#### Professional Electronics for Automotive and Motorsport

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# **PDUX3B (12V)** Datasheet

The PDUX3B (12V) is a high-performance solid-state power distribution unit with a total of 34 powered output channels and maximum current capacity of 350A.

This includes ten flexible 40A output drivers which may be configured as half-bridge, high side or high side PWM (configurable frequency) outputs, with the ability to soft start electrical loads with closed loop current limitation.

In addition, two 40A capable output drivers, high side and high side PWM (configurable frequency) with the ability to soft start electrical loads and eight 15A capable output drives, high side and high side PWM (configurable frequency) with the ability to soft start electrical loads.

Using digitised, voltage, or linearised values from its 16 analogue inputs and from any of three CAN buses, the PDUX3B is calibrated using a clear graphical interface with full logic simulation and live monitoring capabilities.

The PDUX3B is able to operate in a low-power standby state, drawing <2mA, with configurable activation based on physical or CAN input.

Additionally, the PDUX3B may be used to expand input and output functionality of any Life Racing ECU.

The PDUX3B is available in 12V, 24V and 48V variants as well as an internal IMU option as detailed in the 'Ordering Information' section.



# Features:

- Schematic based calibration including logic simulation tool.
- Custom CAN across 3 buses including mux frames and retransmission (gateway) features, configured with a graphical display and import/export tool.
- Low power state woken on either a physical input, CAN activity or specific CAN frame
- Configurable evaluation frequency operation of schematic components in circuitry "Expert Frequency Mode"
- Optional internal IMU (Inertial Measurement Unit) feature offers a six-axis gyro and accelerometer which can be used within PDU schematic or transmitted over CAN.

## Outputs:

- 34 main power outputs:
  - 10 multifunction outputs configurable as either half-bridge, high side, low side, high side PWM (100Hz-20kHz) outputs.
    - (40A continuous, soft-start inrush limiting 60A, hard-start inrush 60A)
  - 10 high side, two of which can be high side PWM (100Hz-20kHz) outputs. (40A continuous, hard-start inrush 60A)
  - 14 high side, eight of which can be high side PWM (100Hz-20kHz) outputs. (15A continuous, hard-start inrush 17.5A)
- Output linking ('teaming') to support very high current devices.
- Four additional low side outputs with configurable PWM (10Hz-10kHz).
- All outputs short circuit and thermally protected with multi-stage in-rush control.
- All outputs additionally protected by physical fuses as required by worldwide regulations.
- Combined diagnostic output with reset input.
- 128 scalable CAN ('soft') outputs.
- Custom CAN datastream— i.e., customisable channel current, channel state and device information

# Inputs:

- 16 physical 0-5V inputs, including software selectable 3k Ohm pull-up resistors.
- Four inputs capable of programmable "wake" functionality.
- Comparing and manipulating real numbers (floating point decimal) in schematic using configurable logic blocks.
- Analogue inputs can be linearised, viewed as raw voltage or Boolean values.
- Dedicated wake pin.
- 128 CAN 'soft' inputs with configurable scaling.

### Interfaces:

- 2x 100Mbit/s full duplex Ethernet (Ethernet switch functionality).
- 3x CAN 2.0B fully flexible.
- Option for one galvanically isolated CAN bus (CAN3 custom projects only).
- RS232C serial interface (custom projects only).
- LIN Bus (custom projects only).



# Power Supply:

- 6V to 20V input voltage (12V), 6V to 30V input voltage (24V), 6V to 60V (48V).
- Dedicated logic power input.
- Regulated 5V sensor supply output with full circuit protection.

# Sleep State:

- Low power standby state with configurable wake options:
  - Wake by voltage signal (1.6mA).
  - Wake by any CAN activity (CAN-1 only) (2mA).
  - Wake by specific CAN frame or content (two frames required, CAN-1 only) (2mA).
  - Wake by specific CAN frame or content with low latency (one frame required, CAN-1 only) (10mA).

# ECU Slaving:

- Allows a Life Racing ECU to "claim" unused pins across a dedicated CAN bus utilising the following PDU I/O:
  - Outputs 1-10 with additional functionality including full-bridge pairing and configurable PWM frequencies.
  - Low outputs 11-14 with configurable PWM frequencies and internal pull up resistors.
  - All 16 inputs, including eight frequency capable (four optionally bipolar), and all with software selectable 3k Ohm pull-up resistors.

## **Physical:**

- Two LEAVYSEAL connectors with a total of 113 pins.
- Amphenol SurLok power stud.
- Machined Aluminium enclosure.
- 210x130x57mm (including connectors).
- 1090 grams.
- Operating Temperature -40°C to +85°C.

# **Ordering Information:**

| Description                               | Part number  |  |
|---|--------------|--|
| PDUX3B 350A (10mm main power stud)        | PDU-C01      |  |
| PDUX3B 200A (8mm main power stud)         | PDU-C04      |  |
| PDUX3B 350A 24V (10mm main power stud)    | PDU-E01      |  |
| PDUX3B 200A 24V (8mm main power stud)     | PDU-E04      |  |
| PDUX3B 350A 48V (10mm main power stud)    | PDU-F01      |  |
| PDUX3B 200A 48V (8mm main power stud)     | PDU-F04      |  |
| PDUX 350A Connector Kit                   | CON-B10      |  |
| PDUX 200A Connector Kit                   | CON-B11      |  |
| 3-axis accelerometer and 3-axis gyroscope | PDU-FEAT-IMU |  |
| Two pin wheel speed sensor inputs         | PDU-BTC-WS   |  |



## Wiring Information:

#### Power Stud

Mating connector (350A): Surlok SLPPCxxBSR Mating connector (200A): Surlok SLPPBxxBSR (xx=size: 35 150A, 50 200A, 70 300A, 85 350A)

| Pin | Gauge | Signal Name | Signal Notes            |
|-----|-------|-------------|-------------------------|
| 1   | -     | +12V Supply | Positive battery supply |

