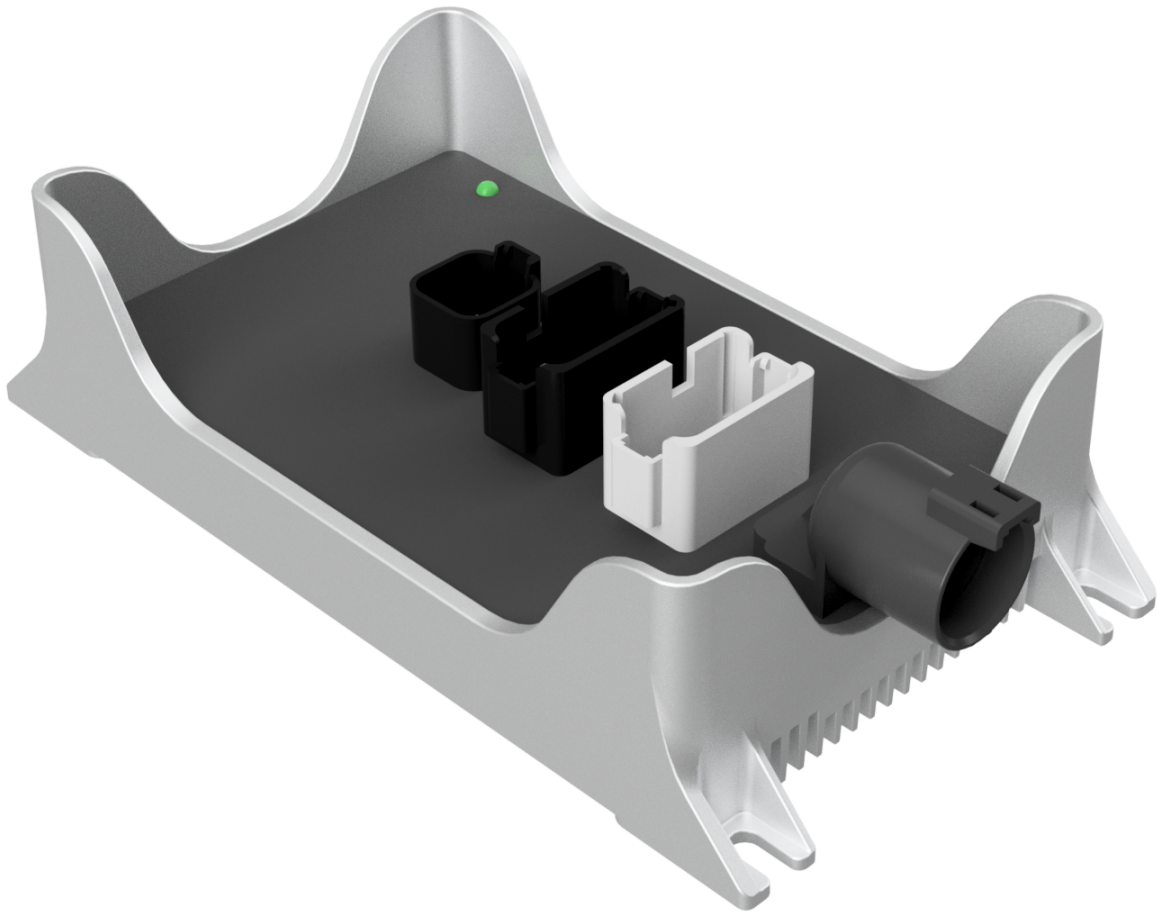




JARDUM



Vehicle Controllers

2024 Catalog

www.jardum.com

Jardum Controller SOM

Introduction

The Jardum Controller Platform is both a standalone Vehicle/Vessel Control Module as well as a System-On-Module. As a controller, the VCM has dual CAN ports, protected voltage inputs and a 6 pin IO connector. Ideal for performing intermediary control functions such as protocol translations, as a VCM it can also control relays, buzzers and lights.

As a SOM, the controller is placed on an IO carrier board and is the “brain” for all of our controller applications. This allows for highly customizable IO to the exact application specification without long project timelines or large development budgets for a highly flexible product.

Key Features

Connector Version

- 2 x CANbus 2.0B
- Wake-on-CAN 1
- 4 x Open drain outputs
- 2 x Analog Inputs (0-5V)

Castellated Version

- 2 x CANbus 2.0B
- Wake-on-CAN 1
- 4 x Open drain outputs
- 2 x Analog Inputs (0-5V)
- 1 x SPI
- 1 x I2C
- 1 x SDIO
- 16 x GPIO
- 5V & 3.3V

Specification

Electrical

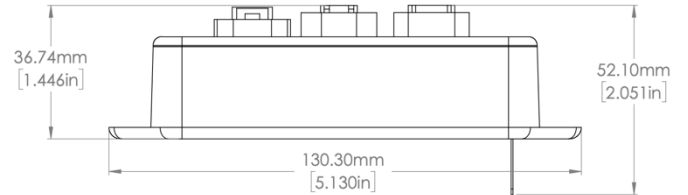
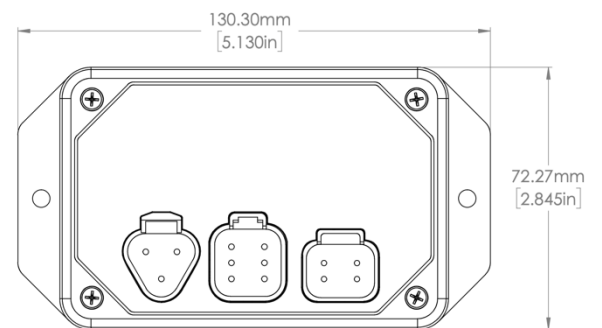
- Input Power: 6 - 18V DC
- Protected against load dump and reverse polarity

Environmental

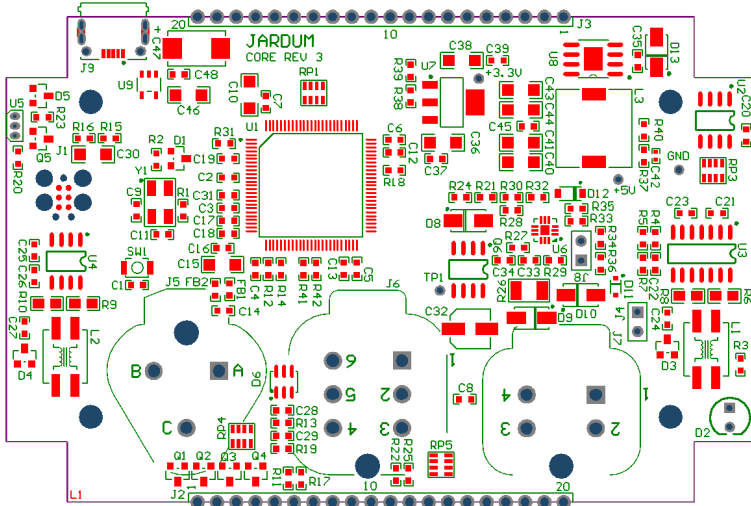
- Operating Temperature: -40 to 75°C
- Ingress Protection: IP67 connectors; IPX7 assembly

