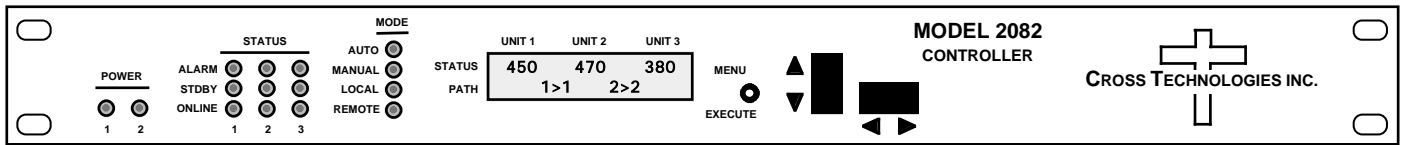


# Instruction Manual

# Model 2082-14x-Series

## Redundant Unit Controllers

May 2018, Rev. F



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# INSTRUCTION MANUAL

## MODEL 2082-14x Redundant Unit Controller

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# MODEL 2082-14x-series - 1:1 & 1:2 Redundant Unit Controllers

## 1.0 General

### 1.1 Equipment Description

The Model 2082-14x-series of Redundant Unit Controllers are designed to power, monitor and control LNA or LNB amplifiers configured in 1:1 or 1:2 redundancy modes. There are currently two (2) Drive Voltages supported (+26 or +47 VDC) and two (2) Common (voltage or ground) configurations. This manual addresses all eight (8) of these models as shown in this chart:

Model	Redundancy	Waveguide Switch Drive Voltage/Amps	Common
2082-141	1:1	+26 VDC/3.0A	+26 VDC
2082-142	1:2	+26 VDC/3.0A	+26 VDC
2082-141P	1:1	+26 VDC/3.0A	Ground
2082-142P	1:2	+26 VDC/3.0A	Ground
2082-141-47	1:1	+47 VDC/3.0A	+47 VDC
2082-142-47	1:2	+47 VDC/3.0A	+47 VDC
2082-141-47P	1:1	+47 VDC/3.0A	Ground
2082-142-47P	1:2	+47 VDC/3.0A	Ground

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. LNA or LNB current is measured and a fault is signaled if the current deviates from user selected thresholds. Multi-function switches select Auto, Local, or Remote operation, (Priority for 1:2 models), and the signal path in the Manual mode. Remote operation via the RS232/RS485 M&C interface allows selection of priorities (1:2) and the signal path. Ethernet is available as option, -W8, -W18, or -W28. Contact closure to ground inputs allow selection of Local/Remote, and 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, Remote, and Manual 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. ALL 2082-14x models are housed in a 1RU chassis which are powered by redundant power supplies fed by separate, fused 100-240 ±10% VAC AC input connectors.

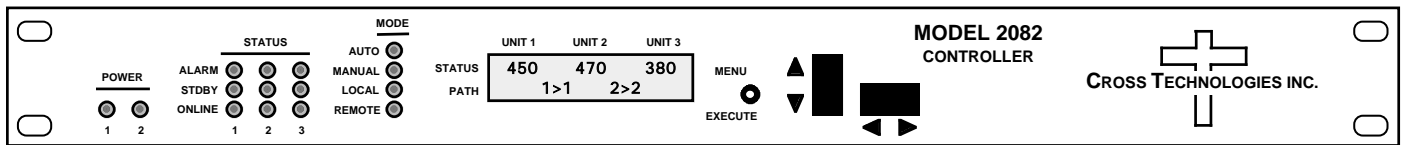


Figure 1.0 TYPICAL FRONT PANEL (1:2 model 2082-142 shown above)

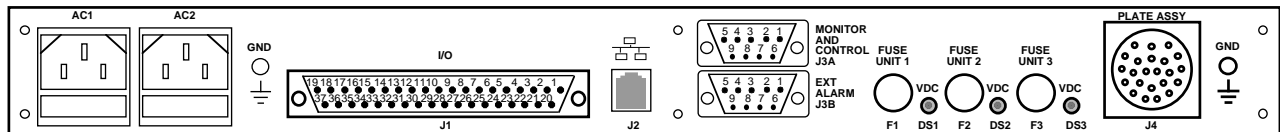


Figure 1.1 TYPICAL REAR PANEL - Shown with optional Ethernet Connector (J2) (1:2 model 2082-142 shown above)

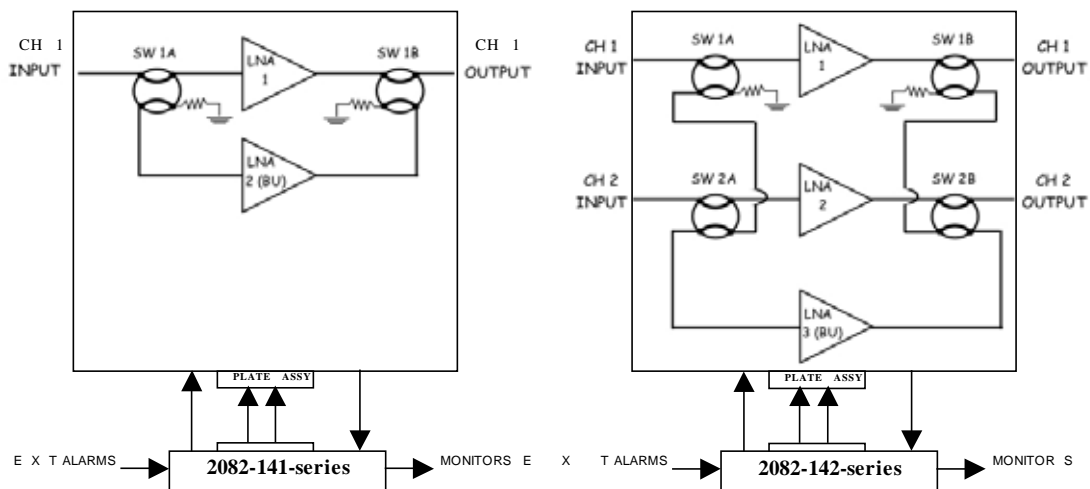


Figure 1.2: (TYPICAL) Block Diagrams, 1:1 (2082-141-series) and 1:2 (2082-142-series) Configurations

## 1.2 Technical Characteristics

<b>TABLE 1.0 2082-14x-Series Switch Specifications*</b>	
<b>LNA/LNB Power</b>	
Output Voltage/Current	+15 ±1 Volts/0.6 amps max., each unit
Number Powered	2 (for -141, 1:1 series), 3 (for -142, 1:2 series)
<b>Switch Drive Characteristics</b>	
Fault Detection time	50 ms max.
Total Switch over time	100 ms max., based on switch specifications
Drive Voltage	+26 or +47 Volts, 3.0A (for either -141 1:1 or -142 1:2 series)
<b>Alarm and Control, M&amp;C</b>	
Alarm Output Signal	Form C relay: 100 VDC, 0.5A, 3W max.
M&C Interface	RS232C or RS485, Selectable, Ethernet Optional (See below for Ethernet options)
M&C Signal	9600 baud rate, no parity, 8 data bits, 1 stop bit
<b>Controls, Indicators</b>	
Mode Select	Local/Remote, Auto/Manual push-button switches, contact closures, or remote selection.
Power On Status	Green LED's (PS1, PS2), External Form C contact closure, 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 LED's, External Form C contact closure, M&C serial (for amplifiers, Ext. and Summary alarm)
<b>Controls, Others</b>	
Parallel I/O Connector	DB37, female
External Alarm	DB9, female
M&C Connector	DB9, female
Amp Plate Connector	MS3112E16-23S
Size	1 RU, 19 inch standard chassis, 1.75" high x 16.0" deep
Power	Redundant 100-240 ±10% VAC, 47-63 Hz, 150 Watts max. power supplies
<b>Remote M&amp;C Ethernet Options</b>	
W8-	Ethernet with Web Browser Interface
W18-	Ethernet with SNMP (and MIB) and Web Browser Interfaces
W28-	Ethernet with Direct TCP/IP Interface
<b>Other Options</b>	
Input Closure Alarm Option: Call Cross Technologies	
<b>Temperature</b>	
*+10°C to +40°C.	
Specifications subject to change without notice	
2016 Cross Technologies, Inc.	