#### Connector 1

Mating connector: 1-1534127-1, Hood: 9-1394050-1

| Pin | Gauge     | Signal Name       | Signal Notes  |
|-----|-----------|-------------------|---|
| 1   | 20-12AWG  | Power Ground      | Negative battery supply   |
| 2   | 20-12AWG  | Output 20         | High Side 40A   |
| 3   | 20-12AWG  | Output 19         | High Side 40A   |
| 4   | 20-12AWG  | Output 18         | High Side 40A   |
| 5   | 20-12AWG  | Output 17         | High Side 40A   |
| 6   | 20-12AWG  | Output 16         | High Side 40A   |
| 7   | 20-12AWG  | Output 15         | High Side 40A   |
| 8   | 20-12AWG  | Output 14         | High Side 40A   |
| 9   | 20-12AWG  | Output 13         | High Side 40A   |
| 10  | 20-12AWG  | Output 12         | High Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>   |
| 11  | 20-12AWG  | Output 11         | High Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>   |
| 12  | 20.424040 | Output 10         | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
| 12  | 20-12AWG  | Output 10         | SLAVED: Half Bridge, Full Bridge paired with Output 9, Low Side, PWM  |
| 13  | 20-12AWG  | Output 9          | High Side/Low Side/High Side PWM (configurable Hz), Soft start, $40A^{(1)}$   |
| 15  | 20 12/100 |                   | SLAVED: Half Bridge, Full Bridge paired with Output 10, Low Side, PWM   |
| 14  | 20-12AWG  | 0-12AWG Output 8  | High Side/Low Side/High Side PWM (configurable Hz), Soft start, $40A^{(1)}$   |
|     |           |                   | SLAVED: Half Bridge, Full Bridge paired with Output 7, Low Side, PWM  |
| 15  | 20-12AWG  | Output 7          | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
|     |           | •                 | SLAVED: Half Bridge, Full Bridge paired with Output 8, Low Side, PWM  |
| 16  | 20-12AWG  | Output 6          | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
|     |           |                   | SLAVED: Half Bridge, Full Bridge paired with Output 5, Low Side, PWM  |
| 17  | 20-12AWG  | Output 5          | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
|     |           |                   | SLAVED: Half Bridge, Full Bridge paired with Output 6, Low Side, PWM  |
| 18  | 20-12AWG  | Output 4          | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
|     |           |                   | SLAVED: Half Bridge, Full Bridge paired with Output 3, Low Side, PWM High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup> |
| 19  | 20-12AWG  | Output 3          | SLAVED: Half Bridge, Full Bridge paired with Output 4, Low Side, PWM  |
|     |           |                   | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
| 20  | 20-12AWG  | Output 2          | SLAVED: Half Bridge, Full Bridge paired with Output 1, Low Side, PWM  |
|     | 20-12AWG  |                   | High Side/Low Side/High Side PWM (configurable Hz), Soft start, 40A <sup>(1)</sup>  |
| 21  |           | 20-12AWG Output 1 | SLAVED: Half Bridge, Full Bridge paired with Output 2, Low Side, PWM  |



#### Connector 2

# Mating Connector: 1703998-1, Hood 1703997-1

| Pin | Gauge    | Signal Name            | Signal Notes   |
|-----|----------|------------------------|--|
| 1   | -        | DO NOT CONNECT         | LR Internal use only   |
| 2   | -        | DO NOT CONNECT         | LR Internal use only   |
| 3   | -        | DO NOT CONNECT         | LR Internal use only   |
| 4   | -        | DO NOT CONNECT         | LR Internal use only   |
| 5   | -        | DO NOT CONNECT         | LR Internal use only   |
| 6   | -        | DO NOT CONNECT         | LR Internal use only   |
| 7   | -        | DO NOT CONNECT         | LR Internal use only   |
| 8   | -        | DO NOT CONNECT         | LR Internal use only   |
| 9   | -        | DO NOT CONNECT         | LR Internal use only   |
| 10  | -        | DO NOT CONNECT         | LR Internal use only   |
| 11  | -        | DO NOT CONNECT         | LR Internal use only   |
| 12  | -        | DO NOT CONNECT         | LR Internal use only   |
| 13  | -        | DO NOT CONNECT         | LR Internal use only   |
| 14  | -        | DO NOT CONNECT         | LR Internal use only   |
| 15  | -        | DO NOT CONNECT         | LR Internal use only   |
| 16  | 24-16AWG | Output 34              | High Side 15A  |
| 17  | 24-16AWG | Output 32              | High Side 15A  |
| 18  | 24-16AWG | Output 30              | High Side 15A  |
| 19  | 24-16AWG | Output 28              | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> |
| 20  | 24-16AWG | Output 26              | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> |
| 21  | 24-16AWG | Output 24              | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> |
| 22  | 24-16AWG | Output 22              | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> |
| 23  | 24-16AWG | 24-16AWG Low Output 11 | Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup>                    |
|     |          |                        | SLAVED: Low Side PWM configurable frequency                                |
| 24  | -        | DO NOT CONNECT         | LR Internal use only   |
| 25  | -        | DO NOT CONNECT         | LR Internal use only   |
| 26  | -        | DO NOT CONNECT         | LR Internal use only   |
| 27  | -        | DO NOT CONNECT         | LR Internal use only   |
| 28  | -        | DO NOT CONNECT         | LR Internal use only   |
| 29  | -        | DO NOT CONNECT         | LR Internal use only   |
| 30  | -        | DO NOT CONNECT         | LR Internal use only   |
| 31  | -        | DO NOT CONNECT         | LR Internal use only   |
| 32  | -        | DO NOT CONNECT         | LR Internal use only   |
| 33  | -        | DO NOT CONNECT         | LR Internal use only   |
| 34  | -        | DO NOT CONNECT         | LR Internal use only   |
| 35  | -        | DO NOT CONNECT         | LR Internal use only   |
| 36  | -        | DO NOT CONNECT         | LR Internal use only   |
| 37  | -        | DO NOT CONNECT         | LR Internal use only   |
| 38  | -        | DO NOT CONNECT         | LR Internal use only   |
| 39  | 24-16AWG | Output 33              | High Side 15A  |
| 40  | 24-16AWG | Output 31              | High Side 15A  |



