

8550-80 24 to 48V DC Power Supply

Compliant with UL Standard 60950, Second Edition*

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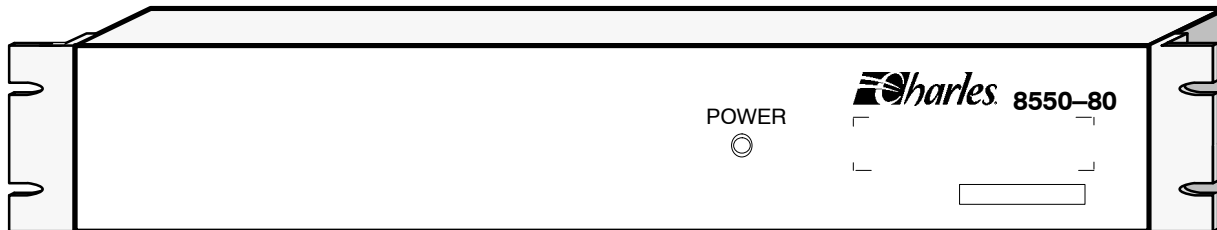


Figure 1. 8550-80 Power Supply

***CAUTION**

Field repairs/modifications may void compliance with UL Standard 60950 — 2nd Edition. Compliance with UL Standard 60950 — Second Edition is restricted to inside plant wiring.

1. GENERAL

1.1 Document Purpose

This document provides general, installation and testing information for the 8550-80 (Issue 1) 48Vdc Power Supply. The 8550-80 is shown in Figure 1.

1.2 Equipment Description

The 8550-80 power supply is a DC to DC converter that takes an 18 to 36VDC (10A max) input voltage and converts it to a filtered, regulated 48Vdc output. The maximum current output of the 8550-80 is 2.5 amps. This unit is UL recognized.

1.3 Equipment Mounting

Mounts in a 19-inch or 23-inch relay rack and occupies one rack unit (1.75 inches of rack space) or can be mounted to a wall or to a 360–80 ICB shelf.

1.4 Equipment Features

Features of the 8550-80 power supply includes:

- Regulated, floating 48Vdc output from 18 to 36 Vdc power source
- Either output polarity can be grounded
- Self-protecting against overload—a short circuit across the output terminals will not damage the unit
- Direct mounting in a 19-inch relay rack; brackets can also be used for 23-inch relay rack mounting or to a wall or 360–80 ICB shelf
- Green Power LED for monitoring output voltage

2. INSPECTION

2.1 Inspect for Damages

Inspect the equipment thoroughly upon delivery. If the equipment has been damaged in transit, immediately report the extent of damage to the transportation company.

2.2 Equipment Identification

Charles Industries' equipment is identified by a model and issue number imprinted on the front panel or located elsewhere on the equipment. Each time a major engineering design change is made on the equipment, the issue number is advanced by 1 and imprinted on subsequent units manufactured. Therefore, be sure to include both the model number and its issue number when making inquiries about the equipment.

3. APPLICATION GUIDELINES

With an 18 to 36V input, the power supply can be used in any 48Vdc application that does not exceed its current limitations (2.5A). It is intended to be installed in a protected environment.

The output noise of the unit is low enough for the unit to be used as a talk battery. Output is floating and either the negative or the positive terminal can be connected to ground as required.

4. MOUNTING

When received from the factory, the 8550-80 includes side mounting brackets for flush-mounting in a 19-inch relay rack. Each power supply requires approximately 1.75-inches of vertical rack space (1 rack unit). Rotating brackets permit flush-mounting in a 23-inch relay rack.

Included with the power supply are two mounting kits. The “Power Supply to 360-80” mounting kit is used to attach the power supply to the top of the 360-80 shelf in wall or desk mount installations of the 360-80 channel

bank. The screws provided in the mounting kit must be used to mount the brackets to the power supply (see Figure 2).

WARNING

The screws for the power supply and the screws for the 360-80 shelf may have different tread types. Do not mix the screws from the kit with the screws for the power supply side mounting brackets. Mixing the screws may damage the mounting holes and may cause a hazardous condition.

