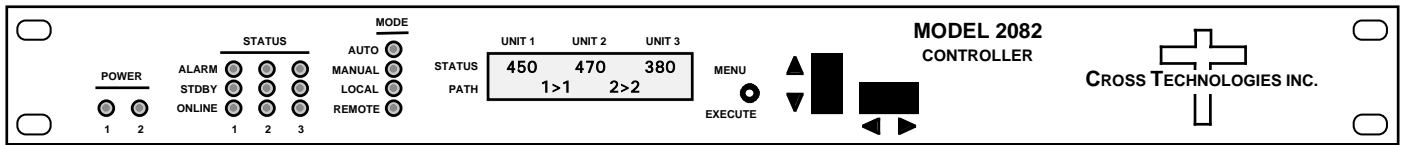


# Instruction Manual

# Model 2082-142 Unit Controller

June 2011, Rev. C



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**INSTRUCTION MANUAL**  
**MODEL 2082-142 Unit Controller**

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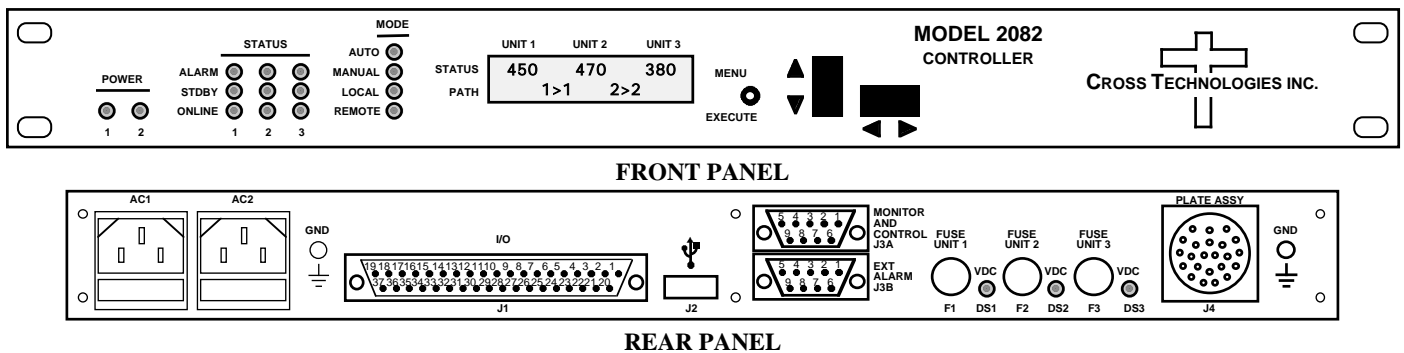
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# MODEL 2082-142 Controller, 1 for 2

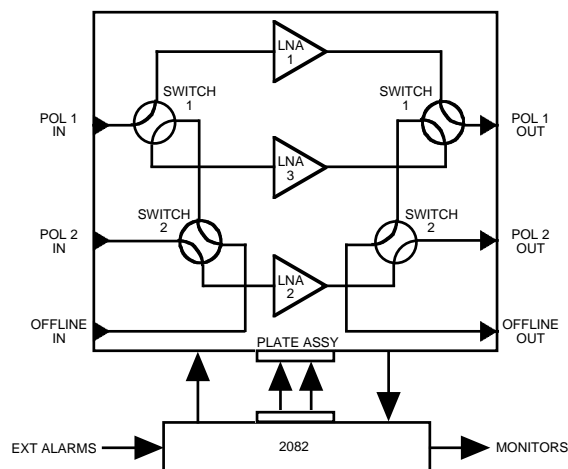
## 1.0 General

### 1.1 Equipment Description

The Model 2082-142 Redundant Unit Controller is used to monitor and control amplifiers (LNA, SSPA, etc.) configured in 1:2 redundancy. Front panel LEDs indicate power, status (online, standby, alarm), and mode (auto, manual, local, remote). Up to 600 ma is available to power each amplifier and +26 VDC is provided for 1:2 (5A) waveguide switch drive. Multi-function push button switches select Auto, Manual, Local, or Remote operation, and priorities for 1:2. Remote operation via the RS232/RS485 M&C interface allows configuration changes and status monitoring. Contact closure to ground inputs allow selection of Auto/Manual Modes. An LCD display shows each amplifier's current and signal path. Form C relay contact closures indicate amplifier and power supply status, waveguide switch position, Auto/Manual and Remote/Local operation. Connectors are DB37 for contact closure I/Os, MS3112E16-23S for the amplifier plate signals, and DB9s for monitor and control and auxiliary external contact closure alarm inputs. The 2082-142 is housed in a 1RU chassis and is powered by redundant power supplies fed by separate, fused 100-240  $\pm 10\%$  VAC AC input connectors.



