PDM32 - POWER DISTRIBUTION MODULE

MoTeC's 32 output Power Distribution Module is designed to provide electronically switched power to the various electrical systems in the vehicle such as motors, lights, solenoids, and electronic devices such as ECUs and data acquisition systems.

The module replaces conventional relays, fuses and circuit breakers to simplify wiring and switch requirements, while increasing reliability.

FEATURES

- Each output is over-current, short circuit and thermal overload protected
- Outputs programmable in 1 A steps and controllable via a combination of switch inputs, CAN messages and logic functions
- Performs up to 200 logic operations and functions that can be used to selectively turn off systems
- Provides full diagnostic information via CAN

SOFTWARE

PDM Manager software is used for:

- Configuring all inputs, outputs, CAN messages and conditions
- Monitoring all channel values
- Output testing
- Firmware updating

SPECIFICATIONS

Inputs

- 23 x switch inputs: range 0 to 51 V, resolution 0.2 V

Outputs

- 8 x 20 A outputs: 20 A continuous, 115 A transient (typical)
- 24 x 8 A outputs: 8 A continuous, 60 A transient (typical)

Communications

- 1 x CAN

Operating Voltage

- 30 V max

Ingress Protection (IP) Rating

- Rubber seal on lid and connectors, conformal coating on PCB
- The device is rated to IP67

IP rating is dependant upon the user ensuring that the connector entries are waterproof, which, as a minimum, requires all unused wire cavities on the connector to be plugged.

Physical

- 1 x 37, 1 x 26, 1 x 8 and 1 x 1 pin Autosport connectors
- Case size 180 x 60 x 28 mm
- Weight 420 grams

COMPATIBILITY

MoTeC ECU Models

- M1 Series
- Discontinued: M84, M400, M600, M800, M880

MoTeC Dash/Logger Models

- C125, C127, C1212, C185, C187, C1812, CDL3, L120, L180
- Discontinued: SDL, SDL3, ADL, ADL2, ADL3, ACL

ACCESSORIES

MoTeC UTC #61059

(UTC is required, not compatible with MoTeC CAN cable)

WIRING

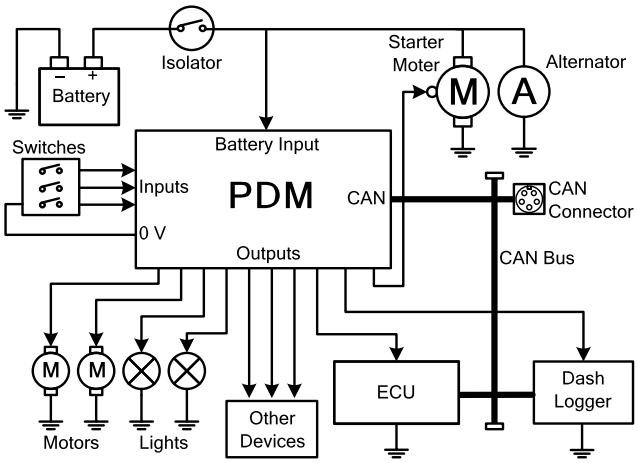
CAN Wiring

The PDM is wired onto the CAN bus. Please ensure wiring is according to CAN requirements and the CAN bus has at least one 100R terminating resistor.

To communicate to the PC, a CAN connector must be wired into the CAN bus. To connect the PDM directly to the CAN connector, wire according to the following table.

PDM Pin	PDM Name	CAN Connector Pin	CAN Connector Wire
A_10	CAN Lo	4	Green
A_11	CAN Hi	5	White
A_9	0 V	1	Black

