

55310A, 55320A, 55322A RACK MOUNT SHELF INSTALLATION GUIDE

This guide describes how to install the HP 55310A, HP 55320A, and HP 55322A rack mount shelf.

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Warning Symbols That May Be Used In This Book



Instruction manual symbol; the product will be marked with this symbol when it is necessary for the user to refer to the instruction manual.



Indicates hazardous voltages.



Indicates earth (ground) terminal.



or



Indicates terminal is connected to chassis when such connection is not apparent.



Indicates Alternating current.



Indicates Direct current.

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Contents

What's In This Guide

This guide contains procedures to help you install the 55310A, 55320A, and 55322A rack mount shelf.

This guide contains the following:

Table of Contents

Chapter 1, “**Introduction**,” (this chapter) introduces you to the Installation Guide.

Chapter 2, “**Installation**,” provides installation procedures.

Accessories Supplied

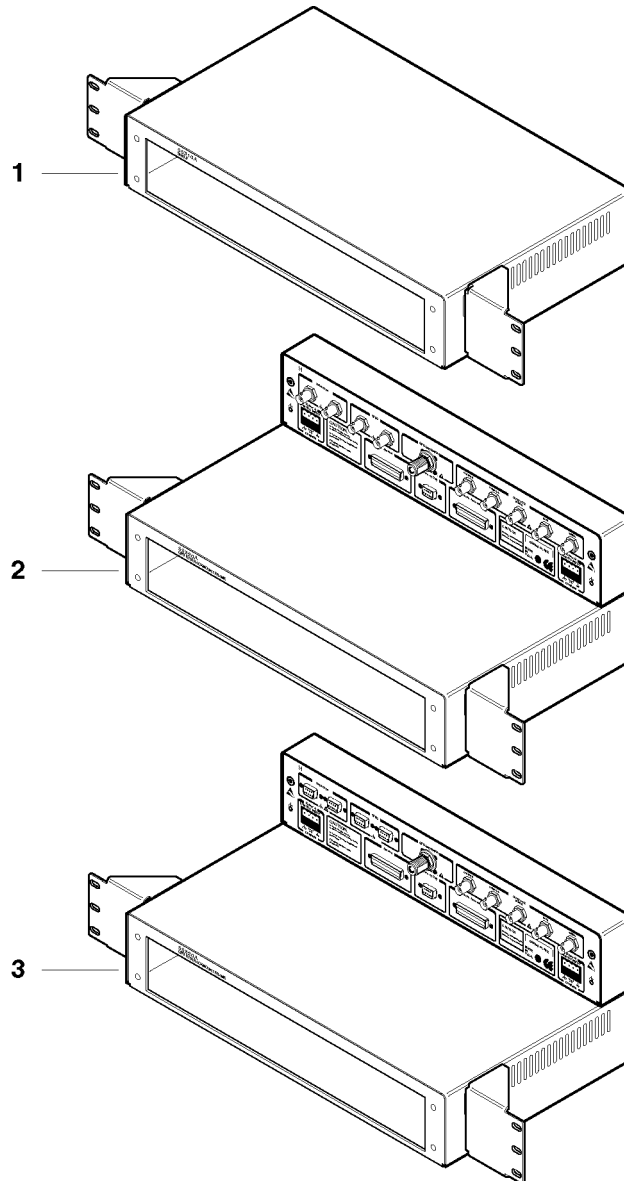
- 19-inch/21-inch Rack Mount Flanges (P/N 55300-00006)
- 23-inch Rack Mount Flanges (P/N 55300-00005)
- dc power connector plugs (0360-2599 or 1251-5272, see page 2-12 in this guide for explanation)

Chapter Contents

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- 55310A, 55320A, 55322A Rack Mount Shelves at a Glance page 2-4
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 - Connecting to the 55310A Wire-Wrap Connectors page 2-21
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55310A, 55320A, 55322A Rack Mount Shelves at a Glance