**FIGURE 1.1** Front and Rear Panels



**FIGURE 1.2** Block Diagram (Upconverter Scenario)

## 1.2 Technical Characteristics

**TABLE 1.0 2082-142 Switch Specifications\***

### Switch Drive Characteristics

Fault Detection Time	50 ms max.
Total Switchover Time	100 ms max., based on switch specifications
Drive Voltage	26 Volts, 5A

### Alarm and Control

Alarm Input Signal	Closure to ground indicates alarm
Alarm Input Voltage	+15 VDC max., can sink 20 mA max.
Alarm Output Signal	Form C relay: 100 VDC, 0.5 A, 3 W max.
M&C Interface	RS232C or RS485, selectable
M&C Signal	9600 baud rate, no parity, 8 data bits, 1 start bit

### Controls, Indicators

Mode Select Controls	Push-buttons for Local/Remote, Auto/Manual, Priority 2 Ground on pin 18 of J1 to activate Manual
Power On Status	Green LEDs, External Form C contact closures, M&C serial
Remote Select Status	Yellow LED, External Form C contact closure, M&C serial
Manual Select Status	Yellow LED, External Form C contact closure, M&C serial
Alarm Status	Red LEDs, External Form C contact closures, M&C serial

### Other

Parallel I/O Connector	DB37 (female)
External Alarms	DB9 (female)
M&C Connector	DB9 (female)
Amp Plate Assy Connector	MS3112E16-23S
Size	19 inch, 1RU standard chassis 1.75" high X 16.0" deep
Power	100-240 $\pm$ 10% VAC, 47-63 Hz, 100 watts max; Redundant power supplies

---

\*+10°C to +40°C; Specifications subject to change without notice

## 1.3 Monitor and Control Interface

### Auto/Manual Mode

Auto mode is the default mode of the controller. When in the auto mode the controller is continuously monitoring the status of AMP1, AMP2, and AMP3. In 1:2 configurations, if a fault is detected from AMP1 or AMP2 then AMP3 is switched into the signal path of the faulted unit. The auto mode can also be configured to monitor the external alarm inputs from J3.

Manual mode may be set via a front panel command, an M&C port command, or by grounding the AUTO/MAN external input (J1, pin 18). When the controller is in the manual mode it ignores fault and alarm inputs and allows the user to manually operate the waveguide switch.

### Local/Remote Mode

Local mode is the default mode of the controller. When the unit is in the local mode it will ignore any serial commands it receives through serial M&C connector J3. Local mode means control of the system is managed with front panel commands and external “ground to activate” inputs. A grounded external input will override the front panel input that controls the same function. The following table describes the “ground to activate” pins located on the DB37 parallel I/O connector and their function. When the unit is in the remote mode it will respond only to serial M&C commands.

DB37 (J1) Pin	Function
16	<u>Auxiliary</u> : This input is wired to the micro controller, but not defined or implemented at this time.
17	<u>Priority Select</u> : Ground to select Priority 2.
18	<u>Auto/Manual Select</u> : Ground to activate Manual mode.

## A) Remote serial interface

**Protocol:** RS232C, 9600 baud rate, no parity, 8 data bits, 1 start bit, and 1 stop bit.  
(RS232C, RS422, or RS485 - **option Q**)

**Connectors:** Rear panel, DB9 female

RS232C	
Pin	Function
1	Rx-
2	RS232C
3	RS232C
4	Tx-
5	GND
6	Not Used
7	Not Used
8	Not Used
9	Not Used

**B) Status Requests** Table 1.1 lists the status requests for the 2082-142 and briefly describes them

\* PLEASE NOTE: The two character {aa}(00-31) prefix, in the table below, should be used ONLY when RS-485, (OPTION-Q), is selected.

TABLE 1.1 2082-142 Status Requests		
Command	Syntax *	Description
Model and Firmware version	{aaSM}	Returns {aaSMbbbbbbbbvercccc} where: <ul style="list-style-type: none"> <li>• bbbbbbbb = Model number</li> <li>• cccc = Firmware version</li> </ul>
AMP1 Status	{aaS1}	Returns {aaS1bbbccddd} where: <ul style="list-style-type: none"> <li>• bbb = AMP1 measured current</li> <li>• ccc = AMP1 nominal current setting</li> <li>• dd = AMP1 window</li> </ul>
AMP2 Status	{aaS2}	Returns {aaS2bbbccddd} where: <ul style="list-style-type: none"> <li>• bbb = AMP2 measured current</li> <li>• ccc = AMP2 nominal current setting</li> <li>• dd = AMP2 window</li> </ul>
AMP3 Status	{aaS3}	Returns {aaS3bbbccddd} where: <ul style="list-style-type: none"> <li>• bbb = AMP3 measured current</li> <li>• ccc = AMP3 nominal current setting</li> <li>• dd = AMP3 window</li> </ul>
Controller Status	{aaS4}	Returns {aaS4bcdefg} where: <ul style="list-style-type: none"> <li>• b = 0 if in AUTO, 1 if in MANUAL</li> <li>• c = 0 if in LOCAL, 1 if in REMOTE</li> <li>• d = 0 if PRIORITY1, 1 if PRIORITY2</li> <li>• e = 0 if no backup, 1 if AMP1 backed up, 2 if AMP2 backed up</li> <li>• g = Power Supply 2 Status: 0 = good, 1 = alarm</li> <li>• f = Power Supply 1 Status: 0 = good, 1 = alarm</li> </ul>

**C) Commands** Table 1.2 lists the commands for the 2082-142 and briefly describes them. After a command is sent the 2082-142 sends a return “>” indicating the command has been received and executed.