Mechanical

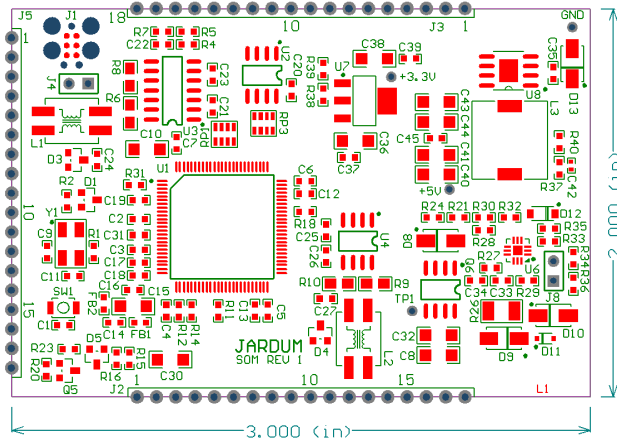
- Material: Epoxy potted ABS enclosure



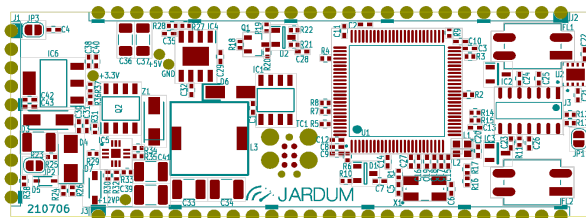
Mating Connector	Pin	Function
DT06-4S	1	12V
	2	Ground
	3	CAN 2 H
	4	CAN 1 L
DT06-6S	1	Open Drain 1
	2	Open Drain 2
	3	Open Drain 3
	4	Open Drain 4
	5	Analog Input
	6	Analog Input
DT06-3S	A	CAN 1 H
	B	CAN 1 L
	C	N/C



SOM2019



SOM2020



SOM2021

2-Zone RGB Light Controller

Introduction

Dual zone RGB control with cycle and sync functionality controlled via CAN bus with NMEA2000 control capability. Internally current monitored outputs allow for zone protection without additional fuses.

Key Features

- CANbus 2.0B connections
 - Wake-on-CAN
- 2 x RGB Controller
 - Current Monitored Solid State Outputs (7.5 A)
- NMEA2000 Control Capable
- Source addressable for multi-zone applications

Specification

Electrical

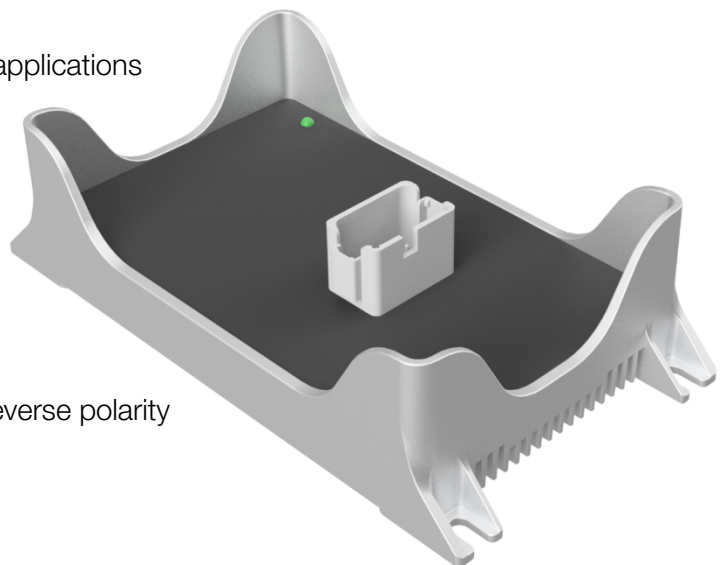
- Input Power: 6 – 18 V DC
- Max Current: 15 A Total
- Protected against load dump and reverse polarity

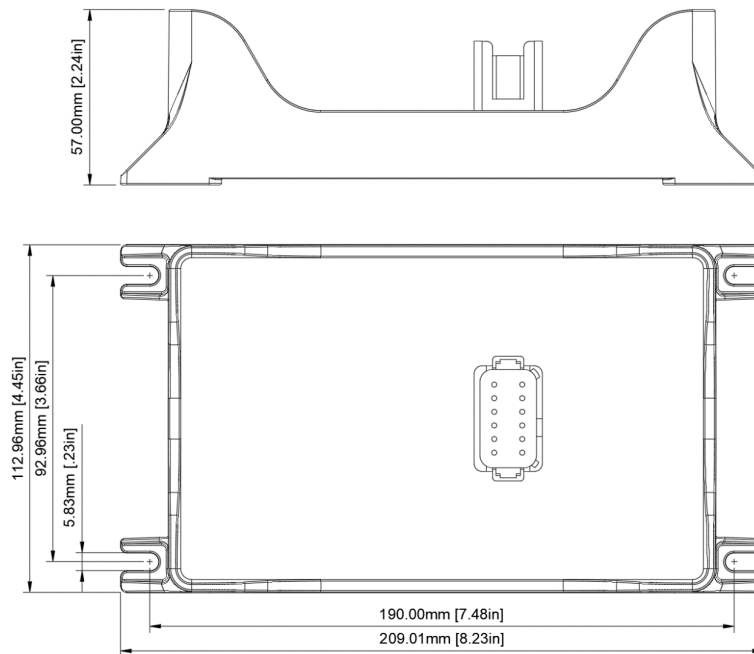
Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

Mechanical

- Material - Epoxy potted aluminum enclosure





Connector Pinout

Mating Connector	Pin	Function	Details
J1 AT06-12SA	1	Ground	
	2	CAN HIGH	Wake-on-CAN
	3	CAN LOW	
	4	RGB1 Red	
	5	RGB1 Green	
	6	RGB1 Blue	
	7	RGB2 Blue	
	8	RGB2 Green	
	9	RGB2 Red	
	10	RGB2 Power	7.5 A Max
	11	RGB1 Power	7.5 A Max
	12	VBATT	15 A Max