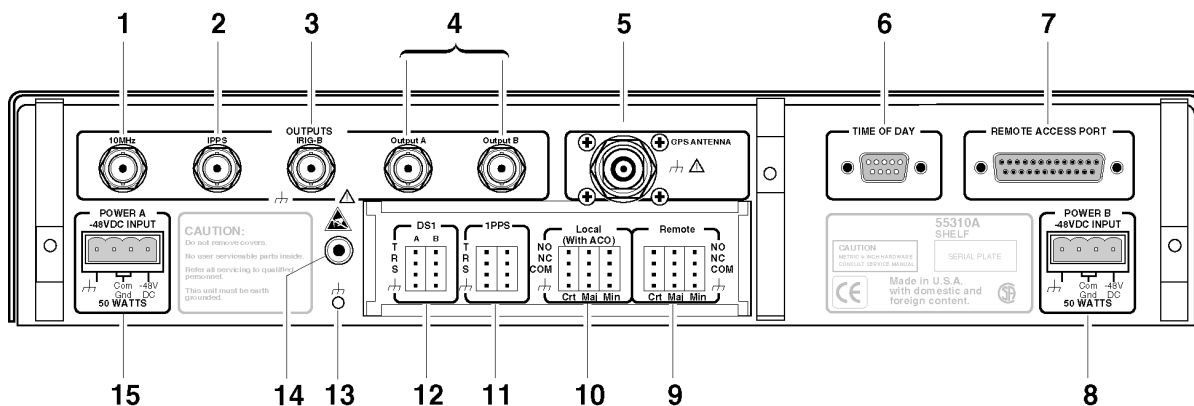


1 55310A GPS NEBS/EIA Rack Mount shelf

2 55320A GPS ETSI Rack Mount shelf

3 55322A GPS ETSI Rack Mount shelf

55300A/55310A Rear Panel at a Glance

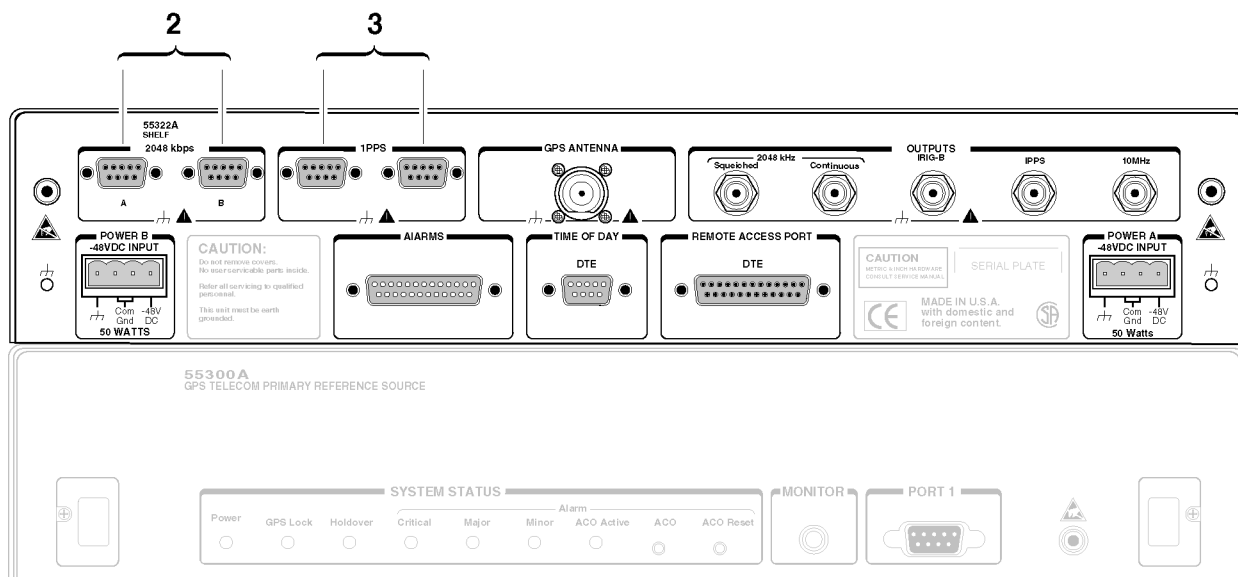
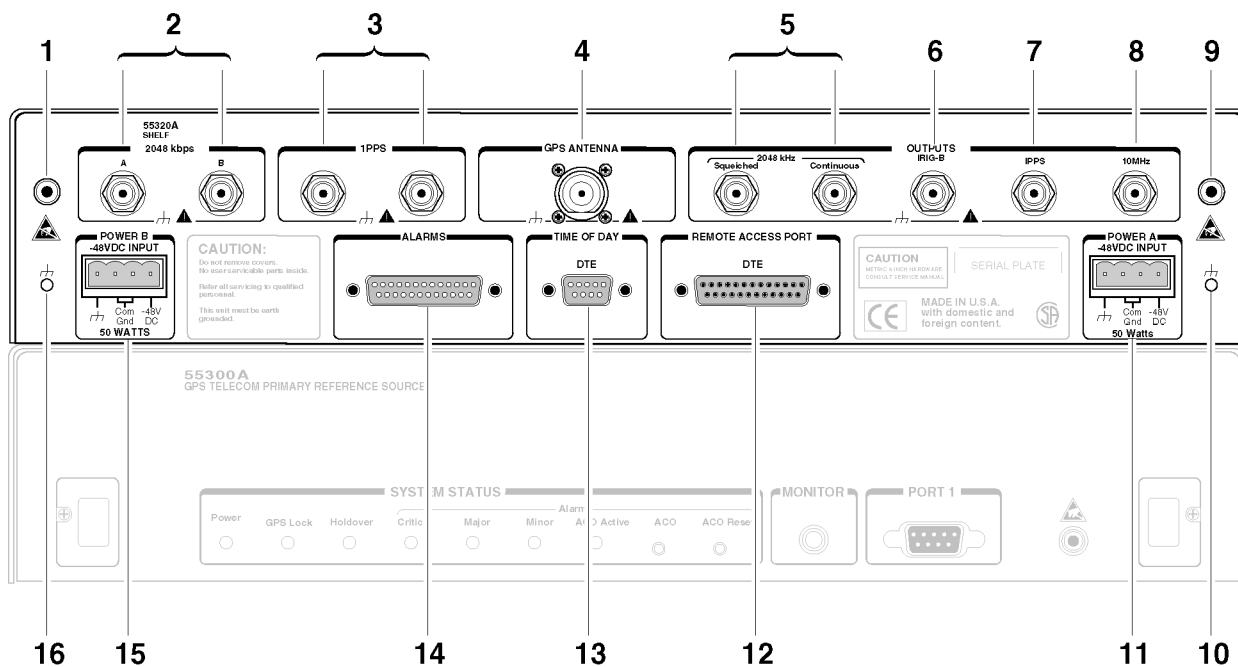


Chapter 2 Installation

55300A/55310A Rear Panel at a Glance

- 1 10MHZ** BNC connector outputs a 10 MHz signal for user-specific applications.
- 2 1 PPS** BNC connector outputs a continuous 1 Pulse Per Second signal. This 1 PPS is a 50Ω TTL level signal.
- 3 IRIG-B** BNC connector outputs formatted time-code signals, after the unit locks to GPS. (This signal is used for general purpose time distribution and magnetic tape annotation applications requiring the time of year.)
- 4 Output A and B** telecom outputs that meet all of the specifications (i.e., impedance, frequencies, etc.) required for a T1 or US (1544 kHz) telecommunications signal. These are identical
- 5** N-type (female) **GPS ANTENNA** input connector for connecting the GPS antenna to the unit.
- 6 TIME OF DAY** RS-232 serial interface port's communication language is SCPI. The connector is a DTE configuration DE-9P (male). Time of Day data and a 1 PPS (accurate to UTC) signal are provided on this port for the network time protocol driver.
- 7 REMOTE ACCESS PORT** RS-232, DB-25S (female), DTE configuration serial interface port for remote control, monitoring, and retrieving of the unit's memory data. The communication language is TL1.
- 8 POWER B –48VDC INPUT** for connecting dc power to the unit; part of the two redundant dc power inputs.
- 9 Remote** wire-wrap connectors provide three independent alarm contacts or relays for the critical, major, and minor alarms.
- 10 Local (with ACO)** wire-wrap connectors provide three independent alarm contacts or relays for the critical, major, and minor alarms. These local external audible alarms can be cutoff or can be caused to not operate.
- 11 1 PPS** wire-wrap connectors provide two sets of outputs from one 1 PPS signal. This 1 PPS signal is a RS-422 differential pair signal. The two sets of wire-wrap outputs allow operators the flexibility of bridging to another line or changing the distribution system without downtime. Each connector has a T (tip), R (ring), S (sleeve), and chassis ground (optional use) connection. The T, R, and S wire-wrap pins allow shielded, twisted pair connections to a standard three-circuit
- 12 DS1** (Digital Signal Level 1 — 1544 kbps) wire-wrap connector outputs is a T1 or US telecommunications signal. The two sets of wire-wrap outputs from one DS1 output allow operators the flexibility of bridging to another line or changing the distribution system without downtime. Each connector has a T (tip), R (ring), S (sleeve), and chassis ground (optional use) connection. The T, R, and S wire-wrap pins allow shielded, twisted pair connections to a standard three-circuit phone plug. The 1544 kbps signal is across the T (+) and R (return) pins.
- 13** Frame-ground stud for chassis-ground connection.
- 14** Banana jack for grounding an Electrostatic Discharge (ESD) wrist strap .
- 15 POWER A –48VDC INPUT** for connecting dc power to the unit; part of the two redundant dc power inputs.