#### **Connector 2**

Continued...

| 41     14.1500     Output 29     High Side 15A       42     24.1600     Output 25     High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 43     24.1600     Output 23     High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 44     24.1600     Output 23     High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 45     24.1600     Output 21     High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 46     24.1600     Low Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 47     24.1600     Input 01     Analogue C-5V, 34D programmable pullup to SV       48     24.1600     Input 03     Analogue C-5V, 34D programmable pullup to SV       49     24.1600     Input 05     Analogue C-5V, 34D programmable pullup to SV       50     24.1600     Input 05     Analogue C-5V, 34D programmable pullup to SV       51     34.1600     Input 05     Analogue C-5V, 34D programmable pullup to SV       52     24.16000     Input 07     Analogue C-5V, 34D programmable pullup to SV       53     34.1400     Analogue C-5V, 34D programmable pullup to SV       54     14.0401     Analogue C-5V, 34D programmable pullup to SV       55     24.16000     Input 11     Analogue C-5V, 34D programmable pullup to SV       54     14.16001     An  | Pin | Gauge      | Signal Name          | Signal Notes   |  |
|--|-----|------------|----------------------|--|--|
| 43         24-164/0         Output 25         High Side, High Side PMM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 44         24-364/6         Output 23         High Side, High Side PMM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 45         24-364/6         Output 21         High Side, High Side PMM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 46         24-364/6         Low Output 21         Low Side FVM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 47         24-364/6         Low Output 12         SUVED: Adapted FVM (configurable Hz), Soft Start, 15A <sup>(2)</sup> 48         24-364/6         Input 03         Analogue 0-5V, 3AD programmable pullup to 5V           54/464/6         Input 03         Analogue 0-5V, 3AD programmable pullup to 5V           54/464/6         Input 05         Analogue 0-5V, 3AD programmable pullup to 5V           54/464/6         Input 05         Analogue 0-5V, 3AD programmable pullup to 5V           54/464/6         Input 07         Analogue 0-5V, 3AD programmable pullup to 5V           54/464/6         Input 07         Analogue 0-5V, 3AD programmable pullup to 5V           51/2         24-364/6         Input 07         Analogue 0-5V, 3AD programmable pullup to 5V           51/2         24-364/6         Input 13         Analogue 0-5V, 3AD programmable pullup to 5V           52         24-364/6  | 41  | 24-16AWG   | Output 29            | High Side 15A  |  |
| 44         24-156/WG         Output 23         High Side, High Side PWM (configurable Hd), Soft Start, 15A <sup>23</sup> 45         24-356/WG         Output 21         High Side, HWM (configurable Hd) <sup>20</sup> 46         24-356/WG         Low Output 12         Low Side PWM (configurable Hd) <sup>20</sup> 47         24-366/WG         Input 01         Analogue 0-5V, 3KD programmable pullup to 5V           48         24-366/WG         Input 03         Analogue 0-5V, 3KD programmable pullup to 5V           54/WD . Analogue 0-5V, 3KD programmable pullup to 5V         StAVED. Analogue 0-5V, 3KD programmable pullup to 5V           59         24-366/WG         Input 05         StAVED. Analogue 0-5V, 3KD programmable pullup to 5V           50         24-366/WG         Input 05         StAVED. Analogue 0-5V, 3KD programmable pullup to 5V           50         24-366/WG         Input 07         Analogue 0-5V, 3KD programmable pullup to 5V           51         24-366/WG         Input 07         Analogue 0-5V, 3KD programmable pullup to 5V           51         24-366/WG         Input 07         Analogue 0-5V, 3KD programmable pullup to 5V           52         24-366/WG         Input 13         Analogue 0-5V, 3KD programmable pullup to 5V           53         32-366/WG         StRDEG RDD         Protected sorreground           54  | 42  | 24-16AWG   | Output 27            | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup>   |  |
| 45     24-164/05     Output 21     High Side, High Side PWM (configurable Hz) <sup>67</sup> 46     24-26/06     Low Output 12     Low Side PWM configurable Hz) <sup>67</sup> 47     24-164/05     Low Output 12     Low Side PWM configurable Hz) <sup>67</sup> 48     24-164/05     Input 01     SUVED Analogue or Side PWM configurable Pullup to SV       48     24-164/05     Input 03     Analogue 0-5V, 3KD programmable pullup to SV       50     24-164/05     Input 05     SUVED Analogue or Side PWM configurable Pullup to SV       51     24-164/05     Input 05     Analogue 0-5V, 3KD programmable pullup to SV       50     24-164/05     Input 07     SUVED Analogue 0-5V, 3KD programmable pullup to SV       51     24-164/05     Input 07     SUVED Analogue 0-5V, 3KD programmable pullup to SV       52     24-164/05     Input 07     SUVED Analogue 0-5V, 3KD programmable pullup to SV       53     24-164/05     Input 13     Analogue 0-5V, 3KD programmable pullup to SV       54     24-164/05     Input 13     Analogue 0-5V, 3KD programmable pullup to SV       55     2-164/05     Input 13     Analogue 0-5V, 3KD programmable pullup to SV       54     24-264/05     Input 13     Analogue 0-5V, 3KD programmable pullup to SV       55     2-164/05     KADD Analogue 0-5V, 3KD programmable pullup to SV       56 <t< td=""><td>43</td><td>24-16AWG</td><td>Output 25</td><td>High Side, High Side PWM (configurable Hz), Soft Start, 15A<sup>(2)</sup></td></t<>  | 43  | 24-16AWG   | Output 25            | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup>   |  |
