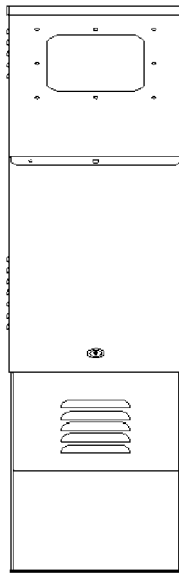




BroadBand CTFLE Series

Metered Power Supply Enclosure

User Manual



Chapter 1 General Information

The CTFLE Series Metered Power Supply Enclosure provides a power source for broadband cable operations. The enclosure is designed for mounting on the ground.

Safety

This Safety Guide contains important instructions that should be followed during installation and maintenance of the APC equipment and batteries. It is intended for APC customers who setup, install, relocate, or maintain APC equipment.

Changes and modifications to this unit not expressly approved by APC could void the warranty.

Failure to observe these warnings may result in serious injury, death or damage to the equipment.

Electrical Warnings

Do not work alone under hazardous conditions.

Do not handle any metallic connector before the power has been disconnected.

Servicing this equipment may require working with protective covers removed and utility power connected. Use extreme caution during these procedures.

High current through conductive materials could cause severe burns.

When grounding cannot be verified, disconnect the equipment from the utility power outlet before installing or connecting to other equipment. Reconnect the power cord only after all connections are made.

Check that the power cord(s), plug(s), and sockets are in good condition.

Replacement of fuses or other parts must be with identical types and ratings. Substitution of nonidentical parts may cause safety and fire hazards.

Lifting Warnings

These units are heavy. Use proper lifting techniques and equipment to avoid injury.

Specifications

Environmental Specifications

Operating Temperature	-40° F to 140° F (-40° C to 60° C)
Humidity	5% to 95% noncondensing within enclosure

Physical Specifications

Characteristic	Specification
Height X Width X Depth <i>CTFLEH150</i> <i>CTFLEH500</i>	36" x 9.5" x 11" (91cm x 24 cm x 28 cm) 50" x 9.5" x 11" (127 cm x 24 cm x 28 cm)
Weight <i>CTFLEH150</i> <i>CTFLEH500</i>	20 lbs (9 kg) 27 lbs (12 kg)

Electrical Specifications

Input Characteristic	Input Specification
Input Voltage	120 Vac
Input Current	15 A Max
Input Frequency	60 Hz ± 1 Hz
Output Characteristic	Output Specification
Output Voltage	Fixed 60 Vac
Output Current	60 Vac @ 15 A
Output Frequency	60 Hz
Output Regulation <i>Normal</i> <i>Standby</i>	± 3% ± 5%
Output Protection	20 A Circuit Breaker (optional)
Transfer Time	<20 milliseconds

Chapter 2 Installation and Maintenance

Only trained service personnel should install and maintain the power supply.

Prior to installation, utility line voltage must be routed to the enclosure. Local, state, federal and/or National Electric Code (NEC) regulations regarding location, permits and electrical wiring must be adhered to.

Do not operate the power supply where the temperature and humidity are outside the specified limits. See *Specifications* in this manual.

Unpacking

Inspect the unit upon receipt. Notify the carrier if there is damage.

The packaging is recyclable; save it for reuse or dispose of it properly.

Check the package contents. The package contains the enclosure and product documentation.

Models Supported

Model Number	Description
CTFLEH150	ENCL, CTFLE Series, 36", Metered
CTFLEH500	ENCL, CTFLE Series, 50", Metered

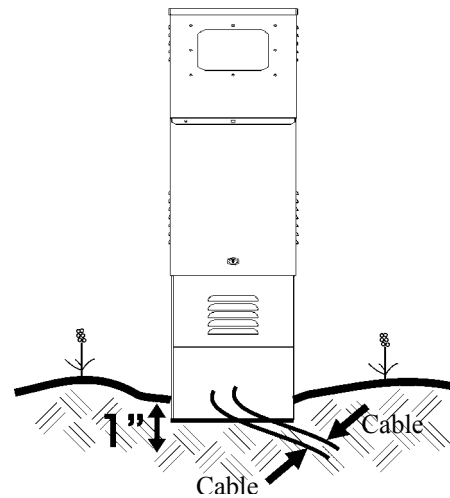
CTFLE Enclosure Installation

Ensure the utility circuit breaker is OFF.

1. Set the CTFLE near the installation site.
2. Remove the screws that secure the front panels and the top section on the enclosure.
3. Unlock the bottom panel. When unlocked this panel will drop off the CTFLE easily.
4. Lift the top section off the CTFLE.
5. Remove the CTFLE floor plate and use as a template to mark the locations for the mounting stakes.
6. Remove enough topsoil so that when installed, the enclosure will sit one inch below grade.

Note: Position the stakes so that the utility and coax cables will enter through the bottom of the enclosure.

4. Bolt the floor plate onto the stakes.
5. Set the enclosure on the floor plate and replace the bolts securing the CTFLE to the floor plate.
6. Install conduit over the utility and coax cables inside the CTFLE.



