

## EXELTECH

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website [www.exeltech.com](http://www.exeltech.com)

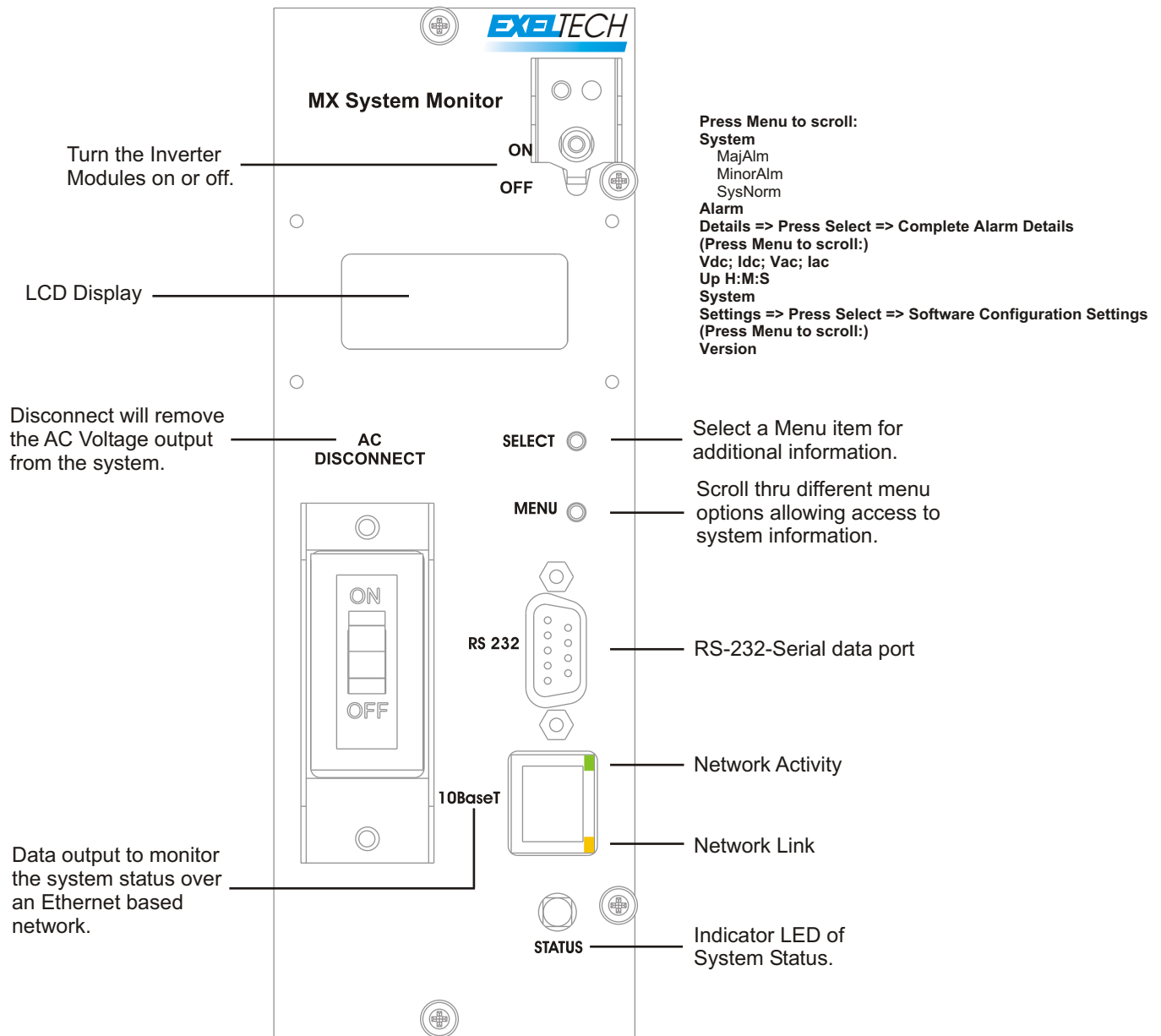


**Manufacturer of UL Listed Products**



*The Telecom Quality Measurement System*

## Optional: System Monitor Card



**Note:** With a System Monitor card, there must be a Control Card in the left slot.

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## **Main Menu Items**

The main menu consists of 10 different screens. Press the SELECT button when the display shows Alarm Details to view specific alarms that may have been triggered. Press the SELECT button when the display shows System Settings to view and change configurable system parameters. Hold the MENU button to return to the main menu screens.

