Important Safety Information

This Guide is intended for any qualified personnel who need to install, operate, configure, and troubleshoot the Conext CL-60. Certain configuration tasks should only be performed by qualified personnel in consultation with your local utility and/or an authorized dealer. Electrical equipment shall be installed, operated, serviced, and maintained only by qualified personnel. Qualified personnel have training, knowledge, and experience in:

- Installing electrical equipment
- Applying applicable installation codes
- Handling and operating the equipment involved in performing electrical work
- Selecting and using Personal Protective Equipment (PPE)
- Connecting communications devices to a venue

Read these instructions carefully and look at the equipment 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.

Selecting and using Personal Protective Equipment (PPE)

• Selecting and using PPE is critical. Equipment and clothing should be selected for the job at hand. Most accidents are caused by the use of improper PPE.

Applying applicable installation codes

• Applying the proper installation codes is critical. Equipment should be installed, operated, serviced, and maintained only by qualified personnel. Qualified personnel have training, knowledge, and experience in:

1. Before using this product, read all instructions and cautionary markings on the unit and all appropriate sections of this manual.
2. Do not use this product near water, flammable materials, or in hazardous environments (including cleaning or working on any components connected to the equipment). Internal capacitors remain charged for 5 minutes after all power is disconnected.
3. This product is designed for outdoor use and is rated IP65.
4. To avoid a risk of fire and electric shock, make sure that existing wiring is in good condition and that wire is not undersized. Do not open nor disassemble the top half of the unit. There are no user-serviceable parts inside.
5. Do not operate the equipment if it has been damaged in any way.
6. Do not disassemble the Conext CL-60 except where noted for connecting wiring and cabling. See your warranty for instructions on obtaining warranty coverage for reassembling the product.
7. To reduce the risk of electrical shock, disconnect the power supply from the equipment before attempting installation, and any maintenance (including cleaning or working on any components connected to the equipment).
8. The equipment must be grounded. Use the protective grounding conductor provided with the AC input conductors.
9. This product is designed for outdoor use and is rated IP65.
10. To reduce the chance of short-circuits, always use insulated tools when installing or working with this equipment. Do not leave tools inside.
11. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with electrical equipment.
12. Do not open nor disassemble the top half of the unit. There are no user-serviceable parts inside.

Read and Save These Instructions - Do NOT discard but Do NOT store inside the CL-60 cabinet.

This guide contains important safety instructions for the Conext CL-60 that must be followed during installation procedures. Read and keep this Quick Install Guide for future reference.

Before proceeding, make sure that the Conext CL-60 is connected to your utility system. This product is designed for outdoor use and is rated IP65. Before starting, make sure that the unit is grounded. Always use insulated tools when working with this equipment. Do not leave tools inside. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with electrical equipment. This is the safety alert symbol. It is used to alert you to potential personal injury hazards. If you do not follow these safety messages, a 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. If you do not follow these safety messages, a hazard exists which will result in death or serious injury. Do NOT discard but Do NOT store inside the CL-60 cabinet.

Register your CL-60

Get a 5 Year Warranty! Register your CL-60

Quick Install Guide

Conext™ CL-60E/CL-60JP

PVSC60E/PVSC60JP

http://solar.schneider-electric.com/product-registration/

Schneider Electric Product Registration

One Easy Step / Multiple Methods

Register today in one easy step to receive additional warranty and valuable benefits!

Select your Method

Scan QR code in the App Store or on the web

Visit QR code on the product label

Call 1-877-518-01-01

http://solar.schneider-electric.com/product-registration

http://solar.schneider-electric.com/contact-support

Register with my Schneider app

Register within 6 months of purchase and redeem additional warranty

Receive your Warranty Certificate

Keep for your records. This contains the model and serial number of the inverter.

No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

This guide for use only by qualified personnel.
Conext CL-60E/CL-60JP (also referred to as CL-60 PV Inverter) is a transformerless three-phase photovoltaic (PV) string inverter that is designed to be an integral part of any utility grid-connected PV Power System. The Conext CL-80 is designed to convert DC power generated from the PV array into AC power that is compatible with utility grade AC power.

**Features**

- **Wall-mounting backplate**
- **Metal frame backplate**
- **AC cable gland (small)**
- **M4x16 backplate screws**
- **4 pairs of 14 mm2 fasteners**
- **MC4 DC input terminals**
- **AC output terminals**
- **Communication cable glands**
- **DC switch**
- **Protective Earth (PE)**
- **AC side cable connection**
- **DC side cable connection**
- **Lock Out Tag Out**
- **Configuration circuit board with RS-485**
- **Communication cable glands**
- **Screw-in handles**
- **AC Side Breaker**
- **Communication Cable Gland**
- **Lock Out Tag Out**
- **AC Side Cable Connection**
- **Communication Cable Connection**
- **Ground Connection**
- **Ground Connection**
- **Protection Earth (PE)**

**Mounting Considerations**

- **Exclusion for Documentation**
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**Introduction**

Conext CL-60E/CL-60JP is a three-phase photovoltaic (PV) string inverter that is designed to be an integral part of any utility grid-connected PV Power System. The Conext CL-80 is designed to convert DC power generated from the PV array into AC power that is compatible with utility grade AC power.