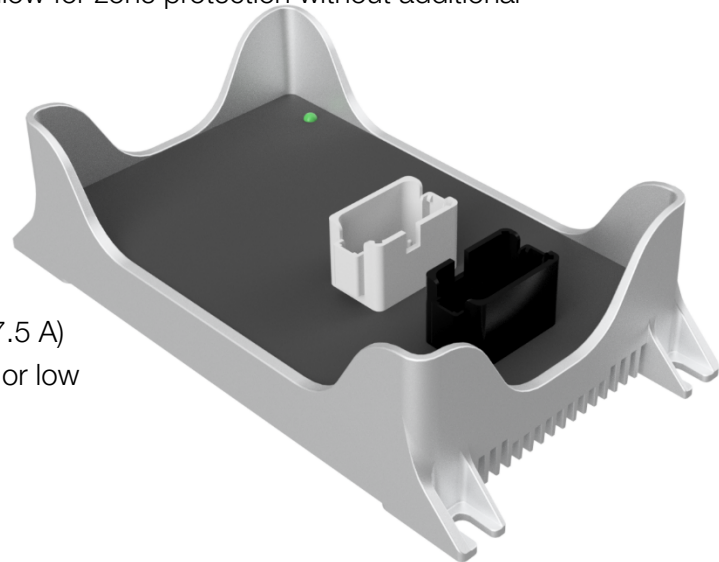
4-Zone RGB Light Controller

Introduction

Quad zone RGB control with cycle and sync functionality controlled via CAN bus with NMEA2000 control capability. Internally current monitored outputs allow for zone protection without additional fuses.

Key Features

- CANbus 2.0B connections
 - Wake-on-CAN
- 4 x RGB Controller
 - Current Monitored Solid State Outputs (7.5 A)
- 2 x Tri-State Inputs | Configurable as active high or low
 - 1 x Device Select
 - 1 x Digital Input
- Source addressable for multi-zone applications



Specification

Electrical

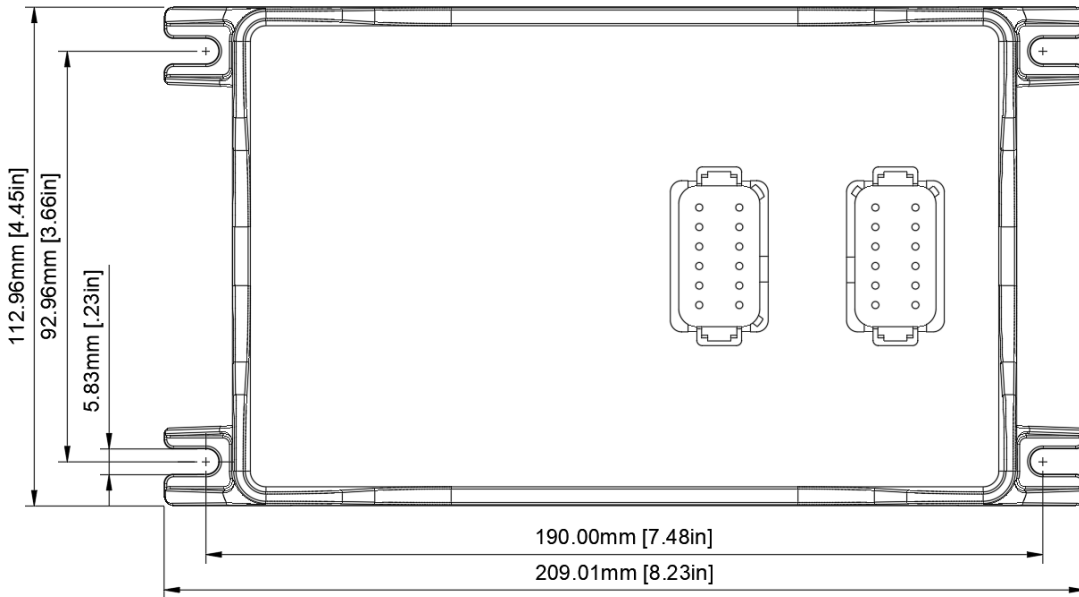
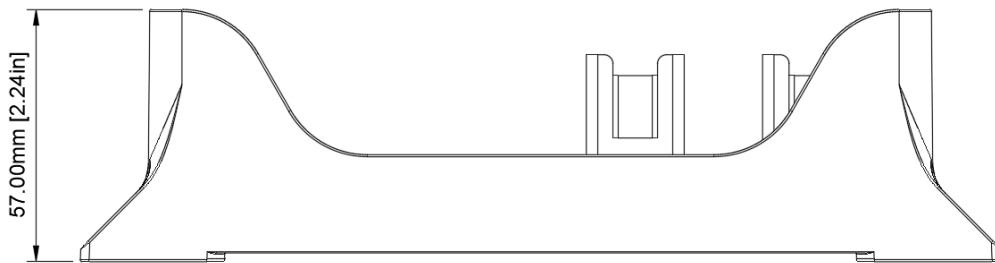
- Input Power: 6 – 18 V DC
- Max Current: 30 A Total
- Protected against load dump and reverse polarity

Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

Mechanical

- Material - Epoxy potted aluminum enclosure



Connector Pinout

Mating Connector	Pin	Function	Details
J1 AT06-12SA	1	Ground	
	2	CAN HIGH	Wake-on-CAN
	3	CAN LOW	
	4	RGB1 Red	
	5	RGB1 Green	
	6	RGB1 Blue	
	7	RGB2 Blue	
	8	RGB2 Green	
	9	RGB2 Red	
	10	RGB2 Power	7.5 A Max
	11	RGB1 Power	7.5 A Max
	12	VBATT	15 A Max
J2 AT06-12SB	1	Ground	
	2	Device Select	Tri-State
	3	Digital Input	Tri-State
	4	RGB3 Red	
	5	RGB3 Green	
	6	RGB3 Blue	
	7	RGB4 Blue	
	8	RGB4 Green	
	9	RGB4 Red	
	10	RGB4 Power	7.5 A Max
	11	RGB3 Power	7.5 A Max
	12	VBATT	15 A Max

2 H-Bridge Tower Controller

Introduction

Dual 25A H-bridges allow for independent control of two actuators, pumps, and other reversible loads. Pulse counters allow for reading position via Hall-effect sensors.