**General Command Format** - The general command format is {aaCND...}, where:

- { = start byte
- aa = address of unit (only used if in RS485 mode, **option -Q only**)
- C = 1 character, either C (command) or S (status)
- N = 1-digit command or status number, 1 through 9
- D = 1 character or more of data (depends on command)
- } = stop byte

\* PLEASE NOTE: The two character {aa}(00-31) prefix, in the table below, should be used ONLY when RS-485, (OPTION-Q), is selected.

Table 1.2 2082-142 Commands		
Command	Syntax*	Description
Set AMP1 Nominal Value	{aaC1xxx}	where:
	or {aaC1}	<ul style="list-style-type: none"> <li>• xxx = 100 (0.100A) to 500 (0.500A)</li> <li>• NOTE: Omit xx to set nominal value to currently measured value</li> </ul>
Set AMP2 Nominal Value	{aaC2xxx}	where:
	or {aaC2}	<ul style="list-style-type: none"> <li>• xxx = 100 (0.100A) to 500 (0.500A)</li> <li>• NOTE: Omit xx to set nominal value to currently measured value</li> </ul>
Set AMP3 Nominal Value	{aaC3xxx}	where:
	or {aaC3}	<ul style="list-style-type: none"> <li>• xxx = 100 (0.100A) to 500 (0.500A)</li> <li>• NOTE: Omit xx to set nominal value to currently measured value</li> </ul>
Set AMP1 Window	{aaC4xx}	where:
		<ul style="list-style-type: none"> <li>• xx = 10 (10%) to 30 (30%) in increments of 5</li> </ul>
Set AMP2 Window	{aaC5xx}	where:
		<ul style="list-style-type: none"> <li>• xx = 10 (10%) to 30 (30%) in increments of 5</li> </ul>
Set AMP3 Window	{aaC6xx}	where:
		<ul style="list-style-type: none"> <li>• xx = 10 (10%) to 30 (30%) in increments of 5</li> </ul>
Set Priority	{aaC7x}	where:
		<ul style="list-style-type: none"> <li>• x = 1 for PRIORITY1, 2 for PRIORITY2</li> </ul>
Set Local/Remote	{aaC8x}	where:
		<ul style="list-style-type: none"> <li>• x = 0 for LOCAL mode, 1 for REMOTE mode</li> </ul>
Set Auto/Manual	{aaC9x}	where:
		<ul style="list-style-type: none"> <li>• x = 0 for AUTO mode, 1 for MANUAL mode</li> </ul>

## Installation & Environmental Information

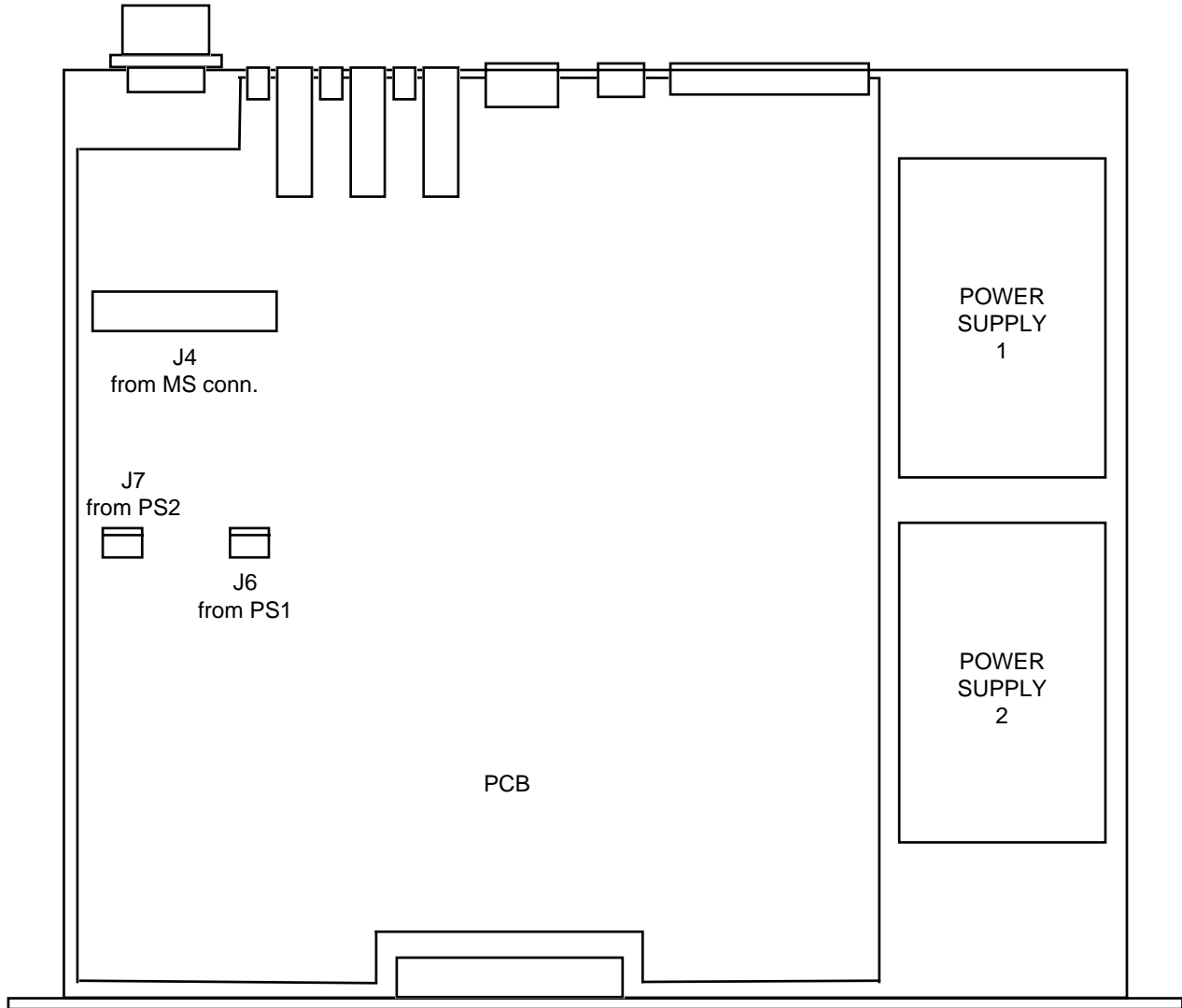
- A. Elevated operating ambient temperature** - if installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack may be greater than room ambient temperature. Therefore, consideration should be given to Tmra.
- B. Reduced air flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Additional space between unit may be required.
- C. Mechanical loading** - Mounting of equipment in a rack should be such that a hazardous condition does not exist due to uneven weight distribution.
- D. Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits could have on over current protection and supply wiring. Appropriate consideration of equipment name plate rating should be used, when addressing this concern.
- E. Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connection to the Branch (use of power strips).
- F. Top Cover** - There are no serviceable parts inside the product so, the Top Cover should not be removed. If the Top Cover is removed the ground strap and associated screw **MUST BE REINSTALLED** prior to Top Cover screw replacement. **FAILURE TO DO** this may cause **INGRESS** and/or **EGRESS** emission problems.