| 46         24-16XWG         Low Output 12         Low Side, Low Side PWM (configurable Hz) <sup>100</sup><br>SLATD: Low Side PWM configurable frequency           47         24-16XWG         Input 01         Analogue 0-5V, 3KD programmable pullup to SV<br>SLAVED: Analogue 0-5V, 3KD programmable pullup to SV           48         24-16XWG         Input 03         Analogue 0-5V, 3KD programmable pullup to SV<br>SLAVED: Analogue 0-5V, 3KD programmable pullup to SV           49         24-16XWG         Input 03         Analogue 0-5V, 3KD programmable pullup to SV<br>SLAVED: Analogue 0-5V, 3KD programmable pullup to SV           50         24-16XWG         Input 05         Analogue 0-5V, 3KD programmable pullup to SV<br>SLAVED: Analogue 0-5V, 3KD programmable pullup to SV           50         24-16XWG         Input 07         Analogue 0-5V, 3KD programmable pullup to SV<br>Freed frequency: 0-5V, 3KD programmable pullup to SV           51         24-16XWG         Input 10         Analogue 0-5V, 3KD programmable pullup to SV           52         24-16XWG         Input 11         Analogue 0-5V, 3KD programmable pullup to SV           53         24-16XWG         Input 13         Analogue 0-5V, 3KD programmable pullup to SV, Make <sup>44</sup> 54         24-16XWG         Input 15         Analogue 0-5V, 3KD programmable pullup to SV, Make <sup>44</sup> 54         24-16XWG         Input 15         Analogue 0-5V, 3KD programmable pullup to SV, Wake <sup>44</sup>  | 44  | 24-16AWG   | Output 23            | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup>   |  |
| 46     X=15AV0     Low Output 12     SLAVED: Low Side PWM configurable frequency       47     X=15AV0     Input 01     SLAVED: Low Side PWM configurable frequency       48     Z=15AV0     Input 03     SLAVED: Analogue of SV, SVD 9V,   | 45  | 24-16AWG   | Output 21            | High Side, High Side PWM (configurable Hz), Soft Start, 15A <sup>(2)</sup>   |  |
| Image: Control State PMA configurable frequency           47         24-154/WG         Input 01         SulVED. Low Side PMA configurable pullup to 5V<br>SLAVED. Analogue 0 5V, 3KD programmable pullup to 5V           48         24-156/WG         Input 03         SulVED. Analogue 0 5V, 3KD programmable pullup to 5V           49         24-156/WG         Input 05         SulVED. Analogue 0 5V, 3KD programmable pullup to 5V           50         24-156/WG         Input 05         SulVED. Analogue 0 5V, 3KD programmable pullup to 5V           51         24-156/WG         Input 05         SulVED. Analogue 0 5V, 3KD programmable pullup to 5V           52         24-156/WG         Input 07         SulVED. Analogue 0 5V, 3KD programmable pullup to 5V           52         24-156/WG         Input 07         SulVED. Analogue 0 5V, 3KD programmable pullup to 5V           53         24-156/WG         Input 11         Analogue 0 5V, 3KD programmable pullup to 5V           54         24-156/WG         Input 13         Analogue 0 5V, 3KD programmable pullup to 5V           55         24-156/WG         Input 13         Analogue 0 5V, 3KD programmable pullup to 5V           55         24-156/WG         Store 0         Protected sensor ground           56         24-156/WG         Store 0         Protected sensor ground           57         24-156/WG <td>40</td> <td></td> <td></td> <td>Low Side, Low Side PWM (configurable Hz)<sup>(3)</sup></td>   | 40  |            |                      | Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup>  |  |
| 47     24-36/WG     Input 01     SJAVED Analogue of requery, 0.5V, 5V to +SV, 3kQ programmable pullup to SV, configurable frequency voltage thresholds:       48     24-56/WG     Input 03     Analogue 0-SV, 3kQ programmable pullup to SV       49     24-56/WG     Input 05     SJAVED Analogue of requery, 0-SV, 5V to +SV, 3kQ programmable pullup to SV, configurable frequency, 0-SV, 3kQ programmable pullup to SV       50     24-56/WG     Input 07     SJAVED Analogue 0-SV, 3kQ programmable pullup to SV       51     24-56/WG     Input 07     SJAVED Analogue 0-SV, 3kQ programmable pullup to SV       52     24-56/WG     Input 07     SJAVED Analogue 0-SV, 3kQ programmable pullup to SV       53     32-456/WG     Input 11     Analogue 0-SV, 3kQ programmable pullup to SV       54     24-56/WG     Input 13     Analogue 0-SV, 3kQ programmable pullup to SV       55     24-56/WG     Input 13     Analogue 0-SV, 3kQ programmable pullup to SV       56     24-56/WG     Input 13     Analogue 0-SV, 3kQ programmable pullup to SV       57     24-456/WG     Input 13     Analogue 0-SV, 3kQ programmable pullup to SV       58     10-11     Analogue 0-SV, 3kQ programmable pullup to SV       59     24-456/WG     Input 13     Analogue 0-SV, 3kQ programmable pullup to SV       51     24-456/WG     Input 13     Analogue 0-SV, 3kQ programmable pullup to SV       52   | 46  | 24-16AWG   | Low Output 12        | SLAVED: Low Side PWM configurable frequency  |  |
| Image: Control Analogue (Control (Contro) (Contro)(Cont)))))))))))))))))))))))))))))))))))) |     |            |                      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V  |  |
| 48         24-164WG         Input 03         SUVED Availague or frequency 05V, 5V to +5V, 3kD programmable pullup to 5V, configurable frequency 05W, 3kD programmable pullup to 5V           49         24-164WG         Input 05         SUVED. Availague or frequency, 05V, 3kD programmable pullup to 5V           50         24-164WG         Input 07         Analogue 0-5V, 3kD programmable pullup to 5V           51         24-164WG         Input 07         Analogue 0-5V, 3kD programmable pullup to 5V           52         24-164WG         Input 09         Analogue 0-5V, 3kD programmable pullup to 5V           52         24-164WG         Input 11         Analogue 0-5V, 3kD programmable pullup to 5V           53         24-164WG         Input 13         Analogue 0-5V, 3kD programmable pullup to 5V           54         24-164WG         Input 13         Analogue 0-5V, 3kD programmable pullup to 5V, Wakel <sup>®</sup> 54         24-164WG         Input 15         Analogue 0-5V, 3kD programmable pullup to 5V, Wakel <sup>®</sup> 55         24-164WG         SENSOR GND         Protected sensor ground         SE           57         24-164WG         SENSOR GND         Protected sensor ground         Second se   | 47  | 24-16AWG   | Input 01             |  |  |
