



SL4 ECU Data Sheet



March 2015

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1.0 General

Power Supply

- Operating Voltage: 6.0 to 22.0 Volts DC (ECU shutdowns at 24.0V)
- Operating Current: 290mA at 14.0V (excluding sensor and load currents)
- Reverse Battery Protection via External Fuse

Operating Temperature

- ECU Internal Temperature
 - Max Operating Range: -30 to 110°C (-22 to 230°F)
 - Recommended Operating Range: -30 to 85°C (-22 to 185°F)

Physical

- 6061 grade aluminum CNC billet enclosure
- Enclosure Size 120 mm x 130 mm x 27 mm
- Weight: 470g
- Connector system: 68 way Super Seal waterproof connectors with gold plated contacts
 - 1 x 34 pin Key 1 Super Seal
 - 1 x 34 pin Key 2 Super Seal

Internal

- Dual 100MHz Processors
- 500Mb DDR RAM (0.5Gb)
- 16MB ECU logging Memory
 - Over 700 channels available
 - 1Hz to 500Hz logging rate
- 4 channel Oscilloscope function
 - Sampling at 500k samples/second
 - Includes Crank and Cam sensors inputs
 - Includes Digital Inputs 1-2
- On-Board Barometric Pressure Sensor.
 - Range 40 - 115.0 kPa
- 3-Axis Accelerometer
 - 16 Bit Resolution
 - $\pm 2g/\pm 4g/\pm 8g$ dynamically selectable full-scale
 - Output Data Rate 500Hz

2.0 Outputs

4x Injector Outputs—High ohm.

- 70V Clamping
- Outputs can be used for ground switching , 6A Continuous , 10A Limit.
- All Outputs are short circuit and over current protected

4x Ignition Outputs.

- Adjustable TTL Ignition drive current (35mA or 70mA)
- Outputs can be used for ground switching , 1A Continuous, 3A Limit
- All Outputs are short circuit and over current protected

10 x Auxiliary Outputs

- Variable Valve Timing, Drive by Wire, Boost control, Stepper motor and many more.
- All Outputs have PWM Control, maximum frequency = 15 kHz
- All Outputs are short circuit and over current protected

Low Side Drivers

- Auxiliary 1-4: Low Side 4A continuous, 6A peak modulated, 8A Limit
- Auxiliary 5-8: Low Side 2.5A Continuous, 4A peak modulated , 5A Limit

High Side Drivers

- Auxiliary 1-8: High Side 4A Continuous, 9A Limit

Half Bridge Drivers

- Auxiliary 9-10: Half Bridge 5A Continuous and 8A limit. Can be used as Low Side, High side or together for DC motor control (DBW)

1x Dedicated EFI Main Relay Output

- Provides a relay ground. 100mA Limit

1x Analog Output

- Voltage range 0 - 5.0V, Output current 100mA

3.0 Inputs

10x Analog voltage/temperature Inputs

- Fully configurable including custom calibrations
- Switchable pull-up resistors on ANV 7-10.
- Resolution is 1.22mV (12 Bit).

6x Digital/speed/Switched Inputs.

- Frequency range from 0.0Hz up the 30kHz.
- Wheel speed, VVT position and other frequency based signals.
- On/Off switched inputs; air-con request, table control switching
- Accepts a 0.0 - 20.0V analog input.
- Switchable pull-up resistors on all 6 channels.

1x Knock Inputs with configurable Frequency and Gain.

- Using Bosch, Digital Knock Integrated Circuit Technology
- Selectable Frequency from 500Hz - 25kHz
- Selectable Bandwidth from 100Hz - 5kHz

1x Dedicated Ignition Switch Input

- 6.0 - 20.0V input used for EFI Relay Control.

4.0 Voltage Supplies

1x ECU Supply Input

- 6V - 22.0V Range
- Supplies ECU power
- Supplies Aux 1-8 High Side Drivers

1x Auxiliary 9-10 Supply Input

- Power Supply for Auxiliary Channels 9 -10. (See SL Series Power Distribution Wiring - A18.pdf for more information on how this should be wired)

1x 5.0V Supply Outputs

- 5V Engine 250mA

1x 8.0V CAS Output

- Output Current 400mA

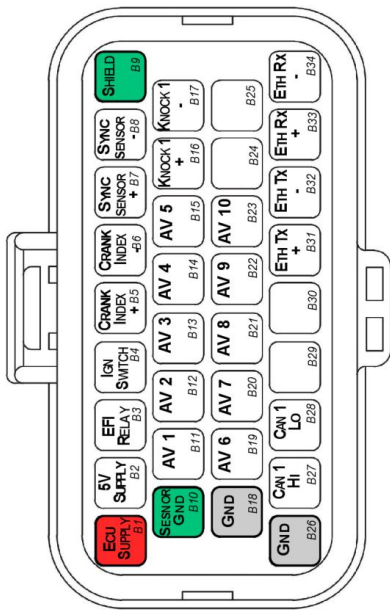
5.0 Communications

- 1x Ethernet 100Mbps
- 1x CAN 2.0B 1Mbps/ 6 Channels per node

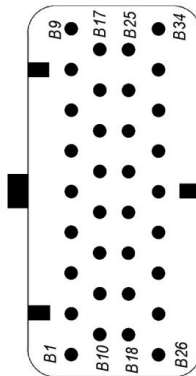
6.0 Ordering Information

Product	Part Number
Emtron SL4 ECU	1912-041
Emtron Comms Cable, Superseal to Emtron Connector 200mm	533-02
Emtron Ethernet Cable, Emtron Connector to Ethernet 1.5m	553-15

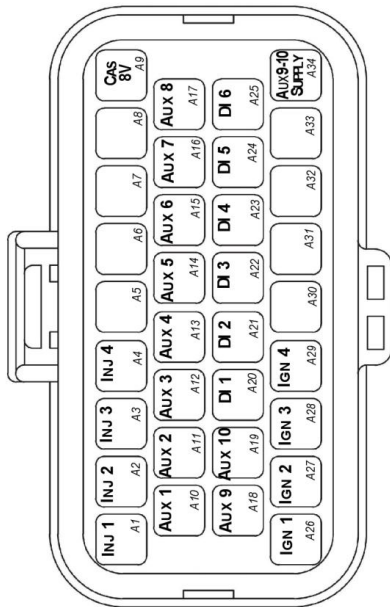
7.0 ECU Pinout Drawing



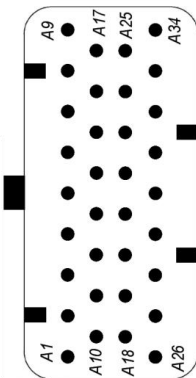
LOOKING INTO ECU



CONNECTOR B



LOOKING INTO ECU



CONNECTOR A

Title: SL4 ECU Pinout

Date: 19/09/2014 | Revision: 1.0

Drawing Number: A4