



► Environmental Monitoring and Control Unit

The Environmental Monitoring and Control (EMAC) Unit is a standalone unit in its own housing, based on the board-level EMAC Adapter but in any formfactor, that provides a compact, yet flexible solution for monitoring the health of a system's internal environment, including power supply voltages, temperatures, smoke detectors and cooling fan operation. Four open collector and eight digital output lines are also provided for the control of the monitored system.

Functions

Monitoring

- Power Supply Voltages
Up to six positive and two negative DC (Direct Current) voltages can be monitored via a 10-bit analogue-to-digital converter. The EMAC Unit is configured to monitor -12 V, +5 V, +12 V and +24 V by default, but can be modified to measure a wider range of DC voltages.
- Temperature
Up to eight DS1820 temperature sensors can be monitored at any time. Power to the sensors is supplied by the EMAC Unit.
- Fan Speed
The rotation speed of up to eight cooling fans can be monitored at any time. The EMAC Unit is able to interface to +12 V (e.g. PAPST 4312S) and +24 V (e.g. PAPST 4314S) DC fans equipped with Pulse Width Modulated (PWM) outputs.
- Smoke Detectors
Two fused power outputs (+24 V) are provided to power eight smoke detectors which are monitored by the EMAC Unit. A +24 V signal from a smoke detector will be interpreted as an alarm while 0 V will indicate normal status.

Controlling

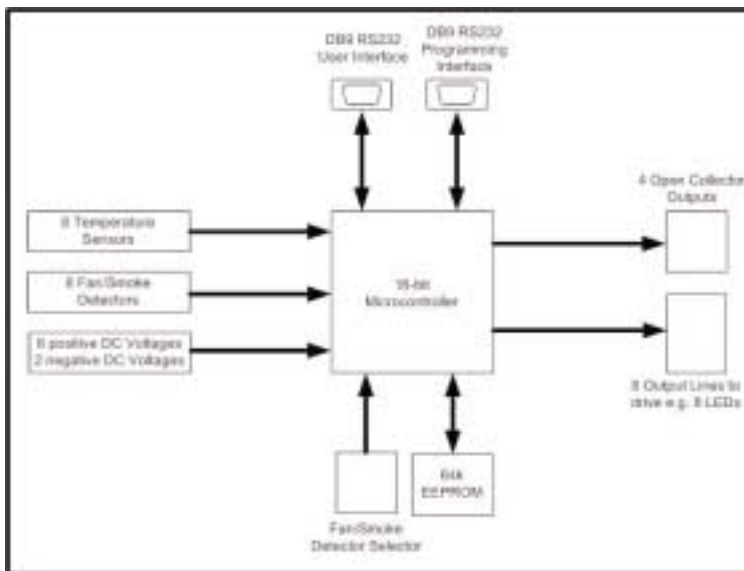
- Eight outputs to drive, for example, LEDs.
- Four open collector outputs can sink 24 V @ 2 A each to control, for example warning lamps and alarms or for other functions. The default configurations are :
 - o Power Warning
When any one of the power modules exceeds the user-specified operating temperature.
 - o Temperature Warning
When any one of the temperature sensors indicates temperatures outside the user-specified range.
 - o Voltage Warning
When any one of the power modules operates outside the user-specified voltage limits.
 - o User Warning
Any function can be implemented in firmware on request.

Features

- Available in either standard, PMC or custom formfactors, with either PCI or RS232 interfaces to host computer.
- Equipped with a Watchdog Timer to restart the EMAC Unit in case of software failure.
- The firmware is field upgradeable.

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EMAC Unit Architecture



Environmental Monitoring and Control Unit Specifications

User Interface	RS232 compatible asynchronous transfer. The EMAC responds to a data request message with a return message within 100 ms.
Ports	1 x DB9 RS232 User Interface 1 x DB9 RS232 Programming Interface 1 x DB37 Signal Interface 1 x DB25 Signal Interface 1 x DB15 Signal Interface
Signal Interface	Interface to fans, smoke detectors, temperature sensors and power modules.
Data Rate	4 800 baud to 38,4 kbaud (9 600 baud standard)
EEPROM	64 Kbyte EEPROM for configuration options or user parameters.
Power Requirements	+5 V at 75 mA +5,5 V to +60 V at 50 mA
Size	175 mm x 110 mm x 30 mm
Mass	Printed Wiring Assembly : 120 g Housing : 140 g
Drivers	<ul style="list-style-type: none"> DOS VxWorks MS-Windows 95b, 98, ME, NT, 2000, XP No drivers required for Linux

Environmental Specifications

	Commercial	Industrial	Conduction-Cooled
Temperature			
- Operating	0 C to +55 C	-15 C to +75 C	-40 C to + 85 C
- Storage	-40 C to +85 C	-40 C to +85 C	-55 C to +125 C
Humidity	0% - 90%	0% - 95%	0% - 95%
Shock	N/A	30 g peak for 11 ms	40 g peak for 11 ms
Vibration			
- Sine	2 g (peak) 10 Hz to 100 Hz	10 g (peak) 5 Hz to 2 kHz	10 g (peak) 5 Hz to 2 kHz
- Random	0,04 g²/Hz at 15 Hz to 2 kHz	0,1 g²/Hz at 15 Hz to 2 kHz	0,1 g²/Hz at 15 Hz to 2 kHz

Designations

CCII/EMAC/STD/ CCII/EMAC/PMC/	EMAC Standalone Unit EMAC PMC Adapter
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