| Instrume         Instrume         Instrume         Instrume         Instrume           49         24-164WG         Input 05         Analogue 0-5V, 3KD programmable pullup to 5V           50         24-164WG         Input 07         Analogue 0-5V, 3KD programmable pullup to 5V           51         24-164WG         Input 07         Analogue 0-5V, 3KD programmable pullup to 5V           52         24-164WG         Input 07         Analogue 0-5V, 3KD programmable pullup to 5V           52         24-164WG         Input 09         Analogue 0-5V, 3KD programmable pullup to 5V           53         24-164WG         Input 11         Analogue 0-5V, 3KD programmable pullup to 5V           53         24-164WG         Input 13         Analogue 0-5V, 3KD programmable pullup to 5V           54         24-164WG         Input 13         Analogue 0-5V, 3KD programmable pullup to 5V           55         24-164WG         Input 15         Analogue 0-5V, 3KD programmable pullup to 5V, Wake <sup>44</sup> 56         24-164WG         KD OUT         Regulated 5V sensor reference supply           57         24-164WG         WARNING AND RESET SW         Warning output for an LED to ground.           58         24-164WG         CAN #03 HI         CAN communication port 1200 software selectable termination           61         <   | 40  |            |                      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V  |  |
| 49     24-36.WG     Input 05     SUVED: Analogue or frequency: 60X, 30D argaramable pullup to 5V<br>Fixed frequency voltage thresholds at 1.25 and 3.75V       50     24-164.WG     Input 07     SLAVED: Analogue or trequency, 6VX, 30D programmable pullup to 5V<br>Fixed frequency voltage thresholds at 2.35 and 3.75V       51     24-164.WG     Input 09     Analogue 0-5V, 3KD programmable pullup to 5V<br>Fixed frequency voltage thresholds at 1.25 and 3.75V       51     24-164.WG     Input 11     Analogue 0-5V, 3KD programmable pullup to 5V       53     24-164.WG     Input 13     Analogue 0-5V, 3KD programmable pullup to 5V       54     24-164.WG     Input 13     Analogue 0-5V, 3KD programmable pullup to 5V, Wake <sup>40</sup> 55     24-164.WG     SKDSOR GND     Protected sensor ground       56     24-164.WG     LOGIC POWER IN     +12V Battery supply; recommended independent logic supply <0.5A   | 48  | 24-16AWG   | Input 03             |  |  |
| State         State <th< td=""><td>40</td><td></td><td></td><td>Analogue 0-5V, <math>3k\Omega</math> programmable pullup to 5V</td></th<>  | 40  |            |                      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V  |  |
| 50         24.164WG         Input 07         Analogue 0-5V, 3&D programmable pullup to 5V<br>SLAVED: Analogue 0-5V, 3&D programmable pullup to 5V<br>Fixed frequency voltage thresholds at 1.25 and 3.75V           51         24.164WG         Input 09         Analogue 0-5V, 3&D programmable pullup to 5V           52         24.164WG         Input 11         Analogue 0-5V, 3&D programmable pullup to 5V           53         24.164WG         Input 13         Analogue 0-5V, 3&D programmable pullup to 5V           54         24.164WG         Input 13         Analogue 0-5V, 3&D programmable pullup to 5V, Wake <sup>40</sup> 54         24.164WG         Input 15         Analogue 0-5V, 3&D programmable pullup to 5V, Wake <sup>40</sup> 54         24.164WG         Input 15         Analogue 0-5V, 3&D programmable pullup to 5V, Wake <sup>40</sup> 55         24.164WG         Input 15         Analogue 0-5V, 3&D programmable pullup to 5V, Wake <sup>40</sup> 56         24.164WG         SK OUT         Regulated 5V sensor reference supply           57         24.164WG         RS232 RX         RS232 receive           60         24.164WG         RAY0 HI         CAN communication port 1200 software selectable termination           61         24.164WG         ETHERNET2 RX+         Ethernet communication port 1200 software selectable termination           62         24.164WG         <  | 49  | 24-16AWG   | Input 05             |  |  |
| FirstSLAVEDSLAVEDAnalogue of requency output (b SV5124-16AWGInput 09Analogue 0-SV, 3KD programmable pullup to SV5224-16AWGInput 11Analogue 0-SV, 3KD programmable pullup to SV5324-16AWGInput 13Analogue 0-SV, 3KD programmable pullup to SV, Wake <sup>(4)</sup> 5424-16AWGInput 15Analogue 0-SV, 3KD programmable pullup to SV, Wake <sup>(4)</sup> 5524-16AWGInput 15Analogue 0-SV, 3KD programmable pullup to SV, Wake <sup>(4)</sup> 5624-16AWGSV OUTRegulated SV sensor reference supply5724-16AWGLOGIC POWER IN+12V Battery supply; recommended independent logic supply <0.SA  |     |            |                      |  |  |
| 5224-t6AWGInput 11Analogue 0-5V, 3kΩ programmable pullup to 5V5324-t6AWGInput 13Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake <sup>(0)</sup> 5424-t6AWGInput 15Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake <sup>(0)</sup> 5524-t6AWGSENSOR GNDProtected sensor ground5624-t6AWG5V OUTRegulated 5V sensor reference supply5724-t6AWGSV OUTRegulated 5V sensor reference supply5824-t6AWGSV OUTRegulated 5V sensor reference supply5924-t6AWGRS232 RXRS232 receive6024-t6AWGCAN #03 HICAN communication port 120Ω software selectable termination6124-t6AWGCAN #03 HICAN communication port 120Ω software selectable termination6224-t6AWGCAN #01 HICAN communication port 120Ω software selectable termination6324-t6AWGCAN #01 HICAN communication port 120Ω software selectable termination6424-t6AWGETHERNET2 RX+Ethernet communication port 26424-t6AWGETHERNET1 RX+Ethernet communication port 16624-t6AWGETHERNET1 TX+Ethernet communication port 16724-t6AWGETHERNET1 TX+Ethernet communication port 16824-t6AWGEthernet TX+Ethernet communication port 16724-t6AWGLow Output 13Low Side PWM (configurable Hz) <sup>(3)</sup> 6824-t6AWGLow Output 14Low Side PWM (configurable Hz) <sup>(3)</sup> 7024-t6AWGLow Output 14   | 50  | 24-16AWG   | Input 07             |  |  |
| 101Imput 13Analogue 0-SV, 3kD programmable pullup to SV, Wake <sup>(4)</sup> 5324-16AWGInput 13Analogue 0-SV, 3kD programmable pullup to SV, Wake <sup>(4)</sup> 5424-16AWGSENSOR GNDProtected sensor ground5624-16AWGSV OUTRegulated 5V sensor reference supply5724-16AWGSV OUTRegulated 5V sensor reference supply5824-16AWGLOGIC POWER IN+12V Battery supply; recommended independent logic supply <0.5A  | 51  | 24-16AWG   | Input 09             | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V  |  |