55300A/55320A and 55300A/55322A Top Front Panels at a Glance



- 1** Banana jack for grounding an Electrostatic Discharge (ESD) wrist strap .
- 2** **2048 kbps** telecom A and B outputs meet the specifications required for a non-US (2048 kbps) telecommunications signal. These formatted outputs are squelched (not present) until the unit is locked to GPS. These connectors are BNCs on the 55320A, or DE-9S subminiature D connectors on the 55322A.
- 3** **1 PPS** RS-422 differential pair output signals. One signal is a positive 1 PPS signal, and the other is a negative 1 PPS signal. The signal from the left connector is the positive 1 PPS, and the other is the negative 1 PPS. These connectors are BNCs on the 55320A, or DE-9S subminiature D connectors on the 55322A.
- 4** N-type (female) **GPS ANTENNA** input connector for connecting the GPS antenna to the unit.
- 5** Two identical BNC **2048 kHz** output signals, except that the Squelched signal is present only after the unit is locked to GPS, whereas the Continuous is always present.
- 6** **IRIG-B** BNC outputs formatted time-code signals, after the unit is locked to GPS. (This signal is used for general purpose time distribution and magnetic tape annotation applications requiring the time of year.)
- 7** **1 PPS** BNC connector outputs a continuous 1 Pulse Per Second signal. This 1 PPS is a 50Ω TTL level signal.
- 8** **10 MHZ** BNC outputs a 10 MHz signal for user-specified applications.
- 9** Banana jack for grounding an Electrostatic Discharge (ESD) wrist strap.
- 10** Frame-ground stud for chassis-ground connection.
- 11** **POWER A** –48VDC INPUT for connecting dc power to unit.
- 12** **REMOTE ACCESS PORT** RS-232, DB-25S (female), DTE configuration serial interface port for remote control, monitoring, and retrieving of the unit’s memory data. The communication language is TL1.
- 13** **TIME OF DAY** serial interface port’s communication language is SCPI. The connector is a DTE configuration DE-9P (male). Time of Day data and a 1 PPS (accurate to UTC) signal are provided on this port for the network time protocol driver.
- 14** **ALARMS** DB-25 P (male) connector provides three independent alarm relays for the critical, major, and minor alarms for all office alarms (both visual and audible). These local external audible alarms can be cutoff or can be caused to not operate.
- 15** **POWER B** –48VDC INPUT for connecting backup or redundant dc power to the unit.
- 16** Frame-ground stud for chassis-ground connection.

Installing the Rack Mount Shelf

There are three types of rack mount shelves: 55310A GPS NEBS/EIA, 55320A GPS ETSI, and 55322A GPS ETSI (see page 2-3).

To Attach the Mounting Flanges to the Rack Mount Shelf

Use the following procedure to attach the mounting flanges to the 55310A/55320A/55322A rack mount shelf as shown in figures 2-1 through 2-3.

Figure 2-1 illustrates flange attachment for 19-inch racks. Figure 2-2 illustrates flange attachment for 21-inch racks. Figure 2-3 illustrates flange attachment for 23-inch rack

NOTE

The same pair of flanges are used for the 19-inch and 21-inch racks. The flanges are simply rotated to become 19-inch or 21-inch flanges as shown in figures 2-1 and 2-2.

- 1 Place the rack mount shelf on a work surface with the front of the shelf facing you. Select the mounting flanges you will use.
- 2 Position the mounting flange with its mounting holes so it aligns with its mounting holes in the side of the shelf. There are four positions or offsets to installed the flanges as shown in figures 2-1 through 2-3.
- 3 Attach the flanges to the shelf with the supplied hardware.
- 4 Repeat steps 1 through 3 for the flange attached to the other side of the rack mount shelf..