## 1.3 Control & Operation

All Redundant Unit Controllers are designed to be 'controlled' either Locally or Remotely (Local/Remote) and the 'switching' is either Automatic or Manual (Auto/Manual). The controller defaults to Local (control)/Auto (switching) mode. These are described in more detail below.

### 1.3.1 Local/Remote (Control) Mode

Local mode is the default 'control' 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 or through the optional Ethernet interface. 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 or Ethernet Webpage, SNMP or TCP/IP Direct commands, depending on the Remote Interface Selection, Menu 5.

DB37 (J1) Pin	Function
18	<u>Auto/Manual Select</u> : Ground to activate Manual Mode.

### 1.3.2 Auto/Manual (Switching) Mode

Auto mode is the default 'switching' mode of the controller.

**2082-141-series (1:1 Redundancy):** When in the auto mode the controller is continuously monitoring the status of AMP1 and AMP2. If a fault is detected from AMP1 then AMP2 is switched into the signal path of the faulted unit.

**2082-142-series (1:2 Redundancy):** When in the auto mode the controller is continuously monitoring the status of AMP1, AMP2 and AMP3. If a fault is detected from AMP1 or AMP2 then AMP3 is switched into the signal path of the faulted unit.

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.

There are 3 methods available to manually operate the waveguide switch.

Method 1 is locally from the front panel interface. The unit must be in Manual Mode and Local (Control) Mode to use this method.

Method 2 is remotely from the serial M&C or Ethernet (optional) interface. The unit must be in Manual Mode and Remote (**Control**) Mode to use this method.

Method 3 allows the user to physically (“manually”) turn the waveguide switch by hand. The unit must be in Manual Mode but may be in either Local or Remote (**Control**) Mode when using this method.

## 1.4 Setup/Testing

At the time of installation **or** testing, the user needs to verify that the controller is properly installed and that the 'back-up' signal path and LNA are functioning properly. The 2082-14x must first be properly wired to a waveguide switch in order to perform any testing. The 2082-14x will not send any waveguide switch control signals if the unit cannot read a valid position from the waveguide switch(s). The switch position read from the waveguide switch is displayed on the bottom line of the main LCD display screen. If “ERROR!” is displayed then the unit cannot read a valid position.

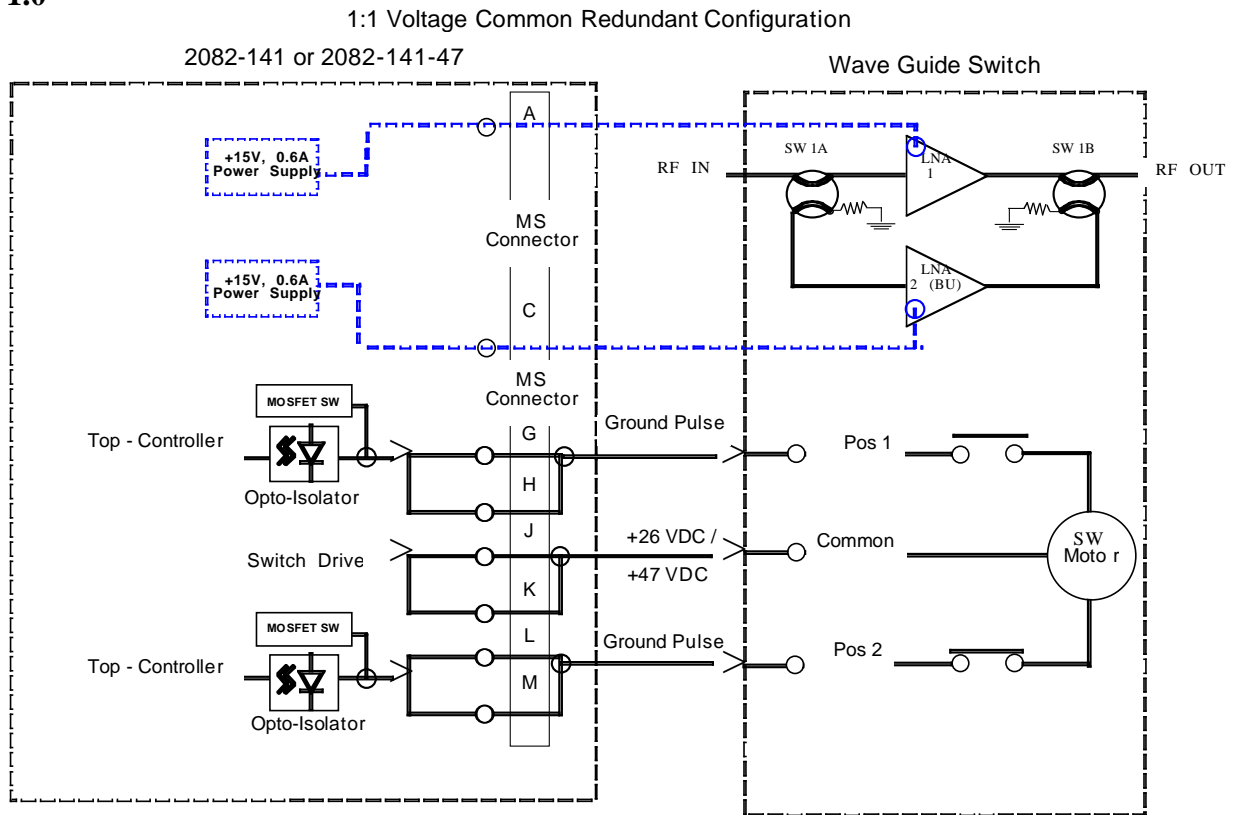
**Ethernet Options. If your unit is equipped with any of the following optional Ethernet M&C Interfaces, the following messages will be displayed:**

- From the optional Ethernet Webpage Interface (W8) there is a Switch Position status field. If “ERROR!” is displayed in that field then the unit cannot read a valid position.
- From the optional Ethernet SNMP interface (W18) there is an Object ID named switchPos208214x. If the value 99 is read from that object ID then the unit cannot read a valid position.
- From the optional Ethernet TCP/IP Direct interface there is a field in the Controller Status query that indicates if the unit cannot read a valid position.

The 2082-14x reads the waveguide switch position through the MS connector J4 on the rear panel.

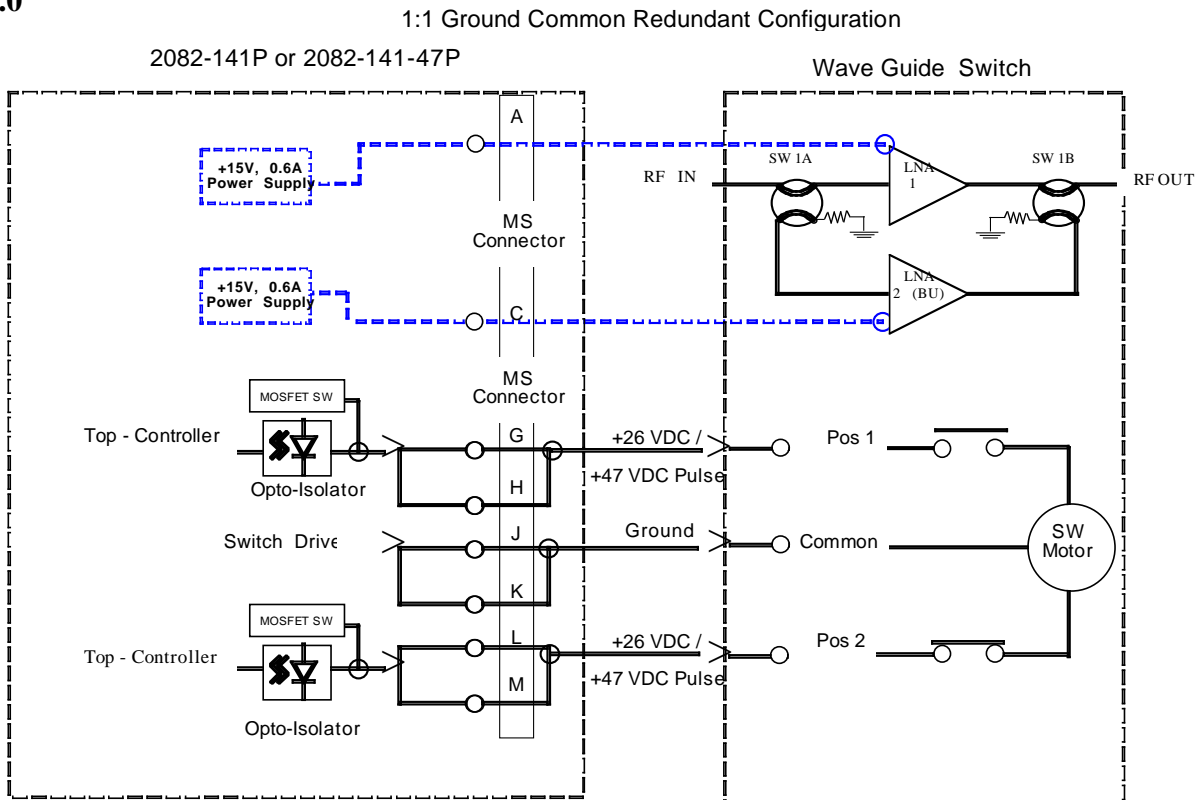
Typical waveguide switch wiring for both +26 and +47 VDC Models 2082-141 or 2082-141P; and 2082-142 or 2082-142P are shown in the following 4 diagrams:

**Figure 1.0**



2082-141 or 2082-141-47 (+26 VDC / +47 VDC Common) Wave Guide SW Wiring Diagram

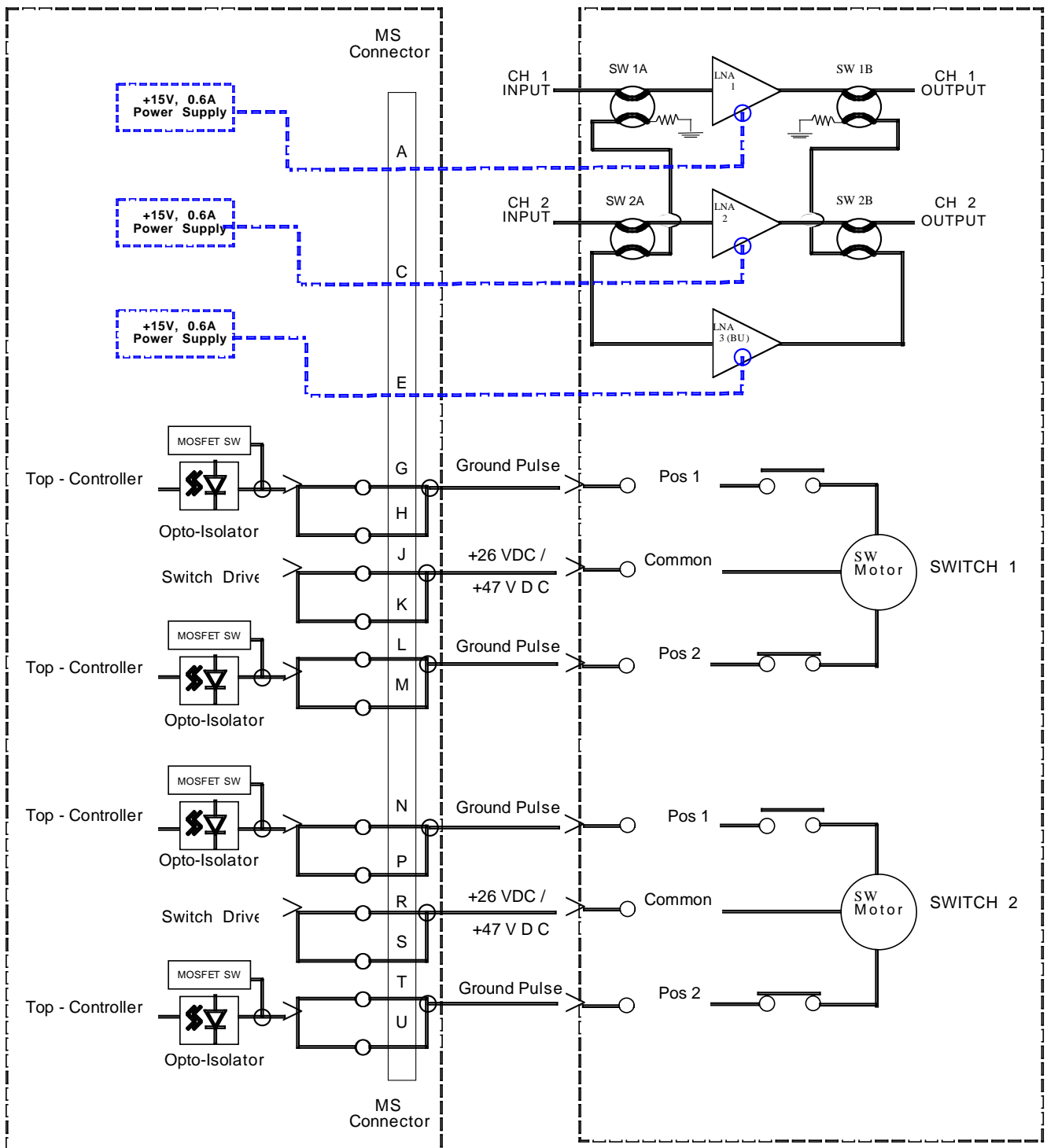
**Figure 2.0**



2082-141P or 2082-141-47P (Ground Common) Wave Guide SW Wiring Diagram

**Figure 3.0**

1:2 Voltage Common Redundant Configuration  
 2082-142 or 2082-142-47 Wave Guide Switch