| 54     24-16AWG     Input 15     Analogue 0-5V, 3kΩ programmable pullup to 5V, Wake <sup>(6)</sup> 55     24-16AWG     SENSOR GND     Protected sensor ground       56     24-16AWG     5V OUT     Regulated 5V sensor reference supply       57     24-16AWG     LOGIC POWER IN     +12V Battery supply; recommended independent logic supply <0.5A   | 52  | 24-16AWG   | Input 11             | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V  |  |
| 55     24-16AWG     SENSOR GND     Protected sensor ground       56     24-16AWG     SV OUT     Regulated 5V sensor reference supply       57     24-16AWG     LOGIC POWER IN     +12V Battery supply; recommended independent logic supply <0.5A  | 53  | 24-16AWG   | Input 13             | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V, Wake <sup>(4)</sup>   |  |
| 5624-16AWG5V OUTRegulated 5V sensor reference supply5724-16AWGLOGIC POWER IN+12V Battery supply; recommended independent logic supply <0.5A  | 54  | 24-16AWG   | Input 15             | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V, Wake <sup>(4)</sup>   |  |
| 57     24-16AWG     LOGIC POWER IN     +12V Battery supply; recommended independent logic supply <0.5A   | 55  | 24-16AWG   | SENSOR GND           | Protected sensor ground  |  |
| 5824-16AWGWARNING AND RESET SWWarning output for an LED to ground. Short to ground for manual reset.5924-16AWGRS232 RXRS232 receive6024-16AWGCAN #03 HICAN communication port 1200 software selectable termination6124-16AWGCAN #02 HICAN communication port 1200 software selectable termination6224-16AWGCAN #01 HICAN communication port 1200 software selectable termination6324-16AWGETHERNET2 RX+Ethernet communication port 1200 software selectable termination6424-16AWGETHERNET2 TX+Ethernet communication port 26524-16AWGETHERNET2 TX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGETHERNET1 TX+Ethernet communication port 16824-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup> 6824-16AWGLow Output 14Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup> 6924-16AWGInput 02SLAVED: Analogue or frequency7024-16AWGInput 02SLAVED: Analogue or frequency; 0-SV, -SV to +SV, 3kΩ programmable pullup to SV, configurable frequency7124-16AWGInput 04Analogue 0-SV, 3kΩ programmable pullup to SV   | 56  | 24-16AWG   | 5V OUT               | Regulated 5V sensor reference supply   |  |
| 5924-16AWGRS232 RXRS232 receive6024-16AWGCAN #03 HICAN communication port 120Ω software selectable termination6124-16AWGCAN #02 HICAN communication port 120Ω software selectable termination<br>ECU Slave – when paired with LR ECU (terminated)6224-16AWGCAN #01 HICAN communication port 120Ω software selectable termination<br>ECU Slave – when paired with LR ECU (terminated)6324-16AWGETHERNET2 RX+Ethernet communication port 26424-16AWGETHERNET2 TX+Ethernet communication port 16524-16AWGETHERNET1 RX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGETHERNET1 TX+Ethernet communication port 16824-16AWGLow Output 13Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Conside PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Analogue 0-5V, 3KΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V<br>S   | 57  | 24-16AWG   | LOGIC POWER IN       | +12V Battery supply; recommended independent logic supply <0.5A  |  |
| 6024-16AWGCAN #03 HICAN communication port 120Ω software selectable termination6124-16AWGCAN #02 HICAN communication port 120Ω software selectable termination<br>ECU Slave – when paired with LR ECU (terminated)6224-16AWGCAN #01 HICAN communication port 120Ω software selectable termination6324-16AWGETHERNET2 RX+Ethernet communication port 26424-16AWGETHERNET2 TX+Ethernet communication port 16524-16AWGETHERNET1 RX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGETHERNET1 TX+Ethernet communication port 16824-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Analogue 0-5V, 3KΩ programmable pullup to 5V<br>SLAVED: Analogue 0-5V, 3KΩ programmable pullup to 5V, SLAVED: Analogue 0-5V, 3KΩ progra   | 58  | 24-16AWG   | WARNING AND RESET SW | Warning output for an LED to ground. Short to ground for manual reset.   |  |
| 61       24-16AWG       CAN #02 HI       CAN communication port 120Ω software selectable termination<br>ECU Slave – when paired with LR ECU (terminated)         62       24-16AWG       CAN #01 HI       CAN communication port 120Ω software selectable termination         63       24-16AWG       ETHERNET2 RX+       Ethernet communication port 2         64       24-16AWG       ETHERNET2 TX+       Ethernet communication port 1         65       24-16AWG       ETHERNET1 RX+       Ethernet communication port 1         66       24-16AWG       ETHERNET1 TX+       Ethernet communication port 1         67       24-16AWG       Power Ground       Negative battery supply         68       24-16AWG       Low Output 13       Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side, PWM configurable Hz) <sup>(3)</sup> 69       24-16AWG       Low Output 14       Low Side, Low Side PWM configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable Hz) <sup>(3)</sup> 70       24-16AWG       Input 02       Analogue 0-5V, 3KΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3KΩ programmable pullup to 5V, sLAVED: Analogue or SV, SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3KΩ programmable pullup to 5V, configurable         71       24-16AWG       Input 04       Analogue or SV, SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3KΩ programmable pullup to 5V, configurable   | 59  | 24-16AWG   | RS232 RX             | RS232 receive  |  |
| 6124-16AWGCAN #02 H1ECU Slave – when paired with LR ECU (terminated)6224-16AWGCAN #01 H1CAN communication port 1200 software selectable termination6324-16AWGETHERNET2 RX+Ethernet communication port 26424-16AWGETHERNET2 TX+Ethernet communication port 16524-16AWGETHERNET1 RX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGETHERNET1 TX+Ethernet communication port 16824-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side, Low Side PWM (configurable frequency6924-16AWGLow Output 14SLAVED: Low Side PWM (configurable frequency7024-16AWGInput 02Analogue 0-5V, 3K0 programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or SV, SkO programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, slAVED: Analogue or frequency; 0-5V, -5V to +5V, 3k0 programmable pullup to 5V, conf  | 60  | 24-16AWG   | CAN #03 HI           | CAN communication port $120\Omega$ software selectable termination   |  |
