USER MANUAL

Model 6103

3U ForeFront Alarm Card

CE This is a Class A device and is intended for use in a light industrial environment. It is not intended nor approved for use in an industrial or residential environment.

PATTON Electronics Co.

Part# 07M6103
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(301) 975-1000
TECHNICAL SUPPORT
(301) 975-1007

ISO 9001 CERTIFIED

An ISO-9001Certified Company

CONTENTS

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 6103 components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment. This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall Patton Electronics be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. Patton Electronics specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 RADIO AND TV INTERFERENCE *(FCC PART15)*

This equipment generates and uses radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If the equipment causes interference to radio or television reception, which can be determined by disconnecting the cables, try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna, and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

1.2 CE DECLARATION OF CONFORMITY

We certify that the apparatus identified in this document conforms to the requirements of Council Directive 1999/5/EC on the approximation of the laws of the member states relating to Radio and Telecommunication Terminal Equipment and the mutual recognition of their conformity.

The safety advice in the documentation accompanying this product shall be obeyed. The conformity to the above directive is indicated by the **CE** sign on the device.

1.3 AUTHORIZED EUROPEAN REPRESENTATIVE

D R M Green

European Compliance Services Limited.

Oakdene House, Oak Road

Watchfield,

Swindon, Wilts SN6 8TD, UK

1.4 SERVICE

All warranty and non-warranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Service at:.

Tel: **(301) 975-1007**

E-mail: **support@patton.com**

URL: **www.patton.com**

Note Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 6103. Technical Service hours: **8AM** to **5PM EST**, **Monday** through **Friday**.

In accordance with the requirements of council directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE), ensure that at end-of-life you separate this product from other waste and scrap and deliver to the WEEE collection system in your country for recycling.

1.5 TRADEMARK ACKNOWLEDGEMENTS

The term *ForeFront* is a registered trademark of Patton Electronics Co. in the United States and other countries.

2.0 GENERAL INFORMATION

Thank you for your purchase of this **Patton Electronics** product. This product has been thoroughly tested and is warranted for One Year parts and labor. If you have questions regarding the installation or use of this product, please contact **Patton Electronics Technical Support** at **(301) 975-1007**.

2.1 PRODUCT FEATURES

- Fits in Patton's Model 6276, Model 6476, Model 6676, Model 6286, Model 6486, and Model 6686 ForeFront chassis assemblies
- Monitors chassis fan speed
- Monitors chassis power supply status
- Monitors chassis temperature
- Receives and indicates system alarms
- Five LED alarm indicators
- Alarm relay presented on Form-C (DB-9)
- Alarm cut-off switch
- Auto-interlock mechanism for reliable connections to ForeFront chassis

2.2 DESCRIPTION

The **Model 6103 Forefront Alarm Card** is intended for use in Patton's Model 6276, Model 6476, Model 6676, Model 6286, Model 6486, and Model 6686 Forefront Chassis Assemblies. The Model 6103 continuously monitors the chassis fan tray tachometer signals, the power supplies, and the chassis temperature for alarm conditions. The Model 6103 detects alarms via the IPMB (Intelligent Platform Management Bus) on the chassis midplane, and forwards the alarm to the proxy card. Upon detection of an alarm condition the Model 6103 will illuminate the appropriate rear panel indicator LED's and will complete the appropriate circuits through the Form-C output. When the alarm conditions have been cleared the Model 6103 will reset the LED's and Form-C output and return to normal operating condition.

3.0 OPERATION

Upon plugging the Model 6103 into the chassis, the unit will perform an LED self-test. After successful completion of this self-test the Model 6103 will be in normal operating mode and will monitor the fan tachometers, the power supply, and the temperature in the chassis on a continual basis.

Note The temperature sensor is in the alarm card.

3.1 REAR PANEL FEATURES

The Model 6103 features five rear panel bi-color LEDs that display the current state of the ForeFront system. Figure 1 shows the rear panel location of each LED. Following Figure 1 is a description of each LED's function. If an alarm condition occurs, the *TEMP*, *FAN*, or *PS* LEDs will illuminate yellow. *MIN* or *MAJ* will also illuminate depending on the severity of the alarm condition.