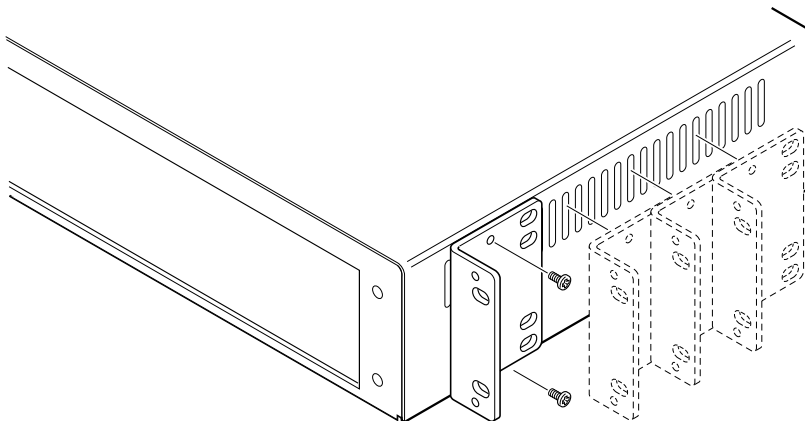


Figure 2-1. Attaching Mounting Flanges for the 19-inch Equipment Racks

Installing the Rack Mount Shelf

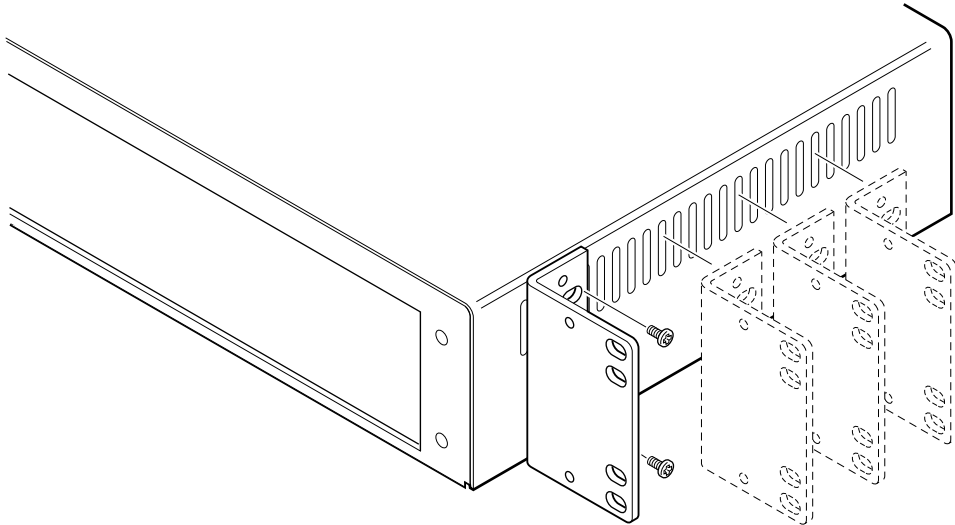


Figure 2-2. Attaching Mounting Flanges for the 21-inch Equipment Racks

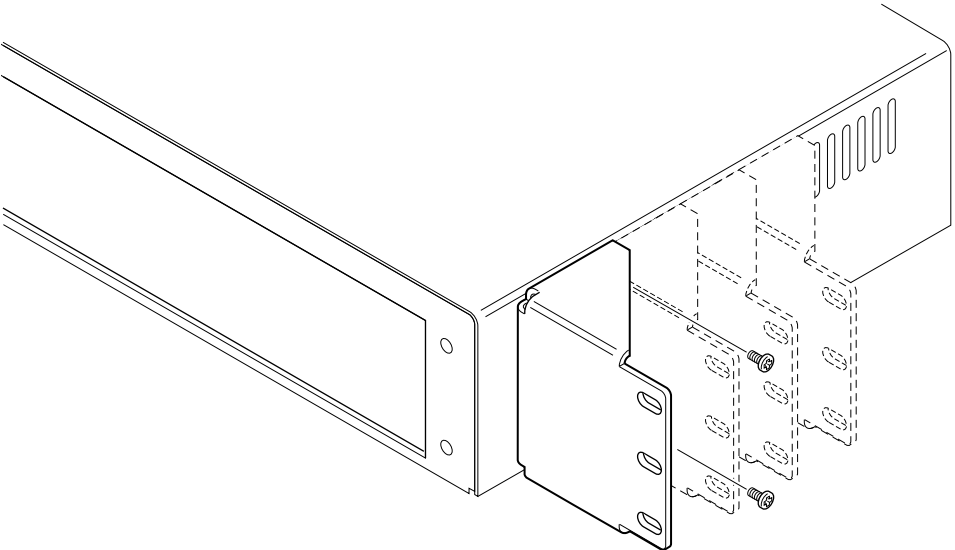


Figure 2-3. Attaching Mounting Flanges for the 23-inch Equipment Racks

Installing the Rack Mount Shelf

To Install the Rack Mount Shelf in the Equipment Rack

- 1 Place the rack mount shelf in the position it will occupy in the equipment rack as shown in Figure 2-4.
- 2 Attach the shelf to the equipment rack with the hardware supplied with the mounting flanges.

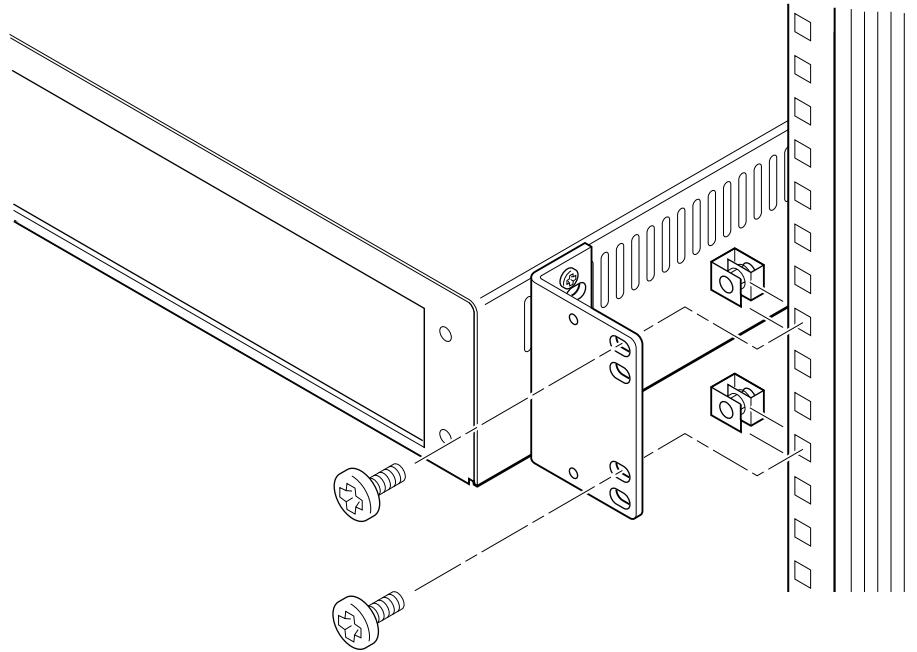


Figure 2-4. Installing Rack Mount Shelf in the Equipment Rack

Installing the Antenna System

CABLE CONSIDERATIONS. *When using the antenna cables with the 55310A/55320A/55322A, you should observe certain precautions. Consult your local electrical and building ordinance codes on how to install RG-213 cables (58518A/519A) or LMR 400 cables (58520A/521A). Certain codes might require you to put the cables inside a conduit, or to use cables made with a non-toxic fire retardant insulation.*

To assist you with installing your GPS antenna system, refer to the subsection titled “GPS ANTENNA Input” in Chapter 3, “Features and Functions,” of the User’s Guide.

Connecting DC Power

Power Requirements

Due to the high reliability requirements for telecom equipment, it is recommended that you take advantage of the dual-redundant power supply capability of the 55310A/55320A/55322A by providing two separate power connections to the rack mount shelf from separate power sources.

Current Demands

The 55300A GPS Telecom Primary Reference Source's maximum current usage is 1 Amp at (48 Vdc. From a cold start, the current is about 0.75 amps. After the cold start, the current usage drops to about 0.33 amps.

NOTE

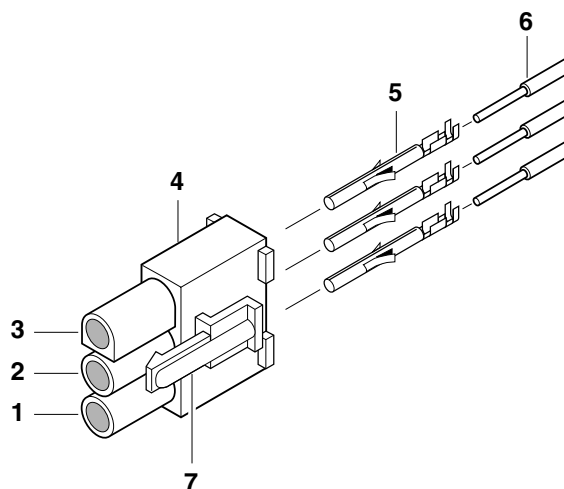
Depending on when your 55310A/55320A Rack Mount Shelf was manufactured, the two supplied dc power plugs could be the four-pin, dc power connector plugs (HP Part Number 0360-2599) (or equivalent) or the three-pin, dc power connector plugs (HP Part Number 1251-5272) (or equivalent). Older versions of the 55300A/55310A/55320A were supplied with the four-pin, dc power plugs (0360-2599). The following sections provides power-connecting instructions for both the four-pin (*starting on* page 2-12) and three-pin (*starting on* page 2-15) dc connectors.

