

## Total Access® 1500 AC Power Supply and Battery Charger Installation and Maintenance

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## 1. GENERAL

This practice provides installation and maintenance procedures for the ADTRAN Total Access 1500 Power Supply/Battery Charger. **Figure 1** is an illustration of the front and back panels of the PS/BC.

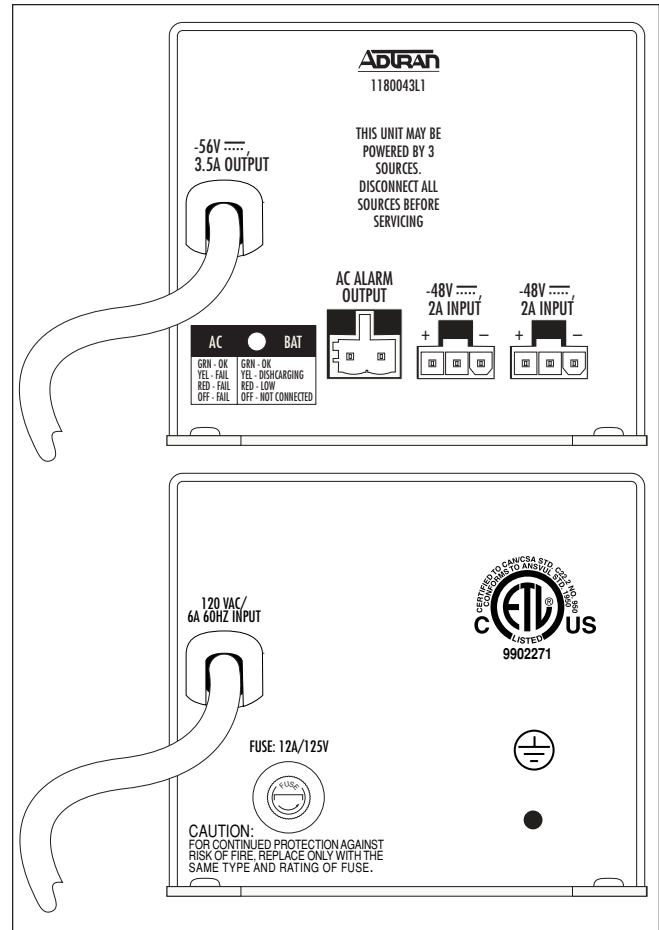
### Revision History

This is the initial release of this document. Future revisions will be explained in this section.

### Features

The Total Access 1500 PS/BC, P/N 1180043L1, features include the following:

- AC power for a fully loaded Total Access 1500 bank (96 FXS) while fully charging the Battery Backup System within 48 hours.
- All mounting hardware included.
- Built-in Fuse.
- Multi-feature status LED.
- Modular connections.
- Positive ground.
- Uninterrupted power output if battery backup connected.
- FCC and UL 1950 compliant.



**Figure 1. Total Access PS/BC, Front and Back**

## 2. DESCRIPTION

The AC Power Supply/Battery Charger is part of the Total Access 1500 AC Power Supply/Battery Backup System (APS/BBS). The AC Power Supply/Battery Charger performs AC to DC conversion, and when used with the Battery Backup System, provides eight hours of backup power for a fully loaded Total Access 1500 bank (96 FXS circuits) with 50 percent of the circuits off hook. The PS/BC receives 115 Vac from a standard wall socket and converts this to -56 Vdc which is provided to the Total Access 1500 chassis. The unit is designed to work in conjunction with two ADTRAN battery backup systems, P/N 1175044L1,

and two 23-inch rack mounting brackets P/N 1175048L2. This provides a complete rack mounted battery backup solution for the Total Access 1500. In this arrangement, the PS/BC maintains the batteries at a peak charge of -56 V. If AC power is lost, the unit automatically transfers power from the battery packs without interrupting service. When AC power returns, the unit switches back to AC power and recharges the batteries to peak charge.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2), this device must accept any interference that may cause undesired operation.

Changes or modifications not expressly approved by ADTRAN could void the user’s authority to operate this equipment.

**Alarm and Battery Disconnect Relays**

Two relays support Power Supply operation:

- Alarm relay
- Battery disconnect relay

**Alarm Relay And Alarm Signal**

The Alarm relay is provided for customer use. In normal operation the contact alarm relay is open. If an AC power failure occurs and the unit defaults to the battery backup, the relay will close. The alarm relay condition can be monitored externally using the 2-pin connection labeled “AC Alarm Output” on the housing.

**Battery Disconnect Relay**

The battery disconnect relay disconnects the battery pack from the system if the battery voltage falls below -40 Vdc. This feature prevents damage to the batteries. The batteries will be recharged when normal AC voltage is restored and the relay will close when the battery voltage exceeds -40 V.