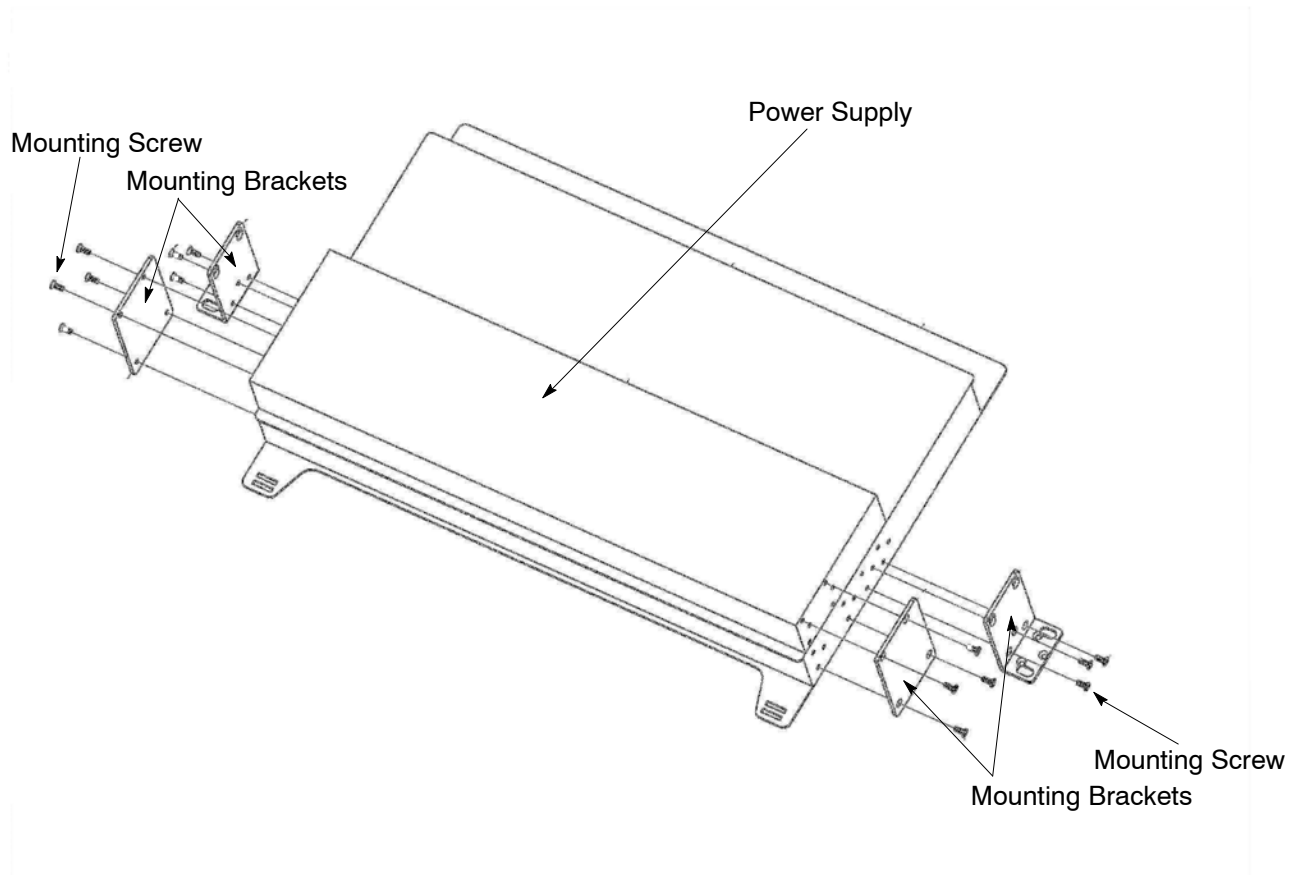


Figure 2. Power Supply to 360-80 ICB Mounting Kit

The wall mounting bracket kit is used to allow the power supply to be mounted to a wall.

4.1 Wall Mounting

Vertical installation (walls, specially build structures, etc.) require strict adherence to the mounting instructions to assure trouble free operation and to protect the safety of personnel

The power supply should be mounted at a height that will permit convenient access for performing maintenance. It should be mounted with one bracket above the other. The front of the unit can face either to the right or the left. This will provide front panel access on one side of the unit and rear panel access on the other side. If the unit cannot be mounted to a wall stud, a plywood mounting board is required.

CAUTION

If using a plywood mounting board, there should be at least two vertical support studs behind the board.