Example Wiring



Wire Gauges

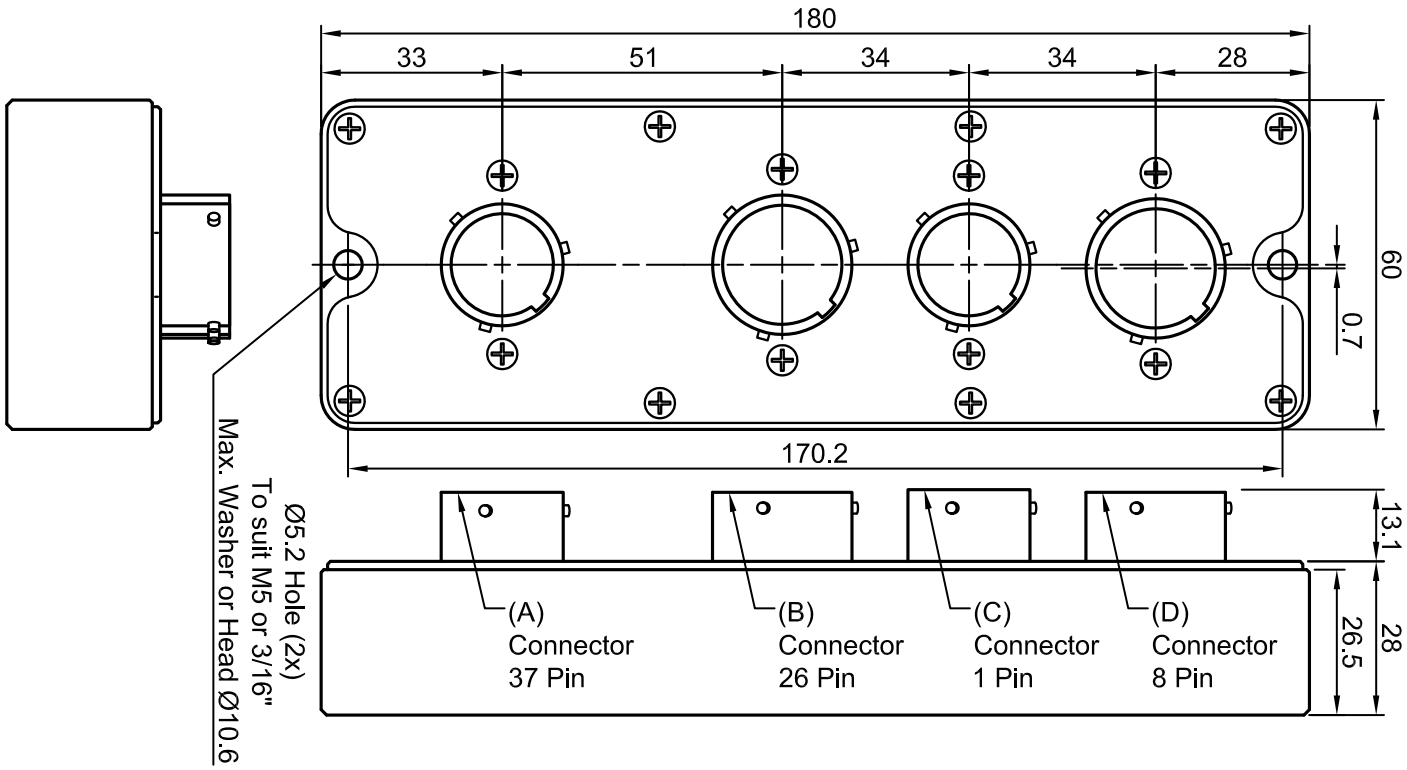
Suitable wire gauges are 24# to 20# for the 8 A outputs and 20# to 16# for the 20 A outputs. The wire gauge must be chosen to suit the current consumed by the connected device and to ensure that the voltage drop is acceptable. In a long run it may be necessary to use a heavier gauge wire to minimise voltage drop. The wire gauge must also be compatible with the connector pin; using a smaller than recommended wire gauge may result in a poor crimp.

DIMENSIONS AND MOUNTING

Measurements in mm.

The product provides through holes for mounting. See drawing for details.

Recommended mounting torque value is 4.5 Nm. The torque value must not exceed 5 Nm.