Meter Installation

1. Use the meter cabinet as a template and mark the mounting holes in the CTFLE.

Note: Mark the holes so that the meter indicator is visible through the window in the top panel.

2. Drill the holes.
3. Mount the meter in the CTFLE.

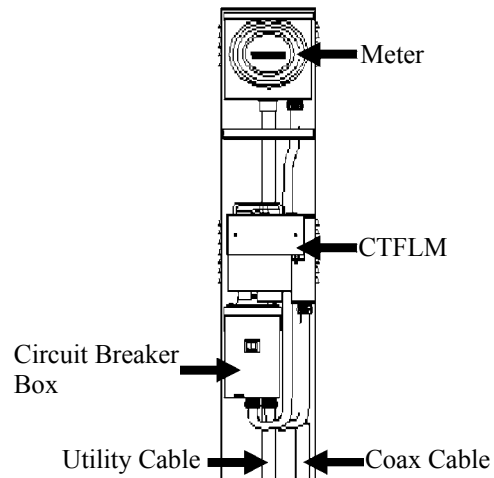
CTFLM 6009/6015 Installation

1. Insert the CTFLM into the enclosure so that the guide pins on the CTFLM and the CTFLE engage.
2. Push the CTFLM until a light “snap” is felt as the contacts lock into place.
3. Pull lightly on the CTFLM. If properly seated the CTFLM will not easily disengage.

Note: Connecting power to the CTFLM will be done in a later step.

Circuit Breaker Installation

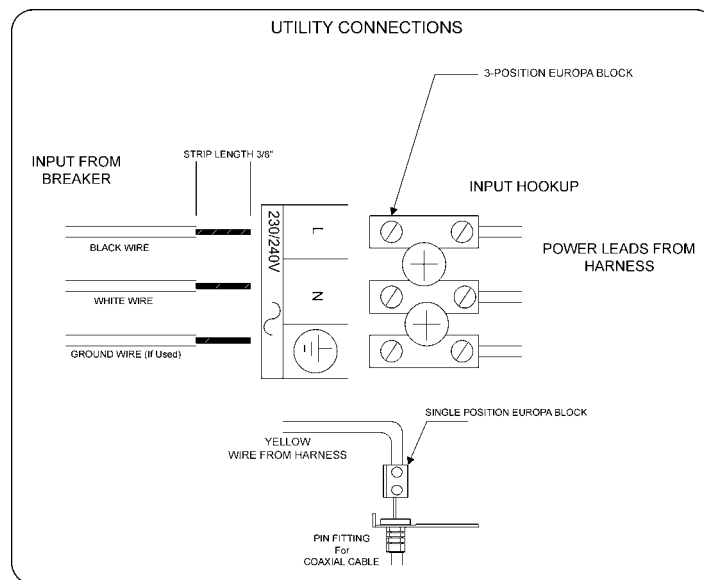
1. Use the circuit breaker box as a template and mark the mounting holes in the CTFLE.
2. Drill the holes.
3. Mount the meter in the CTFLE.



Wiring

Install an approved 20 A high-magnetic utility circuit breaker.

1. Refer to the diagram below for wiring details.
 - Connect the black and white wires from the incoming utility line.
 - Route the power feed coax to the bottom of the enclosure and attach to the coax cable adapter using a pin connector.
 - Attach the stinger lug to the pin connector center pin.
 - Attach suitable solid copper ground wire to the enclosure ground lug and ground in accordance with local codes.
 - Check for voltages between each connector pin and ground using a multimeter. Presence of voltage indicates an improper ground. If voltage is present ensure the ground contact is secure.
 - Reinstall the panels on the CTFLE.



Connect the CTFLM

Refer to the User Manual 990-5501 packaged with the CTFLM for connecting and operating instructions.

Chapter 3 Troubleshooting and Maintenance

Troubleshooting Power Supply Failure

Problem	Possible Cause	Solution
Power Supply Failure	No input voltage detected at connector J1, pins 1 and 2.	Replace the wiring harness
	Input voltage present at connector J1, pins 1 and 2.	Disconnect power from the supply
	No input voltage at the black and white wires input lines.	Replace the Euro block
	Input voltage present at the black and white wires input lines.	Replace the wiring harness.
Reconnect power to the CTFLM.		
Power Supply Failure	No voltage at the Coax stinger.	Replace the CTFLM module

Maintenance

Routine Maintenance Schedule

Operation	Interval
Visual Inspection	
External Surfaces	Semiannually
Connectors	Annually
Operator Controls	Annually
Wiring/Cable Assemblies	Annually
Cleaning	
External Surfaces	Annually
External Controls/Receptacles	Annually
Internal Receptacles/Circuit Boards	Annually
Performance Verification	
Refer to <i>Initial Startup</i> in the manual	Semiannually

Routine Maintenance Procedures

- **Visual Inspection**

- Check external surfaces, connectors, indicators and wiring/cable assemblies for signs of dirt, wear, and damage.

- **Cleaning**

- Brush dust from controls and receptacles using a small paintbrush.
- Wipe surfaces with clean, dry cheesecloth.
- Clean exterior surface with clean cheesecloth moistened with isopropyl alcohol or a general purpose detergent.

