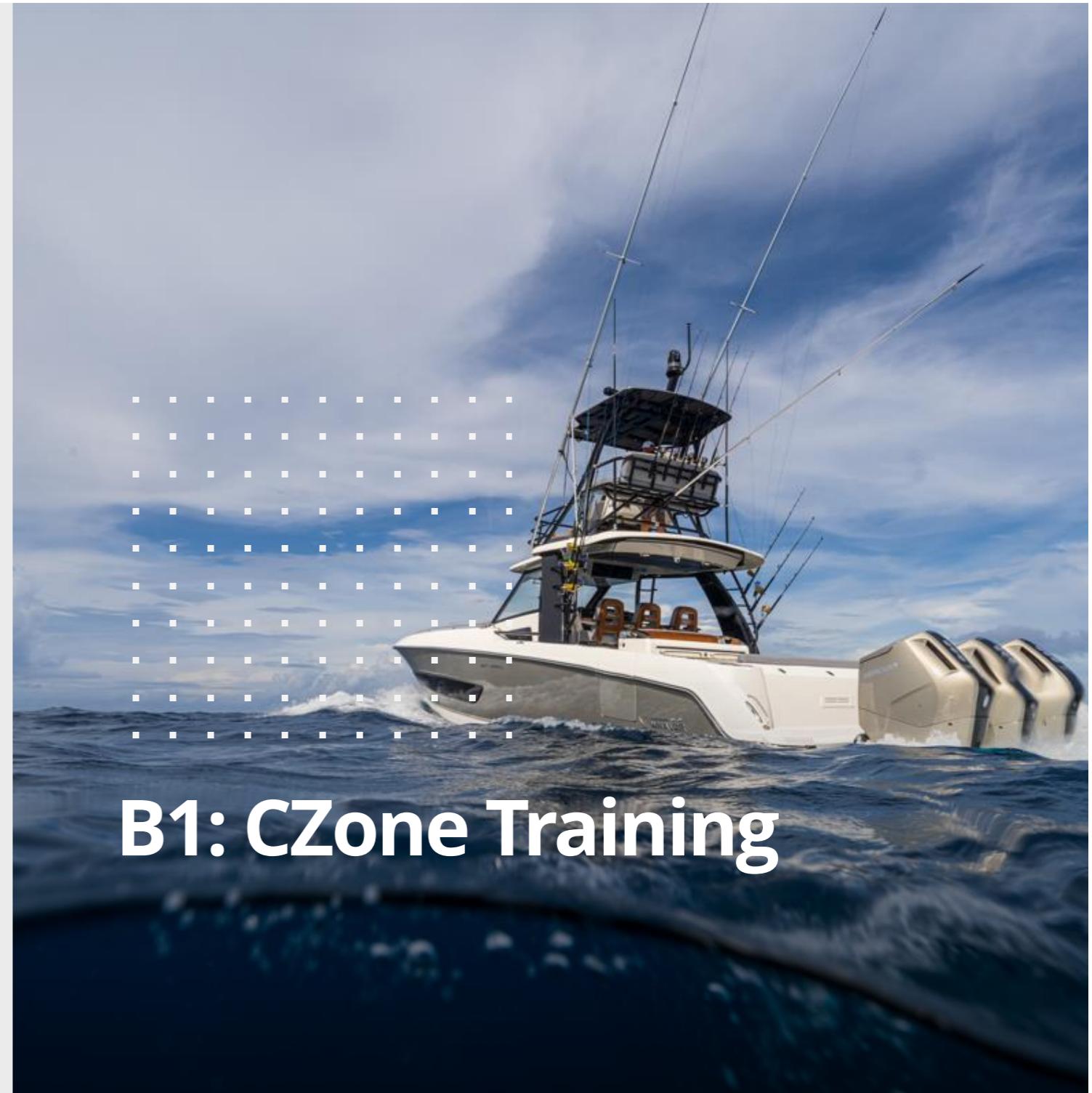


**CZONE**<sup>®</sup>



## B1: CZone Training



# AGENDA

## Welcome to the B1 **CZONE**<sup>®</sup> training module!

- Key Features
- Components / NMEA Guidelines / Module installation
- Module Specific
- Example Installations
- Integration Partners
- New Products
- Configuration Tool R20.1 (R6.25.16.0)