PINOUT

Connector A

37 pin Autosport connector

Mating connector #68089

Pin	Function
A_1	Digital/Switch Input 1
A_2	Digital/Switch Input 2
A_3	Digital/Switch Input 3
A_4	Digital/Switch Input 4
A_5	Digital/Switch Input 5
A_6	0 V
A_7	0 V
A_8	0 V
A_9	0 V
A_10	CAN Low
A_11	CAN High
A_12	Digital/Switch Input 6
A_13	Digital/Switch Input 7
A_14	Digital/Switch Input 8
A_15	Digital/Switch Input 9
A_16	Digital/Switch Input 10
A_17	Digital/Switch Input 11
A_18	Digital/Switch Input 12
A_19	Digital/Switch Input 13
A_20	Digital/Switch Input 14
A_21	Digital/Switch Input 15
A_22	0 V
A_23	0 V
A_24	0 V
A_25	0 V
A_26	Digital/Switch Input 16
A_27	Digital/Switch Input 17
A_28	Digital/Switch Input 18
A_29	Digital/Switch Input 19
A_30	Digital/Switch Input 20
A_31	Digital/Switch Input 21
A_32	Digital/Switch Input 22
A_33	Digital/Switch Input 23
A_34	Not Connected
A_35	Not Connected
A_36	Not Connected
A_37	Not Connected

Connector B

26 pin Autosport connector

Mating connector #65040

Pin	Function
B_A	8 A Output 9
B_B	8 A Output 10
B_C	8 A Output 11
B_D	8 A Output 12
B_E	8 A Output 13
B_F	8 A Output 14
B_G	8 A Output 15
B_H	8 A Output 16
B_J	8 A Output 17
B_K	8 A Output 18
B_L	8 A Output 19
B_M	8 A Output 20
B_N	8 A Output 21
B_P	8 A Output 22
B_R	8 A Output 23
B_S	8 A Output 24
B_T	8 A Output 25
B_U	8 A Output 26
B_V	8 A Output 27
B_W	8 A Output 28
B_X	8 A Output 29
B_Y	8 A Output 30
B_Z	8 A Output 31
B_a	8 A Output 32
B_b	Batt –
B_c	Batt –

Connector C

1 pin waterproof connector

Mating connector:

#68093 (wire gauge #6 AWG)

#68094 (wire gauge #4 AWG)

Pin	Function
C_1	Batt +

Connector D

8 pin waterproof connector

Mating connector: #68092 (Deutsch AS616-08SN)

Pin	Function
D_A	20 A Output 1
D_B	20 A Output 2
D_C	20 A Output 3
D_D	20 A Output 4
D_E	20 A Output 5
D_F	20 A Output 6
D_G	20 A Output 7
D_H	20 A Output 8

PRODUCT INFORMATION

Compliances

This product is designed for use in a vehicle. As such, this product complies with the following standard:

- Directive 2014/30/EU: Electromagnetic Compatibility; by application of UNECE Regulation No.10 (R10) Rev 5.

Installation

IP Rating (dust or water ingress)

This product should be installed in a protected location where only occasional water splashing occurs and where the exposure to dust does not exceed conditions typical for vehicle installations.

Operating Temperature Range

This product is designed for an internal operating temperature range of -40 °C to 85 °C.

It should be installed in a location with sufficient air circulation and be shielded against thermal emissions from surrounding components.

Vibration Statement

This product is designed to withstand vibrations typical for normal vehicle installations.

It should not be exposed to severe and lasting vibrations. For example, the product should not be installed in solid connection to vibrating components like engines or undamped vehicle structures.

Safety

- For safe operation, use only undamaged.
- Minimal force should be exerted to plug in connectors.
- These devices may output voltages which may constitute a risk to human safety. Appropriate precautions must be taken:
  - At no time operate the device with faulty, bare or exposed wiring.
  - Adhere to the normal supply voltage limits as listed in the **Basic Specifications** section
  - Adhere to wire gauges as listed in **Wiring and Connecting**.

Repair

Do not attempt to open and/or repair the device.

For repairs, contact your local MoTeC representative and return the product via an Authorised MoTeC Dealer.

Disposal

This product should be disposed of in accordance with relevant national regulations for disposal of electronic waste.
It does not contain hazardous materials which might be subject to specific materials regulations.

Manufacturer Information

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