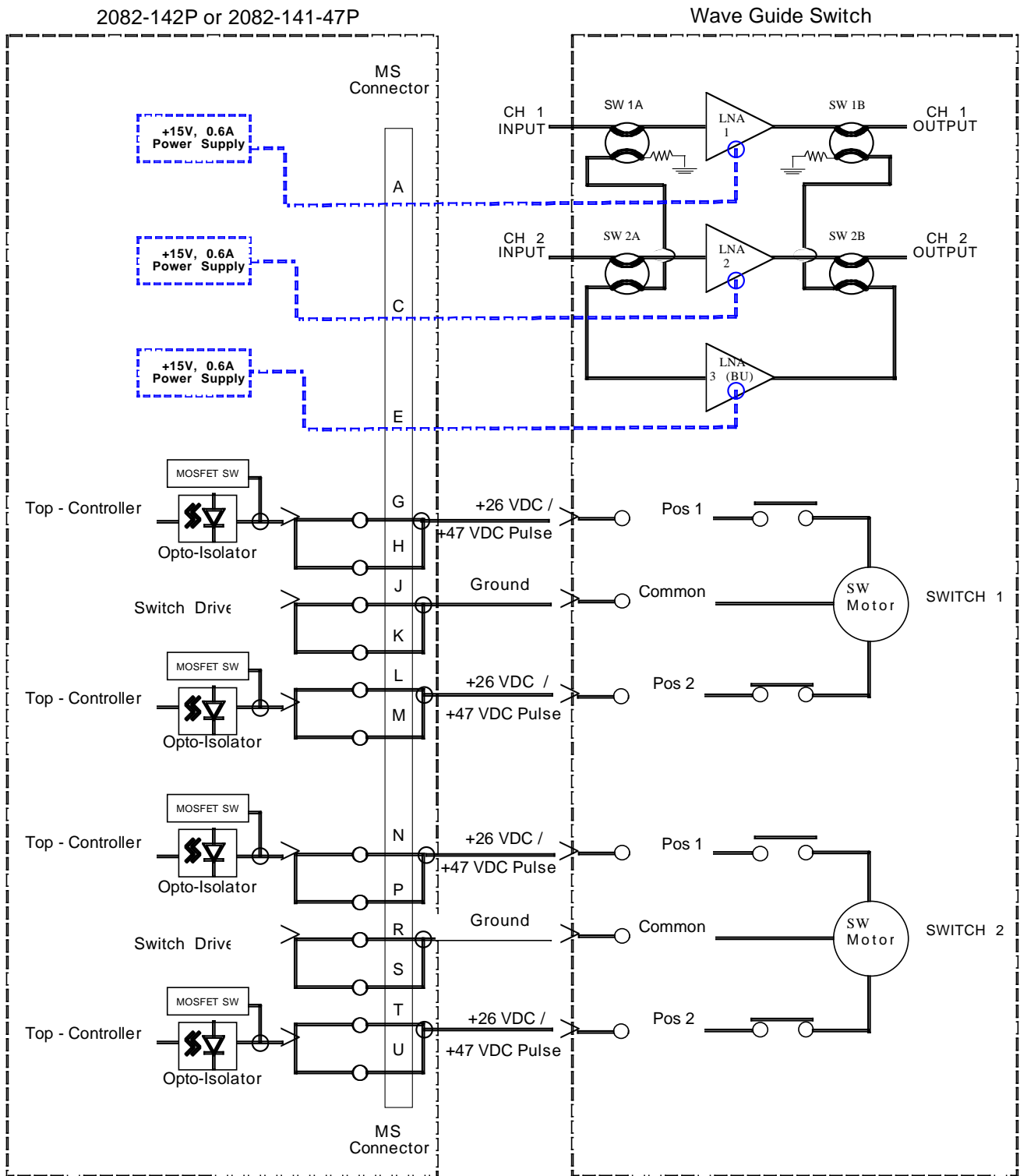


2082-142 or 2082-142-47 (+26 VDC / +47 VDC Common) Wave Guide SW Wiring Diagram



**Figure 4.0**

1:2 Ground Common Redundant Configuration



2082-142P or 2082-142-47P (Ground Common) Wave Guide SW Wiring Diagram

The micro controller in the 2082-14x-series controllers determines the switch position by detecting the presence of switch common voltage on either Pos1 or Pos2. If no presence of switch common voltage is detected then the position is reported as “ERROR!”. The 2082-14x will not send waveguide switch control signals if it cannot determine a valid switch position.

There are three possible methods for a user to override auto switching while in Manual mode to perform waveguide switch testing. These methods are referred to as LOCAL (which provides two (2) possible ways) and REMOTE (one (1) way). These are described below.

**1.4.1 LOCAL.** As mentioned above, local provides two possibilities to override auto switching. The first is via the Front Panel Menu and the second is via the Manual Override Knob located on the waveguide switch (if so equipped.) Both of these require that the 2082-14x be placed in the MANUAL MODE.

### 1.4.2 Front Panel Menu.

To override auto switching via the Front Panel Menu ...

- 1) Place the unit in MANUAL MODE.
- 2) The LCD display will display the following message showing the current location of the switch:

<b>Manually Set</b>	<b>R</b>
<b>POS=1&gt;1</b>	

2082-141 Front Panel Display

<b>Manually Set</b>	<b>R</b>
<b>POS=1&gt;1</b>	<b>POS=2&gt;2</b>

2082-142 Front Panel Display

- 3) You may now select switch positions using the UP/DOWN switch.
  - a) For a 2082-141-series, 1:1 controller, the switch position choices are: 1>1 (Primary active), or 2>1 (Backup active).
  - b) For a 2082-142-series, 1:2 controller, the switch position choices are: 1>1, 2>2 (Both Primary's active), 3>1, 2>2 (Backup #1) and 1>1, 3>2 (Backup #2)
- 4) Once the Switch position is selected, push the PROGRAM/EXECUTE switch to go to the next menu.
- 5) Use the LEFT/RIGHT switch to move the cursor to R (return), then push the PROGRAM/EXECUTE switch to jump to the SAVE SETTINGS menu.

### 1.4.3 Manual Override Knob.

To override auto switching via Manual Override Knob ...

- 1) Place the unit in MANUAL MODE.
- 2) The LCD display will display the following message showing the current location of the switch:

<b>Manually Set</b> <b>R</b>
<b>POS=1&gt;1</b>

2082-141 Front Panel Display

<b>Manually Set</b> <b>R</b>
<b>POS=1&gt;1      POS=2&gt;2</b>

2082-142 Front Panel Display

- 3) Once testing has been completed, the 2082-14x-series Redundant Unit Controller should be restored to AUTO mode.

### 1.4.4 REMOTE

To override auto switching remotely... [The unit must be in the REMOTE mode to execute any remote commands.]

\* PLEASE NOTE: The two character {aa}(00-31) prefix should be used ONLY when the RS485 serial interface is selected.

From the serial M&C Interface:

- 1) SET the unit to MANUAL mode through the following command...  
{aaC9x}  
where x = 1 sets switch to MANUAL.  
example: {aaC91}
- 2) To manually test the switches, send the following remote M&C command to the unit.
  - a) Model 2082-141, 1:1 Redundant Unit Controller:  
{aaCAx}  
where x = 1 sets switch to NONE Backed up,  
x = 2 sets switch to back up position 1.
  - b) Model 2082-142, 1:2 Redundant Unit Controller:  
{aaCAx}  
where x = 1 sets switch to (Primary1 active) and (Primary2 active)  
x = 2 sets switch to (Backup active on Primary 1) and (Primary2 active)  
x = 3 sets switch to (Primary1 active) and (Backup active on Primary2)
- 3) When testing is completed, return the unit to AUTO mode through the following command...  
{aaC9x}  
where x = 0 sets switch to AUTO.  
example: {aaC90}

From the (optional) Ethernet Interfaces:

Webpage (W8):

1. Select “Manual” switching mode.
2. Select “Remote” control mode.
3. Select the desired set position,
  - a) Model 2082-141, 1:1 select either 1 (1 to 1), or  
2 (2 to 1)
  - b) Model 2082-142, 1:2 select either 1 (1 to 1 and 2 to 2), or  
2 (3 to 1 and 2 to 2 ), or  
3 (1 to 1 and 3 to 2)
4. Click “Update Other”.

SNMP (W18):

1. Set ObjectID ctrlMode to 1 (MANUAL).
2. Set ObjectID ctrlSource to 1 (REMOTE).
3. Set ObjectID switchPos to the desired position,
  - a) Model 2082-141, 1:1, select either 1 (AMP1 to 1) or,  
2 (AMP2 to 1).
  - b) Model 2082-142, 1:2, select either 1 (AMP1 to 1 and AMP2 to 2), or  
2 (AMP3 to 1 and AMP 2 to 2), or  
3, (AMP1 to 1 and AMP 3 to 2)

## 1.5 M&C Interface

### 1.5.1 Remote Serial Interface

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

**Connectors:** Rear panel, DB9 female

TABLE 1.1 J3A Monitor & Control Pinout	
Pin	Function
1	RS422/RS485 Tx-
2	RS232C Tx, RS422/RS485 Tx+
3	RS232C Rx, RS422/RS485 Rx+
4	RS422/RS485 Rx-
5	GND
6	Not Used
7	Not Used
8	Not Used
9	Not Used

**1.5.2 Status Requests** Table 1.2 lists the status requests for the 2082-14x-series and briefly describes them.

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

{ = start byte

aa = address of unit (only used if in RS485 mode)

C = 1 character, either C (command) or S (status)

N = 1 character command or status request

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 the RS485 serial interface is selected.

**TABLE 1.2 2082-14x-series Status Requests**

Command	Syntax *	Description
Model and Firmware version	{aaSM}	Returns {aaSMbbbbbbbbbvercccc} where: <ul style="list-style-type: none"> <li>• bbbbbbbb = Model number</li> <li>• cccc = Firmware version</li> </ul>
AMP1 Status	{aaS1}	Returns {aaS1bbbccdd} 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 {aaS2bbbccdd} 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 (for Model 2082-142 only)	{aaS3}	Returns {aaS2bbbccdd} 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>
Controller Status (for Model 2082-141, 1:1)	{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: always PRIORITY1 for 1:1 units</li> <li>• e = 0 if no backup, 1 if AMP1 backed up, E if error</li> <li>• f = Power Supply 1 Status: 0 = good, 1 = alarm</li> <li>• g = Power Supply 2 Status: 0 = good, 1 = alarm</li> </ul>
Controller Status (for Model 2082-142, 1:2)	{aaS5}	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, E if error</li> <li>• f = Power Supply 1 Status: 0 = good, 1 = alarm</li> <li>• g = Power Supply 2 Status: 0 = good, 1 = alarm</li> </ul>

**1.5.3 Commands** Table 1.3 lists the commands for the 2082-14x-series controllers and briefly describes them. After a command is sent, the 2082-14x sends a return “>” indicating the command has been received and executed.