### **1.0 System Status**

Once the system is operational the LCD display will indicate the current alarm state: 3 different alarm levels are possible: Sys Normal (Green LED), Minor Alarm (Orange LED), and Major Alarm (Red LED).

### **2.0 Alarm Details**

Press the SELECT button to enter the Alarm Details menu, hold down the MENU button to return to the main system. Alarm Details will give a listing of all possible Minor and Major alarm triggers. 9 different system parameters are monitored and detailed under this menu selection, Additional information such as Control Card configuration; Maintenance bypass status, and current system version are also available on this menu selection. Press and HOLD the MENU button to return to the main menu.

Note: Indicator = visual representation of the voltage or current values.

### **3.0 System DC Voltage Indicator**

Displays the System DC Voltage.

### **4.0 System DC Current Indicator**

Displays the System DC Current.

### **5.0 Inverter AC Voltage Indicator**

Displays the Inverter output Voltage.

### **6.0 Utility AC Voltage Indicator**

Displays the Utility Voltage.

### **7.0 Inverter AC Current Indicator**

Displays the Inverters output Current.

## **8.0 UP Time**

This feature allows a quick reference for the current system up time. It is measured in H: M: S; Hours Minutes Seconds, or D: H Days and Hours, or M: D, Months and Days. This is not a Real time clock or counter, a month is defined as 30 days.

## **9.0 System Settings**

Communications and system restore items are available under this menu choice. Press and HOLD the MENU button to return to the main menu.

### 9.1 RS-232 Send:

SINGLE PHASE SYSTEMS ONLY: Press select to transmit via serial port at the baud rate that is currently configured. Data settings are always 8 bit, no parity, 1 stop bit, (8, n, 1).

### 9.2 Ethernet Send:

If the Ethernet board is configured to operate in a *client* mode, the device will periodically transmit to a specified IP Address on a specified port #, a supplied java application will monitor the state of the system. If the device is set to server mode only, this menu item will not operate. For more information on configuring the Ethernet client mode, see the SENA Technologies Instruction manual.

### 9.3 Set Baud:

Choose the Baud rate for RS-232 Communication, 3 wire mode only, no flow control. Allowable baud rates are 115000, 19200, 14400, 9600, and 4800.

### 9.4 System Reboot:

Reboot the software running the Monitor Card, resets all values.

### 9.5 Ethernet Reinitialize:

Reset Firmware on the SENA Technologies Ethernet Adapter to Factory Default settings. Factory default is DHCP assigned IP address, server mode, listening on port 6001.

### 9.6 A-B Buss detect:

Allow the addition of a 48VDC A-B Buss system to detect a buss failure, which is classified as a minor alarm.

### 9.7 ACI Cfg:

Configure the AC current sensor size: supported sizes are 65A, and 200A

### 9.8 DCI Cfg:

Configure the DC Hall-Effect sensor size; supported sizes are 100A, 300A, and 1000A

### 9.9 Programmable Relay:

Configure the programmable relay for optional features (i.e. GenStart Application).

## **10.0 System Version**

Displays current software version.

## Operation

Normal operation of the Monitor Card is exactly the same as a standard Exeltech Alarm Card with the notable exception of remote monitoring of system status. A blinking LED for the new alarm state announces new alarm states; pressing either button stops the blinking, and Alarm Details will give a listing of any alarms that have been activated. For a complete description of the Exeltech Alarm Card, see the Exeltech System Installation/ Operation manual.

## Remote Monitoring

Remote monitoring can be performed via DHCP enabled network port. Monitoring software is included to allow remote sensing of alarm states, however, it is simple to implement custom software to meet any monitoring needs.