To Connect the DC Power Using Three-Pin Connectors

Connecting DC Power If No Power Cables Exist (Three-Pin Connectors)

- 1 Note that you will have to assemble your own dc power cables using 20 AWG (0.08 inch or 2 mm diameter) connecting wires and the supplied, three-pin, dc power connector plugs (HP Part Number 1251-5272) (or equivalent) as shown in Figure 2-5A.

Chapter 2 Installation
Connecting DC Power



- | | |
|----------------------------|---------------------|
| 1 -48 Vdc battery supply | 5 Terminal pins |
| 2 Com Gnd (battery return) | 6 Wires |
| 3 Ground (frame ground) | 7 Locking mechanism |
| 4 Power connector | |

Figure 2-5A. Three-Pin DC Connector Pin Assignments

- Strip 5 mm (3/16 in) of insulation from one set of the power supply wires.
- Crimp the terminal pins to the wires according to standard procedures. Figure 2-5B shows a crimped terminal pin. The terminal pins can accept a wire size up to 1.2 mm (0.05 in). If possible, use a crimping tool such as Molex(Hand Crimping Tool 11-01-0084.

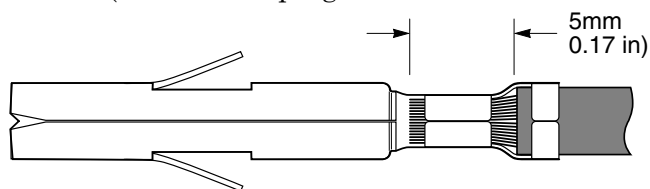


Figure 2-5B. View of Crimped Terminal Pin

- Position the power connector so that it matches the drawing — locking mechanism (7) should face you; see Figure 2-5A. Take the **Ground** (frame ground) wire and grasp the wire insulation behind the terminal pin. Push this wire into plug position 3 of the power connector until the terminal pin snaps into place.

- 5 Using the same procedure in step 4, push the **Com Gnd** (battery return) wire into connector position **2** and the **(48 Vdc)** wire into connector position **1**.

CAUTION

SYSTEM GROUNDING. Common ground on the rack mount shelf (55310A, 55320A, or 55322A) for each (48 Vdc) supply is the battery return. The frame ground, or chassis ground, must be separate from the common ground.

A frame ground can be connected in one of three ways:

- As part of the (48 Vdc) three-pin connector plug.
- Through a single-wire connection to the ground stud on the rear panel (55310A) or top front panel (55320A/55322A). (Use a spade lug.)
- Through the rack mount brackets and the 55300A/55310A (or 55300A/55320A/55322A) when the rack itself is properly grounded.

CAUTION

To prevent battery return-to-frame ground faults, DO NOT connect battery return on the 55310A/55320A/55322A rack mount shelf to the frame ground.

- 6 Observing the correct polarity, attach the other ends of the wires to a proper dc power source to operate the 55300A.
- 7 Observing the correct polarity, insert the plug into the rear-panel **POWER A (48 VDC INPUT)** jack of 55310A, 55320A, or 55322A rack mount shelf.
- 8 Repeat steps 2 through 7 for rear-panel **POWER B (48 VDC INPUT)** jack of 55310A, 55320A, or 55322A rack mount shelf for “alternate” dc power.
- 9 Refer to the subsection titled “POWER A and B –48 Vdc Inputs” in Chapter 3, “Features and Functions,” in the User’ Guide for more information on the dc power inputs.

Connecting DC Power Using Existing Site Power Cables (Three-Pin Connectors)

- 1 Using the multimeter, verify that there are no multiple battery grounds, or any shorts at the power source end of the wires.
- 2 From the rear of the plug (see Figure 2-5A), connect the supply-side wire of the external power supply or battery to position **1** of the plug. Connect the external battery’s return (ground) wire to position **2**, and the chassis ground wire, if present, to position **3** of the plug.

Connecting DC Power

- 3 Using a multimeter, verify a reading between -45 to -60 Vdc across position **1** ((48 Vdc battery) and position **2** (battery return) of the dc connector.
- 4 Observing the correct polarity, insert the plug into the rear-panel **POWER A (48 VDC INPUT** jack of 55310A, 55320A, or 55322A rack mount shelf.
- 5 Repeat steps 1 through 4 for the rear-panel **POWER B (48 VDC INPUT** jack of the rack mount shelf for redundant or “alternate” dc power.

Refer to the subsection titled “POWER A and B -48 Vdc Inputs” in Chapter 3, “Features and Functions,” in the User’s Guide for more information on the dc power inputs.

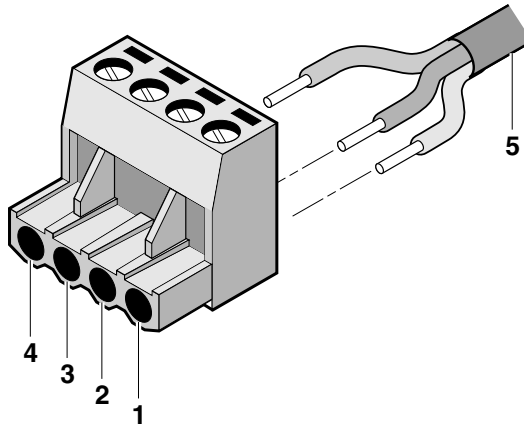
To Connect the DC Power Using Four-Pin Connectors

Connecting DC Power If No Power Cables Exist (Four-Pin Connectors)

- 1 Note that you will have to assemble your own dc power cables using 20 AWG (0.08 inch or 2 mm diameter) connecting wires and the supplied, four-pin, dc power connector plugs (HP Part Number 0360-2599) (or equivalent) as shown in Figure 2-5C.

Chapter 2 Installation

Connecting DC Power



- | | |
|--|---------------------------------|
| 1 – 48 Vdc battery supply | 4 Frame (chassis) ground |
| 2 dc (battery) return (common ground) | 5 Cable wires |
| 3 dc (battery) return (common ground) | |

Figure 2-5C. Four-Pin DC Connector Pin Assignments

- Strip 0.350 inch (9 mm) of insulation from the wires. (Use wires no larger than 0.08 inch or 2 mm in diameter.)
- From the rear of the plug, connect the supply-side wire of the external power supply or battery to pin 1 of the plug. Connect the external battery's return (ground) wire to either pin 2 or pin 3, and the chassis ground wire, if present, to pin 4 of the plug.