<b>Table 1.3 2082-14x-series Commands</b>		
<b>Command</b>	<b>Syntax*</b>	<b>Description</b>
Set AMP1 Nominal Value	{aaC1xxx}	where:
	or {aaC1}	• xxx = 100 (0.100A) to 500 (0.500A)
		• NOTE: Omit xxx to set nominal value to currently measured value
Set AMP2 Nominal Value	{aaC2xxx}	where:
	or {aaC2}	• xxx = 100 (0.100A) to 500 (0.500A)
		• NOTE: Omit xxx to set nominal value to currently measured value
Set AMP3 Nominal Value (for Model 2082-142 only)	{aaC3xxx} or {aaC3}	where: • xxx = 100 (0.100A) to 500 (0.500A) • NOTE: Omit xxx to set nominal value to currently measured value
Set AMP1 Window	{aaC4xx}	where: • xx = 10 (10%) to 30 (30%) in increments of 5
Set AMP2 Window	{aaC5xx}	where: • xx = 10 (10%) to 30 (30%) in increments of 5
Set AMP3 Window (for Model 2082-142 only)	{aaC6xx}	where: • xx = 10 (10%) to 30 (30%) in increments of 5
Set Local/Remote	{aaC8x}	where: • x = 0 for LOCAL mode, 1 for REMOTE mode
Set Auto/Manual	{aaC9x}	where: • x = 0 for AUTO mode, 1 for MANUAL mode
Set Switch Position	{aaCAx}	where:
		<b>2082-141:</b>
		• x = 1 to set to: 1 to 1, 2 to 2
		• x = 2 to set to: 2 to 1, 1 to 2
		<b>2082-142:</b>
		• x = 1 to set to: 1 to 1, 2 to 2
		• x = 2 to set to: 3 to 1, 2 to 2
		• x = 3 to set to: 1 to 1, 3 to 2
		• NOTE: The unit will ignore the set switch position command when not in MANUAL mode.

## 1.6 Environmental Use Information

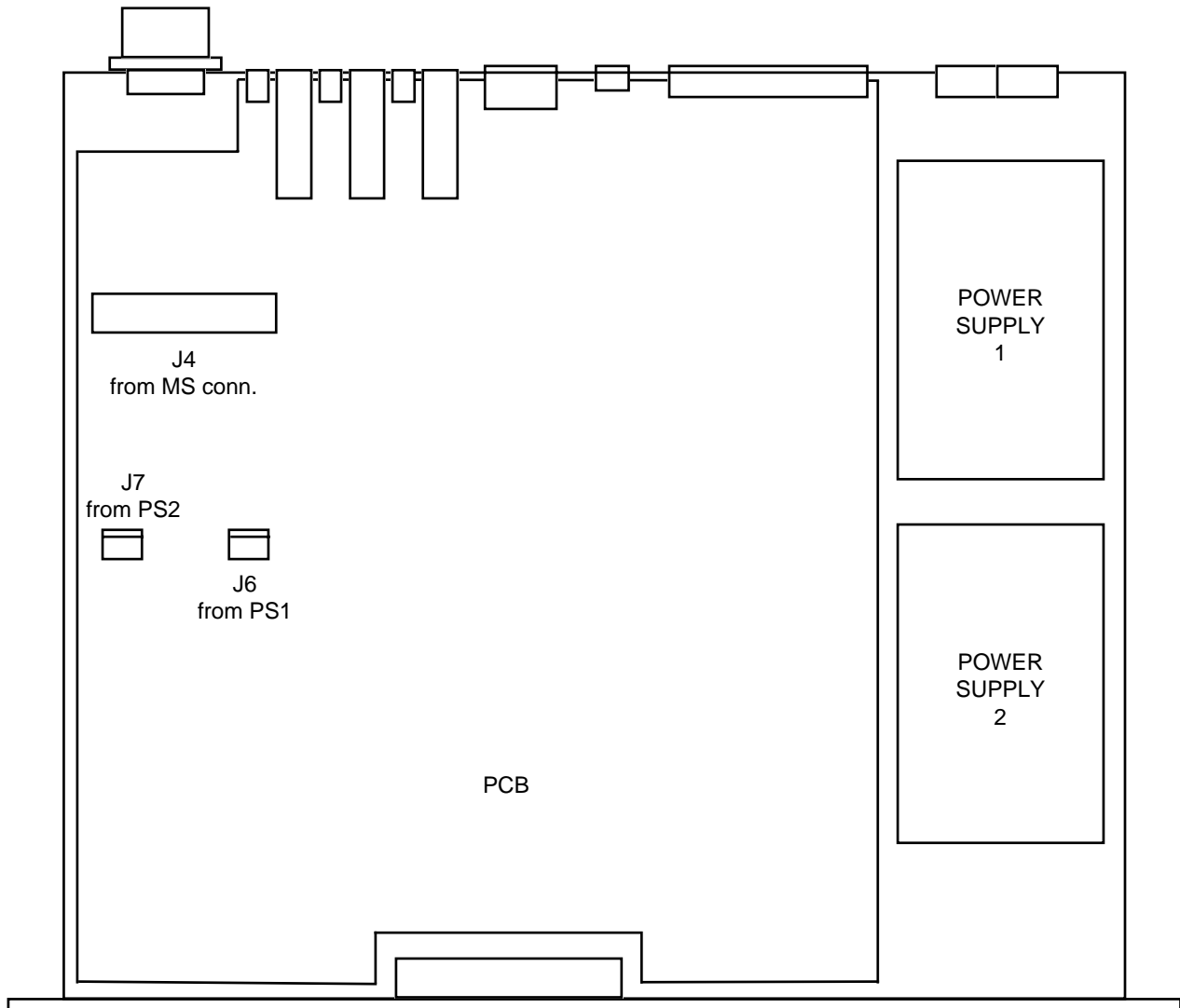
- A. Rack-Mounting** - To mount this equipment in a rack, please refer to the installation instructions located in the user manual furnished by the manufacturer of your equipment rack.
- B. Mechanical loading** - Mounting of equipment in a rack should be such that a hazardous condition does not exist due to uneven weight distribution.
- C. 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 (Maximum Recommended Ambient Temperature).
- D. 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 units may be required.
- E. 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.
- F. 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).
- G. 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 RE-INSTALLED** prior to Top Cover screw replacement. **FAILURE TO DO** this may cause **INGRESS** and/or **EGRESS** emission problems.
- G. 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 RE-INSTALLED** prior to Top Cover screw replacement. **FAILURE TO DO** this may cause **INGRESS** and/or **EGRESS** emission problems.



## 2.0 Installation

### 2.1 Mechanical

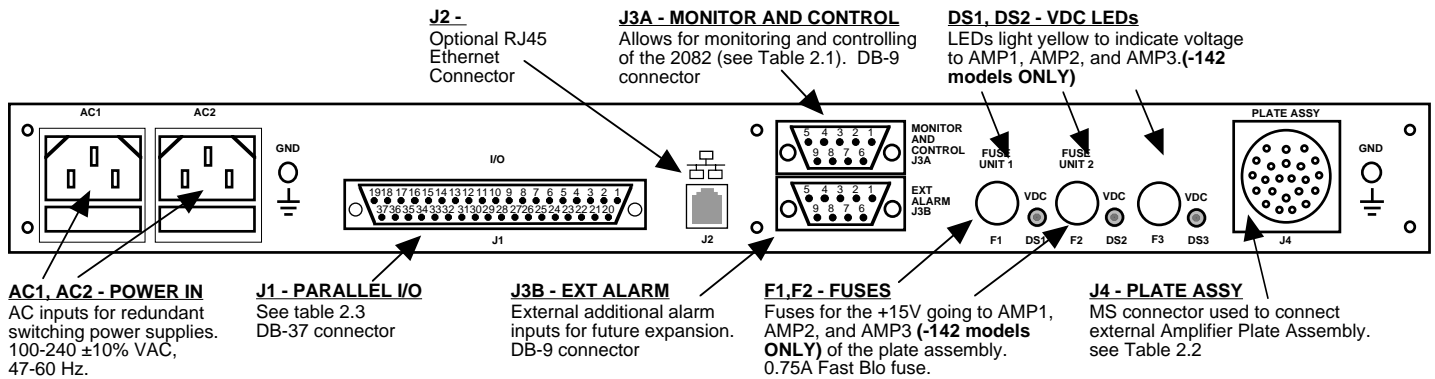
The 2082-14x-series Redundant Controller consists of one PCB housed in a 1 RU (1 3/4 inch high) by 16 inch deep chassis. Two redundant, switching +27 (or +48) VDC power supplies are diode “OR’ed to provide +26 (or +47) VDC for the assembly. The 2082-14x-series unit can be secured to a rack using the 4 holes on the front panel. Figure 2.0 shows how the 2082-14x-series units are assembled.



