Expansion Boxes

Synchronous Versatile Input Module (SVIM)

The Synchronous Versatile Input Module (SVIM) is a compact expander that works in conjunction with an ACL or ADL3 Data Logger to facilitate the synchronised logging of high speed, high resolution inputs.

The SVIM acquires data of the highest integrity for use in advanced chassis and suspension analysis. It samples 18 inputs at the same instant in time using 18 separate converters with 5th order anti-aliasing filters.

Multiple SVIMs are synchronised so that every SVIM in the vehicle samples its high resolution AV inputs at the same instant in time. This is important when looking at the relationships of signals collected from different sensors around the vehicle and is useful for test rigs and real time simulations.

SVIMs are versatile in nature and can be located close to sensors, reducing the weight and complexity of wiring. When used in multiples, up to 200 sensor inputs are available. The SVIM supports many different types of sensors, including unamplified thermocouples and strain gauges.

The SVIM is configured and controlled using the Data Logger Manager software, that has special programming functions for the SVIM. This will also automatically update the firmware version in the SVIM if necessary. The Data Logger communicates to the SVIM via the CAN bus.

Compatible with
ACL (up to eight SVIMs)
ADL3 (up to two SVIMs)

Inputs
6 x Fast analogue voltage inputs
Update rate 5000 Hz (1000 Hz when used with ADL3) , resolution 12 bit
Used to measure the signals from sensors with variable voltage outputs, such as potentiometers, 3-wire pressure sensors, thermocouple amplifiers, accelerometers
10 x High resolution analogue voltage inputs
Update rate 1000 Hz, resolution 15 bit
Used to measure the signals from sensors with variable voltage outputs, such as potentiometers, 3-wire pressure sensors, thermocouple amplifiers, accelerometers
8 x Differential analogue voltage inputs
Update rate 1000 Hz, resolution 15 bit +sign
Programmable amplifier gain range of 1 to 64, used for strain gauges or thermocouples
2 x Speed inputs
Update rate 100 Hz, resolution 12 bit
Programmable trigger levels, ability to measure frequency, period or pulse width.
The voltages from these inputs can also be logged directly as separate channels, allowing the user to see the waveform of the sensor signal

Communications
1 x CAN at 1 Mb/s bus speed

Physical
Case size 48 x 90 x 26.2 mm excluding connector
Weight 150 gram

Connectors
1 x 55 pin Autosport connector for sensor connection
1 x 5 pin Autosport connector for power and communications

Web	Item Number	Description
	M SVIM	SYNCHRONOUS VERSATILE INPUT MODULE

E888 / E816

The E816 and E888 Expander modules are designed to increase the I/O (input/output) capacity of MoTeC products.
With CAN connectivity and a number of configurable inputs and outputs, they provide customers with greater flexibility to add sensors, customise channels and control more auxiliary functions.
The E888 and E816 expander inputs have medium resolution and update rate, where higher update rates or resolution are required consider using the VIM input expander.

Compatible with

SDL3 - only 8 thermocouples on E888
ADL3 / EDL3 - up to two E888 or E816
ACL - up to two E888 or E816
M400, M600, M800, M880 - one E888 or E816
Depending on the application, some limitations may apply when using an expander with these ECUs. Please check with your dealer for details.

Inputs

E888

8 x analogue voltage inputs, 10 bit (4.9 mV) resolution
0 to 5 V, suitable for potentiometers, voltage output sensors and variable resistance (temperature) sensors
8 x thermocouple inputs, 1 °C resolution
Suits K type thermocouples (-200 to 1250 °C)
2 x cold junction compensation thermistor inputs
4 x digital inputs with frequency measurement and switched capability
2 x switch inputs
Update rate for all inputs 200 Hz, for a second expander 50 Hz

E816

16 x analogue voltage inputs, 10 bit (4.9 mV) resolution
0 to 5 V, suitable for potentiometers, voltage output sensors and variable resistance (temperature) sensors
2 x general purpose temperature inputs, calibrated as Bosch water temperature sensors
4 x digital inputs with frequency measurement and switched capability
2 x switch inputs
Update rate for all inputs 200 Hz, for a second expander 50 Hz

Outputs

8 x PWM outputs
Individually controllable for frequency and duty cycle.
4 x adjustable duty cycle 0 to 100% in 255 steps and frequency range from 8 Hz to 5 kHz
4 x adjustable duty cycle 0 to 100% in 20 steps and frequency range from 1 Hz to 100 Hz

Communications

CAN bus used for communicating to the data acquisition, display or ECU and to the PC during calibration and firmware upgrades

Configuration

Configured as part of the configuration for the connected ECU or data logger.

Physical

Case size 99 x 105 x 40 mm
Weight
E888 310 gram
E816 320 gram

Connectors

E888 two part 60 pin waterproof connector with gold plated contacts
E816 66 pin Autosport connector

Web	Item Number	Description
	M E888	E888 EXPANDER
	M E816	E816 EXPANDER

Ignition Expander

The Ignition Expander module (IEX) is designed to increase the ignition output capacity of MoTeC ECUs.
The IEX connects to a single ignition output on the ECU and can drive up to 8 ignition modules. For 10 and 12 coil applications, two IEX units can be used.

Note: that the IEX does not drive the coil directly, an ignition module is still required.

Web	Item Number	Description
	M IGN EX	IGNITION EXPANDER
	M IGN EX AS	IGNITION EXPANDER W/AUTOSPORT

Compatible with
All MoTeC ECUs

Outputs
8 x ignition outputs
Suits most ignition modules of falling edge type
The dwell time is controlled by the ECU
For 10 and 12 coil applications, two IEX units can be used

Communications
MoTeC specific coded signal supplied from a single ignition output on the ECU

Physical
Case size 70 x 100 x 35 mm
Weight 220 gram
Connector Type (Choose one of the following)
18 pin waterproof connector with gold plated contacts
22 pin Autosport connector

Traction Control Multiplexer

The Traction Control Multiplexer (TCMux) is designed to increase the speed inputs into a MoTeC ECU.
It takes four individual wheel speed signals and turns them into one coded signal for an ECU to read as driven speed (wheels that have power), undriven speed (rolling wheels) and slip (percentage difference between driven and undriven wheels).

A TCMux is not a stand-alone device.

Web	Item Number	Description
	M TC MUX	TRACTION CONTROL MULTIPLEXER

Compatible with
All MoTeC ECUs

Inputs
4 x Digital/speed inputs

Communications
MoTeC specific coded signal supplied to an ECU digital/ speed input

Physical
Case size 70 x 100 x 35 mm excluding connector
Weight 215 gram
1x18 pin waterproof connector with gold plated contacts