NOTE: Do not allow cleaning solution into the interior of the enclosure or into any connectors.

- Clean electrical contacts with approved spray-type contact cleaner.

Clean internal receptacles and circuit boards with hand controlled, dry-air jet (not more than 15 lb/in²), clean cheesecloth moistened with isopropyl alcohol. Wipe dry with clean, dry cheesecloth.

Replacement Procedures

- **Wiring Harness Replacement**

- Switch the utility circuit breaker OFF.
- Open the door(s) of the enclosure.
- Switch the CTFLM OFF.
- Remove the CTFLM.
- Disconnect the stinger lug from the pin connector, center pin.
- Disconnect the stinger lug from the pin connector center pin.
- Disconnect the utility wires and the ground wires.
- Remove the two quick disconnect connectors from the top of the indicator lamp socket.
- Remove the module connector plate by removing the Phillips head screws located on the front and back of the enclosure.
- Slide the module connector plate and harness to the left and out of the harness plate.
- Slide the replacement connector plate and harness onto the harness plate and replace the screws.
- Reattach the ground wires.
- Replace the quick disconnects on the indicator lamp socket.
- Reconnect the utility wires and the stinger lug.
- Close the front door of the enclosure.

- Reinstall the CTFLM. Ensure the module is seated properly.
- Switch the CTFLM and the utility circuit breakers ON.
- Complete Performance Verification. Refer to *Initial Startup* in this manual.
- Replace the top door of the enclosure.

- **Indicator Lamp Replacement**

Gently pry the lens off the indicator lamp using the tip of a screwdriver.

NOTE: Place a hand over the lens as it is loosened to ensure that the lens is not lost during the procedure.

- Remove the spent lamp and replace it with a new one.
- Snap the lens back into place.

Euro Block Replacement

Switch the utility circuit breaker OFF.

Remove the doors to the enclosure.

Remove the CTFLM.

Disconnect (and tag), the wiring harness and utility wires from the Euro block.

Remove the screws that secure the Euro block in the enclosure, and lift out the Euro block.

Insert the new Euro block and secure it in the enclosure.

Reconnect the wiring harness to the Euro block.

Reinstall the CTFLM.

Replace the doors on the enclosure.

Switch the utility circuit breaker ON.

Complete Performance Verification. Refer to *Initial Startup* in this manual.

Chapter 4 Service, Contact and Warranty Information

Service

APC makes every effort to ensure parts and equipment arrive in working condition. Occasionally, it may be necessary to return parts or equipment that are not in working condition.

If the unit requires service do not return it to the dealer. Instead, follow these steps:

1. Contact APC Customer Service through the APC web site, www.apc.com/support.
 - Note the product model number, the serial number, and the date purchased. If you call APC Customer Service, a technician will ask you to describe the problem and try to solve it over the phone. If this is not possible the technician will issue a Returned Material Authorization Number (RMA#).
 - If the product is under warranty, repairs are free. If not, there is a repair charge.
 - Procedures for servicing or returning products may vary internationally. Refer to the APC web site. Select the appropriate country from the country selection field. Select Support from the tab at the top of the web page.
2. Pack the product in its original packaging.
 - Pack the unit properly to avoid damage in transit. Never use Styrofoam beads for packaging. Damage sustained in transit is not covered under warranty.
3. Mark the RMA# on the outside of the package.
4. Return the unit by insured, prepaid carrier to the address given to you by Customer Service.

How to Contact APC

In the USA ...	Outside the USA ...
Refer to the APC web site, www.apc.com/support .	Refer to the APC web site, www.apc.com . Select the appropriate country from the country selection field. Select <i>Support</i> from the tab at the top of the web page.

Limited Warranty

American Power Conversion (APC) warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

EXCEPT AS PROVIDED HEREIN, AMERICAN POWER CONVERSION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL APC BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise.

Regulatory Approval



2003
Date of product release on

CE Declaration of Conformity

We, the undersigned, declare under our sole responsibility that the equipment specified below conforms to the following standards and directives:	
Standards to Which Conformity Declared:	EN 6100-3-2, 3-3, 4-2, 4-3, 4-4, 4-5, 4-6, 4-11, EN 60950, EN 55022, IEC 60950
Application of Council Directives:	73/23/EEC, 89/336/EEC
Type of Equipment:	Power Supply
Model Numbers:	CTFLE
Manufacturer's Name and Address:	American Power Conversion 132 Fairgrounds Road West Kingston, Rhode Island, 02892, USA -or- American Power Conversion 1600 Division Highway West Warwick, RI 02893, USA -or- American Power Conversion (A. P. C.) b. v. Ballybritt Business Park Galway, Ireland
Importer's Name and Address:	American Power Conversion (A. P. C.) b. v. Ballybritt Business Park Galway, Ireland
Place: N. Billerica, MA U.S.A.	Richard J. Everett, Sr. Regulatory Compliance Engineer <i>Richard J. Everett</i> 5 Jan 02
Place: Galway, Ireland	Ray S. Ballard, Managing Director, Europe <i>Ray S. Ballard</i> 5 Jan 02

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