Key Features

- 1 x CANbus 2.0B connections
- Wake-on-CAN
- 2 x Independent 25A H-bridges with adjustable current limits

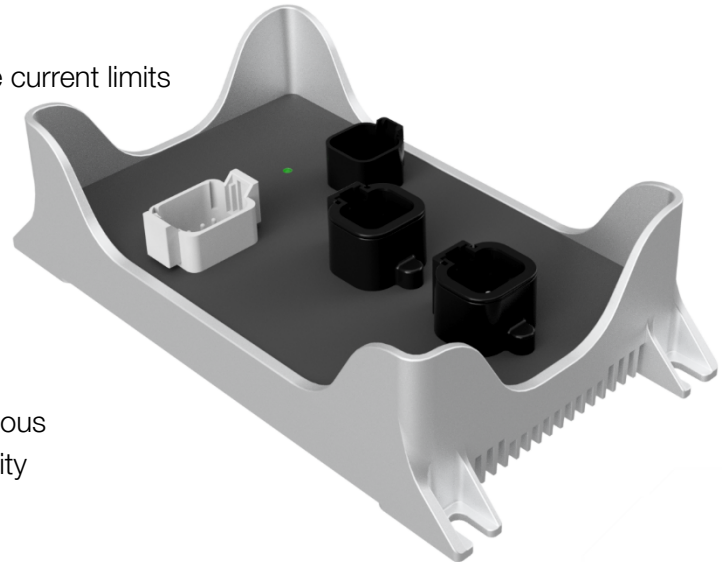
Specification

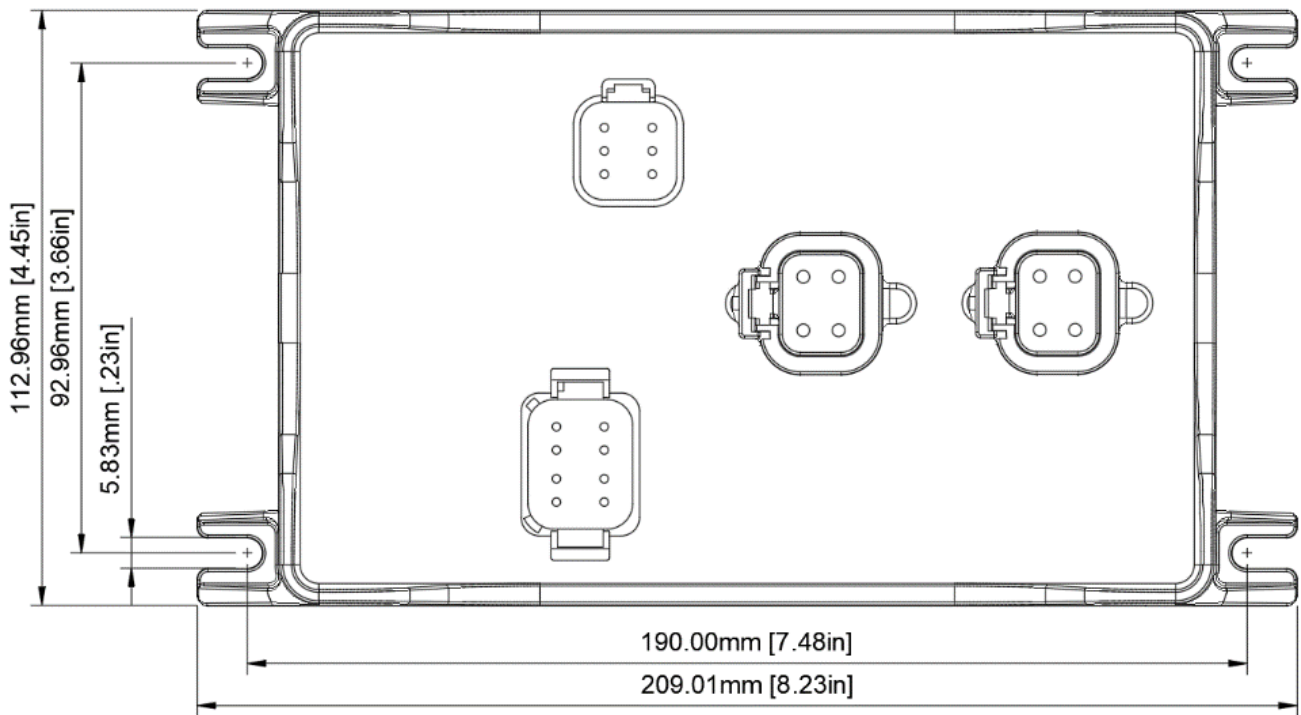
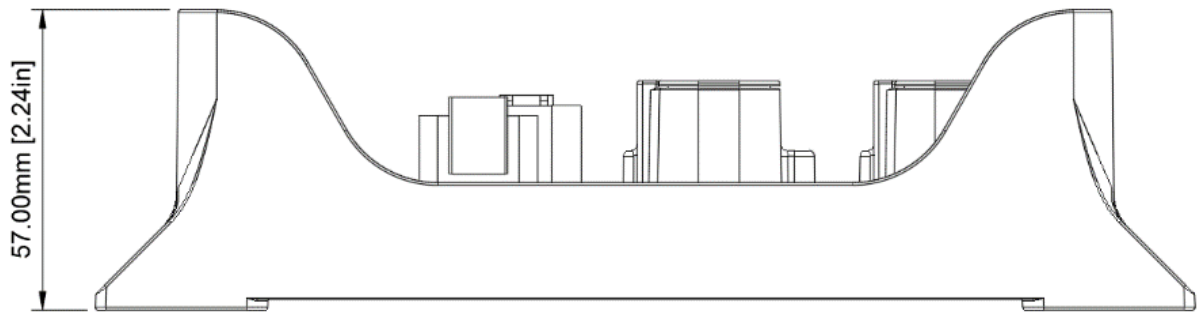
Electrical

- Input Power: 6 – 18 V DC
- Max Current: 100A instantaneous; 50A continuous
- Protected against load dump and reverse polarity

Environmental & Mechanical

- Operating Temperature -40 to 85C
- Protection:
 - Assembly - IPX7; Connectors - IP67
- Material - Epoxy potted aluminum enclosure





Connector Pinout

Mating Connector	Pin	Function	Details
J1 DTP06-4S	1	Ground	
	2	Ch1 Forward	15A Max
	3	Vbatt	30A fuse recommended
	4	Ch1 Reverse	
J2 DTP06-4S	1	Ground	
	2	Ch2 Forward	15A Max
	3	Vbatt	30A fuse recommended
	4	Ch2 Reverse	
J3 DT06-08SA	1	Ch2 Pos A	Active low, pulse counter
	2	Ch2 Pos B	Active low, pulse counter
	3	Ch1 Pos A	Active low, pulse counter
	4	Ch1 Pos B	Active low, pulse counter
	5	CANH	Wake on CAN
	6	CANL	
	7	No Connect	
	8	No Connect	
J4 DT06-6S	1	5V Sensor Supply	0.5A limit
	2	Ground	5V Sensor Return
	3	Device Select	Tri-state
	4	No Connect	
	5	Digital Input 2	Active High
	6	Digital Input 1	Active High

VCM16 – Vessel/Vehicle Control Module

Introduction

Bridge between multiple CAN busses to perform control and power distribution functions, with a mix of configurable power distribution outputs, signal level control outputs along with multiple software configurable inputs. Controls systems directly from a CAN enabled keypad.