CAUTION

SYSTEM GROUNDING. Common ground on the rack mount shelf (55310A, 55320A, or 55322A) for each (48 Vdc supply is the battery return. The frame ground, or chassis ground, must be separate from the common ground.

A frame ground can be connected in one of three ways:

- As part of the (48 Vdc four-pin connector plug.
- Through a single-wire connection to the ground stud on the rear panel (55310A) or top front panel (55320A/55322A). (Use a spade lug.)
- Through the rack mount brackets and the 55300A/55310A (or 55300A/55320A/55322A) when the rack itself is properly grounded.

CAUTION

To prevent battery return-to-frame ground faults, DO NOT connect battery return on the 55310A/55320A/55322A rack mount shelf to the frame ground.

- 4 Observing the correct polarity, attach the other ends of the wires to a proper dc power source to operate the 55300A.
- 5 Observing the correct polarity, insert the plug into the **POWER A (48 VDC INPUT)** jack of the 55310A, 55320A, or 55322A rack mount shelf.
- 6 Repeat steps 1 through 4 for the rear-panel **POWER B (48 VDC INPUT)** jack of the rack mount shelf for redundant or “alternate” dc power.

Refer to the subsection titled “POWER A and B –48 Vdc Inputs” in Chapter 3, “Features and Functions,” in the User’s Guide for more information on the dc power inputs.

Connecting DC Power Using Existing Site Power Cables (Four-Pin Connectors)

- 1 Using the multimeter, verify that there are no multiple battery grounds, or any shorts at the power source end of the wires.
- 2 From the rear of the plug (see Figure 2-5C), connect the supply-side wire of the external power supply or battery to pin 1 of the plug. Connect the external battery’s return (ground) wire to either pin 2 or pin 3, and the chassis ground wire, if present, to pin 4 of the plug.
- 3 Using a multimeter, verify a reading between –45 to –60 Vdc across pin 1 of the dc connector and the dc return pin (2 or 3).
- 4 Observing the correct polarity, insert the plug into the rear-panel **POWER A (48 VDC INPUT)** jack of 55310A, 55320A, or 55322A rack mount shelf.
- 5 Repeat steps 1 through 4 for the rear-panel **POWER B (48 VDC INPUT)** jack of the rack mount shelf for redundant or “alternate” dc power.

Refer to the subsection titled “POWER A and B –48 Vdc Inputs” in Chapter 3, “Features and Functions,” in the User’s Guide for more information on the dc power inputs.

Connecting the Rack Mount Shelf to a Terminal or Computer

NOTE

Although connecting the *55310A/55320A/55322A* to a terminal or computer isn't necessary for it to attain GPS lock, the terminal is needed for you to observe the progress of the *55300A* or to configure alarms.

*If you are going to communicate with the unit using TL1 commands, connect the unit to a terminal via the rear-panel **REMOTE ACCESS PORT** RS-232 port using an HP 24542G (or equivalent) (25-pin male to 9-pin female) interface cable (or whichever cable is appropriate for your terminal) as shown in Figure 2-6A.*

OR

*If you are going to communicate with the unit using SCPI commands, connect the unit to a PC or laptop via the rear-panel **TIME OF DAY** RS-232 port using an HP 24542U (or equivalent) (9-pin female to 9-pin female) or HP F1047-80002 (or equivalent) (9-pin female to 9-pin female) interface cable (or whichever cable is appropriate for your PC or laptop) as shown in Figure 2-6B.*

OR

*If you are going to use an HP 200LX (or equivalent) palmtop computer to communicate with the unit using SCPI commands, connect the unit to the palmtop via the rear-panel **TIME OF DAY** RS-232 port using the F1015-80002 cable as shown in Figure 2-6C.*

There is another serial port, **PORT 1**, that is provided on the front panel of the *55300A* Module, which plugs into the rack mount shelf. This port can be used by service technicians as a local port. See the User's Guide for information.

Connecting the Rack Mount Shelf to a Terminal or Computer

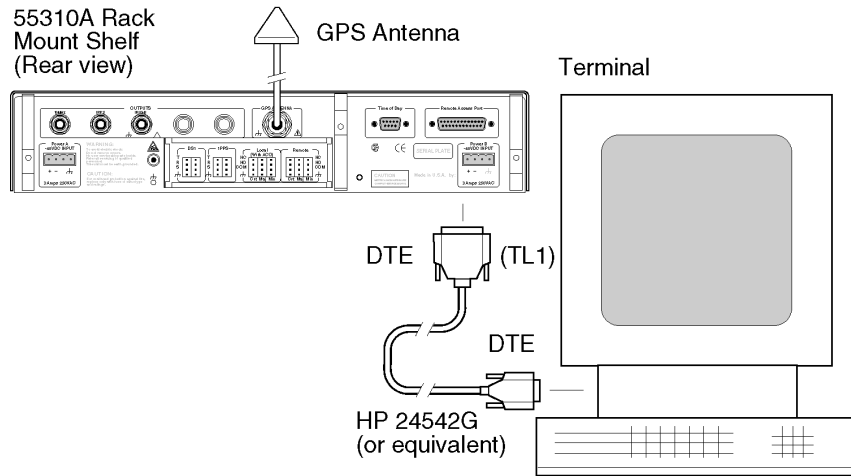


Figure 2-6A. Connecting the 55310A/55320A/55322A to a Terminal Via REMOTE ACCESS PORT to Use TL1 Commands for Communication (55310A shown)

