

# Power Distribution Module – High Current I/O Module



## Features

- Designed for use in severe-duty mobile equipment applications
- Integrated CAN communication using SAE J1939
- Compact, sealed enclosure using Industry standard Deutsch connectors
- Integrated Circuit Protection and Diagnostics
- Easy-to-use Configuration Tool available

The PDM Power Distribution Module, Murphy's advanced CAN-based I/O Module, allows for the flexible extension of new or existing control systems and displays. Two models are available to support operation on either 12 VDC or 24 VDC systems.

The PDM provides a novel alternative to current relay/fuse-based solutions. Unlike existing options with failure prone electromechanical devices, the PDM is completely potted with no moving parts. It eliminates relays and fuses so outputs can be switched ON/OFF or driven proportionally. Output status can be monitored for improved diagnostics, while analog and digital input devices can be easily connected and their signals accessed via CAN messages.

The PDM is fully sealed and uses field-proven Deutsch connectors for superior performance in the most adverse environments. In addition, the twelve fully-protected solid state outputs have the capacity to handle higher current loads than other control & I/O solutions available.

The compact housing design simplifies mounting in tight areas and eases harness installation through reduced wiring. An innovative I/O structure that can be monitored and configured remotely allows for quick adaptation in numerous mobile applications.

This robust unit is intended for use in conditions where reliable operation is crucial, extreme temperature variations are common, high shock and vibration levels exist, and where electromagnetic interference (EMI) is normal.

## Other Features

- Twelve high side or 6 H-Bridge outputs with high current (15A Channel) pulse width modulation (PWM) capability. 70A Total.
- Optional Current Feedback
- Enhanced Diagnostics (Short circuit, Open circuit, Over circuit)
- Eight analog inputs (0-5VDC).
- Twelve tri-state input (high side, low side, open)
- Twelve high current outputs (15A/channel)
- 70A total simultaneously.
- Supply for sensor excitation (5 VDC).

## Wiring - Connector Pinouts

J3	GRAY	FUNCTION	NOTES
1	5V_RTN		
2	DIG12	0-28.4V	Switch Inputs
3	CH7	PWM 100 Hz	Output Channels
4	CH8	PWM 100 Hz	Output Channels
5	CH9	PWM 100 Hz	Output Channels
6	CH10	PWM 100 Hz	Output Channels
7	AN8	0-5 V	Analog Inputs
8	AN7	0-5 V	Analog Inputs
9	AN6	0-5 V	Analog Inputs
10	AN5	0-5 V	Analog Inputs
11	AN4	0-5 V	Analog Inputs
12	5V_EXT	Sensor supply	

J6	2-PIN	FUNCTION	NOTES
1	CH12	PWM 100 Hz	Output Channels
2	CH11	PWM 100 Hz	Output Channels

J4	BLACK	FUNCTION	NOTES
1	CH1	PWM 1000 Hz	Output Channels
2	CH2	PWM 1000 Hz	Output Channels
3	CH3	PWM 1000 Hz	Output Channels
4	CH4	PWM 1000 Hz	Output Channels
5	CH5	PWM 1000 Hz	Output Channels
6	CH6	PWM 1000 Hz	Output Channels
7	AN3	0-5 V	Analog Inputs
8	AN2	0-5 V	Analog Inputs
9	AN1	0-5 V	Analog Inputs
10	DIG11	0-28.4V	Switch Inputs
11	DIG2	0-28.4V	Switch Inputs - Address Pin
12	DIG1	0-28.4V	Switch Inputs - Address Pin

J1	Ground
J2	Vbat

J5	GREEN	FUNCTION	NOTES
1	CAN-	CAN	CAN LOW
2	DIG3	0-28.4V	Switch Inputs
3	DIG4	0-28.4V	Switch Inputs
4	DIG5	0-28.4V	Switch Inputs
5	DIG6	0-28.4V	Switch Inputs
6	SVRTN		
7	5VEXT	Sensor supply	
8	DIG7	0-28.4V	Switch Inputs
9	DIG8	0-28.4V	Switch Inputs
10	DIG9	0-28.4V	Switch Inputs
11	DIG10	0-28.4V	Switch Inputs
12	CAN+	CAN	CAN HIGH