Key Features

- 2 CANbus 2.0B connections
- 16 Current Monitored Solid State Outputs
- 6 Analog Inputs
- 1 Digital Input -
- 1 Device Select - Tri-State | Configurable as active high or low for up to 3 devices
- 5 Volt Self Protected Sensor Supply (500 mA)

Specification

Electrical

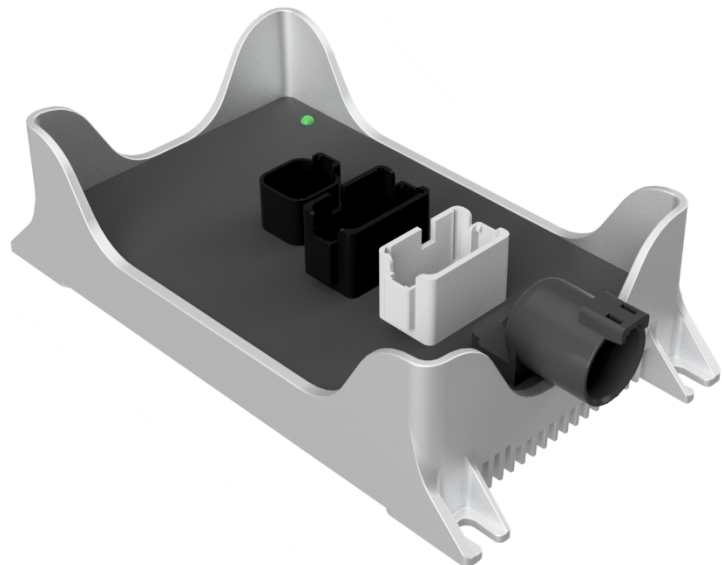
- Input Power: 6 – 18 V DC
- Max Current: 100 A Total
- Protected against load dump and reverse polarity

Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

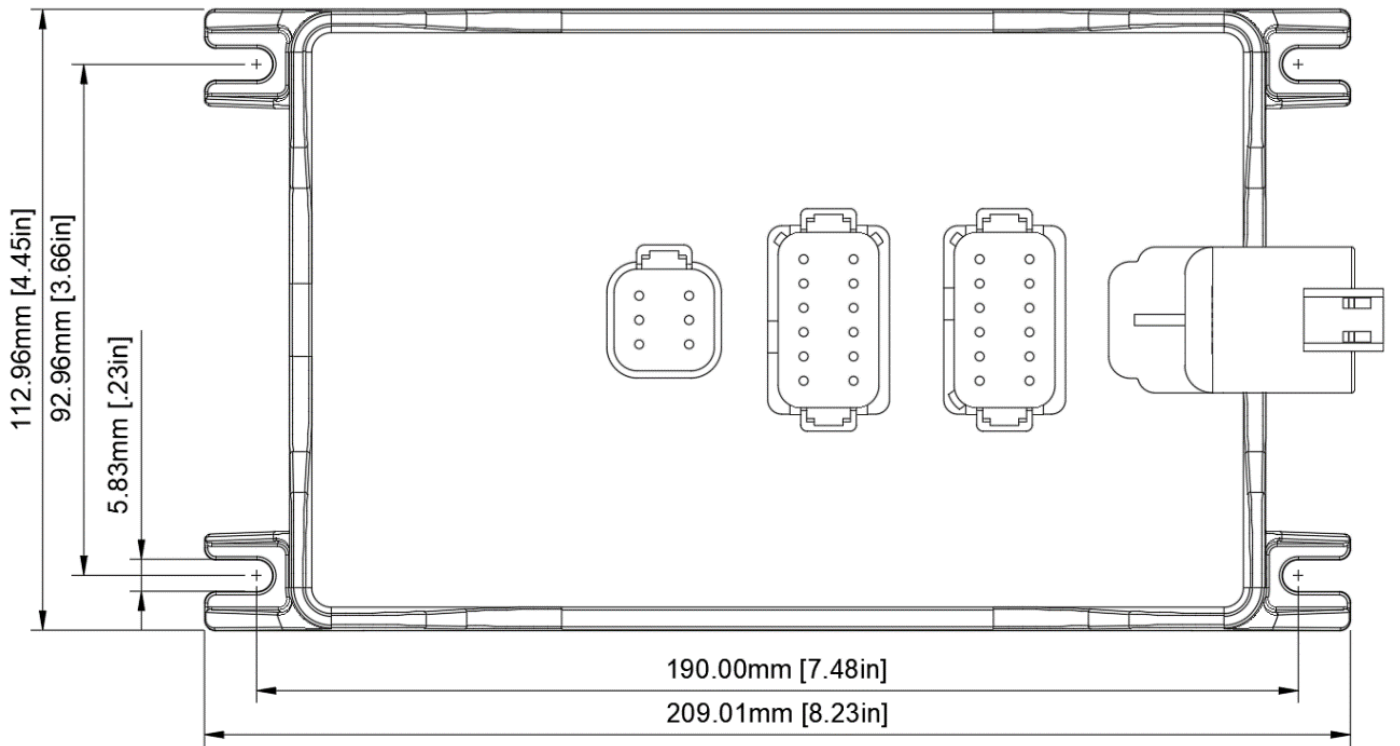
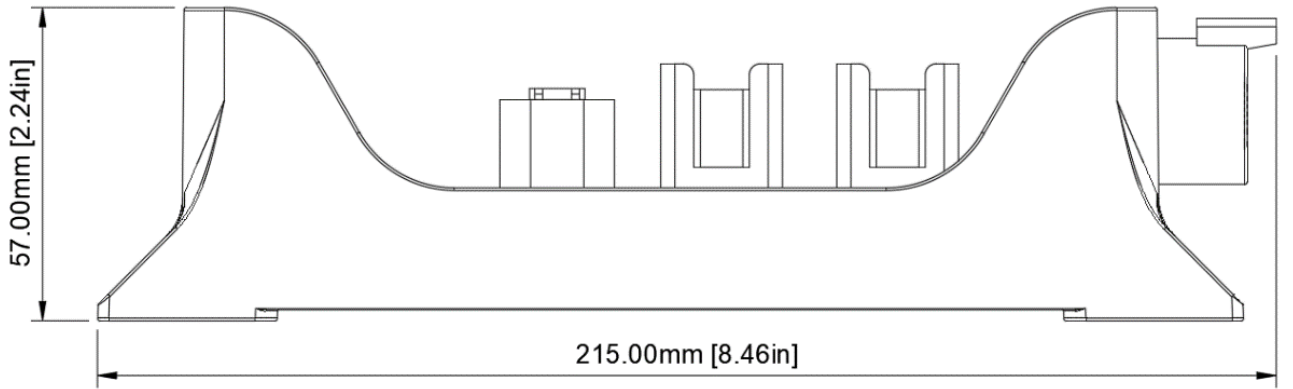
Mechanical