**FIGURE 2.0 2082-14x 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 2082-141 Rear Panel I/O's**

Pin	Function
1	RS422/RS485 Tx-
2	RS232C Tx, RS422/RS485 Tx+
3	RS232C Rx, RS422/RS485 Rx+
4	RS422/RS485 Rx-
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), 9600 baud rate, no parity, 8 data bits, 1 start bit, 1 stop bit.

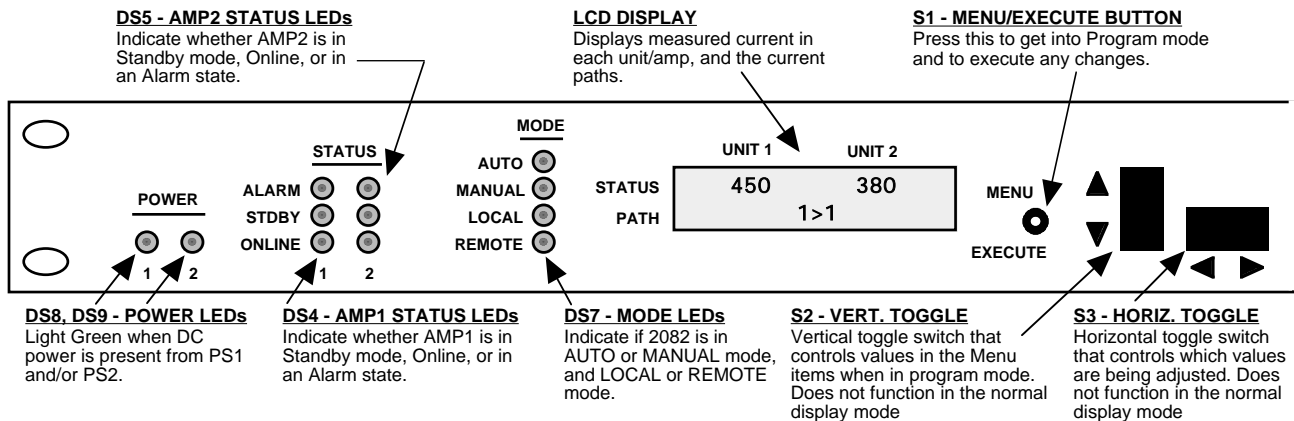
Pins	Functional Description	
A	AMP1 +15VDC, 0.6A (Fused - F1, LED DS1)	
C	AMP2 +15VDC, 0.6A (Fused - F2, LED DS2)	
E	AMP3 +15VDC, 0.6A (Fused - F3, LED DS3)	-142 ONLY
B,D,F,V	GROUND	
J,K,R,S	Switch Common, +26 or +47 Volts, 3.0A (for either -141, 1:1 or -142, 1:2 series)	
G,H	Switch #1 - Position 1	
L,M	Switch #1 - Position 2	
N,P	Switch #2 - Position 1 (-142 series ONLY)	-142 ONLY
T,U	Switch #2 - Position 2 (-142 series ONLY)	-142 ONLY

**TABLE 2.2 J1 Parallel I/O Pins [Bold text apply only to -142 models)**

<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
<b>(RF AMP3 (below) applies only to -142 models..)</b>		
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
<b>(SW2 (below) applies only to -142 models..)</b>		
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
<b>(PRIORITY settings (below) applies only to -142 models..)</b>		
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 (AMP3 STANDBY applies only to -142 models..)
36	input	AMP2 STANDBY; Ground to activate
37	input	AMP1 STANDBY; Ground to activate
19	output	GROUND

## 2.3 Front Panel Controls and Indicators

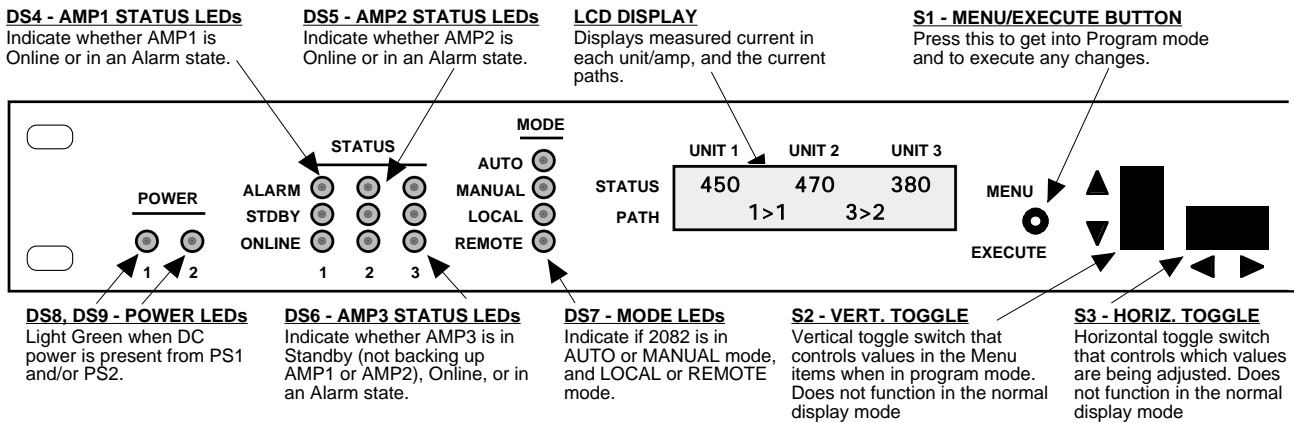
Figure 2.2 shows the Front Panel controls and indicators for 2082-141 (1:1) model controllers. Table 2.3 shows the LED Indicators for the 2082-141(1:1) model controllers.



**FIGURE 2.2 2082-141-series Front Panel Controls and Indicators**

TABLE 2.3 LED Indicators for 2082-141 models.	
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, STDBY	Illuminates YELLOW when AMP2 is not backing up AMP1
STATUS2, ONLINE	Illuminates GREEN when AMP2 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

Figure 2.3 shows the Front Panel controls and indicators for 2082-142 (1:2) model controllers. Table 2.4 shows the LED Indicators for the 2082-142 (1:2) model controllers.