## Specifications

### Operating Voltage

- 12 V Nominal (6-18 V)
- 24 V Nominal (8-32 V)
- Reverse Polarity Protection

### Environmental

- **Operating Temperature:** -40 to +85 C (-40 to +185 F)
- **Storage Temperature:** -40 to +125 C (-40 to +257 F)
- **Environmental Sealing:** IP67
- **Shock:** 30G, 3 cycles

- **Vibration:** 72 hrs./axis (5-25 G, 50-2000 Hz)

- **Radiated Immunity:** Tri-plate test 100 V/M 10 KHz - 1 GHz

**CAN Interface:** CAN 2.0B Active, Default Protocol SAE J1939, Baud Rate 250 Kbits

**Housing:** Combination PBT and E-coated cast aluminum with integrated mounting feet.

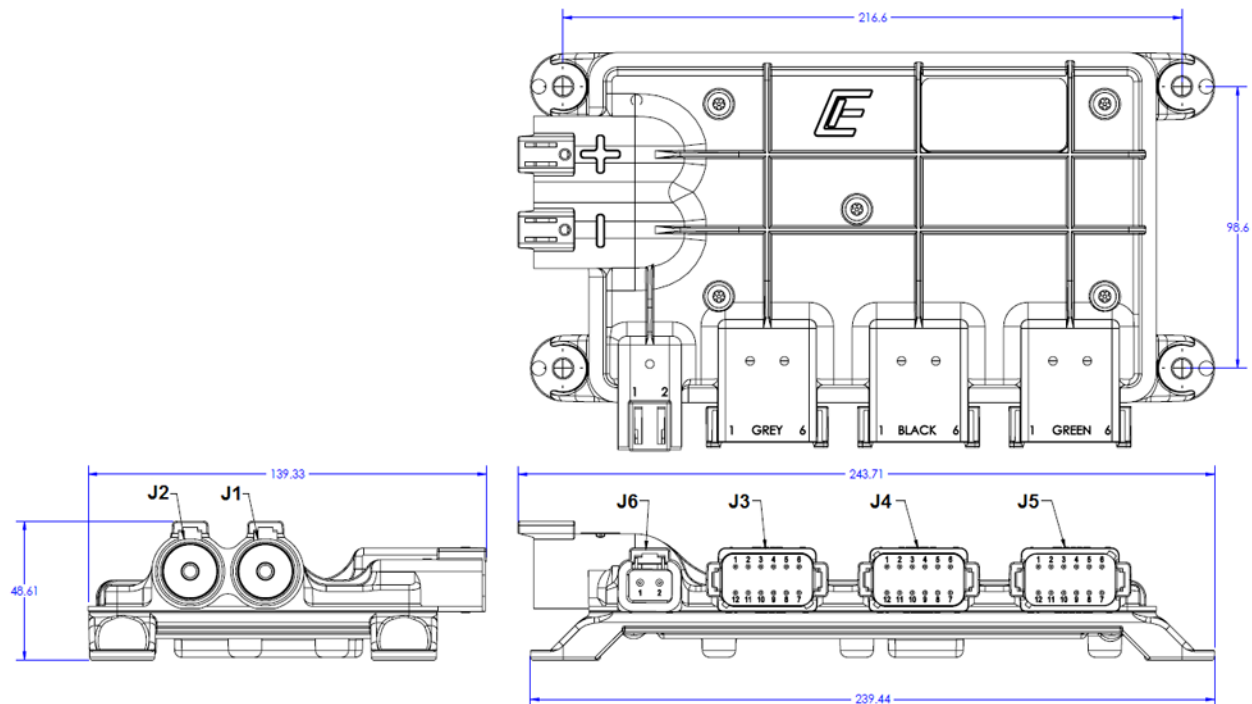
**Weight:** 2 lb. (900 Gram)

**Connectors:** Deutsch (3) DT Series 12 pin (J3, J4, J5);

(1) DT Series 2 pin (J6); (2) DT HD power series 1 pin (J1 & J2)

Contact surface Nickel-plated copper alloy.

## Product Dimensions



## How to Order

Part Number	Description
E2443000	PDM Power Distribution Module for use on 12 VDC Supply
E2443050	PDM Power Distribution Module for use on 24 VDC Supply

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**Warranty** - A limited warranty on materials and workmanship is given with this FW Murphy product.  
 A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>