- Material - Epoxy potted aluminum enclosure



Connector Pinout

Mating Connector	Pin	Function	Details
J1 AT06-12SA	1	High Current Output #1	15 A Max Backfeed Protected
	2	High Current Output #2	15 A Max Backfeed Protected
	3	CAN 1 HIGH	Wake-on-CAN Software Selectable Termination
	4	CAN 1 LOW	
	5	High Current Output #3	15 A Max
	6	High Current Output #4	15 A Max
	7	High Current Output #5	15 A Max
	8	High Current Output #6	15 A Max
	9	Ground	
	10	Device Select	Tri-State
	11	High Current Output #7	15 A Max
	12	High Current Output #8	15 A Max
J2 AT06-12SB	1	Medium Current Output #1	10 A Max Backfeed Protected
	2	Medium Current Output #2	10 A Max
	3	CAN 2 HIGH	
	4	CAN 2 LOW	
	5	Medium Current Output #3	10 A Max
	6	Medium Current Output #4	10 A Max Backfeed Protected
	7	Low Current Output #1	3 A Max
	8	Low Current Output #2	3 A Max
	9	5 V Sensor Supply	500 mA Max
	10	Digital Input	Active Low Wake-on-Low
	11	Low Current Output #3	3 A Max
	12	Low Current Output #4	3 A Max
J3 AT06-6S	1	Analog Input #1	0 – 5 V Tri-State Resistive
	2	Analog Input #2	0 – 5 V Tri-State Resistive
	3	Analog Input #3	0 – 5 V Tri-State Resistive 0 – 40 V
	4	Analog Input #4	0 – 5 V Tri-State Resistive Flyback Safe
	5	Analog Input #5	0 – 5 V Tri-State Resistive Wake-on-High
	6	Analog Input #6	0 – 5 V Tri-State 4 – 20 mA



VCM8 – Vessel/Vehicle Control Module

Introduction

Independent eight channel power distribution module controlled via CAN and is intended to be paired a display and/or CAN keypad(s).

Key Features

- 1 CANbus 2.0B connection
- 8 High Current Monitored Solid State Outputs (15 A)
- 1 x Device Select Tri-State for 3 devices

Specification

Electrical

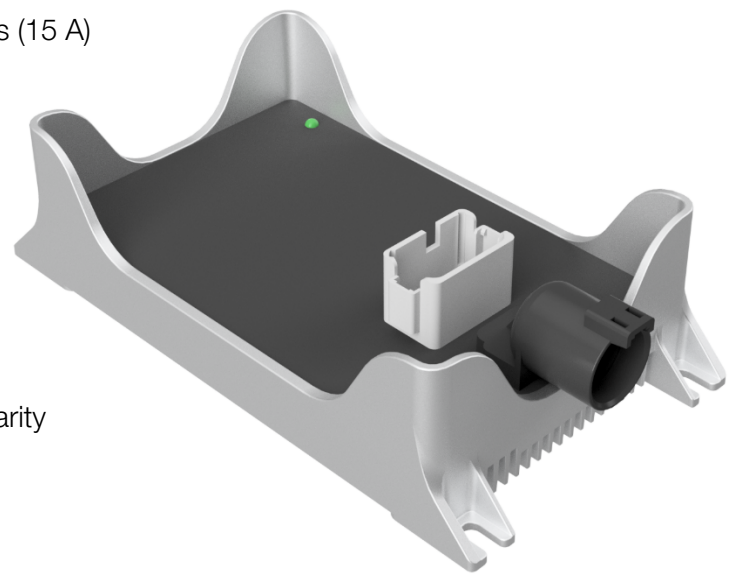
- Input Power: 6 – 18 V DC
- Max Current: 100 A Total
- Protected against load dump and reverse polarity

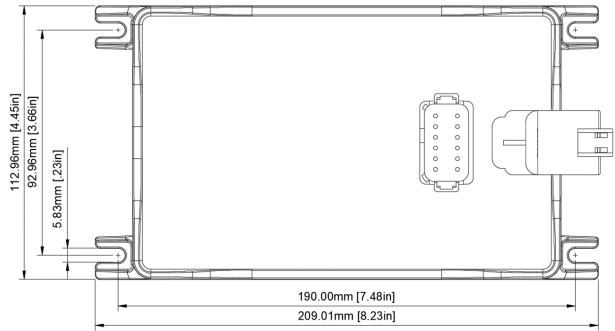
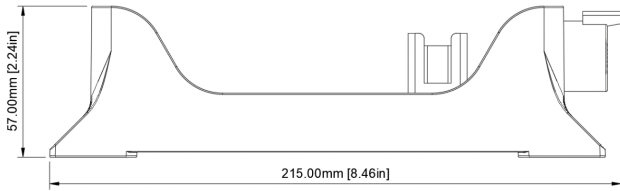
Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

Mechanical

- Material - Epoxy potted aluminum enclosure





Connector Pinout

Mating Connector	Pin	Function	Details
J1 AT06-12SA	1	High Current Output #1	15 A Max Backfeed Protected
	2	High Current Output #2	15 A Max Backfeed Protected
	3	CAN 1 HIGH	Wake-on-CAN Software Selectable Termination
	4	CAN 1 LOW	
	5	High Current Output #3	15 A Max
	6	High Current Output #4	15 A Max
	7	High Current Output #5	15 A Max
	8	High Current Output #6	15 A Max
	9	Ground	
	10	Device Select	Tri-State
	11	High Current Output #7	15 A Max
	12	High Current Output #8	15 A Max
ATHD06-1-4S	1	VBATT	100 A Max

VCM8-IO – Vessel/Vehicle Control Module

Introduction

Independent eight channel power distribution module controlled via CAN and is intended to be paired a display and/or CAN keypad(s). The additional seven multipurpose inputs not only acts as a cheaper alternative to the VCM16 but adds the ability for the controller to operate without being connected to a CAN network.

Key Features

- 1 x CANbus 2.0B connection
 - 1 x Wake-on-CAN with software selectable termination
- 8 x High Current Monitored Solid State Outputs (15 A)
 - 2 x Protected against backfed voltage
- 6 x Multipurpose Inputs
- 1 x Device Select Tri-State for up to 3 devices

Specification

Electrical

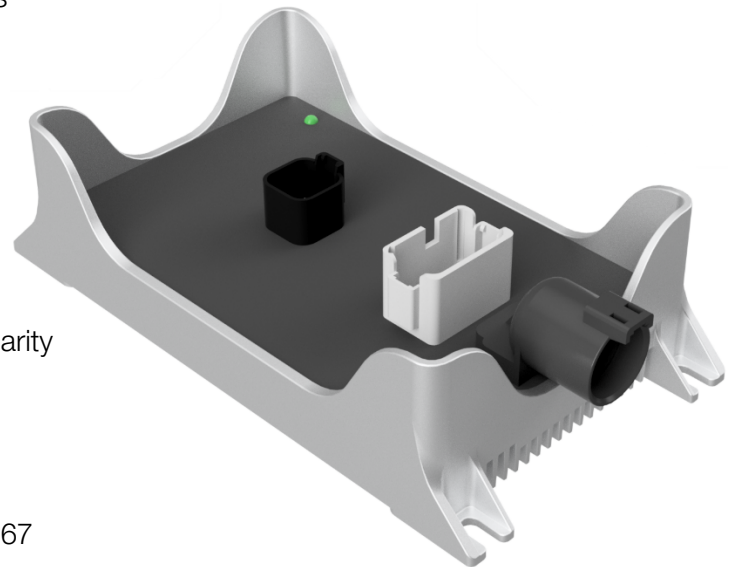
- Input Power: 6 – 18 V DC
- Max Current: 100 A Total
- Protected against load dump and reverse polarity