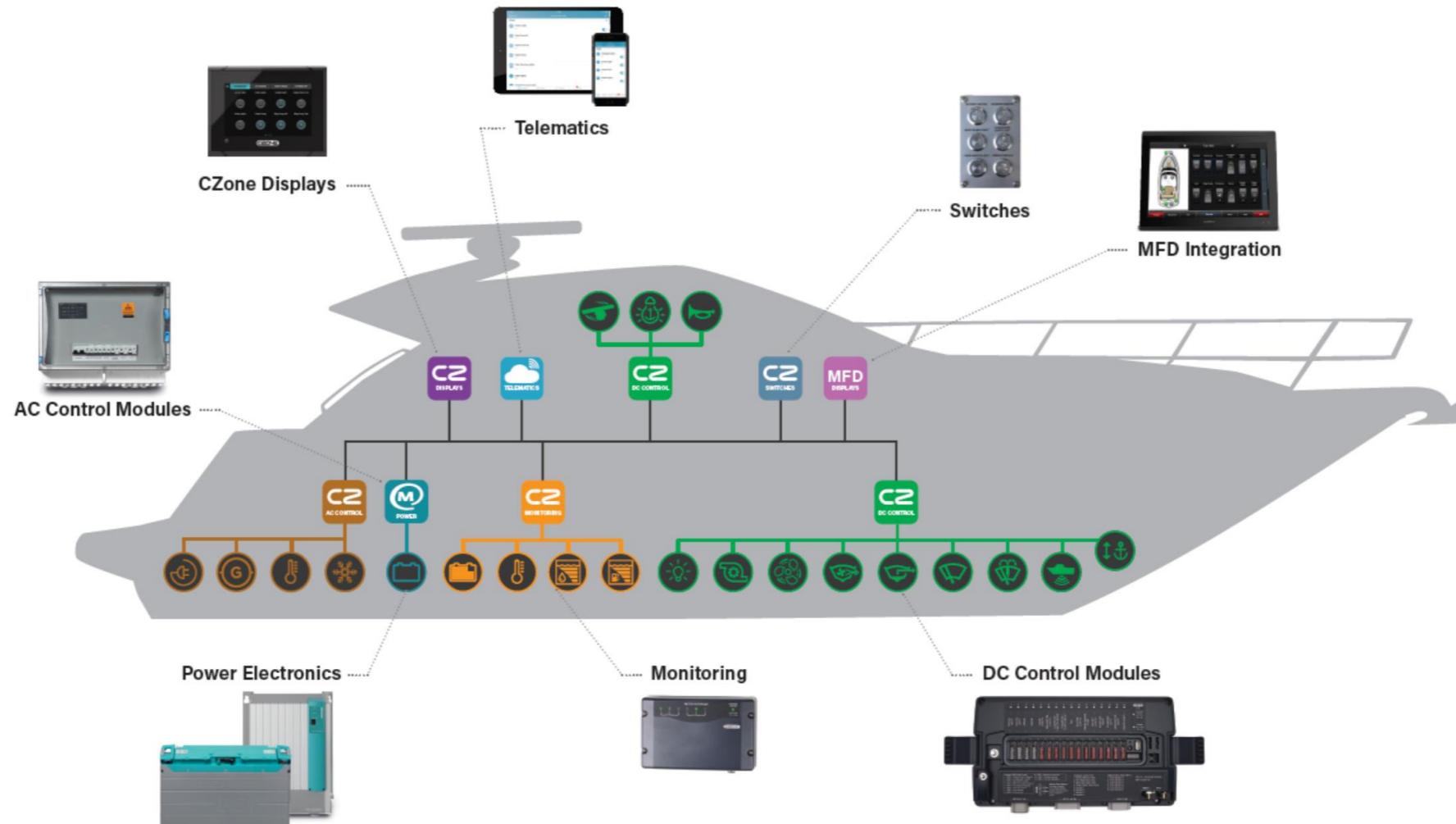
## Key Features



CZONE®

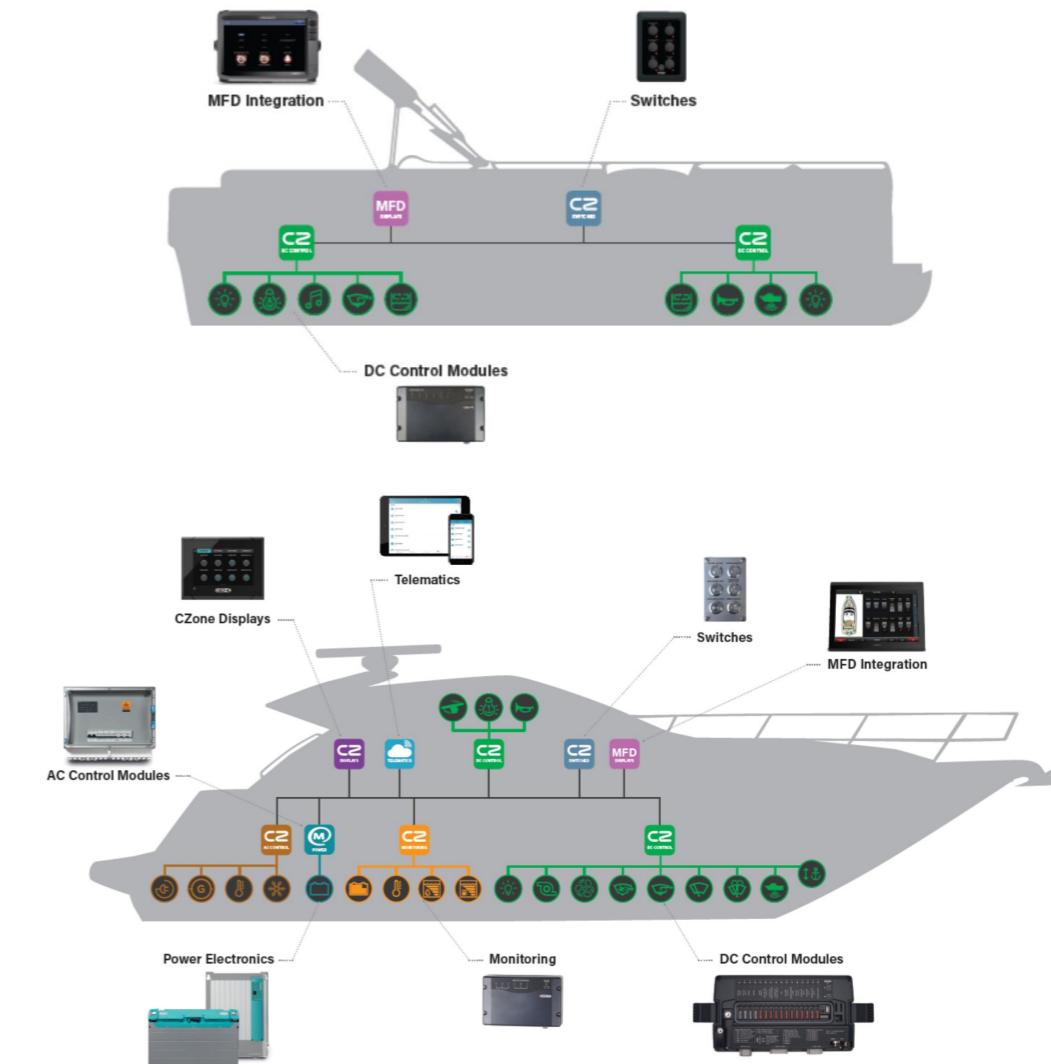
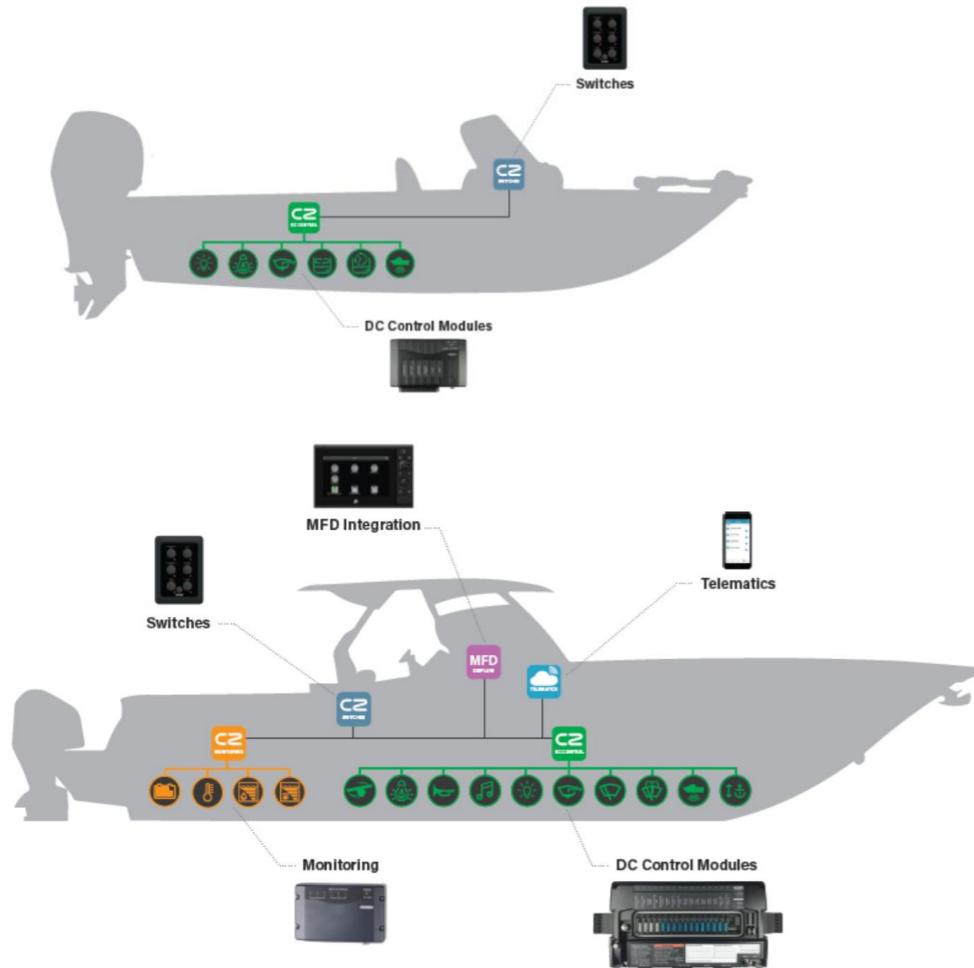
# CZone Smart Boat Overview