**FIGURE 2.3 2082-142-series Front Panel Controls and Indicators**

TABLE 2.4 LED Indicators for 2082-142 models.	
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

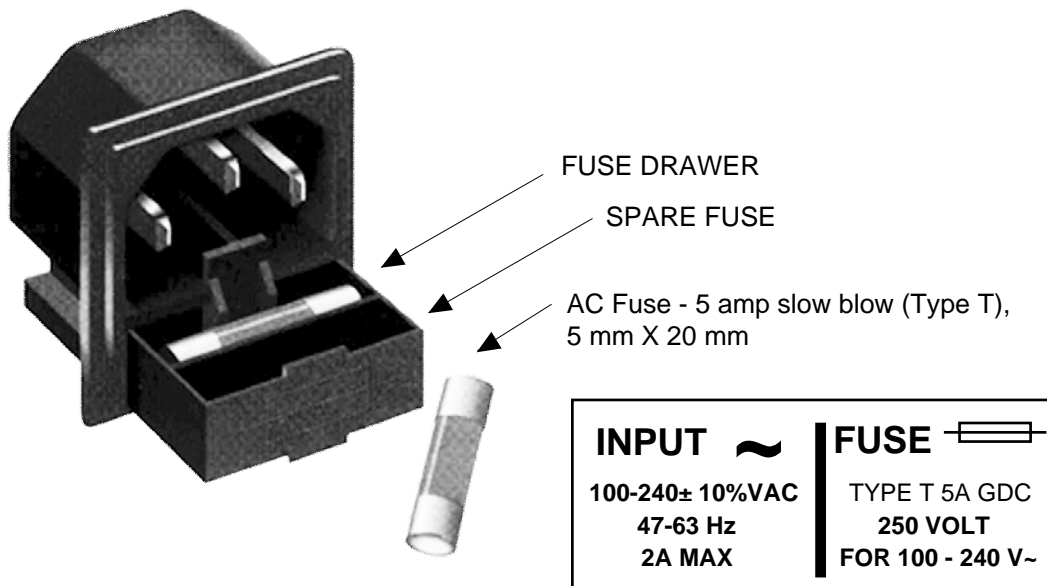
## 2.4 Installation / Operation

### 2.4.1 Installing and Operating the 2082-141-series (1:1) Controller units:

1. Connect external Amplifier Plate Assembly to 2082-141 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 and DS2 are lit. If not, then either a fuse is missing or blown in F1 or F2, respectively (Figure 2.1).
5. Set the current windows for AMP1 and AMP2 (See Section 2.5 Menu Settings).
6. 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 2.4. There is a spare fuse in the near slot.
7. If a fuse continues to open, the corresponding power supply is most likely defective.

### 2.4.2 Installing and Operating the 2082-142-series (1:2) Controller units:xxx

1. Connect external Amplifier Plate Assembly to 2082-142 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 2.3).
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 2.4. There is a spare fuse in the near slot.
8. If a fuse continues to open, the corresponding power supply is most likely defective.



**FIGURE 2.4 Fuse Location and Spare Fuse**

## 2.5 Menu Settings

### 2.5.1 Functions for model 2082-141-series (1:1) Controllers

**NOTE1:** If you have a model 2082-142-series 1:2 Controller, *skip to Section 2.5.1a*

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 2.5):

#### **Power Up**

#### **Normal Display**

**Menu 1** Select AUTO/MANUAL mode

NOTE: If MANUAL mode, then --> Menu 1a Manually set switch positions.

**Menu 2** Select LOCAL/REMOTE mode

**Menu 3** Set AMP1 Window? Y/N

If Y then --> **Menu 3a** Indication of Nominal value and Actual Measured value of AMP1 current

**Menu 3b** Set Nominal current to Actual Measured value of AMP1 current? Y/N

IF N then --> **Menu 3b.1** Manually Set AMP1 Nominal Current

**Menu 3c** Set AMP1 Window

**Menu 4** Set AMP2 Window? Y/N

If Y then --> **Menu 4a** Indication of Nominal value and Actual Measured value of AMP2 current

**Menu 4b** Set Nominal current to Actual Measured value of AMP2 current? Y/N

IF N then --> **Menu 4b.1** Manually Set AMP2 Nominal Current

**Menu 4c** Set AMP2 Window

**Menu 5** Set Remote Interface (RS232, 422 or 485 Standard); Ethernet (optional).

**Menu 6** Set RS485 Remote Address (only if RS485 selected in Menu 5.)

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

## 2.5.1a Functions for model 2082-142-series (1:2) Controllers

**NOTE1: If you have a model 2082-141-series (1:1) Controller, go back to Section 2.5.1**

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 2.5a):

### **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 Figures 2.2 & 2.3).

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.



## 2.5.2 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.

## 2.5.3 Power On Settings and LCD Menu Control, model 2082-141-seies (1:1) Controllers.

**NOTE1:** If you have a model 2082-142-seies (1:2) Controller, skip to Section 2.5.3a

**NOTE2:** The last status of a unit is retained even when power is removed. When power is restored, the unit will return to its 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
STATUS	450	390
PATH	1>1	

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 1 unit where RF input 1 is routed through AMP1 (1>1).

### 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 1.a

```
Manually set      R  
POS= 1>1
```

Toggle between switch positions 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 SETTING menu.

### Menu 2

```
LOCAL/REMOTE=    R  
LOCAL
```

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

```
SET AMP1   Y/N    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 3a

```
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 3b

```
Set to actual    R  
AMP1=.XXX A   Y/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 3b.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 3c

<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 4

<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 4a

<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 4b

<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 4b.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 4c

<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 5

<b>REMOTE</b>	<b>RS232</b>	<b>R</b>
<b>INTERFACE</b>		

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

### Menu 6

<b>ADDRESS=00</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>Y/N</b>
----------------------	------------

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

## 2.5.5 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			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 1a</b> Manually set POS = 1 > 1		Manually set		R	SCROLL <>	
		POS = 1>1			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 3,4</b> Set AMPX Operational Current Window?		SET AMPX	Y/ <u>N</u>	R	SCROLL <>	
		WINDOW			SCROLL ⤴	PUSH BUTTON
<b>Menu 3a,4a</b> Indication of the current nominal and actual measured current of AMPX		AMPX NOM=.243		R	SCROLL <>	
		AMPX ACT=.255			SCROLL ⤴	PUSH BUTTON
<b>Menu 3b,4b</b> Set Nominal current value to currently measured value?		Set to actual		R	SCROLL <>	
		AMPX=.255 A <u>Y</u> /N			SCROLL ⤴	PUSH BUTTON
<b>Menu 3b.1,4b.1</b> If N in previous menu, set Nominal value for AMPX current		Manually set		R	SCROLL <>	
		AMPX NOM=.24 <u>3</u> A			SCROLL ⤴	PUSH BUTTON
<b>Menu 3c,4c</b> Set Allowable Operating Range of AMPX current		AMPX		R	SCROLL <>	
		WINDOW=1 <u>0</u> %			SCROLL ⤴	PUSH BUTTON
<b>Menu 5</b> Set Remote Mode		REMOTE	<u>R</u> S232	R	SCROLL <>	
		INTERFACE			SCROLL ⤴	PUSH BUTTON
<b>Menu 6</b> Set RS485 Address		ADDRESS=0 <u>0</u>		R	SCROLL <>	
					SCROLL ⤴	PUSH BUTTON
<b>Menu 7</b> Change Network Settings?		CHANGE NETWORK		<u>N</u> O	SCROLL <>	
		SETTINGS?			SCROLL ⤴	PUSH BUTTON
<b>Menu 7a.</b> Set IP Address		IP ADDRESS		R	SCROLL <>	
		192.168.123.00 <u>2</u>			SCROLL ⤴	PUSH BUTTON
<b>Menu 7b.</b> Set Subnet Mask		SUBNET MASK =			SCROLL <>	
		255.255.255.000		C	SCROLL ⤴	PUSH BUTTON
<b>Menu 7c.</b> Set Gateway Address		GATEWAY =			SCROLL <>	
		000.000.000.000		R	SCROLL ⤴	PUSH BUTTON
<b>Menu 7d.</b> Restore Factory Network Settings?		RESTORE FACTORY			SCROLL <>	
		SETTINGS?		R	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 2.5 Menu Display and Sequences, model 2082-14x-series (1:1) Controllers**

### 2.5.3a. Power On Settings and LCD Menu Control, model 2082-142-series (1:2) Controllers.

**NOTE:** The last status of a unit is retained even when power is removed. When power is restored, the unit will return to its 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

<u>L</u> OCAL/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  1      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/N    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  Y/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

```
Manually set      R  
AMP1 NOM=.XXX A
```

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

```
AMP1 WINDOW=10%   R
```

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

```
SET AMP2   Y/N     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 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

```
AMP2 NOM=.XXX      R  
AMP2 ACT=.XXX
```

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

```
Set to actual      R  
AMP2=.XXX A   Y/N
```

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

```
Manually set      R  
AMP2 NOM=.XXX A
```

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

```
AMP2 WINDOW=10%   R
```

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

```
SET AMP3   Y/N   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 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