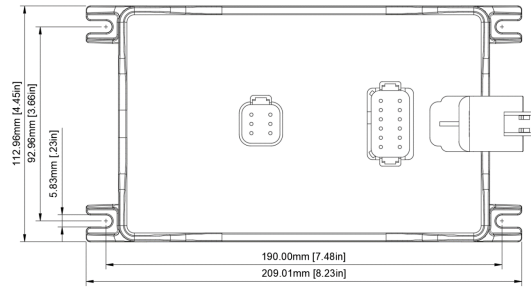
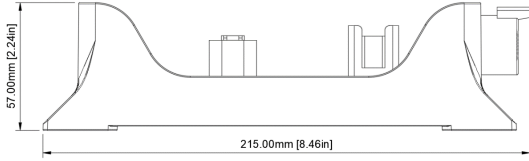
Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

Mechanical

- Material - Epoxy potted aluminum enclosu





Connector Pinout

Mating Connector	Pin	Function	Details
J1 AT06-12SA	1	High Current Output #1	15 A Max Backfeed Protected
	2	High Current Output #2	15 A Max Backfeed Protected
	3	CAN 1 HIGH	Wake-on-CAN Software Selectable Termination
	4	CAN 1 LOW	
	5	High Current Output #3	15 A Max
	6	High Current Output #4	15 A Max
	7	High Current Output #5	15 A Max
	8	High Current Output #6	15 A Max
	9	Ground	
	10	Device Select	Tri-State
	11	High Current Output #7	15 A Max
	12	High Current Output #8	15 A Max
J3 AT06-6S	1	Analog Input #1	0 – 5 V Tri-State Resistive
	2	Analog Input #2	0 – 5 V Tri-State Resistive
	3	Analog Input #3	0 – 5 V Tri-State Resistive 0 – 40 V
	4	Analog Input #4	0 – 5 V Tri-State Resistive Flyback Safe
	5	Analog Input #5	0 – 5 V Tri-State Resistive Wake-on-High
	6	Analog Input #6	0 – 5 V Tri-State 4 – 20 mA
ATHD06-1-4S	1	VBATT	100 A Max

VCM-IO – Vessel/Vehicle Control Module

Introduction

Versatile CAN controlled input/output module capable of reading a wide variety of input signal types while also capable of controlling various types of loads.

Key Features

- 1 CANbus 2.0B connections
- 8 Push-Pull Outputs (4 10A, 4 3A)
- 7 Multipurpose Inputs
- 1 5 Volt Self Protected Sensor Supply (500 mA)

Specification

Electrical

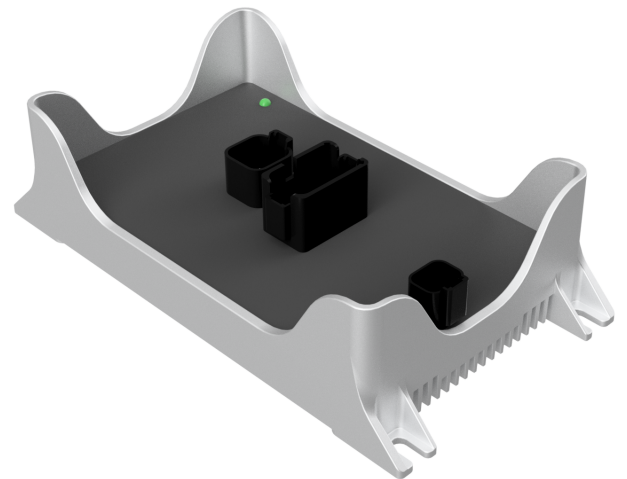
- Input Power: 6 – 18 V DC
- Max Current: 15 A Total
- Protected against load dump and reverse polarity

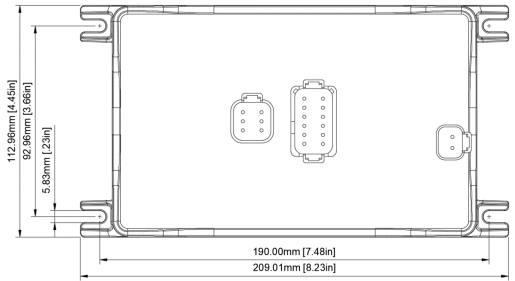
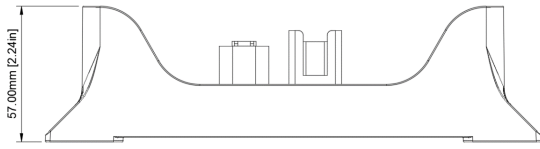
Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

Mechanical

- Material - Epoxy potted aluminum enclosure





Connector Pinout

Mating Connector	Pin	Function	Details
J2 AT06-12SB	1	Medium Current Output #1	10 A Max Backfeed Protected
	2	Medium Current Output #2	10 A Max
	3	CAN 1 HIGH	Wake-on-CAN Software Selectable Termination
	4	CAN 1 LOW	
	5	Medium Current Output #3	10 A Max
	6	Medium Current Output #4	10 A Max Backfeed Protected
	7	Low Current Output #1	3 A Max
	8	Low Current Output #2	3 A Max
	9	5 V Sensor Supply	500 mA Max
	10	Digital Input	Active Low Wake-on-Low
	11	Low Current Output #3	3 A Max
	12	Low Current Output #4	3 A Max
J3 AT06-6S	1	Analog Input #1	0 – 5 V Tri-State Resistive
	2	Analog Input #2	0 – 5 V Tri-State Resistive
	3	Analog Input #3	0 – 5 V Tri-State Resistive 0 – 40 V
	4	Analog Input #4	0 – 5 V Tri-State Resistive Flyback Safe
	5	Analog Input #5	0 – 5 V Tri-State Resistive Wake-on-High
	6	Analog Input #6	0 – 5 V Tri-State 4 – 20 mA
J5 AT06-2S	1	VBATT	15 A Max
	2	Ground	

3 H-Bridge

Introduction

Three 40A H-bridges allow for independent control of three actuators, pumps, and other reversible loads.