| 6324-16AWGETHERNET2 RX+Ethernet communication port 26424-16AWGETHERNET2 TX+Ethernet communication port 26524-16AWGETHERNET1 RX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency6924-16AWGLow Output 14Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency7024-16AWGInput 02Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable7124-16AWGInput 04Analogue 0-5V, 3kΩ programmable pullup to 5V, sLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable  | 61  | 24-16AWG   | CAN #02 HI           | •  |  |
| 6424-16AWGETHERNET2 TX+Ethernet communication port 26524-16AWGETHERNET1 RX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency6924-16AWGLow Output 14Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency7024-16AWGInput 02Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable<br>frequency voltage thresholds7124-16AWGInput 04Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable  | 62  | 24-16AWG   | CAN #01 HI           | CAN communication port 120 software selectable termination   |  |
| 6524-16AWGETHERNET1 RX+Ethernet communication port 16624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency6924-16AWGLow Output 14Low Side, Low Side PWM (configurable frequency7024-16AWGInput 02Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable<br>frequency voltage thresholds7124-16AWGInput 04Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable  | 63  | 24-16AWG   | ETHERNET2 RX+        | Ethernet communication port 2  |  |
| 6624-16AWGETHERNET1 TX+Ethernet communication port 16724-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency6924-16AWGLow Output 14Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency7024-16AWGInput 02Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable<br>frequency voltage thresholds7124-16AWGInput 04Analogue 0-5V, 3kΩ programmable pullup to 5V, sLAVED: Analogue or frequency: 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable  | 64  | 24-16AWG   | ETHERNET2 TX+        | Ethernet communication port 2  |  |
| 6724-16AWGPower GroundNegative battery supply6824-16AWGLow Output 13Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency6924-16AWGLow Output 14Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup><br>SLAVED: Low Side PWM configurable frequency7024-16AWGInput 02Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable<br>frequency voltage thresholds7124-16AWGInput 04Analogue 0-5V, 3kΩ programmable pullup to 5V, configurable  | 65  | 24-16AWG   | ETHERNET1 RX+        | Ethernet communication port 1  |  |
| 68       24-16AWG       Low Output 13       Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup> 69       24-16AWG       Low Output 14       Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup> 70       24-16AWG       Input 02       Analogue 0-5V, 3kΩ programmable pullup to 5V         71       24-16AWG       Input 04       Analogue 0-5V, 3kΩ programmable pullup to 5V  | 66  | 24-16AWG   | ETHERNET1 TX+        | Ethernet communication port 1  |  |
| 68       24-16AWG       Low Output 13       SLAVED: Low Side PWM configurable frequency         69       24-16AWG       Low Output 14       Low Side, Low Side PWM (configurable frequency         70       24-16AWG       Input 02       Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable<br>frequency voltage thresholds         71       24-16AWG       Input 04       Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable   | 67  | 24-16AWG   | Power Ground         | Negative battery supply  |  |
| Generation       SLAVED: Low Side PWM configurable frequency         Generation       Low Output 14         Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup> SLAVED: Low Side PWM configurable frequency         70       24-16AWG         Input 02       Analogue 0-5V, 3kΩ programmable pullup to 5V         SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable frequency voltage thresholds         71       24-16AWG         Input 04       Analogue 0-5V, 3kΩ programmable pullup to 5V         SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V         SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V  | 60  | 24 16 4140 | Low Output 12        | Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup>  |  |
| 69     24-16AWG     Low Output 14       70     24-16AWG     Input 02       71     24-16AWG     Input 04  | 80  | 24-16AWG   |                      | SLAVED: Low Side PWM configurable frequency  |  |
| Constraint     SLAVED: Low Side PWM configurable frequency       70     24-16AWG     Input 02     Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable<br>frequency voltage thresholds       71     24-16AWG     Input 04     Analogue 0-5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V<br>SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable   | 69  | 24-16AWG   | Low Output 14        | Low Side, Low Side PWM (configurable Hz) <sup>(3)</sup>  |  |
| 70     24-16AWG     Input 02     SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable frequency voltage thresholds       71     24-16AWG     Input 04     Analogue 0-5V, 3kΩ programmable pullup to 5V       SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V     SLAVED: Analogue 0-5V, 3kΩ programmable pullup to 5V   |     | 2.10000    |                      |  | SLAVED: Low Side PWIM configurable frequency |
| 71     24-16AWG     Input 04     SLAVED: Analogue of frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V       SLAVED: Analogue of frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V     SLAVED: Analogue of frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable  | 70  | 24-16AWG   | 24-16AWG Input 02    |  |  |
| 71         24-16AWG         Input 04         SLAVED: Analogue or frequency; 0-5V, -5V to +5V, 3kΩ programmable pullup to 5V, configurable  | /0  |            |                      |  |  |
| · SLAVED. Analogue of nequency, 0-5V, 5V to +5V, 5K2 programmable pullup to 5V, comigurable  | _   |            |                      | Analogue 0-5V, 3kΩ programmable pullup to 5V   |  |
|  | 71  | 24-16AWG   | 24-16AWG Input 04    | SLAVED: Analogue or frequency; 0-5V, -5V to +5V, $3k\Omega$ programmable pullup to 5V, configurable frequency voltage thresholds |  |



