# Mini Input Module

## (RLVBMIM01)

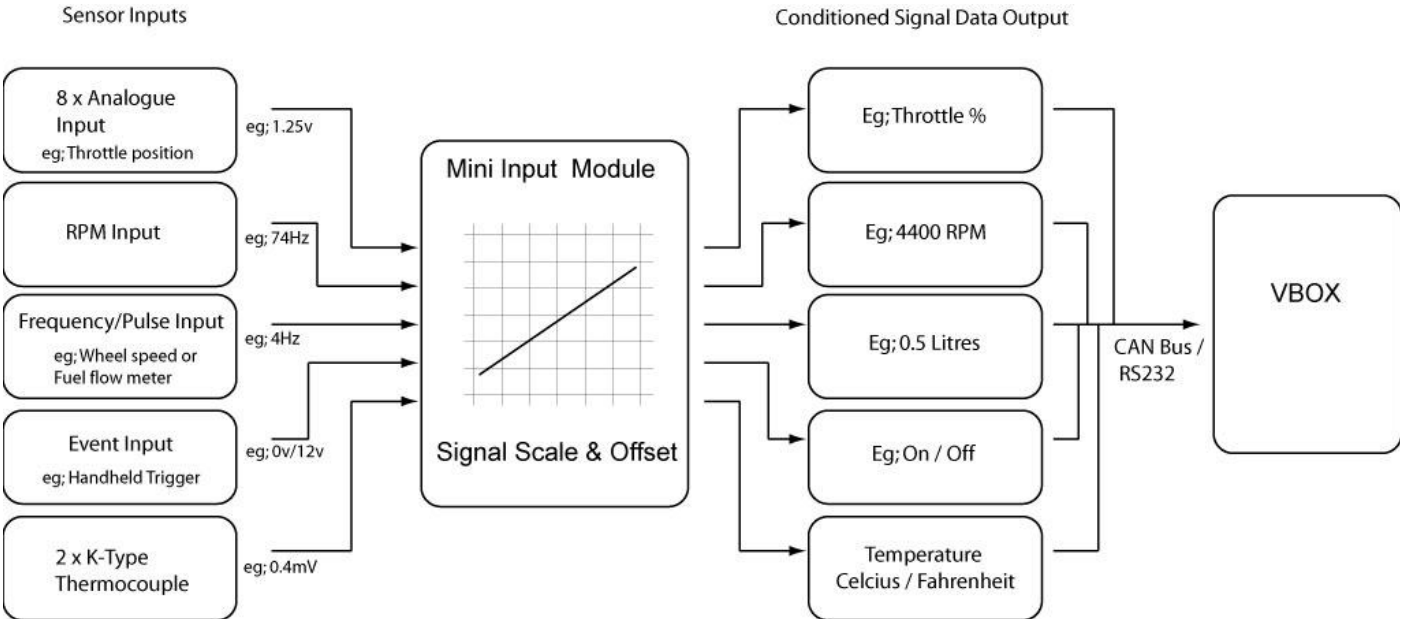
The VBOX mini input module is a general purpose input / output module designed for use by either the VBOX Mini or existing VBOX products.

This module allows data such as Temperature, RPM, Wheel Speed, Fuel Flow, Throttle angles and Pedal forces to be easily measured along with the VBOX GPS data.



### Inputs / Outputs

| Inputs | Outputs |
|---|---|
| 8 x 14 bit Analogue inputs | 1 x Digital Output |
| 1 x Low-Tension RPM input | 1 x Analogue Output (*Analogue and Digital outputs only available when used with a VBOX Mini)* |
| 1 x Wheel Speed Input with gain control | |
| 1 x Digital State Input for event marker | |
| 2 x K-Type thermocouple interface | |