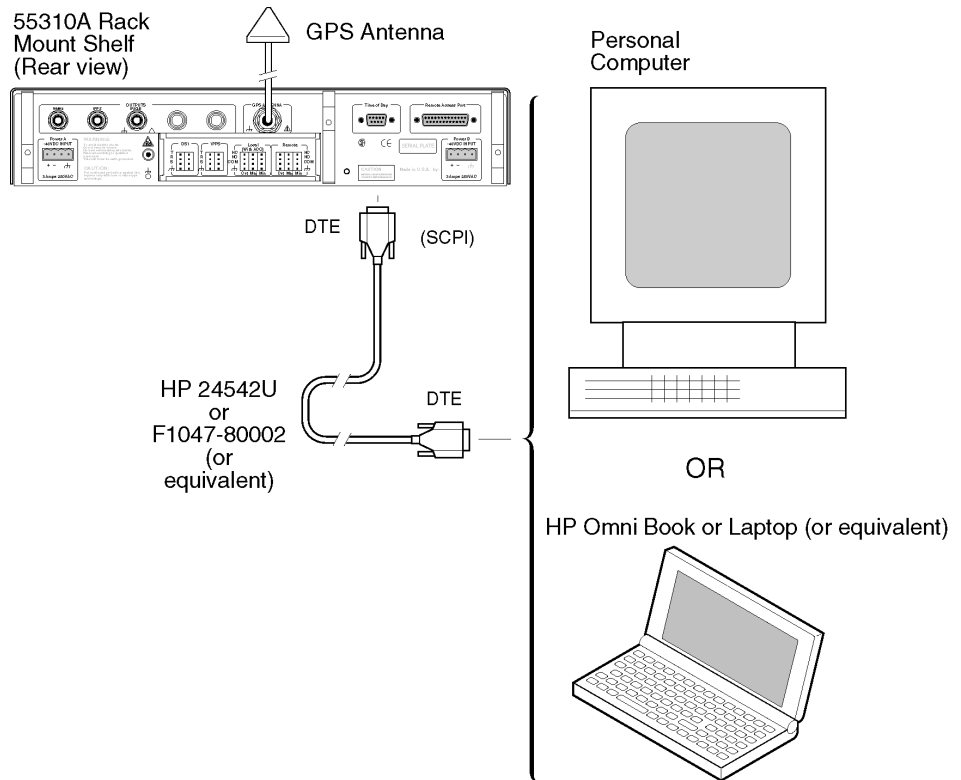


Figure 2-6B. Connecting the 55310A/55320A/55322A to a PC or Laptop to Use SCPI Commands for Communication (55310A shown)

Connecting the Rack Mount Shelf to a Terminal or Computer

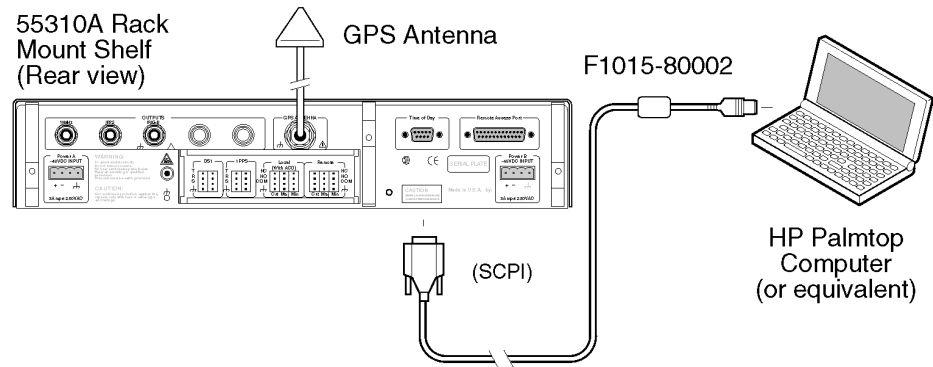


Figure 2-6C. Connecting the 55310A/55320A/55322A to a Palmtop to Use SCPI Commands for Communication (55310A shown)

Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack Mount Shelf

Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack Mount Shelf

Connecting to the 55310A Wire-Wrap Connectors

The 55310A Rack Mount Shelf (for United States installation) provides wire-wrap connector pins (shown in Figure 2-7) for telecom DS1(1), 1PPS (2), local alarm (3), and remote alarm (4) outputs.

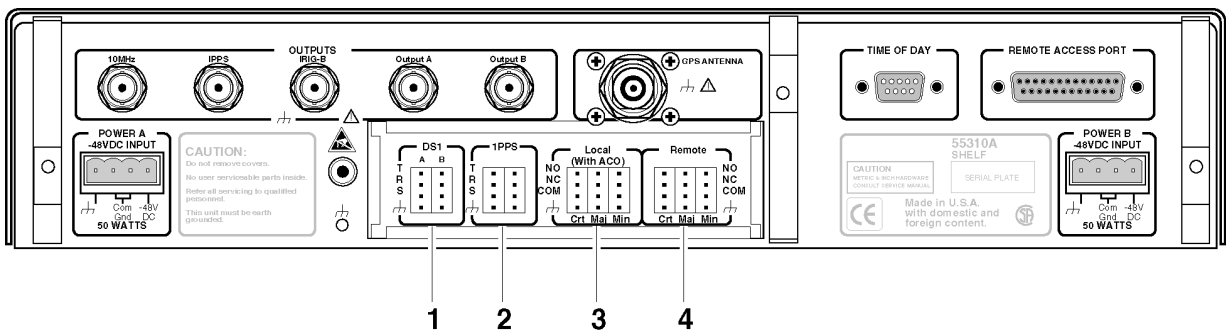
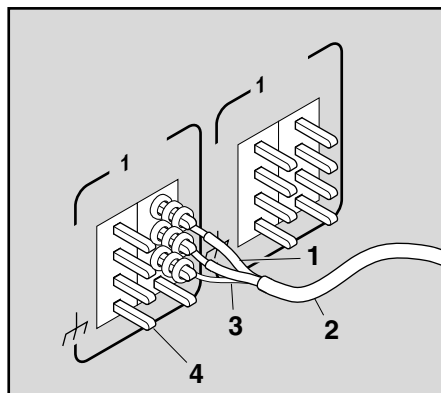


Figure 2-7. 55310A Wire-Wrap Connections

Use the appropriate wire-wrap gun or driver to connect wires to the wire-wrap pins as shown in Figure 2-8. The DS1 (1544 kbps) signal is across the T (+) and R (return) pins.



- | | |
|-------------------|--|
| 1 Insulated wires | 3 Shield wire |
| 2 Cable | 4 Chassis ground connection (optional) |

Figure 2-8. Sample Wire-Wrap Connection to the DS1 Wire-Wrap Connector Pins

Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack Mount Shelf

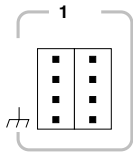
About the 55310A Wire-Wrap Connectors

This section provides information on the outputs and connections of each of the wire-wrap connectors of the 55310A.

The connectors are discussed in the following order:

- DS1 Wire-Wrap Connector Outputs
- 1 PPS Wire-Wrap Connector Outputs
- Local (with ACO) Alarm Control Wire-Wrap Connectors
- Remote Alarm Control Wire-Wrap Connectors

DS1 Wire-Wrap Connector Outputs (55300/55310A Only)



DS1 wire-wrap connector outputs meet all of the specifications (that is, impedance, frequencies, etc.) required for a DS1 telecommunications signal, which is known as the T1 frequency for US telecommunications. (Refer to paragraph 2, Figure 10/G.703 and Table 4/G.703 of the *Recommendation G.703* standard for details on the 1544 kbps signal.)

