

# PowerCore™ Intelligent Xpansion™ IX3212 – Power Distribution Module (PDM)

The Murphy PowerCore™ Intelligent Xpansion™ Power Distribution Module (PDM) expands CAN bus control networks by replacing existing relay and fuse boxes with more reliable solid-state switches that can directly drive work lights, wiper motors, cooling fans, directional DC motors and other high current loads.

Each of the 12 IX3212 outputs can switch or proportionally control up to 15 A loads in 2.5 A increments and feature built-in over-current detection and shut-down capability. Outputs are paired to run up to six electric motors with H-bridge direction control. Twelve digital inputs monitor switched battery, ground and floating inputs. Additionally, eight analog inputs are available with a 5V sensor supply.

Wiring length is reduced and costs are cut by remotely locating the IX module near loads and signals. The I/O is multiplexed using a CAN bus network which allows engineers to greatly simplify harness design for ease of installation and improved reliability.

For applications not requiring a CAN bus controller, the inputs can directly trigger the outputs so there is no need for a separate controller.

The enclosure is fully sealed and potted to withstand wash down and protect from dust.



## Features

Model	IX3212-12	
Inputs	Analog	8
	Digital	12
Outputs	Digital	12
	PWM	12
	H-Bridge	6

## Specifications

**Operating Voltage:** 8-32V (IX3212-24) for 12V and 24V systems

**Total Current:** 70 A maximum continuous

**Dimensions:** 245 mm (L) x 140 mm (W) x 50 mm (H)

**Mass:** 0.9 kg (2.0 lb)

**Operating Temperature:** -40° F to 185° F (-40° C to 85° C)

**Storage Temperature:** -40° F to 275° F (-40° C to 135° C)

**Electrical and EMI/EMC:**

2004/108/EC and 2006/95/EC directives

IEC 61000-4-3, -4-6 and -4-8

EN 60945 / CISPR 11

EN 61326-1

**Shock:** 30 G, 3 cycles

**Vibration:** 5-25 g, 50-2,000 Hz, 72 hrs per axis

**Sealing:** IP66 and 67, SAE J1455 4.5.3 (10,300 kPa @ 50° C and 100 mm away for 15 min)

12 Outputs	<ul style="list-style-type: none"> <li>(6) 15 A max per channel, 500 Hz</li> <li>(6) 15 A max, 100 Hz</li> <li>Channel overload set in 2.5 A increments</li> <li>High-side, open-loop PWM and directional DC motor control (H-bridge) modes</li> <li>Off-state leakage current &lt;0.1 mA</li> </ul>
20 Inputs	<ul style="list-style-type: none"> <li>12 digital, tri-state, input impedance 7.7 kΩ</li> <li>6 analog, 0-5 V, input impedance 100 kΩ pull-down</li> <li>2 analog, resistive, input impedance 2.2 kΩ pull-up</li> <li>10 bit resolution on all analog inputs</li> </ul>
Sensor Supply	5V @ 70 mA
Communications	1 CAN 2.0B, 250 kbps, J1939 proprietary messaging
Mating Connectors	Deutsch DTHD, DT and DTP Series <ul style="list-style-type: none"> <li>J1, J2 – DTHD06-1-4S</li> <li>J3 – DT06-12SA (Gray)</li> <li>J4 – DT06-12SB (Black)</li> <li>J5 – DT06-12SC (Green)</li> <li>J6 – DTP06-2S</li> </ul>
Certifications	CE mark

# Connectors

Connector J1		
Pin	Name	Function
1	GND	Ground (-)

Connector J2		
Pin	Name	Function
1	PWR	Power (+)