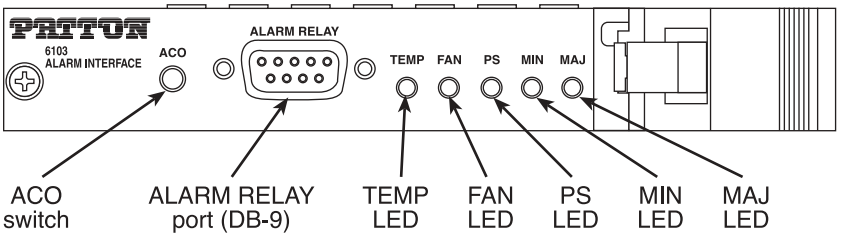

Figure 1. Rear panel LEDs, ACO switch, and Alarm Relay port locations

Alarm LED information

The Model 6103 alarm card monitors the following items: fan tray, power supply, and chassis temperature.

Alarm types

- **TEMP indicator**—Glows yellow in the case of a temperature alarm or green when there is no temperature alarm.
- **FAN indicator**—Glows yellow in the case of a fan tachometer alarm or green when there is no fan tachometer alarm.
- **PS indicator**—Glows yellow in the case of a power supply alarm or green when there is no power supply alarm.

Alarm severity

- **MIN indicator**—Glows yellow in the case of a minor alarm condition or green when there is no minor alarm condition.
- **MAJ indicator**—Glows red in the case of a major alarm condition or green when there is no major alarm condition.

Indicator Function	LED color under normal & alarm conditions	
	Normal	Alarm
TEMP (Temperature) status	Green	Yellow
FAN status	Green	Yellow
PS (Power Supply) status	Green	Yellow
MIN (Minor) Alarm status	Green	Yellow
MAJ (Major) Alarm status	Green	Red

Alarm Relays (Form-C Outputs)

The Model 6103 is equipped with two Form-C relay outputs presented on a DB-9 connector located on the rear panel (see Figure 1 on page 6). In the event of an alarm, the Model 6103 will complete one of two circuits through this Form-C connector.

A Form-C relay has three contacts: normally open (N.O.), normally closed (N.C.), and a common contact. When no alarm is issued, the Form-C relay will connect common to N.C. In the event of an alarm, the common contact will connect to the normally-open (N.O.) contact. If it is a minor alarm, the Model 6103 will connect pin 5 to pin 9. In the event of a major alarm, the Model 6103 will connect pin 2 to pin 6.

Note Contact rated load is 12 amps at 24 VDC.

Alarm Cut Off Switch

The Model 6103 is equipped with an alarm cut-off switch (ACO) on the rear panel as shown in Figure 1 on page 6. If an alarm occurs and you want to turn off the form-C output, press the ACO button to do so.

Note The LED on the Model 6103 will remain yellow for the offending alarm and will remain lit until the alarm is cleared. Subsequent alarms will retrigger the alarm relay indicating the presence of a new alarm.

Fan monitor

The Model 6103 monitors the fan tray tachometer signals. If a fan tray alarm signal is detected, the alarm card will illuminate the FAN LED. The Model 6103 will also illuminate either the MIN or the MAJ LED depending on the severity of the alarm condition.

Temperature Monitor

The Model 6103 monitors the temperature inside the chassis on the alarm card. If a temperature alarm is detected, the alarm card will illuminate the TEMP LED and the MAJ LED.

Power Supply Monitor

The Model 6103 monitors the chassis power supplies. If a power supply alarm is detected, the alarm card will illuminate the PS LED. The Model 6103 will also illuminate either the MIN or the MAJ LED depending on the severity of the alarm condition.

3.2 ALARM CONDITIONS

The following section describes the conditions necessary to set an alarm in the Model 6103. Fan, Temperature, and power alarm conditions are internally set. System alarm conditions are set in the Patton Model 3096RC or 2616RC.