### Connector 2

Continued...

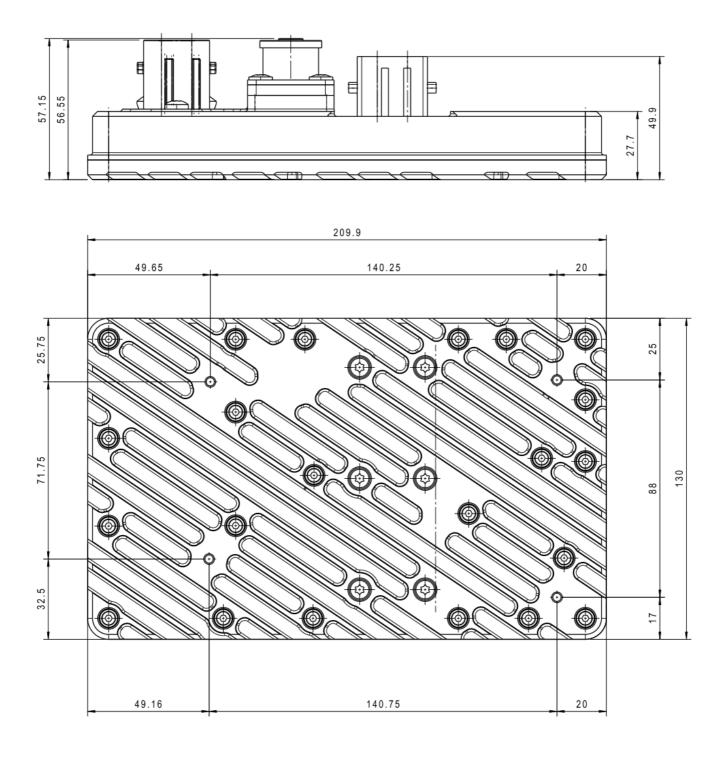
| Pin | Gauge       | Signal Name   | Signal Notes  |
|-----|-------------|---------------|---|
|     |             | Input 06      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V   |
| 72  | 72 24-16AWG |               | SLAVED: Analogue or frequency; 0-5V, 3k $\Omega$ programmable pullup to 5V Fixed frequency voltage thresholds at 1.25 and 3.75V |
|     |             | Input 08      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V   |
| 73  | 24-16AWG    |               | SLAVED: Analogue or frequency; 0-5V, 3kΩ programmable pullup to 5V<br>Fixed frequency voltage thresholds at 1.25 and 3.75V      |
| 74  | 24-16AWG    | Input 10      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V   |
| 75  | 24-16AWG    | Input 12      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V   |
| 76  | 24-16AWG    | Input 14      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V, $Wake^{(4)}$   |
| 77  | 24-16AWG    | Input 16      | Analogue 0-5V, $3k\Omega$ programmable pullup to 5V, $Wake^{(4)}$   |
| 78  | 24-16AWG    | SENSOR GND    | Protected sensor ground   |
| 79  | 24-16AWG    | Power Ground  | Negative battery supply   |
| 80  | 24-16AWG    | WAKEUP        | Dedicated wake <sup>(4)</sup>   |
| 81  | 24-16AWG    | LIN           | NOT CURRENTLY IN USE  |
| 82  | 24-16AWG    | RS232 TX      | RS232 transmit  |
| 83  | 24-16AWG    | CAN #03 LO    | CAN communication port 120 $\!\Omega$ software selectable termination   |
| 84  | 24-16AWG    | CAN #02 LO    | CAN communication port 120 $\Omega$ software selectable termination ECU Slave – when paired with LR ECU (terminated)            |
| 85  | 24-16AWG    | CAN #01 LO    | CAN communication port 120 $\!\Omega$ software selectable termination   |
| 86  | 24-16AWG    | ETHERNET2 RX- | Ethernet communication port 2   |
| 87  | 24-16AWG    | ETHERNET2 TX- | Ethernet communication port 2   |
| 88  | 24-16AWG    | ETHERNET1 RX- | Ethernet communication port 1   |
| 89  | 24-16AWG    | ETHERNET1 TX- | Ethernet communication port 1   |
| 90  | 24-16AWG    | Power Ground  | Negative battery supply   |
| 91  | 24-16AWG    | Power Ground  | Negative battery supply   |
| 92  | 24-16AWG    | Output 21D    | Duplicate of output 21 with Diode - intended for wiper operation 15A  |

#### Footnotes:

<sup>(1)</sup>Default PWM frequency for Outputs 1-12 is 10kHz.
 <sup>(2)</sup>Default PWM frequency for Outputs 21-28 is 10kHz.
 <sup>(3)</sup>Default PWM frequency for Low Side Outputs 11-14 is 125Hz.
 <sup>(4)</sup>Can be calibrated to bring unit out of sleep mode.



# **Dimensions:**



# Warranty and Servicing:

• One year limited warranty when used within supplied specification.