Step	Action
1.	Remove and rotate the bracket 90 degrees so that the bracket is toward the bottom of the unit (see Figure 3).
2.	Mount the bracket to the unit.
3.	Repeat steps 1 and 2 for the bracket on other side of the unit.
4.	If mounting directly to a wall, locate a stud and mark a spot for the top bracket over the stud.
5.	Drill a pilot hole for the fastener at the marked spot (use whatever fasteners are appropriate per local practice).
6.	Mount the unit using one of the fasteners through one of the brackets.
7.	Hold a level across the top of the unit and then level.
8.	Mark the mounting surface for all the other holes to be used to mount both brackets.
9.	Drill pilot holes for the remaining fasteners at the marked spots.
10.	Install the remaining fasteners through the mounting brackets.
11.	Tighten the fasteners.

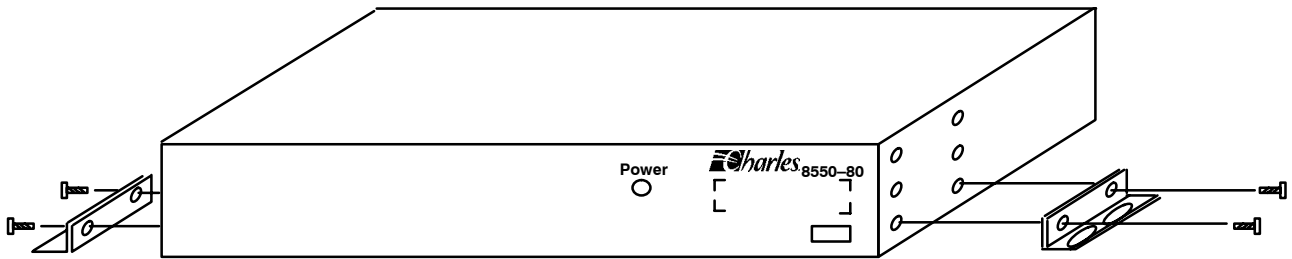


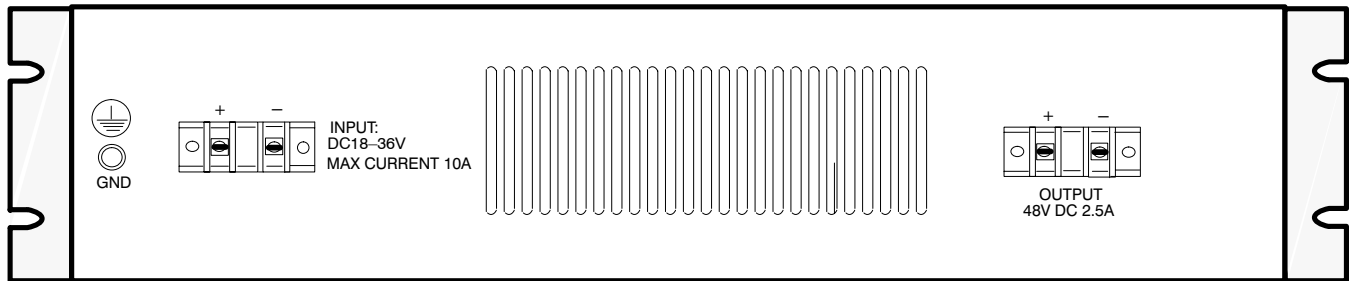
Figure 3. Power Supply with Wall Mounting Bracket

5. INSTALLER CONNECTIONS

Both terminal blocks have a protective, insulating covers, fastened with screws. Remove the screws to remove the covers.

Connect an 18–36VDC power source with the positive lead going to the input terminal block marked with a “+” and the negative lead going to the input terminal block marked with a “-” (refer to Figure 4).

Connect the customer’s positive load lead to the output terminal marked with a “+” and the customer’s negative load lead to the output terminal marked with a “-” (refer to Figure 4). These terminals are floating and either may be connected to ground as required. For protection against accidental shorts, replace the insulating cover upon completion of the power supply installation.



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Figure 4. Location of Terminal Block on the 8550-80

6. TESTING

Use the following steps to test the power supply.

Step	Action
1.	Connect the positive lead of a multimeter to the output terminal marked “+” and the negative lead to terminal marked “-” on the terminal block. The multimeter should read 48V +/- 1.5V. If the test condition is satisfied, no further testing is required. However, if no voltage indication is obtained, proceed with Step 2. If a low voltage indication is obtained, proceed with Step 3
2.	Measure the input voltage of the source. The multimeter should indicate 18 to 36V. If this condition is satisfied, proceed with Step 3 Otherwise, check the DC source feeding the power supply.
3.	With the multimeter connected between output terminals “+” and “-” on the terminal block, disconnect the load from the power supply. If removing the load restores the operating voltage to normal, the trouble is caused by an overload or short circuit in the external circuit. If removing the load does not cause the output voltage to return to normal, replace the power supply with a similar unit known to be in good operating condition and retest.