**Installation (Mounting)**

**NOTE:**
- Obtain all necessary permits prior to starting the installation. Installations must meet all local codes and standards. Installation of this equipment should only be performed by skilled personnel such as qualified electricians and Certified Renewable Energy (RE) System installers.
- For full details on unit installation which includes metal frame installation, alternative lifting techniques, and multiple unit guidelines, see the full Owner's Guide available on the USB stick that came with the box.

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**
- Do not connect the PV Inverter to a live power source prior to cabling and wiring. The inverter can be energized from two sources namely, DC from the PV array and AC from the grid.
- Do not connect any powered device to the PV Inverter during installation.
- Failure to follow these instructions will result in death or serious injury.

Check all the materials in the box (see Features) and make sure nothing is missing. The following materials and tools are not supplied but are required to complete the installation (mounting):

- Personal protective equipment (PPE)
- Screwdriver and drill set (powered and/or manual)
- Six (M10x65) screws (for fastening wall-mounting backplate to the wall)

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**
- Appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must only be installed and serviced by qualified personnel.
- Never energize the inverter with the covers removed.
- Do not open fuse holders unless under load. The fuse must be de-energized from all sources before servicing.
- The inverter is energized from multiple sources. Before removing covers identify all sources, de-energize, lock-out, and tag-out and wait 10 minutes.
- Always use a properly rated voltage sensing device to confirm all circuits are de-energized.
- Replace all devices and covers before turning on power to the equipment.
- The DC conductors of the photovoltaic system are ungrounded and may be energized.

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

**Installation (Wiring)**

- **NOTE:**
  - Use 1.2 meters (4 ft) of wire 25 - 40 mm² for the AC Side Cable Connection.
  - Wire size must comply with Table 501-4, National Electrical Code, Part 1, Article 250, or local codes.
  - Ensure wire connector is suitable for specific wire size.
  - Use 4 mm² wire for Communication Cable if 5 mm² cable is used.
  - Use 4 mm² wire for Communication Cable if 5 mm² cable is used.
  - Do not use 5 mm² wire for Communication Cable.

**AC Side Connection - for more information see the Owner’s Guide**

The following materials and tools are not supplied but are required to complete the installation (wiring):

- AC power cable (5-wire)
- DC power cables (red, black)
- RS-485 cable for Modbus/RS-485 device
- CAT6/5e network cable for Modbus/RS-485 PV Inverter and Ethernet TCP/IP connections
- Wire stripper, standard molex crimper, AC/DC crimp pins
- Screwdriver and drill set (powered and/or manual)
- Calibrated professional digital multimeter
- Crimping tool from Multi-Contact (http://www.multi-contact-usa.com/)

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**TOTAL DC Power Limit** = 67500 W

**Max Open-Circuit Voltage @ Input** = 1000 V

**Short Circuit Current Limit** = 140 A

---

### DC Side Cable Connection

1. Strip
2. Separate connectors* (5AWG)
3. Remove cable glands and matching pins
4. Crimp
5. Thread cable through glands
6. Insert contact into insulator
7. Attach cable glands

**NOTE:** Use a spanner, if available, to tighten the cable glands to the insulator.

---

### Ground Connection

1. Remove a cable gland
2. Connect each wire (A, B, and GND) to the connector terminals

**NOTE:** Do not leave tools and other objects on and inside the CL-60.

---

### Communication Cable Connection

1. Turn OFF DC switch
2. Attach (-) MC4 connectors* to (-) terminals and (+) MC4 connectors* to (+) terminals
3. Use an external 15 A inline fuse connector (Multi-Contact MC4 Type 68A inline fuse PV-K/ILF) on the negative line, if required by local installation codes (such as in the UK, France, and Australia).

**5.** Replace the cover

---

### Inspection Before Commissioning

- CL-60 accessible?
- CL-60 stable and secure on the wall?
- Ventilation - CL-60 free of obstructions?
- No tools left on and inside CL-60?
- Cable connections tight and secure?
- AC and DC circuit breakers are connected to CL-60?
- Unused terminals are sealed?
- Permanently affixed product rating and warning labels?