CZone is a Smart Boat control and monitoring system consisting of electronic devices communicating on a network.



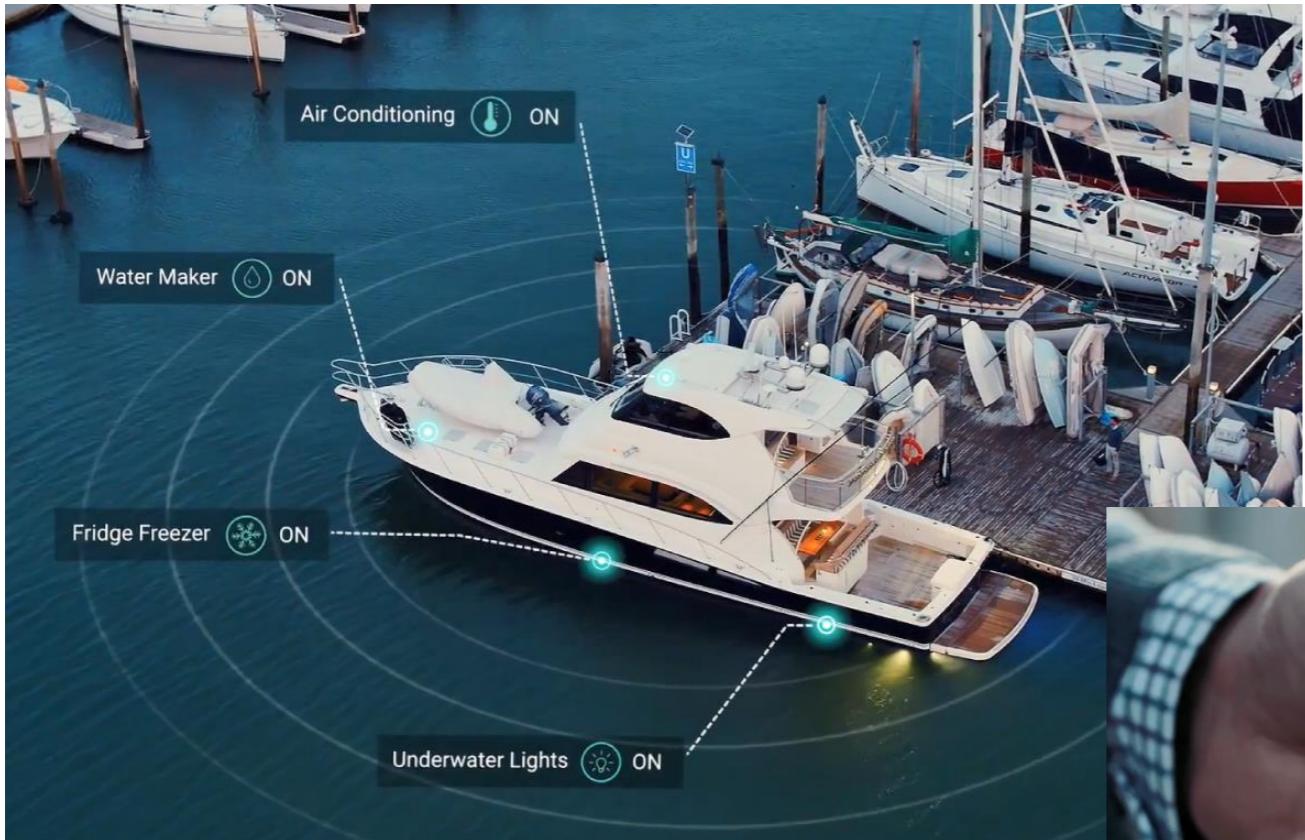
# CZone Smart Boat Overview

CZone can be scaled to suit all vessel types



# Modes

Simplify your vessel electrical system by changing the onboard environment with a single touch



- Systems On
- Night Cruise
- Day Cruise
- Unattended
- Systems Off

# Modes

Easy to configure via Modes Guru

Multiple state options to choose:

On

Off

Dimmed

Timed On/Off

Multiple control options:

Keyfob

CZone Touch

iPad

Remotely (Telematics)