### Ethernet Monitoring:

Remote monitoring via Ethernet communication is achieved using a RS232->Ethernet device located on board the System Monitor Card. DHCP networking is required to initialize the System Monitor IP address, once initialized; it can be configured using a terminal program such as Hyperterm or Teraterm PRO. A telnet connection is used to alter the Ethernet system setup.

For Specific Programming of Ethernet settings see the SENA Technologies installation manual. NOTE: DO NOT ADJUST THE SERIAL COMM SETTINGS, This will prevent the Device from communicating with the Monitor Card.

## System Monitor Serial Data Format

Each "packet" is a 6 character string ending with a <CR> ASCII 13

Byte 1 and Byte 2 indicate what data is being presented, bytes 3,4,5,6 are the data string in hexadecimal.

Example 2000bb: (only the lower byte needed) zeros indicate don't care

20 indicates Minor Alarm status, bb are 2 bytes of ASCII data. (1 byte of data )

Bit 0 B-Buss Status (lowest bit)  
Bit 1 A-Buss Status  
Bit 2 n/c  
Bit 3 Low Voltage Alarm  
Bit 4 Control Card Temperature Alarm  
Bit 5 Control Card Fail  
Bit 6 Module Fail  
Bit 7 Module Temperature Alarm (Highest Bit)

## Example Alarm States

200001: B-Buss Failure only  
200009: Low Voltage Alarm, B-Buss Failure  
200049: Module Fail, Low Voltage Alarm, B-Buss Failure

24 indicates Major Alarm status

240b00 (only the upper byte data needed) zeros indicate don't care

Bit 8 Inverter Fail (0x0100)  
Bit 10 Breaker Open (0x0400)

240100 Inverter fail  
240400 Breaker open  
240500 Both failure states

## Product Status Application Help

### Step 1: Install a Java runtime environment.

- 1.1 Your CD will contain a Java Runtime Environment (JRE) for the Windows 32-bit platform. Double-click the "jre-1\_5\_0-windows-i586.exe" and the wizard will guide you through the rest of the installation process. If you wish to view installation instructions, open the "install-windows32-jre.htm" file.
- 1.2 If you require a JRE for a different system platform, you can download a free one from Sun's Java website. On the internet, go to the link, <http://java.sun.com/>. Next, click on the "Downloads" link on the upper left part of the website. Select the latest version of the Java 2 Platform, Standard Edition (J2SE), and click on all platforms. Click on the "Go" button. Look for J2SE JRE download link and click on it to download. Please also download and read the provided JRE installation instructions for your particular platform before installing.

### Step 2: Execute the application.

- 2.1 Copy the files, "ProductStatus.bat" and "ProductStatus.jar" from your CD into a directory on your PC. Make sure both files are in the same directory.

2.2 For Microsoft Windows users, double-click the batch file, "ProductStatus.bat", to run the application. For Linux/Unix users, type "ProductStatus" and press the Enter key to run the application.

### Step 3: Use the application.

3.1 After running the Product Status application, a small dialog should pop up. The dialog will ask you to enter the IP address of your product and select the phase. At this point make sure you have connected your product to your network.



3.2 If the product IP address is not known, install the IP MGR software to discover an IP address that has been assigned by a DHCP server.

3.3 Once installed, start application and choose Probe, under the Search menu option to find all System Monitor cards currently installed on the network. Once the card is discovered, manual changes are simple to implement using the configuration manager software.

3.4 On Product Status application screen, type the product's IP address into the text fields, select the phase and click the "Submit" button.

3.5 A status screen will pop up. If you selected Bi-Phase on the previous screen, the information for voltages and current readings and alarm states are divided into Line1, Line To Line and Line 2 as shown below. If you selected Single-Phase, however, Line To Line and Line 2 information is excluded. This screen will display your product's statistics based on the mode you choose.