Either Option 104 or Option 105 is provided for these A and B outputs. These outputs are 1544 kbps signals and are squelched at powerup when not locked to GPS. After locking to GPS, the outputs are valid formatted signals. If a user-specified holdover threshold period has been exceeded, these signals will be either the factory default AIS (non-formatted), or squelched, or continuous signals.

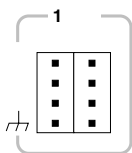
The customary connector for the DS1 output, in the United States, is wire-wrap. The 55300A provides two sets of wire-wrap outputs from the one DS1 output for the convenience of the operators. Normally, you would use one connection from the DS1 output, but you may want to bridge a second line on to it or you might want to change the distribution system. Thus, the two sets of outputs permits you to hook up the DS1 to the second set of connections before you transfer from the first set of connections without any downtime.

Each parallel row of wire-wrap connector pins has a T (tip), R (ring), S (sleeve), and chassis ground (optional use) connections. The T, R, and S wire-wrap pins allow a shielded, twisted pair connections to a standard three-circuit phone plug. The 1544 kbps signal is across the T (+) and R (return) pins.

Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack Mount Shelf

The chassis ground pin is available for applications when the sleeve needs to be wired to the shield wire and tied to ground. (This is done by connecting the shield of the twisted pair wire to the chassis ground pin, and then connecting a jumper wire between the chassis ground and S pins.) For applications when the shield wire should not be tied to ground, then the chassis ground pin can be used as a place to hang the shield wire; this way, the shield wire doesn't have to float. If you decide later to connect the shield wire to chassis ground, you can connect a jumper wire between the chassis ground and S pins.

1 PPS Wire-Wrap Connector Outputs (55300/55310A Only)



These wire-wrap connector outputs provide two sets of wire-wrap outputs from one 1 PPS output for the convenience of the operators. Normally, you would use one connection from the 1 PPS output, but you may want to bridge a second line on to it or you might want to change the distribution system. Thus, the two sets of outputs permits you to hook up the 1 PPS to the second set of connections before you transfer from the first set of connections without any downtime.

Each parallel row of wire-wrap connector pins has a T (tip), R (ring), S (sleeve), and chassis ground (optional use) connections. The T, R, and S wire-wrap pins allow a shielded, twisted pair connections to a standard three-circuit phone plug. The 1 PPS signal is across the T (+) and R (return) pins, and is a RS-422 differential pair signal. The amplitude of this signal is greater than 2.0V into a 100Ω load, pulse width is 26 microsecond, and time interval is 1 second.

The chassis ground pin is available for applications when the sleeve needs to be wired to the shield wire and tied to ground. (This is done by connecting the shield of the twisted pair wire to the chassis ground pin, and then connecting a jumper wire between the chassis ground and S pins.) For applications when the shield wire should not be tied to ground, then the chassis ground pin can be used as a place to hang the shield wire; this way, the shield wire doesn't have to float. If the you decide later to connect the shield wire to chassis ground, you can connect a jumper wire between the chassis ground and the S pins.

Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack Mount Shelf

Local (with ACO) Alarm Control Wire-Wrap Connectors (55300A/55310A Only)

The **Local (with ACO)** wire-wrap connectors, shown in Figure 2-9, provide three independent alarm contacts or relays for the critical, major, and minor alarms.

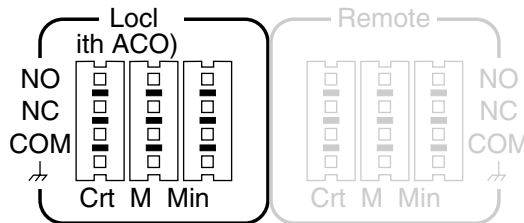


Figure 2-9. Local (with ACO) Alarm Wire-Wrap Connectors

The local external (audible) alarms can be cutoff or can be caused to not operate. For example, say you have a major alarm indication that is driving a buzzer, and you are trying to work to solve the alarm problem. You can push the front-panel **ACO** button to turn off the buzzer (the local alarm). (The remote alarm indication, however, which is located on a board in the control room, will indicate that the major alarm condition still exists.)

Figure 2-10 shows a local alarm wire-wrap connector and a demonstrative relay circuit that drives or controls the wire-wrap NC and NO pins via firmware. In “normal” operation, S1 is closed. Loss of power is an “alarm” condition; thus, S1 is opened.

Four wire-wrap pins are provided for each alarm (i.e., critical, major, and minor) as shown in Figure 2-10.

Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack Mount Shelf

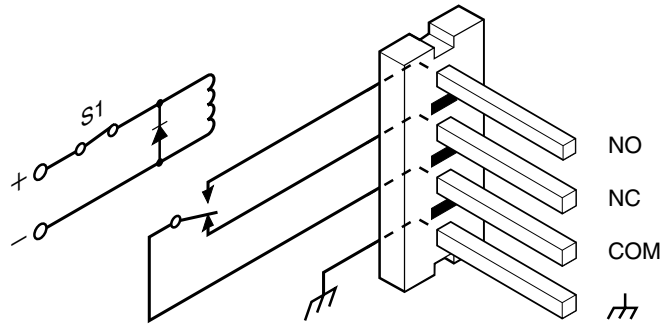



Figure 2-10. The Local/Remote Demonstrative Relay Circuit

- **NO** (normally-opened contact) relay contact or wire-wrap pin — NO contact is opened when there is no alarm, and is closed on alarm.
- **NC** (normally-closed contact) relay contact or wire-wrap pin — NC contact is closed when there is no alarm, and is opened on alarm.
- **COM** (common)
-  chassis ground — provided in case you need it.

It's your choice on how you want to wire your alarm system to run (that is, using the normally-closed or normally-opened logic). The 55300A provide this flexibility so that the 55300A can be compatible with any current operating system.

Remote Alarm Control Wire-Wrap Connectors (55300A/55310A Only)

The **Remote** wire-wrap connectors, shown in Figure 2-11, provide three independent alarm contacts or relays for the critical, major, and minor alarms.

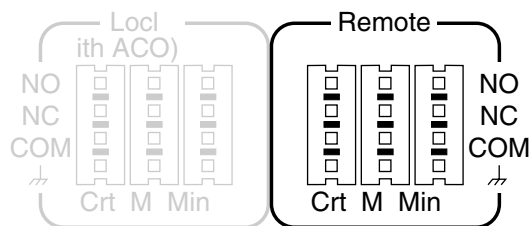


Figure 2-11. Remote Alarm Wire-Wrap Connectors

The remote alarm can be wired to an external visual alarm located in a remote control room. This way, the operator can easily detect when an alarm condition exists.

**Connecting Cables to the Wire-Wrap Connectors on the 55310A Rack
Mount Shelf**