	Systems On	Day Cruise	Night Cruise	Systems Off
▶ Alarm Test! (Operating Mode)	Not Used	Not Used	Not Used	Not Used
Navigation Lights (Fan Mode)	Off	Off	On	Off
Backlight Zone 1	On	On	On (50.0%)	Off
Bilge Pump Aft (Operating Mode)	On	Off	Off	Off
Bilge Pump Aft (Fan Mode)	On	Off	Off	Off
Cabin Aircon (Operating Mode)	Not Used	Not Used	Not Used	Not Used
Cabin Aircon (Fan Mode)	Not Used	Not Used	Not Used	Not Used
Cabin Aircon (Fan Speed)	Not Used	Not Used	Not Used	Not Used
Cabin Aircon (Setpoint Temp)	Not Used	Not Used	Not Used	Not Used
Cabin Lights (Fan Speed)	On	On	On (10.0%)	Off Timer: When turned Off, keep On for 3.0 seconds.
Cabin Lights (Operating Mode)	Off	Off	On (10.0%)	Off
Cabin Lights (Setpoint Temp)	On	On	On (10.0%)	Off Timer: When turned Off, keep On for 3.0 seconds.
Galley Lights (Fan Mode)	On	Off	On (10.0%)	Off
Bilge Pump Aft (Setpoint Temp)	Off	On	Off	Off
Galley Lights (Operating Mode)	Off	Off	On (10.0%)	Off
Galley Lights (Setpoint Temp)	Off	Off	On (10.0%)	Off
Navigation Lights (Operating Mode)	Off	Off	On (10.0%)	Off

# Key Features

## Automation

CZone makes the complex simple via easy-to-use configuration tools.

Logic switching – e.g., when tanks run low, turn off pumps to avoid damage.

Load shedding – prevent flat batteries by turning off non-essential circuits.

Timers – leave lights on when owner exiting vessel.

Auto generator start

Automatic AC supply selection



# All Electrical Systems on one screen

Remove dedicated control panels and monitors.

Simplified operation for the owner.  
Clean Helm.



**Battery Monitor**



**Bilge Pump Monitor**



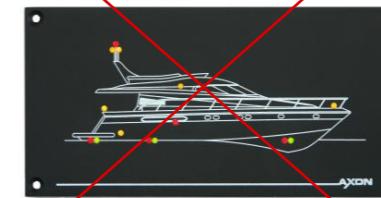
**AC Monitor**



**Wiper Module**



**LED Boat Mimic**



**Tank Monitor**





## **CZone Components / NMEA Guidelines / Module Installation**



**CZONE®**

# Components

CZone systems are typically combination of various modules and displays.

After this course, you should have familiarity with the purpose of each module and what components are required to ensure a complete working system.

1. DC modules
2. AC modules
3. Displays
4. Network connectors
5. Options: Wi-Fi, key fob, bridge

# System Components



Combination Output Interface (COI) – Controls and monitors 12x 10A Circuits and 4x 25A Circuits. Also has 8x Analogue inputs and 6x Digital inputs for switches. Replaces Circuit breakers and provides electronic fusing with bypass function.



Meter Interface (MI) – Provides Battery Capacity (State of Charge) and Voltage (AC + DC) values.



Output Interface(OI) – Controls and monitors 6x 20A circuits, replaces Circuit breakers and provides electronic fusing with bypass function.



Switch Control Interface (SCI) – 8x Switch inputs with different switching options I.E Momentary or Latching. (e.g., Horn or BEP Carling switch or BEP pushbutton)

# System Components



Signal Interface (SI) Reads voltage or resistive signals (0-32V, 0-1000 Ohm Input). Can be used for Tank level Monitoring and Positive or Negative switch inputs. (e.g., Bilge Float switches, traditional switches)



Motor Output Interface (MOI) – Control's motor driven devices with 20A Reversing Output (includes 2 additional 20 Amp circuit outputs). Used primarily for Actuators such as window lifts or hatch lifters.



Contact 6 Plus (C6P) Controls 6x 15A circuits, replaces Circuit breakers and provides bypass function. Does not have Current sensing or electronic fusing. Reduced cost per circuit.

# System Components



Control 1 (C1) Controls 12x 10A Circuits and 4x 25A Circuits. Also has 8x Analogue inputs. Replaces Circuit breakers and provides fusing with bypass function. Does not have current sensing or electronic fusing (reduced cost).



## AC Output Interface (ACOI)

- Controls and monitors AC loads (8x 50 Amp Outputs)
- 110 / 230 VAC; 50/60 Hz
- Suitable for Aircons, Lighting, Pumps, Refrigeration, socket outlets etc

# System Components



## AC Mains Interface (ACMI)

- Shore power and Generator control
- 6x AC Inputs (Shore / Gen / Inverter)
- 110 – 230 VAC 50/60 Hz
- Automatic and Priority control selection (Shore / Generator)



NMEA Connectors and Cables– Spinal cord of the system.

Single Tees, Two-way tees, Four-way tees, Power Tees

Different cable lengths 0.5 Mtr – 10 Mtr

# System Components

## Module Comparison



	Contact 6 Fused	Contact 6 Non Fused	Contact 6 PLUS	Output Interface (OI)	Control 1	Combination Output Interface (COI)
Mechanical Fuse	✓ PTC (auto-rest)		✓ ATC	✓ ATC	✓ ATC	✓ ATC
Tripped Fuse Detection			✓	✓	✓	✓
Circuit Bypass	✓ Electronic	✓ Electronic	✓ Mechanical	✓ Mechanical	✓ Mechanical	✓ Mechanical
Current Sensing				✓		✓
Software Fusing				✓		✓
Dimming (PWM)			✓ All Channels	✓ All Channels	✓ Low Current Outputs	✓ Low Current Outputs
Low Current Outputs	6 x 7.5A	6x 9A			12 x 10A 4 x 25A	12 x 10A 4 x 25A
High Current Outputs			6 x 15A	6 x 20A	With Bilge Pump Running Detection	With Bilge Pump Running Detection
Negative Output Switching	✓ Per Circuit	✓ Per Circuit				
Reverse Motor Control	✓					
Analogue/Digital Inputs					8 0-1000, 0-32V, 4-20mA, Pos & Neg Switch	8 0-1000, 0-32V, 4-20mA, Pos & Neg Switch
Backlit Digital Switch Inputs						6 Requires DSB Module
Output Voltage	12V	12/24V	12/24V	12/24V	12/24V	12/24V

# Displays

Touch 5"