**Product Status, version 1.9a**

Textual Display

Overall System: **NA** Elapsed Time: **Data is inconsistent.**

Voltage and Current Readings:

	Low Limit	Data	High Limit
Battery Voltage (V dc)	40	NA	60
Battery Current (I dc)	0	NA	20
A Buss Voltage (V dc)	40	NA	60
B Buss Voltage (V dc)	40	NA	60

Line 1	Low Limit	Data	High Limit	Line To Line	Low Limit	Data	High Limit	Line 2	Low Limit	Data	High Limit
Inverter Voltage (V ac)	100	NA	130	Inverter Voltage (V ac)	100	NA	240	Inverter Voltage (V ac)	100	NA	130
Inverter Current (I ac)	0	NA	25	Inverter Current (I ac)	0	NA	25	Inverter Current (I ac)	0	NA	25
Output VA (V ac * I ac)		NA		Output VA (V ac * I ac)		NA		Output VA (V ac * I ac)		NA	
Utility Voltage (V ac)	100	NA	130	Utility Voltage (V ac)	100	NA	240	Utility Voltage (V ac)	100	NA	130

Alarm States:

Line 1	Data	Line 2	Data
Power Module	NA	Power Module	NA
Power Module Temp	NA	Power Module Temp	NA
Control Card Stat	NA	Control Card Stat	NA
Maintenance Bypass	NA		
Low DC Voltage	NA		
A Buss	NA		
B Buss	NA		

Major Failures:

Breaker **NA**

System Output **NA**

User Controls:

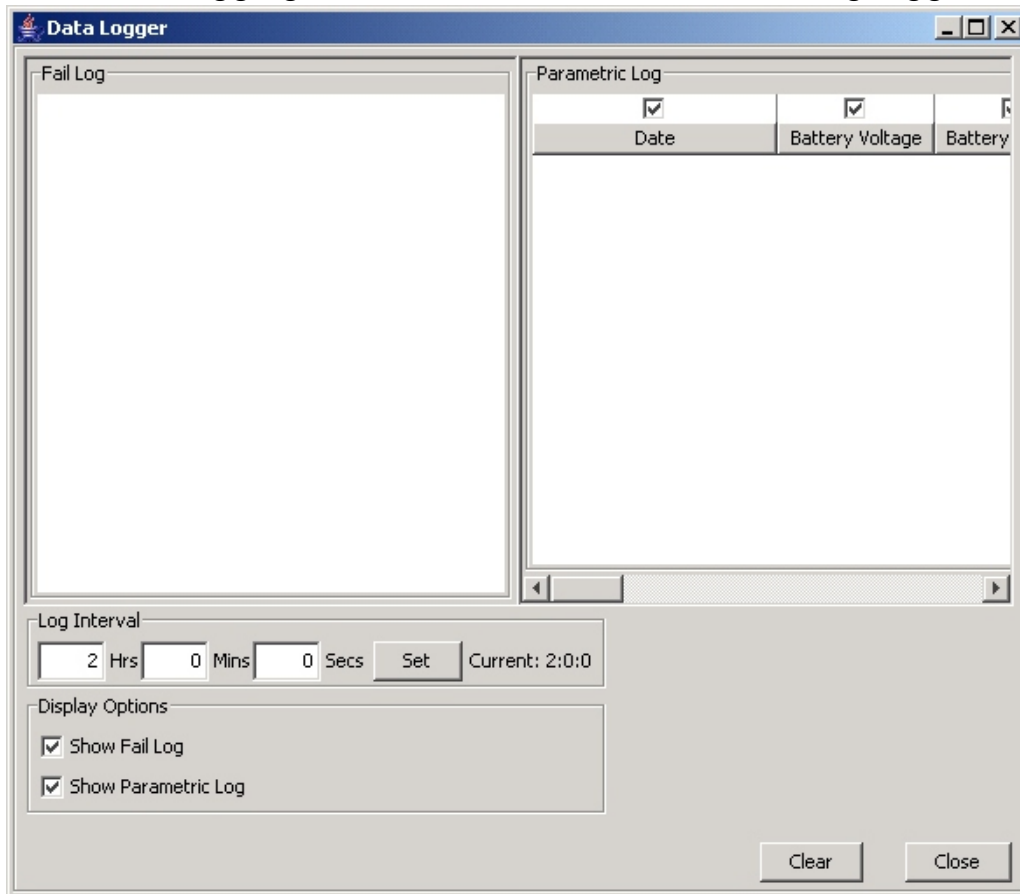
Mode

View Logging

Good

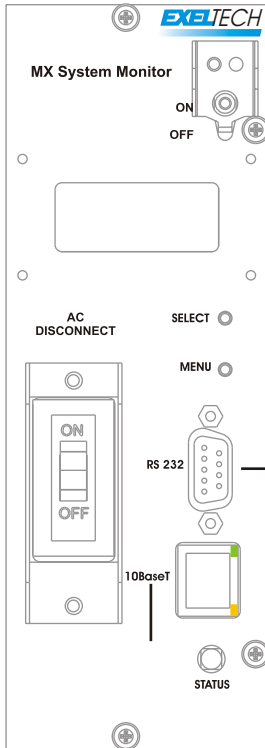
- 3.6 Click on the “Mode” button to change modes. The current modes are poll and receive, and have the following functions:
- A) The poll mode will tell your application to send a start command to your product. Once the start command is sent to the product, a reply message of its statistics is sent back to your application.
  - B) The receive mode will not send any commands, but will tell your application to wait for your product to send its statistics.
- 3.7 You can indicate the parameter range you want by entering the values in the low limit and high limit text fields. Also note that Line 1 designates Phase 1, Line 2 designates Phase 2, and Line To Line designates the voltages seen when taken from Line 1 to Line 2.
- 3.8 Click on the “Run” button to start the chosen mode. After your product sends statistics back in either mode, the following information are displayed on the screen:
- A) For system output field:  
The word “breaker open”, will be displayed and highlighted with a red color to indicate breaker is off, the word “inverter fail” will be displayed and highlighted with a red color to indicate that the inverter has failed, or the word “good” will be displayed and highlighted with a green color to indicate both the breaker and inverter are in working order.
  - B) For overall system field:  
The word “minor alarm” will be displayed and highlighted with a red color to indicate minor alarm failure, the word “major alarm” will be displayed and highlighted with a red color to indicate if the breaker or inverter are not in working order, or the word “normal” will be displayed and highlighted with a green color to indicate that the whole system has no minor and major alarms.
  - C) For data state field located on top right corner of screen:  
The current state of all the information being passed is displayed. The field will show the text “Data is inconsistent” and highlighted with a red color to indicate that unreliable information is shown. The field will show the text “Data is live” and highlighted with a green color to indicate that accurate and up to date information is shown.
  - D) For voltage and current readings section:  
A real number value will be displayed and highlighted with a green color to indicate that it does fall within the specified range or it will be highlighted with a red color to indicate that it does not fall within the specified range.
  - E) For maintenance bypass field:  
The word “normal” will be displayed and highlighted with a green color to indicate system is in normal mode or the word “bypass” will be displayed and highlighted with a yellow color to indicate system is in bypass mode.
  - F) For all other fields:  
The word “good” will be displayed and highlighted with a green color to indicate a good condition or the word “fail” will be displayed and highlighted with a red color to indicate a fail condition.
- 3.9 Click on the “Stop” button to end the current mode.

- 3.10 The Elapsed Time field near the top of the screen shows the current system up time. The time is measured in M:D (Months and Days), D:H (Days and Hours), or H:M:S (Hours, Minutes, and Seconds).
- 3.11 Click on the "About. . ." Button to view the current hardware version information.
- 3.12 Click on the "Change IP" button if you want to go back to the first screen to try another IP address.
- 3.13 Click on the "Close" button or the "X" on the top, right corner of the screen to terminate the program.
- 3.14 Select the "View Logging" checkbox to show the data being logged.