## 2.0 Installation

### 2.1 Mechanical

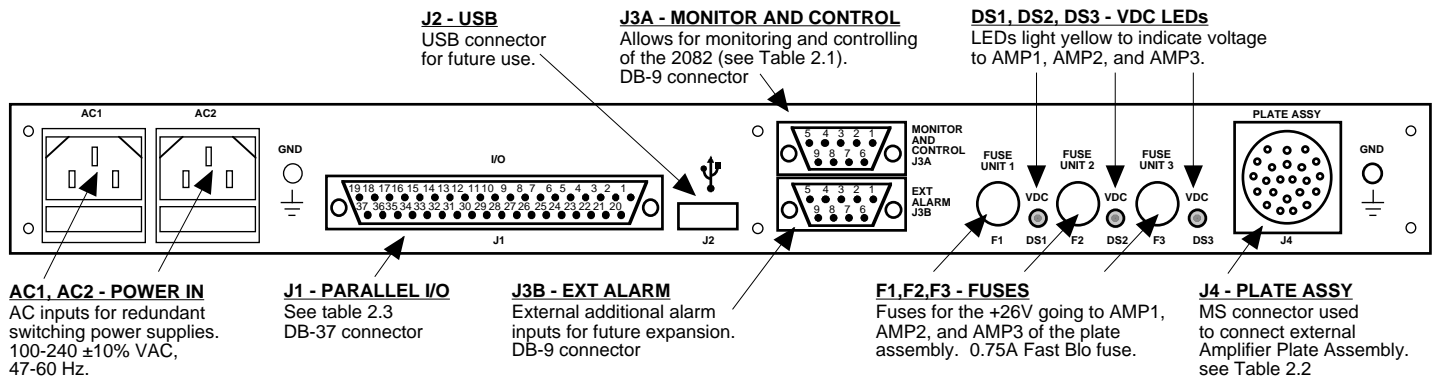
The 2082-142 consists of one PCB housed in a 1 RU (1 3/4 inch high) by 16 inch deep chassis. Two redundant switching +27 VDC power supplies are diode OR'ed to provide +26 VDC for the assembly. The 2082-142 can be secured to a rack using the 4 holes on the front panel. Figure 2.0 shows how the 2082-142 is assembled.



**FIGURE 2.0 2082-142 Mechanical Assembly**

## 2.2 Rear Panel Input/Output Signals

Figure 2.1 shows the input and output connectors on the rear panel.



**FIGURE 2.1 2082-142 Rear Panel I/O's**

RS232C	
Pin	Function
1	Rx-
2	RS232C
3	RS232C
4	Tx-
5	GND
6	Not Used
7	Not Used
8	Not Used
9	Not Used

### \*Remote Serial Interface

Interface: DB9 Male

Protocol: RS232C (RS232C/422/485 **option Q only**), 9600 baud rate, no parity, 8 data bits, 1 start bit, 1 stop bit.