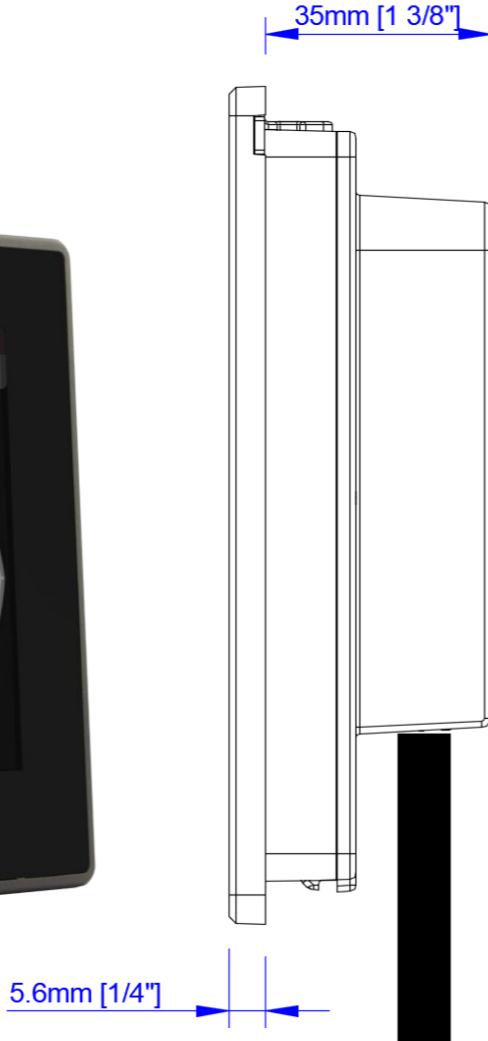
## Key Features

- Built in Wi-Fi
- 5-inch Capacitive Multitouch
- High Resolution 800 x 480
- Super Bright 1200 nits - ideal display on open helms
- IPx7
- Low 8mm Profile
- Multiple mounting options including flush mount to maintain glass helm look
- Micro-SD card slot



# Displays

## Touch 7"



7" LCD with excellent viewing angles and modern design.

The easiest to install CZone Touch display ever with front mount and shallow depth.

Half the power consumption of the current Touch 5 display, so ideal for 24hr circuits.

Consistent and familiar CZone 2.0 User Interface, customizable for any OEM.

New electronics with the fastest processor ever in a CZone Touch display and built-in connectivity for tablet pairing.

Mount from the front, no rear access required

\*Dry environment only (I.E Flybridge, Saloon)

# Displays

## Touch 10"

### Key Features

- 10.1" Widescreen Capacitive Touch Panel
- High Resolution: 1280 x 800 WXGA
- Attractive Low Profile (4mm) black aluminium design
- IPS LCD Technology for High Contrast and Wide Viewing Angles
- High Bright LED backlight with full range dimming
- Marine spec custom mounting bracket allowing easy access to rear connections



# Display Comparison Chart

-	Touch 5	Touch 7	Touch 10
Screen Size	5"	7"	10.1"
Applications	Interior & Exterior	Interior Only	Interior & Exterior
IPS Display	✗	✓	✓
Optical Bonding	✓	✓	✗
Processor	iMX6 single core	iMX6 dual core	iMX537 single core
Housing Material	PC/ABS	PC/ABS	Aluminium
Resolution	800 x 480	1024 x 600	1280 x 800
Brightness	1200 nit	500 nit	500 nit
Colour Depth	16-bit RGB	24-bit RGB	24-bit RGB
Updates	Micro SD	USB	USB
IP Rating	IPX7	IPX0	IPX6
Voltage	12V	8-32VDC	8-32VDC
CAN	✓	✓	✓
WiFi	✓	✓	✗
Ethernet	✗	✓	✗
Current Draw	900mA @ 12V	430mA @ 12V	1A @ 12V

# Options



Wireless Interface – Allows for On-Board wireless monitoring and control via iPad. Can be connected to existing On-Board wireless systems to allow simplicity for user connection.



Wireless Remote Kit – Turn On/Off vehicle / vessel or switch modes without having to be on-board.

- Turn on Boarding/Step Lights
- Enable Dock/Unattended modes
- RF control



CZone / Mastervolt Bridge – Complete control and monitoring of Mastervolt Power Electronics on-board.

- Control + Monitor Inverters / Chargers
- Alternators
- DC/DC Converters, etc.

# Options



- IPX7 Waterproof keypads with RGB backlit circuit labels with adjustable brightness
- Simple installation with reduced complexity over traditional switches and fuse panels
- Plug and play out of the box functionality
- Can be configured with advanced CZone functionality like Live Bait Tank timers, sequential button presses, and even load shedding
- New smart harness greatly simplifies network installation when used as a standalone system

# Options

All in one Smart Harness for straight forward plug and play installation.

Two Position Smart Y Harness allows up to two 6 Button Keypads per Contact 6 Plus interface.



