-8 minutes or less.

The Upgrade manager section shows the Version before upgrade, Version after upgrade, Time left, and Progress bar for each device being upgraded.



- 7. Confirm that the firmware upgrade was successful as shown below.
- 8. Repeat the same steps (5 through 7) for the **DSP firmware** file and monitor the progress of the firmware upgrade.

The upgrade should take 5-8 minutes or less.

The Upgrade manager section shows the Version before upgrade, Version after upgrade, Time left, and Progress bar for each device being upgraded.

9. Confirm that the firmware upgrade was successful as shown below.

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- 10. Once the firmware upgrade is successful on your CL-60 inverter(s), disconnect the communication cables and restart the inverter(s).
- 11. On the LCD screen of the inverter(s), verify the firmware version(s).
- 12. Perform any additional settings as required.

If you change any settings, restart the inverter.

5

Setting Inverter Parameters and Upgrading the Firmware (Modbus TCP)

Chapter 5 contains information about:

- Connecting the Inverter via Modbus TCP
- Logging In
- Search Process
- Main Window
- Searching for Devices (Inverters)
- Setting Inverter Parameters
- Setting Running Parameters
- Setting Protection Parameters
- Updating the Inverter Firmware

Connecting the Inverter via Modbus TCP

NOTE: Before using the TCP connection, make sure that the Commissioning procedure (*Section F of the Conext CL-60 Quick Install Guide*) has been performed. If not, perform the commissioning procedure and connect the inverter(s) using Ethernet connection.

To connect the inverter via modbus TCP:

- 1. Ensure the inverter is completely de-energized.
- 2. Connect the ethernet cable as described in the "Ethernet Connection" section of the *Conext CL-60 Owner's Guide*.
- 3. Ensure there are no other modbus master devices in the Modbus network.
- 4. Replace the cover on the inverter.
- 5. Energize the inverter by applying DC power.

Before Proceeding

By default, the CL-60 inverter's IP address is set to static (192.168.1.100) and its DHCP setting is disabled.

In order for inverters with a disabled DHCP setting to be searchable, follow the steps below.

1. Change the network settings of your computer (PC or laptop) as shown below.

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Figure 5-1 Computer's Network Settings

- 2. Connect an Ethernet cable between the computer (via network port) and the inverter's Ethernet port.
- 3. Continue with procedures in this chapter.

Logging In

After starting the CL-60 EasyConfig Tool successfully, the **Login** window will appear.

To log in:

- 1. Select the Access mode: Ethernet.
- 2. Enter the Level 1 Password: 111111.

For the Level 2 password, contact your Sales Application Engineer.

- 3. Select the preferred Language: English (default).
- 4. Click the Login button.

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Figure 5-2 CL-60 EasyConfig Tool Login Window

Search Process



Figure 5-3 Search Process

Searching for the First Time

The first time you search for devices, CL-60 EasyConfig Tool does not check for previous connections.

To search for a device for the first time:

1. Log in to the CL-60 EasyConfig Tool. See *"Logging In" on page 5–3*. After a successful log in, the following dialog window appears.



Figure 5-4 First search dialog

- 2. Click the **Yes** button.
- 3. In the **Device number** drop-down list, enter the number of devices that you want to search for and click the **Search** button.

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Figure 5-5 Search Window

A summary window shows the devices found.

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Figure 5-6 Devices Summary Window

4. If the search times out before the number of devices specified for the search are found, the following dialog window appears.

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- To stop the search, click the **NO** button.
- To continue searching immediately, click the **YES** button.

If you do not click a button in the dialog, after five seconds, the CL-60 EasyConfig Tool continues searching. This step repeats until all the devices are found or you click the **NO** button.

5. When all devices are found, click the **NO** button on the dialog window at the previous step. The following dialog window appears.

Config				
	Do you nee	d auto-assig	med address?	
		YES	NO	

- 6. In the dialog window, do one of the following:
 - To proceed to Step 6 without assigning modbus addresses, click the NO button.
 - To automatically assign the modbus addresses, click the **YES** button. The **Auto Assigned Address Settings** window (Figure 5-7) appears.