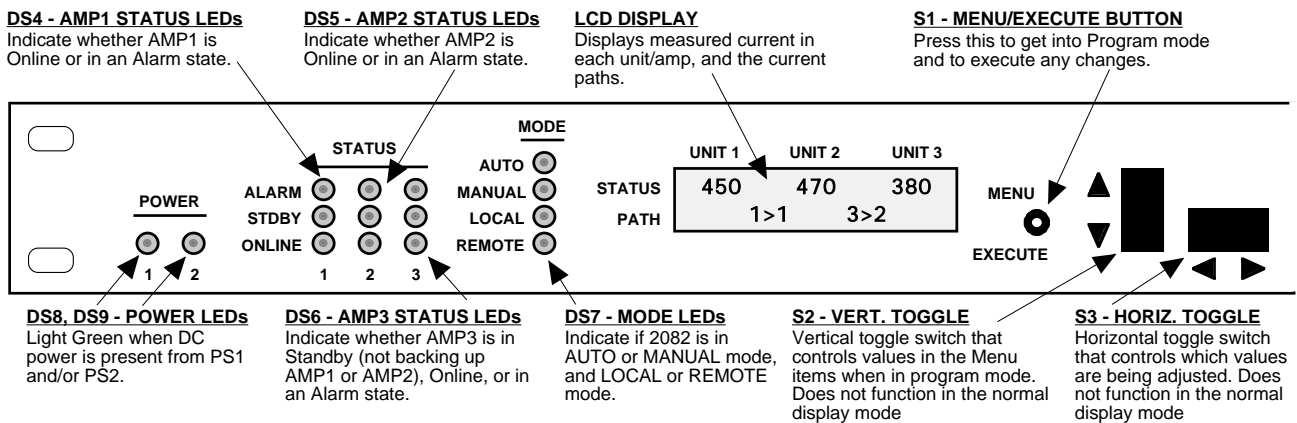
TABLE 2.2 J4 (Plate Assy) MS Connector Pinout	
Pins	Functional Description
A	AMP1 +15VDC, 0.6A (Fused - F1, LED DS1)
C	AMP2 +15VDC, 0.6A (Fused - F2, LED DS2)
E	AMP3 +15VDC, 0.6A (Fused - F3, LED DS3)
B,D,F,V	GROUND
J,K,R,S	Switch Common, +26VDC, 5A max
G,H	Switch #1 - Position 1
L,M	Switch #1 - Position 2
N,P	Switch #2 - Position 1
T,U	Switch #2 - Position 2

**DB37**

<b>Pin</b>	<b>Direction</b>	<b>Functional Description</b>
1	output	RF AMP1 status; normally closed (to pin 20); opens if a fault is detected from AMP1
20	output	RF AMP1 status; common for AMP1 fault indicators
2	output	RF AMP1 status; normally open (to pin 20); closes if a fault is detected from AMP1
21	output	RF AMP2 status; normally closed (to pin 3); opens if a fault is detected from AMP2
3	output	RF AMP2 status; common for AMP2 fault indicators
22	output	RF AMP2 status; normally open (to pin 3); closes if a fault is detected from AMP2
4	output	RF AMP3 status; normally closed (to pin 23); opens if a fault is detected from AMP3
23	output	RF AMP3 status; common for AMP3 fault indicators
5	output	RF AMP3 status; normally open (to pin 23); closes if a fault is detected from AMP3
25	output	AUTO indication; closed (to pin 6) when in AUTO mode
6	output	AUTO/MANUAL mode indication; common for AUTO/MANUAL indication
24	output	MANUAL indication; closed (to pin 6) when in MANUAL mode
7	output	REMOTE mode indication; normally closed (to pin 26); open when in REMOTE mode
26	output	REMOTE mode indication; common for REMOTE indication
8	output	REMOTE mode indication; normally open (to pin 26); closed when in REMOTE mode
27	output	SW1 - POSITION 1 indication; closed (to pin 9) when SW1 is in POSITION 1
9	output	SW1 - POSITION indication; common
28	output	SW1 - POSITION 2 indication; closed (to pin 9) when SW1 is in POSITION 2
10	output	SW2 - POSITION 1 indication; closed (to pin 29) when SW2 is in POSITION 1
29	output	SW2 - POSITION indication; common
11	output	SW2 - POSITION 2 indication; closed (to pin 29) when SW2 is in POSITION 2
31	output	PS1 ALARM; normally closed (to pin 12); open when a Power Supply 1 fault occurs
12	output	PS1 ALARM; common
30	output	PS1 ALARM; normally open (to pin 12); closed when a Power Supply 1 fault occurs
14	output	PS2 ALARM; normally closed (to pin 32); open when a Power Supply 2 fault occurs
32	output	PS2 ALARM; common
13	output	PS2 ALARM; normally open (to pin 32); closed when a Power Supply 2 fault occurs
34	output	PRIORITY 1 indication; closed (to pin 15) when PRIORITY 1 is selected
15	output	PRIORITY indication; common for PRIORITY indication
33	output	PRIORITY 2 indication; closed (to pin 15) when PRIORITY 2 is selected
16	input	AUXILIARY; Ground to activate
17	input	PRIORITY SELECT; Ground to activate PRIORITY 2
18	input	AUTO/MANUAL SELECT; Ground to activate MANUAL mode
35	input	AMP3 STANDBY; Ground to activate
36	input	AMP2 STANDBY; Ground to activate
37	input	AMP1 STANDBY; Ground to activate
19	output	GROUND

## 2.3 Front Panel Controls and Indicators

Figure 2.2 shows the front panel controls and indicators.