Regular Smart Harness  
P/N: 80-911-0171-00

2 Position Smart Y-Harness  
P/N: 80-911-0172-00

# NMEA Installation Guidelines

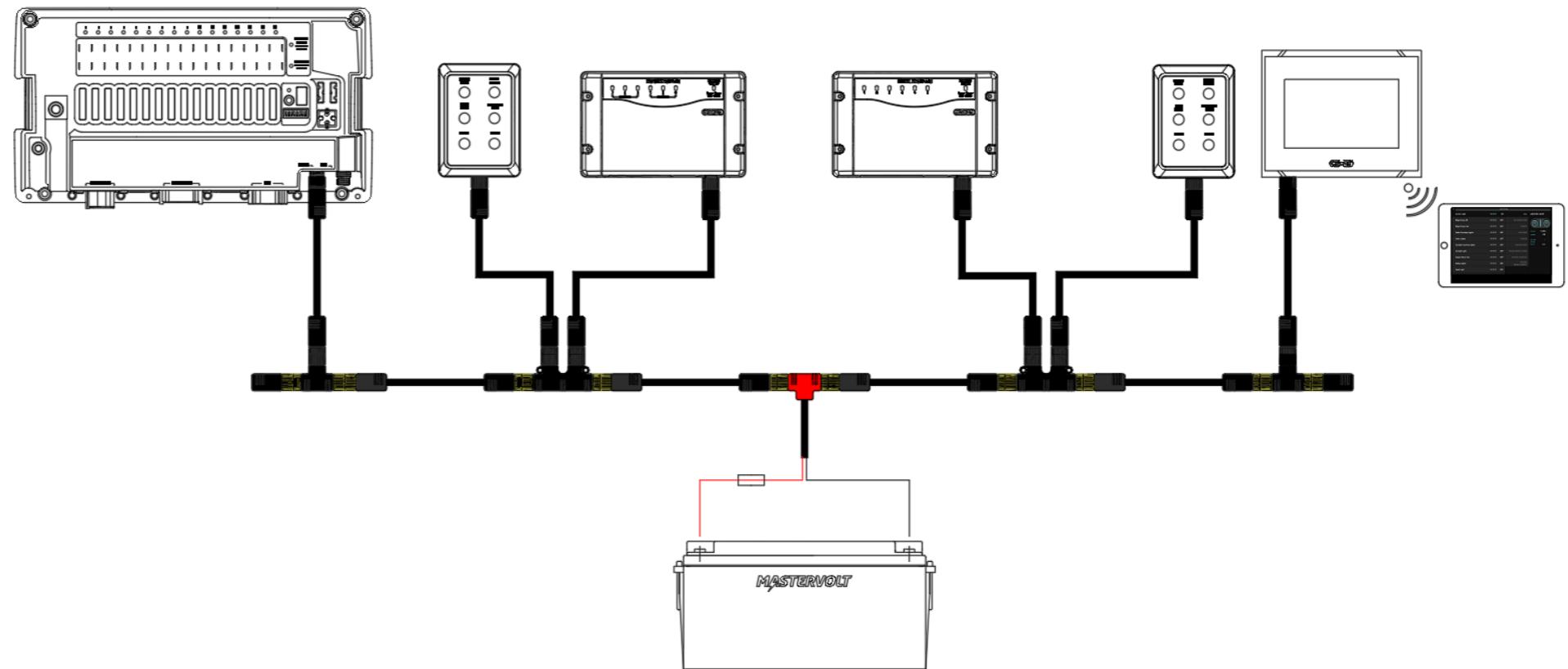
## Best Practice

NMEA 2000 standards state that;

“Drop cables from the backbone to any device **must not exceed 6 Metres**”

Ensure terminating resistors are fitted to each end of the network.

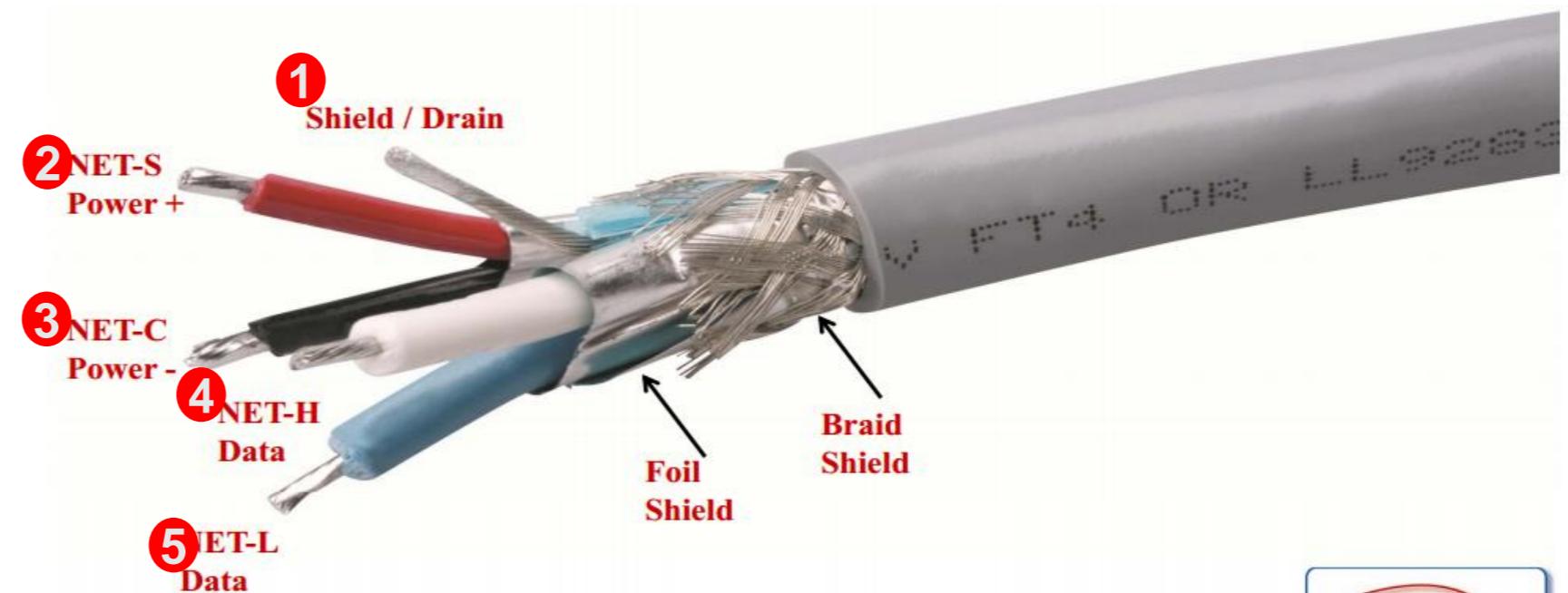
Branches to all modules must be in a “T” format.



# NMEA Installation Guidelines

## Best Practice

ANCOR Branded NMEA conductors have upgraded Power cables, improves Volt Drop

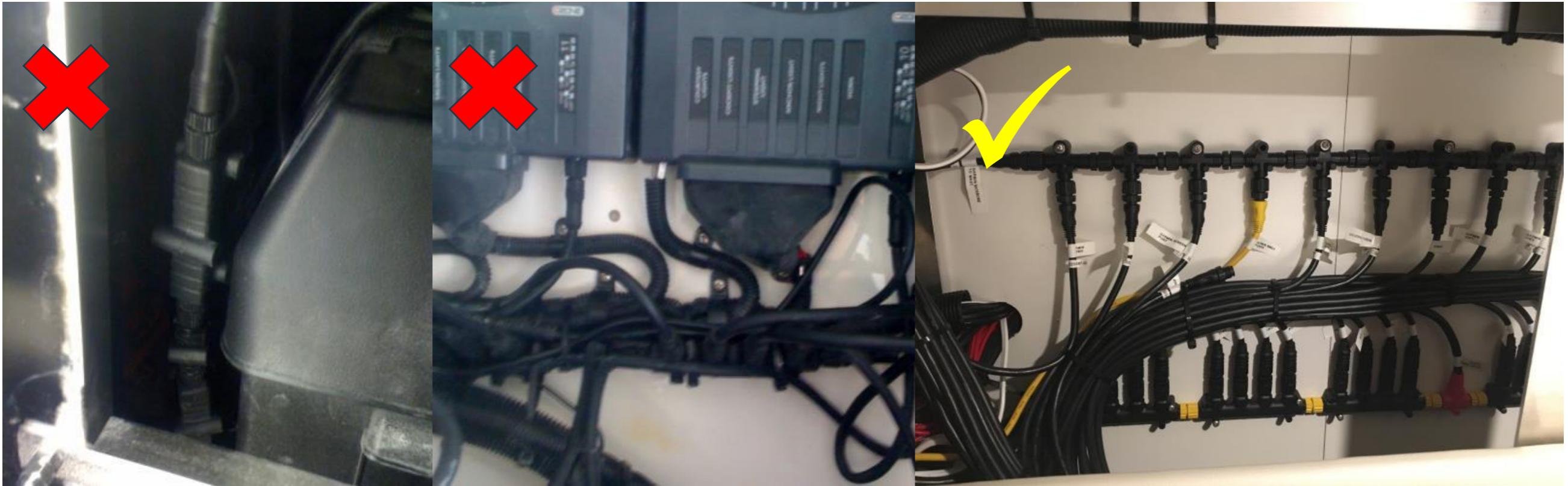


# NMEA Installation Guidelines

## Best Practice

NMEA Connections must be tight. IP67 When installed correctly.