Click the **OK** button. A **Change Completed** dialog window appears. Click the **Confirm** button.

Change the IP address of your choice in case your network setup has a static connection (DHCP = OFF) and the inverters are directly connected to PC. Click the **OK** button.

art IP: 192 . 168 . 1 . 10 Subnet mask: 255 . 255 . 255 . 0 Default gateway: 192 . 168 . 1 No SN A Device address Device new address IP address New IP address 1 A1607080044 4 4 10.179.238.51 10.179.238.51	DHCP enabl	le:	On		Off	
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Figure 5-7 Auto Assigned Address Settings window

- 7. On the Country Setting window, do one of the following:
 - To change the country setting, select the country and click the **OK** button.
 - To use the existing country setting, click the **Cancel** button.

Country setting		
Select a country:	•	
OK Cancel		

NOTE: The **Select a country** drop-down list includes Great Britain, Germany, France, Italy, Spain, Austria, Australia, Czech, Belgium, Denmark, Greece Land, Greece Island, Netherlands, Portugal, China, Sweden, Romania, Thailand, Tokelau, Canada, America, Japan, and Others. Set the Country according to the jurisdiction where the inverter is going to operate.

8. If you change the country setting, restart the CL-60E/CL-60A inverter.

Searching Subsequent Times

If you have previously searched for devices, the CL-60 EasyConfig Tool does not show the history of connections and it automatically displays the **Devices** window. If you are searching for the first time, see *"Searching for the First Time"* on page 5–4.

To search for a device:

After successfully logging in, the following dialog window appears.



1. Click the NO button.

The **Devices** window appears. By default, the **SearchDev** tab will be shown, to give the option to manually search the devices using the Ethernet interface.

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Figure 5-8 Devices Window

- 2. Click on the **NET Search** button and select the **Device number** (number of devices to search).
- 3. Select the Start and End addresses (Modbus addresses)

4. Select the IP address range and click on the **Search** button shown in the window in Figure 5-9.



Figure 5-9 Search Window

Once all the inverters are detected, the summary window shows the devices found as shown in Figure 5-10.

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Figure 5-10 Summary Window

Main Window



The CL-60 EasyConfig Tool's main window is divided into different sections as shown in Figure 5-11.

Figure 5-11 The CL-60 EasyConfig Tool Main Window

Label	Description	Remarks
Α	Title Bar	Name of the software.
		Devices: Search the device.
		SysPara : Set up and read the system parameters of the device.
		RunPara : Set up and read the parameters, including active/reactive power regulation, run time, LVRT, and frequency derating, etc.
в	Novigation Dar	ProtectionPara : Set up and read the protection parameters.
В	Navigation Bar	Debug : Receive and display the debug message that is sent manually.
		ViewInfo : Dynamically display the operation information, debugging information of a single device.
		UpdateSN: Do not use this option.
		Firmware Upgrade : Upgrade the inverter firmware for a single device or for multiple devices.

Label	Description	Remarks
С	Basic Tools	Buttons for minimizing, maximizing and closing the window.
D	Device Tree	Displays all devices searched in the current system and their logical relationship.
E	Menu Bar	Displays the selected tab from the Navigation bar. In some cases, a sub- menu will appear below the Menu bar tab with additional tabs.
F	Settings	Displays the current parameters associated with the selected tab for the selected device.

Searching for Devices (Inverters)

NOTE: When you search the devices with Ethernet Search, all the IP addresses on the inverter LCD display must be valid and unique.

Refer to "Search Process" on page 5-4.

Setting Inverter Parameters

Refer to "Setting Inverter Parameters" on page 4-18.

Setting Running Parameters

Refer to "Setting Running Parameters" on page 4–19.

Setting Protection Parameters

Refer to "Setting Protection Parameters" on page 4–20.

Updating the Inverter Firmware

Refer to "Upgrading the Inverter Firmware" on page 4–22.

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