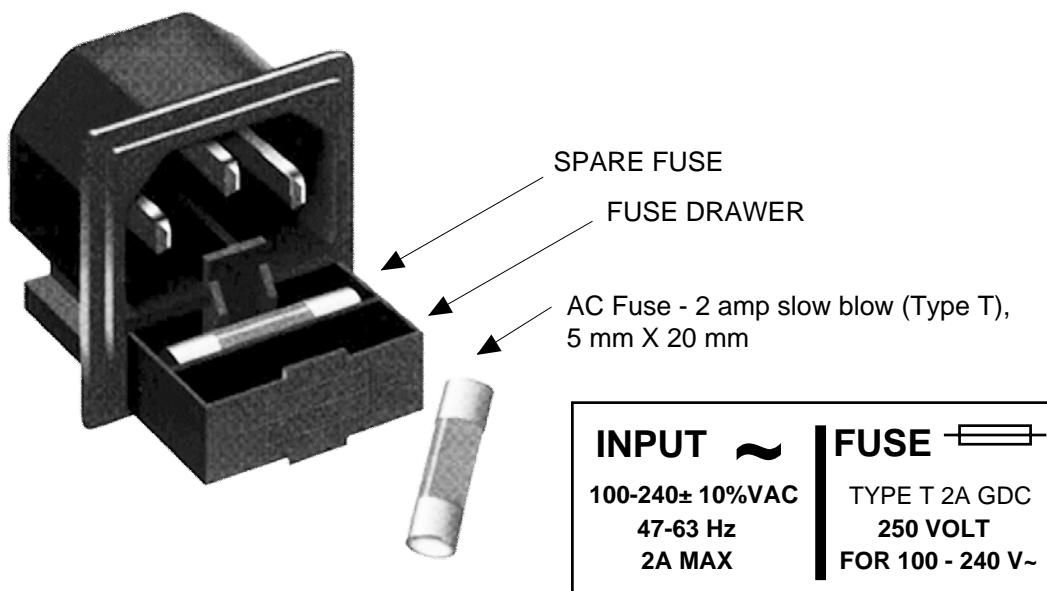
**FIGURE 2.2 2082-142 Front Panel Controls and Indicators**

TABLE 2.4 LED Indicators	
LED	Function
POWER1	Illuminates GREEN when power supply 1 is on
POWER2	Illuminates GREEN when power supply 2 is on
STATUS1, ALARM	Illuminates RED when a fault is detected from AMP1 monitor
STATUS1, ONLINE	Illuminates GREEN when AMP1 is online
STATUS2, ALARM	Illuminates RED when a fault is detected from AMP2 monitor
STATUS2, ONLINE	Illuminates GREEN when AMP2 is online
STATUS3, ALARM	Illuminates RED when a fault is detected from AMP3 monitor
STATUS3, STDBY	Illuminates YELLOW when AMP3 is not backing up AMP1 or AMP2
STATUS3, ONLINE	Illuminates GREEN when AMP3 is online
AUTO	Illuminates GREEN when controller is in auto mode
MANUAL	Illuminates YELLOW when controller is in manual mode
LOCAL	Illuminates GREEN when unit is in local mode
REMOTE	Illuminates YELLOW when unit is in remote mode

## 2.4 Installation / Operation

### 2.4.1 Installing and Operating the 2082-142

1. Connect external Amplifier Plate Assembly to 2082 via MS connector, J4 (Figure 2.1).
2. Connect two 100-240  $\pm$ 10% VAC, 47 - 63 Hz power cords to AC1 and AC2 on the back panel (Figure 2.1).
3. Be sure DS8 & DS9 (green, DC Power) are on and red Alarm indicators are off (Figure 2.2).
4. Check that DS1, DS2, and DS3 are lit. If not, then either a fuse is missing or blown in F1, F2, or F3, respectively (Figure 2.1).
5. Set PRIORITY1 or PRIORITY2 (See Section 2.5 Menu Settings).
6. Set the current windows for AMP1, AMP2, and AMP3 (See Section 2.5 Menu Settings).
7. AC Fuses - The fuses are 5 mm X 20 mm, 2 amp slow blow (Type T) and are inserted in the far slot in the drawer below the AC inputs as shown in Figure 2.3. There is a spare fuse in the near slot. If a fuse continues to open, the corresponding power supply is most likely defective.



**FIGURE 2.3 Fuse Location and Spare Fuse**

## 2.5 Menu Settings

### 2.5.1 Functions

This section describes operation of the front panel controls. There are three operator switches, the LCD display and alarm indicator LEDs. All functions for the equipment are controlled by these components. The functions are (see Figure 2.4):

#### **Power Up**

#### **Normal Display**

**Menu 1** Select AUTO/MANUAL mode

**Menu 2** Select LOCAL/REMOTE mode

**Menu 3** Select PRIORITY 1 or PRIORITY 2

**Menu 4** Set AMP1 Window? Y/N

If Y then --> **Menu 4a** Indication of Nominal value and Actual Measured value of AMP1 current

**Menu 4b** Set Nominal current to Actual Measured value of AMP1 current? Y/N

IF N then --> **Menu 4b.1** Manually Set AMP1 Nominal Current

**Menu 4c** Set AMP1 Window

**Menu 5** Set AMP2 Window? Y/N

If Y then --> **Menu 5a** Indication of Nominal value and Actual Measured value of AMP2 current

**Menu 5b** Set Nominal current to Actual Measured value of AMP2 current? Y/N

IF N then --> **Menu 5b.1** Manually Set AMP2 Nominal Current

**Menu 5c** Set AMP2 Window

**Menu 6** Set AMP3 Window? Y/N

If Y then --> **Menu 6a** Indication of Nominal value and Actual Measured value of AMP3 current

**Menu 6b** Set Nominal current to Actual Measured value of AMP3 current? Y/N

IF N then --> **Menu 6b.1** Manually Set AMP3 Nominal Current

**Menu 6c** Set AMP3 Window

**Menu 7** Set Remote Interface

**Menu 8** Set RS485 Remote Address

**Save Menu** When "R" is selected or when get to the end

Alarm indications appear on the LEDs (see figure 2.2).