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## Specification

| Analogue Input | | Digital Input 1 | |
|---|---|---|---|
| **Number of channels** | 8 | **Input Voltage (max range)** | 30VDC |
| **DC Accuracy** | 10mV | **Switching Threshold L>H** | 4V |
| **Input Range** | 0V – 13.8V | **Switching Threshold L<H** | 3.8V |
| **Input Impedance** | 20K | **Input Frequency Range** | 1Hz to 10KHz |
| **Voltage Resolution** | 1.06mV | | |

| RPM Input | | Digital Input 2 | |
|---|---|---|---|
| **Input type** | Low tension Coil Signal | **Input voltage (max range)** | ±40V |
| **Minimum signal amplitude** | 5V | **Minimum signal amplitude** | 0.5V |
| **Input frequency range** | 0 to 1000Hz | **Input frequency range** | 1Hz to 10KHz |
| **Resolution** | 0.1RPM | **Minimum frequency** | 1Hz |

| Thermocouple | | Environmental and physical | |
|---|---|---|---|
| **Input Channels** | 2 Differential input channels | **Weight** | Approx. 500 g |
| **Thermocouple type** | K-Type | **Size** | 119mm x 128mm x 30mm |
| **Update rate** | 5.8 Hz | **Operating temperature** | -30°C to +60°C |
| **Resolution** | 0.25°C | **Storage temperature** | -40°C to +85°C |
| **Range** | 0 to 1024°C | | |
| **Accuracy**<br>0 – 200°C:<br>200 – 1000°C: | Typical [Maximum]<br>±2°C [±3°C]<br>±4.0°C [±8.0°C] | | |

| Digital Output | | Analogue Output | |
|---|---|---|---|
| **Frequency range** | DC – 10 KHz | **Output voltage range** | 0 to 5 V DC |
| **Default Setting** | 25 Hz per Kph (0-400 Kph)<br>90 pulses per metre | **Default Setting** | 0.0125 Volts per Kph<br>76uV/bit |

| Power | |
|---|---|
| **Input Voltage Range** | 6 – 30 V DC |
| **Power** | Typically 1.5 Watts |

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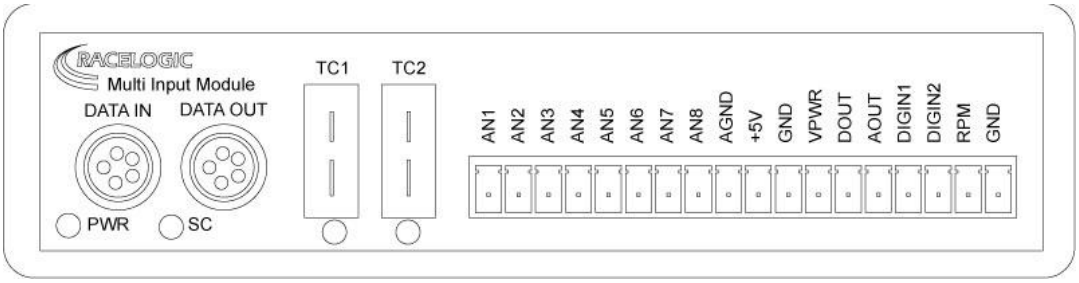
### Signal Connections




### Input Connector: 18 Way

| Pin | Function | I/O | Pin | Function | I/O |
|---|---|---|---|---|---|
| **AN1** | Analogue Channel 1 + | I | **GND** | Ground | I/O |
| **AN2** | Analogue Channel 2 + | I | **VPWR** | Power Output | I/O |
| **AN3** | Analogue Channel 3 + | I | **DOUT** | Digital Output | O |
| **AN4** | Analogue Channel 4 + | I | **AOUT** | Analogue Output | O |
| **AN5** | Analogue Channel 5 + | I | **DIGIN1** | Digital input e.g. Event trigger | I |
| **AN6** | Analogue Channel 6 + | I | **DIGIN2** | Digital Input e.g. Wheel speed signal | I |
| **AN7** | Analogue Channel 7 + | I | **RPM** | RPM input | I |
| **AN8** | Analogue Channel 8 + | I | **GND** | Ground | I/O |
| **AGND** | Analogue Ground | I | | | |
| **+5V** | +5V (sensor supply) | O | | | |