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|------------------------|-------------|--------------------------------|-----------------------|
| <b>Document Number</b> |             | PB-E888-001 Expander Module    |                       |
| <b>Title</b>           |             | E888 and E816 Expander Modules |                       |
| <b>Approved By</b>     |             | Keith Turner                   |                       |
| <b>Revision</b>        | <b>Date</b> | <b>Prepared By</b>             | <b>Change History</b> |
| A                      | 18/12/2003  | Daniel Sadique                 |                       |

## Product News

MoTeC Pty Ltd is proud to announce the release of the **E816** and **E888** Expander modules. These modules are designed to increase the I/O capacity of MoTeC products.

The following specification describes the functionality of the E888/E816 Expander modules.

### Specifications

The **E816** has the following inputs and outputs:

- 16 Analog voltage inputs
- 2 Thermistor inputs
- 6 Digital inputs
- 8 PWM outputs

The **E888** has the following inputs and outputs:

- 8 Analog voltage inputs
- 8 Thermocouple inputs
- 2 Cold junction compensation thermistor inputs
- 6 Digital inputs
- 8 PWM outputs

### **Analog Voltage Inputs (AV 1 to AV 16)**

The E888 has eight 0-5v Analog voltage inputs (AV 1 to AV 8).

The E816 has sixteen inputs (AV 1 to AV 16).

### **Thermocouple Inputs (TC 1 to TC 8)**

The E888 has eight calibrated and compensated type K (-200 to 1250°C) thermocouple inputs.

### **Cold Junction Compensation Inputs (CJC 1 and CJC 2)**

The cold junction compensation inputs are used to measure thermistor (2 wire temperature sensor) temperatures for thermocouple input compensation.

If the thermocouple inputs are not in use, or when using the E816, these inputs may be used as general purpose temperature inputs.

The CJC inputs are calibrated to read from -30°C to 150°C using Bosch 0 280 130 023/026 sensors.

### **Digital Inputs (DIG 1 to DIG 6)**

Digital inputs DIG 1 to DIG 6 are general purpose digital inputs with DIG 1 to DIG 4 capable of frequency measurement and switched capabilities. DIG 5 and DIG 6 are suitable as switched inputs only.

The frequency measurement range is approximately 1Hz to 5000Hz.

## **PWM outputs (PWM 1 to PWM 8)**

The eight PWM (pulse width modulated) outputs are individually controllable for frequency and duty cycle.

The Duty cycle for PWM outputs 1, 3, 5 and 7 is adjustable from 0 to 100% in 255 steps, with an adjustable frequency range of 8Hz to 5kHz.

The Duty cycle for PWM outputs 2, 4, 6 and 8 is adjustable from 0 to 100% in 20 steps, with an adjustable frequency range of 1Hz to 100Hz.

## **Communications**

The CAN bus is used for PC communications during calibration, firmware upgrades, and for communicating to the ADL or M800.

The following data is transmitted from the E888/E816:

- Thermocouple temperatures
- Cold junction compensation temperatures
- Digital input states
- Digital input frequencies
- Output driver faults
- Internal temperature
- Internal voltages (-5v, 8vAux, 5vAux, Vbattery, 4.5v)
- E888 status flags
- E888 firmware version

The following data is received by the E888/E816

- PWM outputs frequency and duty cycle
- PWM outputs enable

## **Connection**

The connector styles are different for the E816 and E888 Expander modules.

The E888 has two plastic connectors, a 26 pin and a 34 pin.

The E816 has a single alloy 66 pin Autosport connector.

## **Availability**

The E816 and E888 Expander modules will be available ex stock from January 5, 2004.

Should you have any further queries regarding this bulletin, do not hesitate to contact MoTeC support.

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