All program changes must start with the operation of the Menu/Execute switch and must also end with the operation of the Menu/Execute switch verified by the "Save Settings?" Menu. If this sequence is not followed, none of the changes will take effect. If programming is initiated and no operator action takes place for approximately 12 seconds (before the final press of the Menu/Execute switch) the display will revert to its previous status and you will need to start over.

### 2.5.3 Control Switches

1. Menu/Execute - Any change to the programming of the unit must be initiated by pressing the Menu/Execute switch and completed by pressing the Menu/Execute switch.
2. Horizontal Switch - This switch is mounted so its movement is horizontal and moves the cursor left or right.
3. Vertical Switch - This switch is mounted so its movement is vertical, and changes settings in each menu.

### 2.5.2. Power On Settings and LCD Menu

**NOTE:** The last status of a unit is retained even when power is removed. When power is restored, the unit will return to it's previous settings.

When power is first applied, the LCD goes black to show all segments are functioning. The current firmware version will then be displayed for approximately 2 seconds.

#### Power Up

REV 1.00
----------

#### Normal Display

	UNIT 1	UNIT 2	UNIT 3
STATUS	450	470	380
PATH	1>1	3>2	

The unit is now operational and ready for any changes the operator may desire. The top line displays the current drawn by each unit. The bottom line describes the signal path and switch position. The example above depicts a 1 for 2 unit where RF input 1 is routed through AMP1 (1>1) and RF input 2 is routed through AMP3 (3>2).

#### Menu 1

AUTO/MAN= <u>A</u> UTO      R
-------------------------------

Toggle between AUTO and MANUAL mode with the UP/DOWN switch. Push the PROGRAM/EXECUTE switch to go to the next menu. Use the LEFT/RIGHT switch to move the cursor to R, then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

## Menu 2

LOCAL/REMOTE=	R
<u>L</u> OCAL	

Toggle between LOCAL and REMOTE mode with the UP/DOWN switch. Push the PROGRAM/EXECUTE switch to go to the next menu. Use the LEFT/RIGHT switch to move the cursor to R, then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

## Menu 3

PRIORITY <u>1</u>	R
-------------------	---

Toggle between PRIORITY1 and PRIORITY2 with the UP/DOWN switch. Push the PROGRAM/EXECUTE switch to go to the next menu. Use the LEFT/RIGHT switch to move the cursor to R, then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

## Menu 4

SET AMP1	Y/ <u>N</u>	R
WINDOW		

If “Y” is selected then the next sequence of menus prompt the user to either automatically or manually set the high and low current values that will trip AMP1 alarm. Push the PROGRAM/EXECUTE switch to go to the next menu. Use the LEFT/RIGHT switch to move the cursor to R, then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

## Menu 4a

AMP1 NOM= .XXX	R
AMP1 ACT= .XXX	

This menu is simply an indication of the present value of the nominal AMP1 current, as well as the actual measured value of AMP1 current. Press PROGRAM/EXECUTE to proceed.

## Menu 4b

Set to actual	R
AMP1= .XXX A	<u>Y</u> /N

Select “Y” to accept the presently measured value of AMP1 current as the nominal value. Select “N” to manually enter a nominal value of AMP1 current. The nominal current value is used as a reference from which the high and low current thresholds are derived. Push the PROGRAM/EXECUTE switch to go to the next menu.



### Menu 4b.1

<b>Manually set</b> <b>R</b>
<b>AMP1 NOM=.XXX A</b>

This menu is entered only if “N” is selected from menu 7a. This allows the user to manually enter a nominal value for AMP1 current. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 4c

<b>AMP1 WINDOW=10%</b> <b>R</b>
---------------------------------

Use the up and down switches to set the allowable operating range of AMP1 current. This percentage is the amount of positive or negative deviation from the nominal value before AMP1 alarm is tripped. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 5

<b>SET AMP2</b> <b>Y/N</b> <b>R</b>
<b>WINDOW</b>

If “Y” is selected then the next sequence of menus prompt the user to either automatically or manually set the high and low current values that will trip AMP2 alarm. Push the PROGRAM/EXECUTE switch to go to the next menu. Use the LEFT/RIGHT switch to move the cursor to R, then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

### Menu 5a

<b>AMP2 NOM=.XXX</b> <b>R</b>
<b>AMP2 ACT=.XXX</b>

This menu is simply an indication of the present value of the nominal AMP2 current, as well as the actual measured value of AMP2 current. Press PROGRAM/EXECUTE to proceed.