Certain alarm features on the power supply are still powered by the battery after the disconnect relay is opened. These features slowly drain the battery. If it is known that AC power will be unavailable for an extended period (greater than a week), ADTRAN recommends that the battery be disconnected from the power supply to prevent over-discharge.

The batteries used in ADTRAN’s battery backup system are designed to withstand occasional over-discharge. While it is not recommended, the batteries

can recover their full capacity under normal charging conditions, even when they have been subjected to extreme over-discharge.

**Fuse**

A 12-amp fuse on the back panel protects the unit from over current. The fuse isolates the AC input from the power supply in the event of a fault. The fuse is replaced by twisting the black cap to the left and pulling the fuse out. After the new fuse is inserted, the cap is pushed back in and turned to the right.

**Status LED**

A single multi-feature LED on the front panel provides AC operation or battery operation power status. See **Table 1** for indication descriptions.

**Table 1. LED Indication**

AC Power Operation		Battery Operation	
Green	OK	Green	OK (charging)
Yellow	Power Fail	Yellow	Discharging
Red	Power Fail	Red	Low (<-40 V)
Off	Power Fail	Off	Disconnected

**3. INSTALLATION**

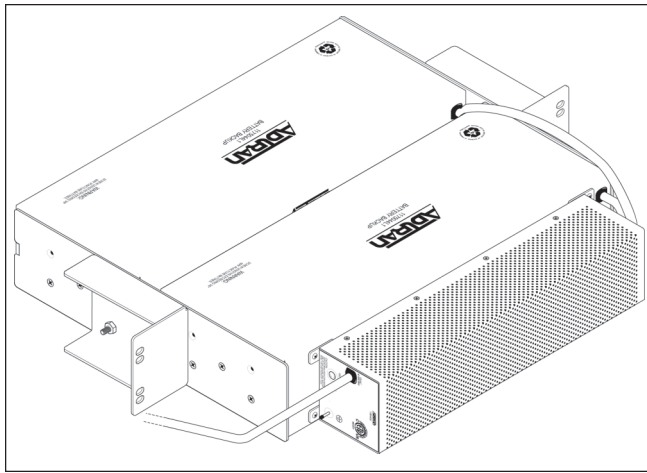


After unpacking the unit, inspect it for damage. If damage is noted, file a claim with the carrier then notify ADTRAN Customer Service.

The power supply is designed to mount to the side of the Total Access Battery Backup System P/N 1175044L1. Each power supply is designed to maintain two Battery Backup Systems. The rack mounting brackets P/N 1175048L2 are designed to hold two Battery Backup Systems and the Total Access 1500 AC Power Supply. See **Figure 2** for the mounting configuration.

**Grounding**

The ground connector on the PS/BC provides an additional ground reference (the third prong of the AC plug is also grounded) and may be connected to “ground bus” or “ground wire” in a customer equipment room. 18 AWG or larger ground wire is recommended.



**Figure 2. AC Power Supply/Battery Charger Layout**

**NOTE**

The AC outlet shall be installed near the equipment and shall be easily accessible.

**4. SPECIFICATIONS**

See **Table 2** for specifications.

**5. MAINTENANCE**

The AC Power Supply/Battery Charger does not require routine maintenance for normal operation.

ADTRAN does not recommend that repairs be attempted in the field. Repair services are obtained by returning the defective unit to ADTRAN Customer Service.

**6. WARRANTY AND CUSTOMER SERVICE**

ADTRAN will replace or repair this product within ten (10) years from the date of shipment if it does not meet its published specifications or fails while in service. (See *ADTRAN U.S. and Canada Carrier Networks Equipment Warranty*, document 60000087-10).

Contact Customer And Product Service (CAPS) prior to returning equipment to ADTRAN.

For service, CAPS requests, or further information, contact one of the following numbers:

**ADTRAN Sales**

Pricing/Availability  
(800) 827-0807

**ADTRAN Technical Support**

Pre-sales Applications/Post-sales Technical Assistance  
(800) 726-8663

Standard hours: Monday-Friday, 7 a.m. - 7 p.m. CST  
Emergency hours: 7 days/week, 24 hours/day

**ADTRAN Repair/CAPS**

Return for Repair/Upgrade  
(256) 963-8722

**Repair and Return Address**

ADTRAN, Inc.  
CAPS Department  
901 Explorer Boulevard  
Huntsville, Alabama 35806-2807

**Table 2. Specifications**

Electrical	
AC Input	115 Volts nominal
Range	88 to 132 Vac
DC Output	-56 Volts, 196 Watts Steady state peak
Battery Charging	48 hr maximum
Battery Discharge	Up to 8 hours
Physical	
Dimensions	3 1/2 in. W, 3 in. H, 15 3/8 in. L (including mounting tabs)
Weight	5 lb. 12 oz.
Environmental	
Operating Temperature	0° C to 50° C (32° F to 122° F)
Storage Temperature	-40° C to 85° C (-40° F to 185° F)
Relative Humidity	95 percent noncondensing @ 50° C