T-Pieces are to be screwed or securely fastened with adequate stress relief provided .

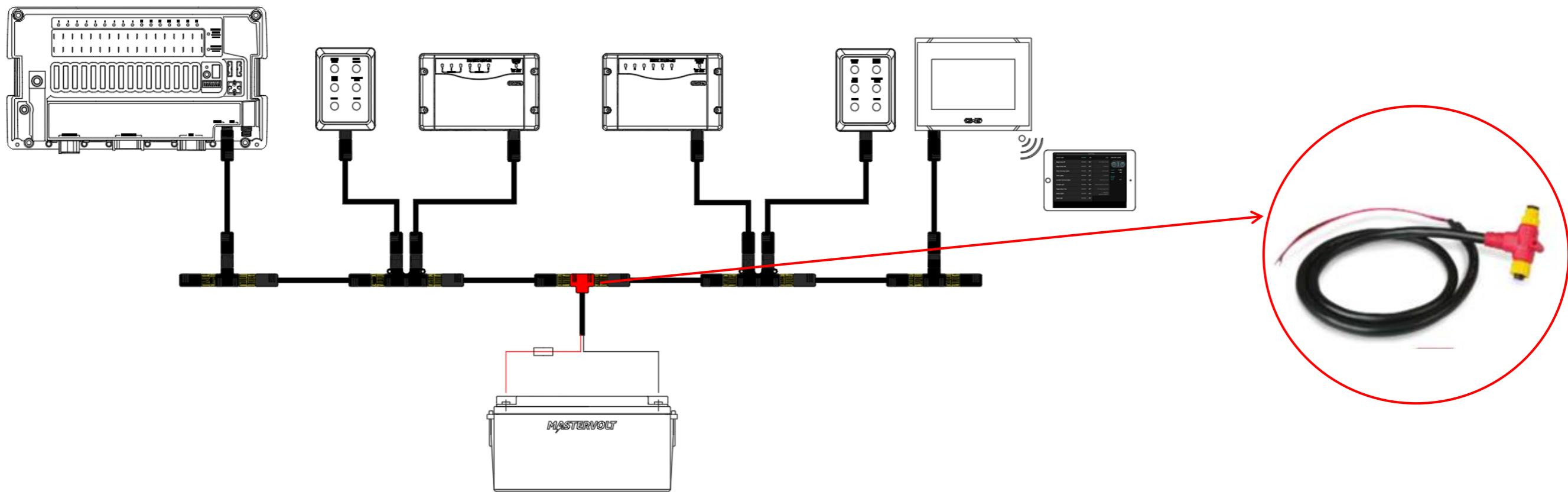


# NMEA Installation Guidelines

## Best Practice

NMEA 2000 power supply to be a single point connection (unless a CZone Network Bridge is used) and MUST BE 12VDC.

Supply power as close to the middle of the network as possible to limit voltage drop across network.



# NMEA Installation Guidelines

## Best Practice

Volt Drop can be an issue on larger NMEA networks.

NMEA standard states;

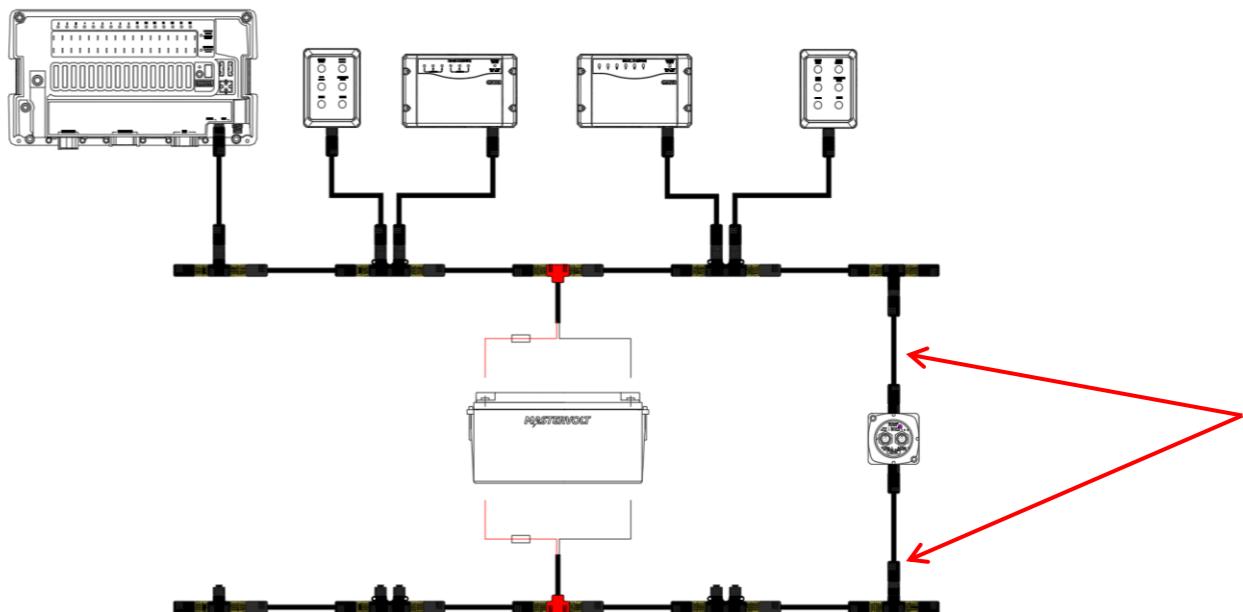
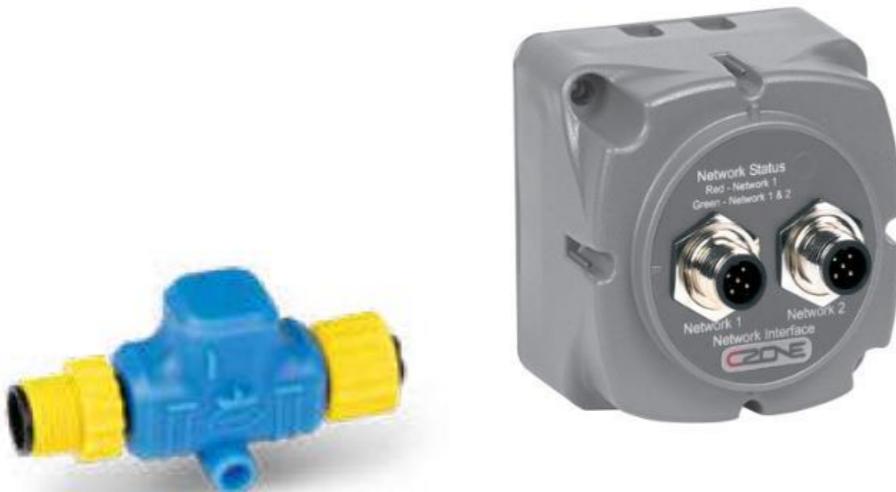
“The maximum amount of devices on one network does not exceed 50 Nodes (Modules)”