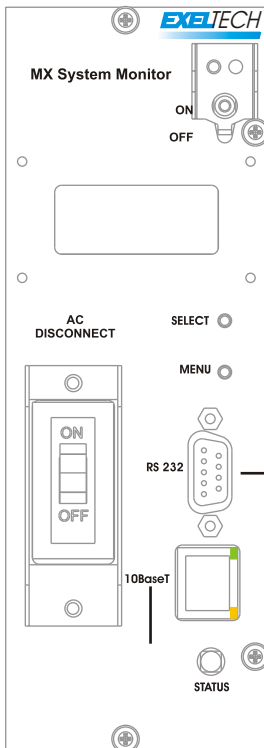


- 3.15 Enter the amount of time to pass between each entry being logged in the Hrs, Mins and Secs fields. Click on the "Set" button to change the current interval time. You will see the new interval time displayed to the right of the "Set" button.
- 3.16 Select the "Show Fail Log" checkbox to display the logging of alarm states. The Data Logger displays this information in three columns: date, event, and status.
- 3.17 Select the "Show Parametric Log" checkbox to display the logging of voltage and current readings. The Data Logger displays this information in a table format. The columns can be rearranged to a more suitable order. Indicate the logging preference for each column by selecting/deselecting the checkboxes above each column header.
- 3.18 Click the "Clear" button to erase all current logged entries.
- 3.19 Click the "Close" button to close the Data Logger window.

## BI-PHASE SYSTEM MONITOR OPTION



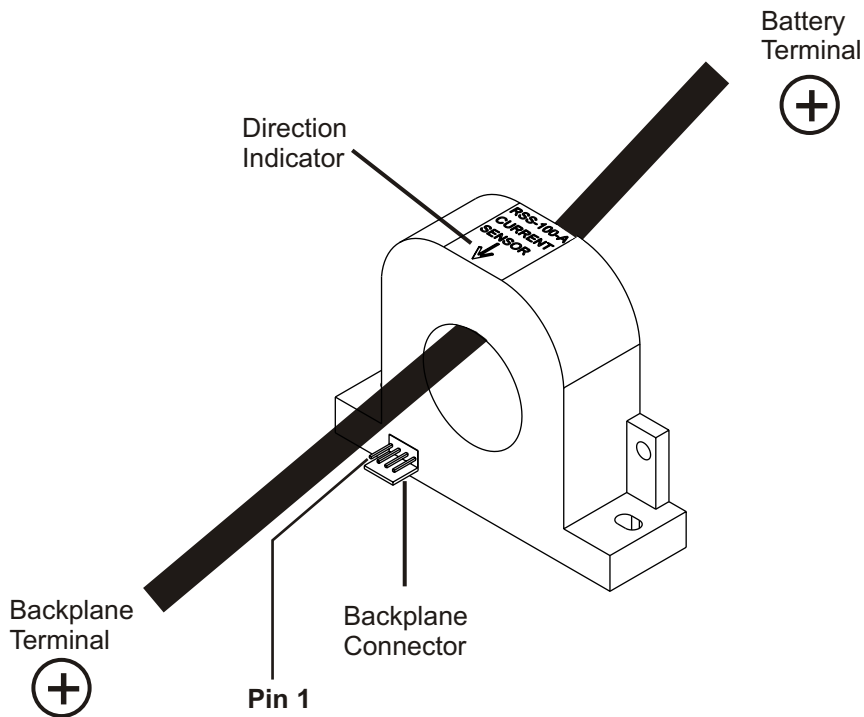
Serial male-male null modem cable required for Bi-phase monitoring.



System will operate, but monitoring will not function with out this cable in place.

## Installation of RSS-100-A Hall effect sensor for DC Current Measurement

The Hall effect sensor will measure the DC current while providing an electrical isolation for the signal. For installation run the POSITIVE Battery cable thru the hole in the direction indicated. Erroneous readings will occur if the sensor is hooked up backwards. Follow wiring instruction below if there is a need to replace any wiring.



Pin #	Pin 1	Pin 2	Pin 3	Pin 4	
Wire color	Red	n/c	Green	Black	
Signal	14VDC	n/c	DC Fail NO	A-	
Connector	P106-3	n/c	P103-3	P106-4	*
Connector	P107-3	n/c	P103-3	P107-4	**

\*FOR 19A BACKPLANE ONLY

\*\*FOR 23A BACKPLANE ONLY

*Made in the USA*

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