---

**For a single CL-60 only. See the Owner’s Guide for multiple CL-60s.**

**RS-485 Connection (2 connection types)**

1. Switch the terminating resistor to OFF inside the unit
2. Insert a standard CAT6/5/e Ethernet cable through the gland
3. Attch the RJ45 plug to the Ethernet terminal

**RS485in RS485out**

4. Attach the connector to the RS485out terminal inside the unit
5. Attach the RA45 plug to the RS485in terminal inside the unit

**NOTE:** Do not leave tools and other objects on and inside the CL-60.

---

**Ethernet Connection**

- Single-network
- Multiple-daisy-network
- Star network
- Single-parallel

---

**NOTE:** The RS-485 cable must be a shielded twisted pair type or an Ethernet shielded twisted pair type.

---

**RS-485 Communication can be set up in the following configurations:**

- Single-direct
- Multiple-daisy-direct
- Single-network
- Multiple-daisy-network
- Star network

---

**NOTE:** Use a shielded twisted pair type or an Ethernet shielded twisted pair type.

---

**E3 Ground Connection** - for more information see the Owner’s Guide

**NOTE:** See above for more information.

---

**E4 Communication Cable Connection** - for more information see the Owner’s Guide

**RS-485 Connection (2 connection types)**

1. Attach the RA45 plug to the RS485in terminal inside the unit
2. Use one or both to pass cables through

**RS485in RS485out**

3. Switch the terminating resistor to OFF inside the unit
4. Replace the cover

---

**E5 Inspection Before Commissioning**

- CL-60 accessible?
- CL-60 stable and secure on the wall?
- Ventilation - CL-60 free of obstructions?
- No tools left on and inside CL-60?
- Cable connections tight and secure?
- AC and DC circuit breakers are connected to CL-60?
- Unused terminals are sealed?
- Permanently affixed product rating and warning labels?

---

**NOTE:** Use a shielded twisted pair type or an Ethernet shielded twisted pair type.

---

**NOTE:** Do not leave tools and other objects on and inside the CL-60.

---

**NOTE:** Do not leave tools and other objects on and inside the CL-60.
**Commissioning**

1. Close (turn On) AC Breaker
2. Close (turn On) DC Disconnect
3. Turn ON DC switch

**NOTE:** If there is enough sunlight and the PV array initializes, then the display activates soon after.

4. Observe the LCD display for the splash screen, warning screen, and then the Countries screen (Country Code) appears.

**NOTE:** Each country code is pre-programmed with the country’s local protective parameters, in compliance with local utility grid requirements. If one of the highlighted country codes below is selected, an additional Grid Code screen appears. Otherwise, proceed to the next step.

5. Press to select
6. Press to confirm

**Country Code**

<table>
<thead>
<tr>
<th>Country Code</th>
<th>Country</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>Germany</td>
<td>German</td>
</tr>
<tr>
<td>FR</td>
<td>France</td>
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<tr>
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<td>Thailand</td>
<td>Thai</td>
</tr>
<tr>
<td>Other</td>
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</table>

**Grid Code**

<table>
<thead>
<tr>
<th>Grid Code</th>
<th>Language</th>
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<tbody>
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</tbody>
</table>

**NOTE:** If the Commissioning procedure succeeds after confirming the settings above, the CL-60 will enter into the startup process and will start displaying some activity on the main screen.

7. Press to set the local date and time
8. Press first to move the cursor to each setting press last to confirm date and time

9. Acquire start-up: Select “Pro-Stage” Selected Code: Single-stage

**NOTE:** For a full description of the Information Icons, LED Indicators, Inverter State, and other Main Screen objects.

**Information Icons**

- **ALERT LED Indicator**
- **RUN LED Indicator**

**G2 Firmware Upgrade Using CL EasyConfig Tool**

**NOTE:** See the Conext CL-60 EasyConfig Tool Owner’s Guide (document number 975-0773-01-01) for full instructions including illustrations.

**G3 Torque Values**

**TORQUE TYPES**

- **Stop**
- **Start**
- **Emergency Stop**
- **Run**

** immersion**

- **Hot**
- **Cold**

**Characteristics**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-3500 vs. 3500</td>
<td>Code stands for a combination of 3500, cold and 3500, cold without sealant.</td>
</tr>
<tr>
<td>M-1100</td>
<td>Code stands for a combination of 1100, cold and 1100, cold without sealant.</td>
</tr>
<tr>
<td>M-1200</td>
<td>Code stands for a combination of 1200, cold and 1200, cold without sealant.</td>
</tr>
<tr>
<td>A-750</td>
<td>Code stands for a combination of 750, cold and 750, cold without sealant.</td>
</tr>
</tbody>
</table>

**Lock Out Tag Out (LOTO)**

Lock-out refers to the practice of preventing de-energized circuits from being re-energized by putting locks on the disconnecting devices, holding them open. Tag-out refers to the practice of attaching a tag to the disconnected 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.

**CAUTION**

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