```
AMP3 NOM=.XXX   R  
AMP3 ACT=.XXX
```

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

```
Set to actual   R  
AMP3=.XXX A   Y/N
```

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

```
Manually set   R  
AMP3 NOM=.XXX A
```

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    <u>RS232</u>      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      <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.

### 3.0 ETHERNET Interface Installation and Operation

**NOTE:** Via front panel, remote interface (Menu 5) must be set to Ethernet.

The 2082-14x-series Redundant Unit Controller may be equipped with a 10/100 Base-T compatible Ethernet interface for control and monitoring of its operating parameters. An HTML script interface allows the user to monitor and control the converter using a standard web browser. SNMP (Simple Network Management Protocol) is also supported. Contact Cross Technologies for the SNMP MIB file.

#### 3.1 Methods of Connection

##### Directly Connected to a PC:

For control from a local PC, attach the 2082-14x's Ethernet port to the Ethernet network connector on the PC using a crossover RJ-45 cable.

##### LAN Connection

For LAN connections, attach the 2082-14x's Ethernet port to the LAN using a normal RJ-45 cable. Use any PC on the LAN to connect to the 2082-14x.

#### 3.2 Ethernet Configuration

Each 2082-14x must be configured with an appropriate IP address, Netmask, and Gateway assigned by your network manager. The 2082-14x is set at the factory with the following network settings:

<b>Factory Network Settings</b>	
<b>IP Address:</b>	<b>192.168.123.2</b>
<b>Subnet Mask</b>	<b>255.255.255.000</b>
<b>Gateway</b>	<b>000.000.000.000</b>

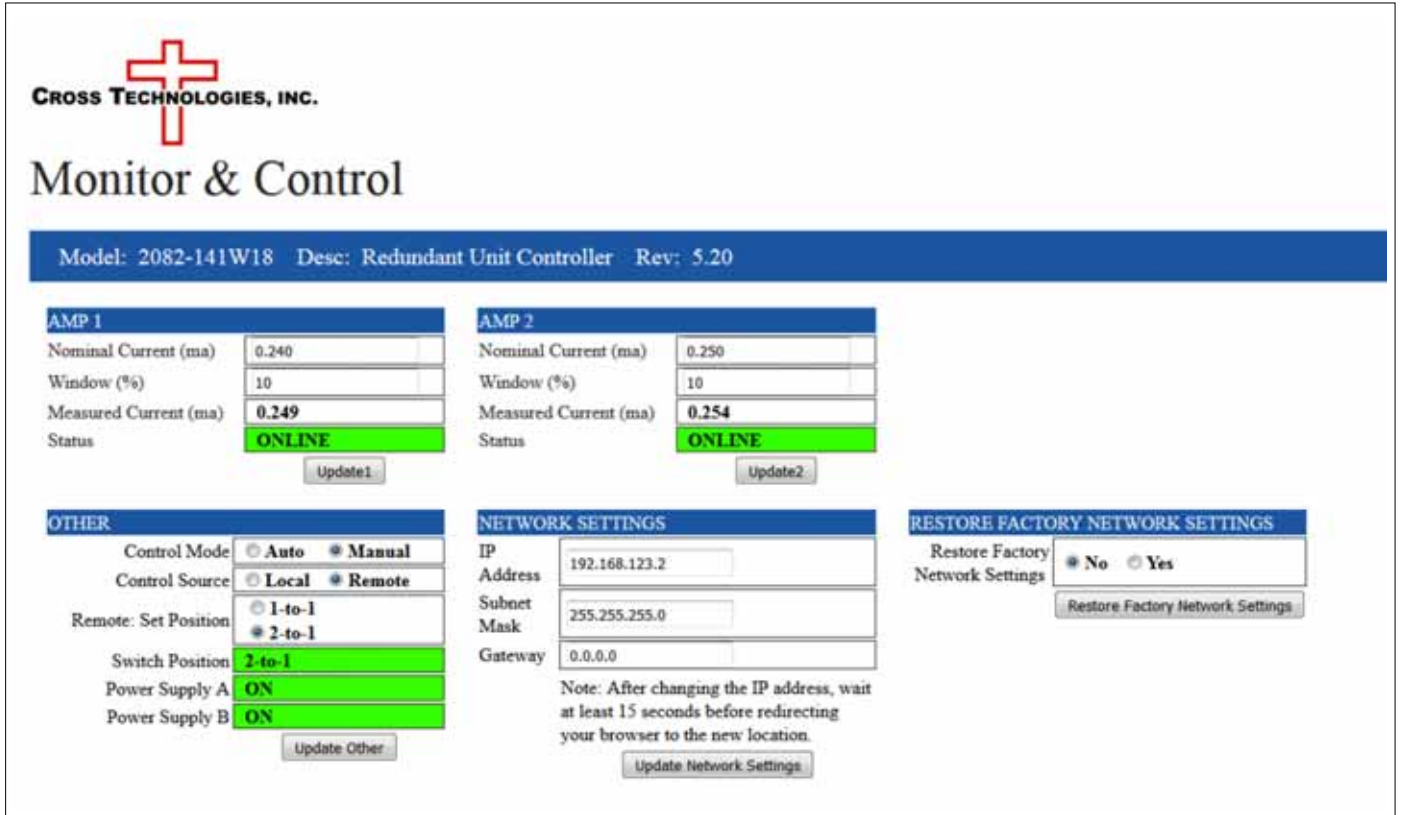
The network settings may be changed via the front panel or from the web browser interface.

### 3.3 Web Page M&C

Enter the following address in a web browser to access the M&C web page:

http://<ip address of 2082-14x>/serial/0/setup.htm where <ip address> is the IP address of the unit.

Figure 2-C below, shows the web page from a model 2082-14x, (1:2) Redundant Unit Controller.



**Figure 2-C - Model 2082-14x Web page**

### 3.4 SNMP Configuration

Setting of SNMP parameters such as Community Write and Community Read strings requires a *Telnet*<sup>®</sup> connection to port 9999. The following instructions explain how to establish such a *Telnet*<sup>®</sup> connection using Windows XP's Hyper Terminal utility.

Start the Hyper Terminal application and select "New Connection" from the "File" drop down menu. The next screen is a "Connect To" dialog box. Select TCP/IP (Winsock) from the "Connect" using drop down menu.

Enter the IP address of the 2082-14x in the "Host address:" field and 9999 in the "Port number" field.

Figure 2-E shows an example of the Hyper Terminal settings required to access the SNMP configuration menu.



**Figure 2-E: - Telnet® Settings in Hyper Terminal**

Once the *Telnet*® connection is established you will be prompted to “Press Enter for Setup Mode.” Press enter and a menu of device server configuration options will appear (see Figure 2-F). Select menu item 3, “SNMP configuration.” You will be prompted to enter SNMP community read and write strings. After setting your desired community strings you will be prompted to “Enter IP addresses for SNMP traps” You must enter at least one and up to four IP addresses of SNMP managers that will access the unit. This is required even though SNMP traps are not implemented. The unit will not process SNMP SET and GET requests from an SNMP manager unless the IP address associated with that manager is entered in the device server.

**Figure 2-F - Device Server Configuration Menu**

```
xport_telnet_setup - HyperTerminal
File Edit View Call Transfer Help
Enhanced Password is disabled

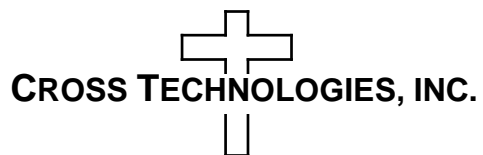
***** Channel 1 *****
Baudrate 38400, I/F Mode 4C, Flow 00
CPU performance : Standard
Web RAM size 01000

***** SNMP Configuration *****
SNMP community name for read: public
SNMP community name for write: public
Trap IP addresses:
1: 192.168.123.1
2: 0.0.0.0
3: 0.0.0.0

Change Setup:
0 Server configuration
1 Channel 1 configuration
3 SNMP configuration
6 Security
7 factory defaults
8 exit without save
9 save and exit

Your choice ?

Connected 0:00:20 ANSIW TCP/IP SCROLL CAPS NUM Capture Print
```



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