# *Ole Buhl Racing Ltd presents the new "Power Control Distribution Module"*


**BREAKING NEWS:**
**Selected by PORSCHE MOTORSPORT for the new LMP2 SPYDER.**

The Power Control and Distribution Module, is a product developed by Ole Buhl Racing Ltd. It is a compact, intelligent control unit which replaces conventional relays and circuit breakers, simplifying the wiring harness design.

**General**

- Replaces a conventional power junction box using relays and circuit breakers with a compact and lightweight intelligent power module.
- Simplifies wiring harness layout.
- Improved reliability and functionality compared to a conventional power junction box.
- 34 programmable outputs.
- Diagnostic memory.
- Deutsch Autosport shell size 14 connectors for battery power input, power output channels, switch inputs and communication.
- Very compact, dimensions are L 195 x W 90 x H 46 mm, weight is 710 grams.

**Features**

- Operated by 11 conventional, external triggers (switches, ECU switches, etc) or via CAN, controlling each of the 34 channels individually.
- Easy creation of virtual input channels.
- Automatic shut-down of selectable output channels at low battery voltage threshold.
- CAN data imported from engine control unit or external switch panel.
- Channel status, current draw and real time diagnostics exported via CAN.
- Channel setup by PC software and USB link.
- Diagnostic status displays open circuit, short circuit or overload.

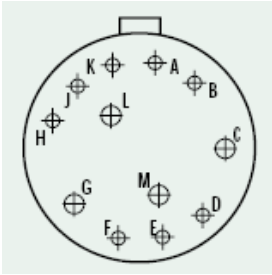
**18 High Power Channels**

- Maximum peak current > 60 Amps each channel.
- Individual adjustable peak current time up to 10 seconds.
- 8 channels max 20 Amps, 4 channels max 15 Amps and 6 channels max 7.5 Amps continuous current draw.
- 2 channels configurable as high frequency PWM channels (up to 15 kHz).
- User configurable channel names, type of activation (latching, pulse, low frequency PWM and high frequency PWM (up to 15 kHz)), switch configuration and current trip values.
- Current trip values adjustable in steps of 0.1 Amp.
- The PCM is programmed to retry to reset any channel with a potential overload / fault automatically.
- The current flow (in steps of 100 mA), status and diagnostics for each channel can be logged and controlled via CAN.

**16 Low Power Channels**

- 16 low power channels for secondary supplies such as sensors, dashboard, data recording etc.
- Max 8 Amps totally per group of 4 channels, but max 2,9 Amps per channel.
- User configurable channel names, switch configuration and current trip values.
- The PCM is programmed to retry to reset any channel with a potential overload / fault automatically.
- Channel status can be logged and controlled via CAN.

**Pin Configuration**




Connectors used:

| | | |
|---|---|---|
| - Connector #1 | ASHD014 – 1 PN | Battery main power |
| - Connector #2 | AS014-97 SN | High power |
| - Connector #3 | AS014-97 SA | High power |
| - Connector #4 | AS014-35 SN | Low power / comms |

| **Con2 Outputs - Red ring** | | | |
|---|---|---|---|
| **Pin** | **Used for** | **Max Rating (A)** | **Notes** |
| A | | | |
| B | Channel 6 High Power | 15 | PWM up to 15 kHz. |
| **C** | Channel 11 High Power | 20 | |
| D | Channel 5 High Power | 7.5 | |
| E | Channel 10 High Power | 7.5 | |
| F | Channel 4 High Power | 7.5 | |
| **G** | Channel 9 High Power | 20 | |
| H | Channel 3 High Power | 7.5 | |
| | | | |
| J | | | |
| K | Channel 14 High Power | 15 | PWM up to 15 kHz. |
| **L** | Channel 2 High Power | 20 | |
| **M** | Channel 13 High Power | 20 | |

| **Con3 Outputs - Yellow ring** | | | |
|---|---|---|---|
| **Pin** | **Used for** | **Max Rating (A)** | **Notes** |
| A | Channel 8 High Power | 7.5 | |
| B | Channel 16 High Power | 7.5 | |
| **C** | Channel 1 High Power | 20 | |
| D | | | |
| E | Channel 15 High Power | 15 | |
| F | **Power Ground** | | |
| **G** | Channel 12 High Power | 20 | |
| H | **Power Ground** | | |
| | | | |
| J | | | |
| K | Channel 18 High Power | 15 | |
| **L** | Channel 7 High Power | 20 | |
| **M** | Channel 17 High Power | 20 | |

| Con4 Outputs - Red ring | | | | | |
|---|---|---|---|---|---|
| **Pin** | **In / out** | **Used for** | **Max Rating (A)** | **Other** | **Notes** |
| 1 | Output | Channel 1 Low Power | 2.9 | 1) | |
| 2 | Output | Channel 2 Low Power | 2.9 | 1) | ***2*** |
| 3 | Output | Channel 3 Low Power | 2.9 | 1) | ***2*** |
| 4 | Output | Channel 4 Low Power | 2.9 | 1) | |
| 5 | Output | Channel 5 Low Power | 2.9 | 2) | ***2*** |
| 6 | Output | Channel 6 Low Power | 2.9 | 2) | ***2*** |
| 7 | Output | Channel 7 Low Power | 2.9 | 2) | |
| 8 | Output | Channel 8 Low Power | 2.9 | 2) | |
| 9 | Output | Channel 9 Low Power | 2.9 | 3) | |
| 10 | Output | Channel 10 Low Power | 2.9 | 3) | |
| 11 | Output | Channel 11 Low Power | 2.9 | 3) | |
| 12 | Output | Channel 12 Low Power | 2.9 | 3) | |
| 13 | Output | Channel 13 Low Power | 2.9 | 4) | |
| 14 | Output | Channel 14 Low Power | 2.9 | 4) | |
| 15 | Output | Channel 15 Low Power | 2.9 | 4) | |
| 16 | Output | Channel 16 Low Power | 2.9 | 4) | |
| 17 | Output | Current sum 0-5V | | | |
| 18 | Output | Warning Light | | | |
| 19 | Input | Switch 1 | | | |
| 20 | Input | Switch 2 | | | |
| 21 | Input | Switch 3 | | | |
| 22 | Input | Switch 4 | | | |
| 23 | Input | Switch 5 | | | |
| 24 | Input | Switch 6 | | | |
| 25 | Input | Switch 7 | | | |
| 26 | Input | Switch 8 | | | |
| 27 | Input | Switch 9 | | | |
| 28 | Input | Switch 10 | | | |
| 29 | Input | Switch 11 | | | |
| 30 | Output | GND | | | |
| 21 | Comms | CAN H | | | |
| 32 | Comms | CAN gnd | | | |
| 33 | Comms | CAN L | | | |
| 34 | Comms | USB 5V | | USB pin 1 | |
| 35 | Comms | USB dp | | USB pin 3 | |
| 36 | Comms | USB dm | | USB pin 2 | |
| 37 | Comms | USB Gnd | | USB pin 4 | |

1) Max current draw from group of 4 drivers are 8 Amps
2) Max current draw from group of 4 drivers are 8 Amps
3) Max current draw from group of 4 drivers are 8 Amps
4) Max current draw from group of 4 drivers are 8 Amps