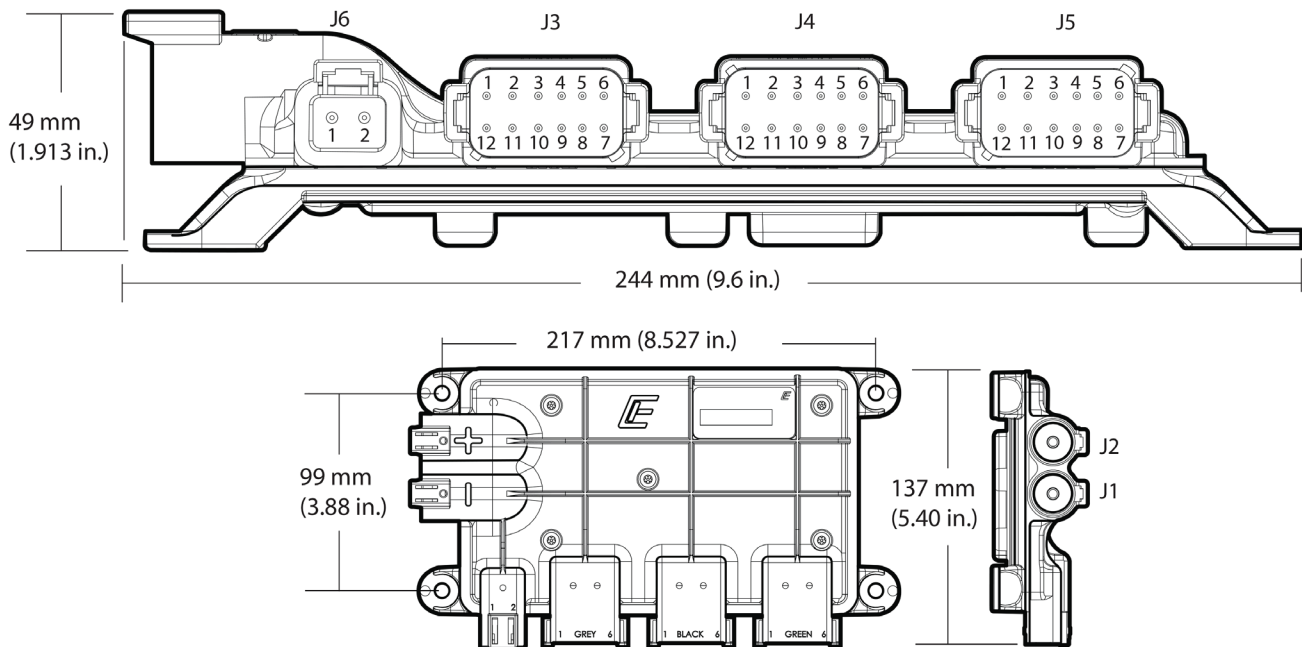
Connector J3		
Pin	Name	Function
1	5V_GND	5V Sensor Ground (-)
2	DI12	Digital Input 12
3	DO7/PWM7	Digital Output 7 / PWM 7 (15 A, 100 Hz)
4	DO8/PWM8	Digital Output 8 / PWM 8 (15 A, 100 Hz)
5	DO9/PWM9	Digital Output 9 / PWM 9 (15 A, 100 Hz)
6	DO10/PWM10	Digital Output 10 / PWM 10 (15 A, 100 Hz)
7	AI8	Analog Input 8 (0-5V)
8	AI7	Analog Input 7 (0-5)
9	AI6	Analog Input 6 (0-5V)
10	AI5	Analog Input 5 (0-5)
11	AI4	Analog Input 4 (0-5V)
12	5V_PWR	5V Sensor Power (+)

Connector J6		
Pin	Name	Function
1	DO12/PWM12	Digital Output 12 / PWM 12 (15 A, 100 Hz)
2	DO11/PWM11	Digital Output 11 / PWM 11 (15 A, 100 Hz)

Connector J4		
Pin	Name	Function
1	DO1/PWM1	Digital Output 1 / PWM 1 (15A, 500 Hz)
2	DO2/PWM2	Digital Output 2 / PWM 2 (15A, 500 Hz)
3	DO3/PWM3	Digital Output 3 / PWM 3 (15A, 500 Hz)
4	DO4/PWM4	Digital Output 4 / PWM 4 (15A, 500 Hz)
5	DO5/PWM5	Digital Output 5 / PWM 5 (15A, 500 Hz)
6	DO6/PWM6	Digital Output 6 / PWM 6 (15A, 500 Hz)
7	AI3	Analog Input 3 (0-5V)
8	AI2	Analog Input 2 (Resistive)
9	AI1	Analog Input 1 (Resistive)
10	DI11	Digital Input 11
11	DI2	Digital Input 2 (Source Address 1)
12	DI1	Digital Input 1 (Source Address 0)

Connector J5		
Pin	Name	Function
1	CANLO	CAN - (Green)
2	DI3	Digital Input 3
3	DI4	Digital Input 4
4	DI5	Digital Input 5
5	DI6	Digital Input 6
6	5V_GND	5V Sensor Power (-)
7	5V_PWR	5V Sensor Power (+)
8	DI7	Digital Input 7
9	DI8	Digital Input 8
10	DI9	Digital Input 9
11	DI10	Digital Input 10
12	CANHI	CAN + (Yellow)

# Dimensions



# How To Order

Part Number	Description	Notes
E2443053	IX3212-24, Power Distribution Module	12V or 24V Systems
78001026	Deutsch DTHD, DTP and DT Connector Kit	Plugs, Sockets and Keys