Key Features

- CANbus 2.0B connections
- Wake-on-CAN 1 traffic
- 3 x Independent 40A H-bridges with adjustable current limits
- 3 x Analog Inputs
- 1 x Tri-State inputs configurable as device address select

Specification

Electrical

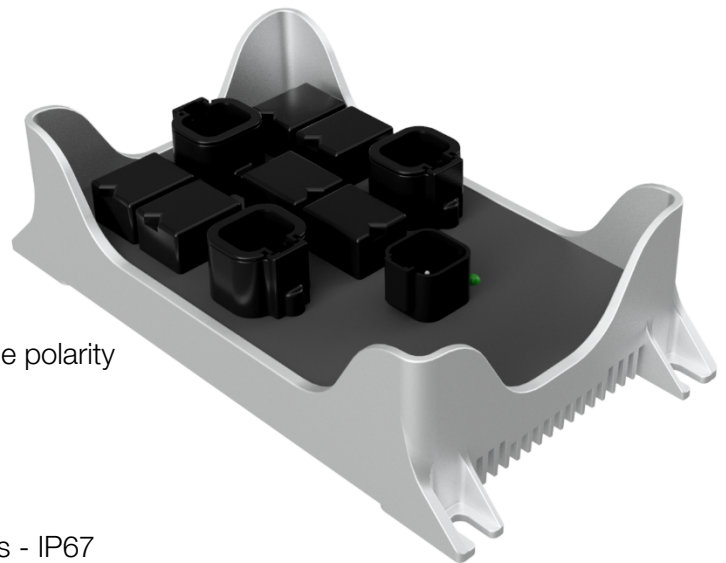
- Input Power: 6 – 18 V DC
- Max Current: 100A Total
- Protected against load dump and reverse polarity

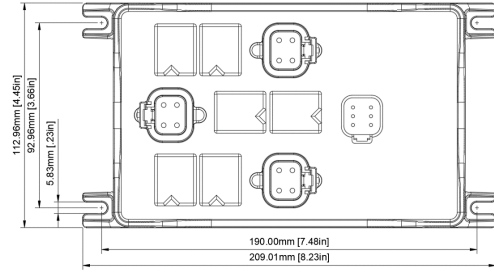
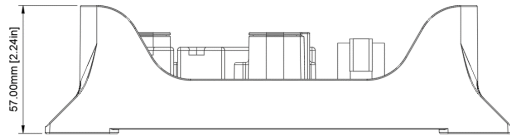
Environmental

- Operating Temperature -40 to 85°C
- Protection: Assembly - IPX7; Connectors - IP67

Mechanical

Material - Epoxy potted aluminum enclosure





Connector Pinout

Mating Connector	Pin	Function	Details
J1 DTP06-4S	1	Vbat+	50A Fuse recommended
	2	Vbat-	
	3	H-Bridge 1+	35A Max
	4	H-Bridge 1-	
J2 DTP06-4S	1	Vbat+	50A Fuse recommended
	2	Vbat-	
	3	H-Bridge 2+	35A Max
	4	H-Bridge 2-	
J3 DTP06-4S	1	Vbat+	50A Fuse recommended
	2	Vbat-	
	3	H-Bridge 3 +	35A Max
	4	H-Bridge 3 -	
J4 DT06-6S	1	CAN L	Wake on CAN
	2	CAN H	
	3	AI1	0-5V, Resistive, 4-20mA
	4	AI2	0-5V, Resistive, 4-20mA
	5	AI3	0-5V, Resistive, 4-20mA
	6	Address Pin	Tri-state DI

RPi CM4 – In Development

Introduction

Jardum RPi CM4 combines the ease and accessibility of the popular Raspberry Pi SBC platform with industrial spec'd components and peripherals.

Key Features

- Use any Raspberry Pi CM4 modules
- 1 x CANbus 2.0B connections
- Ethernet
- Real time clock
- HDMI and USB (unsealed)
- Bluetooth and Wi-Fi Options via CM4

Specification

Electrical

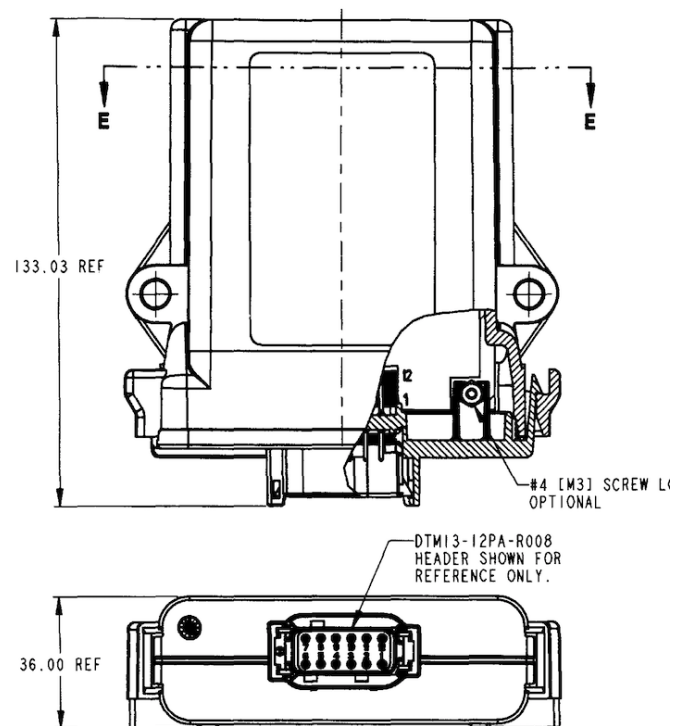
- Input Power: 6 – 18 V DC
- Protected against load dump and reverse polarity

Environmental

- Operating Temperature -20 to 85°C
- Protection: IP67 or IP6K7K

Mechanical

Deutsch DTM EEC Series Enclosure or Amphenol-Sine Armor IPX



Custom Carrier Boards

The JARDUM SOM and RPi CM4 allow for rapid prototypes with low development costs to design completely custom IO combinations. Since the core power circuit, primary logic, and processor are all reused, custom PDM/VCMs can be developed in just a few weeks and the platform can be used for quick validation of new hardware protocols

Validated Options

Inputs:

- Digital Input - Active High
- Digital Input – Active Low
- Digital Input – Tri-State
- Analog Input – 4-20 mA
- Analog Input – Resistive
- Analog Input – 0-5 V
- Analog Input – Configurable
- Thermal Couple
- RTD
- Frequency Input/Pulse Counter

Communication:

- CANbus 2.0B Baud Rate: 125k-1M bit/s
 - Wake on CAN function
- BLE

Outputs:

- Relay
 - 10 – 40 A
 - Current Monitoring with Configurable Fuse Setting
 - H-Bridge
- Solid State
 - 2.5 - 30 Amp Continuous
 - Current Monitoring with Configurable Fuse Setting
 - PWM and Soft Start
 - Low Side/Open Drain
 - High Side
 - Push-Pull
 - H-Bridge