### Menu 5b

<b>Set to actual</b> <b>R</b>
<b>AMP2=.XXX A</b> <b>Y/N</b>

Select “Y” to accept the presently measured value of AMP2 current as the nominal value. Select “N” to manually enter a nominal value of AMP2 current. The nominal current value is used as a reference from which the high and low current thresholds are derived. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 5b.1

<b>Manually set</b>	<b>R</b>
<b>AMP2 NOM=.XXX A</b>	

This menu is entered only if “N” is selected from menu 8a. This allows the user to manually enter a nominal value for AMP2 current. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 5c

<b>AMP2 WINDOW=10%</b>	<b>R</b>
------------------------	----------

Use the up and down switches to set the allowable operating range of AMP2 current. This percentage is the amount of positive or negative deviation from the nominal value before AMP2 alarm is tripped. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 6

<b>SET AMP3</b>	<b>Y/N</b>	<b>R</b>
<b>WINDOW</b>		

If “Y” is selected then the next sequence of menus prompt the user to either automatically or manually set the high and low current values that will trip AMP3 alarm. Push the PROGRAM/EXECUTE switch to go to the next menu. Use the LEFT/RIGHT switch to move the cursor to R, then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

### Menu 6a

<b>AMP3 NOM=.XXX</b>	<b>R</b>
<b>AMP3 ACT=.XXX</b>	

This menu is simply an indication of the present value of the nominal AMP3 current, as well as the actual measured value of AMP3 current. Press PROGRAM/EXECUTE to proceed.

### Menu 6b

<b>Set to actual</b>	<b>R</b>
<b>AMP3=.XXX A</b>	<b>Y/N</b>

Select “Y” to accept the presently measured value of AMP3 current as the nominal value. Select “N” to manually enter a nominal value of AMP3 current. The nominal current value is used as a reference from which the high and low current thresholds are derived. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 6b.1

<b>Manually set</b> <b>R</b> <b>AMP3 NOM=.XXX A</b>
--

This menu is entered only if “N” is selected from menu 9a. This allows the user to manually enter a nominal value for AMP3 current. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 6c

<b>AMP3 WINDOW=1<u>0</u>%</b> <b>R</b>
--

Use the up and down switches to set the allowable operating range of AMP3 current. This percentage is the amount of positive or negative deviation from the nominal value before AMP3 alarm is tripped. Push the PROGRAM/EXECUTE switch to go to the next menu.

### Menu 7

<b>REMOTE</b> <b><u>R</u>S232</b> <b>R</b> <b>INTERFACE</b>
--

Use the up and down switches to scroll to the desired interface (RS232, RS422, RS485). Use the LEFT/RIGHT switch to move the cursor to R, then push PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

### Menu 8

<b>ADDRESS=0<u>0</u></b> <b>R</b>
-----------------------------------

Use the up and down switches to set the RS485 address of the unit. This address is only applicable when RS485 is the selected remote interface. The address is used if multiple units are connected in a multidrop configuration. Use the LEFT/RIGHT switch to move the cursor to R, then push PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

### Save Menu

<b>SAVE SETTINGS</b> <b><u>Y</u>/N</b>
--

Select “Y” to save any changes made in the previous menus. Select “N” to revert back to the previous settings.

### 2.5.3 Alarm Indications

An alarm condition will occur if AMP1, AMP2, or AMP3 draw current that falls outside of their respective current windows (when connected properly).

ON POWER UP	
<b>Power Up</b>	REV 1.00
<hr/>	
NORMAL DISPLAY	
	UNIT 1      UNIT 2      UNIT 3
<b>Normal Display</b>	STATUS      450      470      380
	PATH      1>1      2>2
	PUSH BUTTON
<hr/>	
<b>Menu 1</b> Select AUTO or MANUAL mode	AUTO/MAN= <u>A</u> UTO      R
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Menu 2</b> Set Unit to REMOTE or LOCAL Operation	LOCAL/REMOTE= <u>L</u> OCAL      R
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Menu 3</b> Set Priority to AMP1 or AMP2	PRIORITY <u>1</u> R
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Menu 4,5,6</b> Set AMPX Operational Current Window?	SET AMPX    Y/ <u>N</u> R
	WINDOW
	SCROLL <>
	PUSH BUTTON
<b>Menu 4a,5a,6a</b> Indication of the current nominal and actual measured current of AMPX	AMPX NOM=.243      R
	AMPX ACT=.255
	SCROLL <>
	PUSH BUTTON
<b>Menu 4b,5b,6b</b> Set Nominal current value to currently measured value?	Set to actual      R
	AMPX=.255 A <u>Y</u> /N
	SCROLL <>
	PUSH BUTTON
<b>Menu 4b.1,5b.1,6b.1</b> If N in previous menu, set Nominal value for AMPX current	Manually set      R
	AMPX NOM=.24 <u>3</u> A
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Menu 4c,5c,6c</b> Set Allowable Operating Range of AMPX current	AMPX      R
	WINDOW= <u>10</u> %
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Menu 7</b> Set Remote Mode	REMOTE <u>R</u> S232      R
	INTERFACE
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Menu 8</b> Set RS485 Address	ADDRESS= <u>00</u> R
	SCROLL <>
	SCROLL ⇅
	PUSH BUTTON
<b>Save?</b> When "R" is selected or at the end of the menu options	SAVE SETTINGS <u>Y</u> /N
	SCROLL <>
	PUSH BUTTON

**FIGURE 2.4 Menu Display and Sequences**



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