7. TECHNICAL ASSISTANCE

If technical assistance is required, contact Charles Industries’ Technical Services Center at:

847-806-8500

847-806-8556 (FAX)

800-607-8500

techserv@charlesindustries.com (e-mail)

8. WARRANTY & CUSTOMER SERVICE

8.1 Warranty

Charles Industries, Ltd. offers a 2-year warranty on this product. Contact your local Sales Representative at the address or telephone numbers below for warranty details. The warranty provisions are subject to change without notice. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract.

Charles Industries, Ltd.

5600 Apollo Drive

Rolling Meadows, Illinois 60008-4049

U.S.A.

847-806-6300 (Main Office)

847-806-6231 (FAX)

8.2 Field Repairs (In-Warranty Units)

Field repairs involving the replacement of components within a unit are not recommended and may void the warranty and compatibility with any applicable regulatory or agency requirements. If a unit needs repair, contact Charles Industries, Ltd. for replacement or repair instructions, or follow the *Repair Service Procedure* below.

8.3 Advanced Replacement Service (In-Warranty Units)

Charles Industries, Ltd. offers an “advanced replacement” service if a replacement unit is required as soon as possible. With this service, the unit will be shipped in the fastest manner consistent with the urgency of the situation. In most cases, there are no charges for in-warranty repairs, except for the transportation charges of the unit and for a testing and handling charge for units returned with no trouble found. Upon receipt of the advanced replacement unit, return the out-of-service unit in the carton in which the replacement was shipped, using the pre-addressed shipping label provided. Call your customer service representative at the telephone number above for more details.

8.4 Standard Repair and Replacement Service (Both In-Warranty and Out-Of-Warranty Units)

Charles Industries, Ltd. offers a standard repair or exchange service for units either in- or out-of-warranty. With this service, units may be shipped to Charles Industries for either repair and quality testing or exchanged for a replacement unit, as determined by Charles Industries. Follow the *Repair Service Procedure* below to return units and to secure a repair or replacement. A handling charge applies for equipment returned with no trouble found. To obtain more details of this service and a schedule of prices, contact the CI Service Center at 217-932-5292 (FAX 217-932-2943).

Repair Service Procedure

1. Prepare, complete, and enclose a purchase order in the box with the equipment to be returned.
2. Include the following information:
 - Company name and address
 - Contact name and phone number
 - Inventory of equipment being shipped
 - Particulars as to the nature of the failure
 - Return shipping address
3. Ship the equipment, purchase order, and above-listed information, transportation prepaid, to the service center address shown below.

CI Service Center
503 N.E. 15th St., P.O. Box 339
Casey, IL 62420-2054
U.S.A.
4. Most repaired or replaced units will be returned within 30 or 45 days, depending on the product type and availability of repair parts. Repaired units are warranted for either 90 days from the date of repair or for the remaining unexpired portion of the original warranty, whichever is longer.

9. SPECIFICATIONS

9.1 Electrical

The electrical characteristics of the 8551-80 Power Supply is as follows:

- (a) INPUT VOLTAGE: 18 – 36Vdc.
- (b) INPUT CURRENT: 10.0A maximum.
- (c) OUTPUT VOLTAGE: 48 +/- 1.5 Vdc.
- (d) OUTPUT CURRENT: 2.5A maximum.
- (e) OUTPUT POLARITY: Floating; either positive or negative terminal may be grounded.
- (f) RIPPLE: Less than 0.5V peak-to-peak.
- (g) NOISE: Less than 0.5V peak to peak.
- (h) OVERLOAD PROTECTION: Current foldback, protects the power supply from damage if the output is shorted.

9.2 Physical

The physical characteristics of the 8550-80 Power Supply are shown in Table 1:

Table 1. Physical Specifications

Feature	U.S.	Metric
Height	1.73 inches	4.4 centimeters
Width (with flanges)	19 or 23 inches	48.26 or 58.42 centimeters
Depth	4.33 inches	24.77 centimeters
Weight	3.9 pounds	1.7 kilograms
Temperature	14 to 122° F	-10 to 50° C
Humidity	To 95% (no condensation)	