Fan Tray Alarm Conditions

The Model 6103 monitors the tachometer signals from the fans in the chassis. The following describes the conditions necessary to set a fan alarm.

Alarm	Condition
Fan Minor Alarm	One fan has dropped to 1/2 speed
Fan Major Alarm	• Two or more fans have dropped to 1/2 speed • One or more fans have dropped to 3/8 speed

Temperature Alarm Conditions

The Model 6103 monitors the temperature in the chassis on the alarm card through an on-board temperature sensor. The following describes the conditions necessary to set a temperature alarm.

Alarm	Condition
Temperature Major Alarm	Ambient temperature in the chassis has reached 80°C (176°F)

Power Supply Alarm Conditions

The Model 6103 monitors the power supplies in the chassis. The following describes the conditions necessary to set a power supply alarm.

Alarm	Condition
Power Supply Minor Alarm	The Model 6103 receives a degrade alarm from a power supply
Power Supply Major Alarm	The Model 6103 receives a fail alarm from a power supply

System Alarm Conditions

The Model 6103 detects alarms via the IPMB (Intelligent Platform Management Bus) on the chassis midplane, and forwards the alarm to the proxy card. The conditions that necessitate an alarm are set in the 3096RC or 2616RC. See the Model 3096RC or 2616RC manual for more information.

3.3 ALARM INDICATIONS

The following sections describes the Model 6103 alarm indications that are set when an alarm condition is detected.

Fan Alarm Indications

When a Fan Minor Alarm is detected, the alarm card will illuminate the *FAN* LED and the *MIN* LED. The alarm card will also activate the *MINOR* relay by connecting pin 5 to pin 9 on the Form-C output.

When a Fan Major Alarm is detected, the alarm card will illuminate the *FAN* LED and the *MAJ* LED. The alarm card will also activate the *MAJOR* relay by connecting pin 2 to pin 6 on the Form-C output.

Temperature Alarm Indications

When a Temperature Major Alarm is detected, the alarm card will illuminate the *TEMP* LED and the *MAJ* LED. The alarm card will also activate the *MAJOR* relay by connecting pin 2 to pin 6 on the Form-C output.

Power Supply Alarm Indications

When a Power Supply Minor Alarm is detected, the alarm card will illuminate the *PS* LED and the *MIN* LED. The alarm card will also activate the *MINOR* relay by connecting pin 5 to pin 9 on the Form-C output.

When a Power Supply Major Alarm is detected the alarm card will illuminate the *PS* LED and the *MAJ* LED. The alarm card will also activate the *MAJOR* relay by connecting pin 2 to pin 6 on the Form-C output.

System Alarms

The system alarms the Model 6103 can receive include:

- System Clear Alarm
- System Minor Alarm
- System Major Alarm
- System Critical Alarm

When a System Minor Alarm is transmitted, the alarm card will illuminate the *MINOR* LED. The alarm card will also activate the *MINOR* relay by connecting pin 5 to pin 9 on the Form-C output.

When either a System Major Alarm or a System Critical Alarm is transmitted, the alarm card will illuminate the *MAJOR* LED. The alarm card will also activate the *MAJOR* relay by connecting pin 2 to pin 6 on the Form-C output.

Table 1 summarizes all possible alarm conditions and the indicators that are active during these conditions.

Table 1: Alarm Indicators

ALARM CONDITION	TEMP LED	FAN LED	PS LED	MIN LED	MAJ LED	MINOR RELAY	MAJOR RELAY
Fan Minor		X		X		Active	
Fan Major		X			X		Active
Power Supply Minor			X	X		Active	
Power Supply Major			X		X		Active
Temperature Major	X				X		Active
System Minor				X		Active	
System Major					X		Active
System Critical					X		Active

APPENDIX A
DB-9 (FEMALE) CONNECTOR PIN ASSIGNMENTS

Pin	Function
1	Major Normally Closed
2	Major Normally Open
3	GND
4	Minor Normally Closed
5	Minor Normally Open
6	Major Common
7	N/C
8	N/C
9	Minor Common