We recommend on CZone systems larger than **40 modules**, that two networks are connected together using a ‘Network Bridge interface’ (NBI).

The NBI allows data to be transferred between networks while maintaining isolated power supplies.

The NBI can also be used to separate CZone and other NMEA 2000 Networks on-board, E.g MFD's or Electronics or to create 24 Hour Networks

‘Drop to Drop’ easiest connection



# NMEA Installation Guidelines

## Components

BEP has a range of ANCOR NMEA connectors and Tee's.

These have been designed specifically for CZone applications and feature a more robust mounting solution, colour coding for the backbone and increased power cable sizing.

These can also be used on other NMEA installations for a robust connection solution.



### Single Tee Connector NEW

Connects a single device into the NMEA backbone.

Part # 80-911-0029-00



### 2 Way Tee Connector NEW

Connects multiple devices into the NMEA backbone.

Part # 80-911-0047-00



### 4 Way Tee Connector NEW

Connects multiple devices into the NMEA backbone.

Part # 80-911-0048-00



### NMEA 2000 Power Isolator

The power isolator connects between NMEA 2000 tees and backbone cables while isolating the power supply within the network.



### Backbone Cable NEW

Special low volt drop Backbone Cable ensures ultimate reliability for your NMEA 2000 network.

Part # 80-911-0026-00 1.6 ft .5 m

Part # 80-911-0027-00 6.5 ft 2 m

Part # 80-911-0024-00 16 ft 5 m

Part # 80-911-0025-00 32 ft 10 m



### Power Cable NEW

Provides power to the NMEA 2000 network. 18 AWG/0.8mm<sup>2</sup> conductors meet ABYC/CE standard for minimum conductor size plus add connection to protect the network from electromagnetic interference.

Part # 80-911-0028-00 3.2 ft 1 m



### Terminating Resistors NEW

Use at either end of the NMEA backbone to complete the network. Each network must have a male and female terminator.

Part # 80-911-0031-00 Male

Part # 80-911-0030-00 Female

# NMEA Installation Guidelines

## PGN's

CZone modules such as the MI, SI, ACMI & COI output standard PGN's (Parameter Group Numbers). This means when used with another NMEA device such as an MFD that can read these PGN's, the data will be displayed.

It also means that CZone can use these PGN's for switching.

A list of PGN's that can be sent via CZone can be found in the instruction manual.

PGN Number	Description	Fields
127503	AC Input Status	Voltage, Current, Frequency, Real Power
127504	AC Output Status	Voltage, Current, Frequency, Real Power
127505	Fluid Level	Fluid Level
127506	DC Detailed Status	State of Charge, State of Health, Time Remaining
127507	Charger Status	Operating State, Charger Mode, Charger Enable/Disable
127508	Battery Status	Battery Voltage, Battery Current, Battery Case Temperature
127509	Inverter Status	Operating State, Inverter Enable/Disable
127488	Engine Parameters	Engine Speed, Boost Pressure, Tilt/Trim
127489	Engine Parameters	Oil Pressure, Oil Temp, Engine Temp, Alternator Potential, Fuel Rate, Total Engine Hours, Coolant Pressure, Fuel Pressure, Engine Load, Engine Torque
129026	SOG	SOG
130312	Temperature	Actual Temperature
130314	Pressure	Pressure
128267	Water Depth	Depth

PGN Number	Description	Fields
127503	AC Input Status	Voltage, Current, Frequency, Real Power
127504	AC Output Status	Voltage, Current, Frequency, Real Power
127506	DC Detailed Status	State of Charge
127508	Battery Status	Battery Voltage, Battery Current
127744	AC P&C Phase A	AC Power and Current
127745	AC P&C Phase B	AC Power and Current
127746	AC P&C Phase C	AC Power and Current
127747	AC V&F Phase A	AC Voltage and Frequency
127748	AC V&F Phase B	AC Voltage and Frequency
127749	AC V&F Phase C	AC Voltage and Frequency

# Module Installation

## Best Practice

To achieve correct IP Ratings (IP65):

- Modules must be mounted vertically with cables exiting downwards.
- All seals, plugs and cable glands must be installed ensuring unused holes are fitted with caps.
- Cable boots on modules must be clipped firmly in place.
- Ensure all covers are secured firmly with supplied screws or by ensuring the covers on modules are completely locked on.



# Module Installation

## Best Practice

CZone Modules must be mounted **at least 50mm** away from:

Heavy current carrying conductors such as Bow Thruster cables / Winches etc

Speakers

VHF's and SSB's

Battery Chargers and Inverters

Transformers

Other high Inductive loads; motors etc

Modules must be in **easily accessible areas.** (Bypass functionality)

# Module Installation

## Best Practice

All circuit and module identification labels must be fitted.

Module ID labels should be fitted to both the cover and the module to ensure they are not mixed when covers are removed.



Module ID Label

Circuit Label



**Module Specific**



# Combination Output Interface

COI

## COI (Combination Output Interface)

Four High current outputs (25A) have Reverse current sensing and alarms; I.E Ideal for Bilge Pump inputs with Low level float

## No Dimming capability first 4 channels.

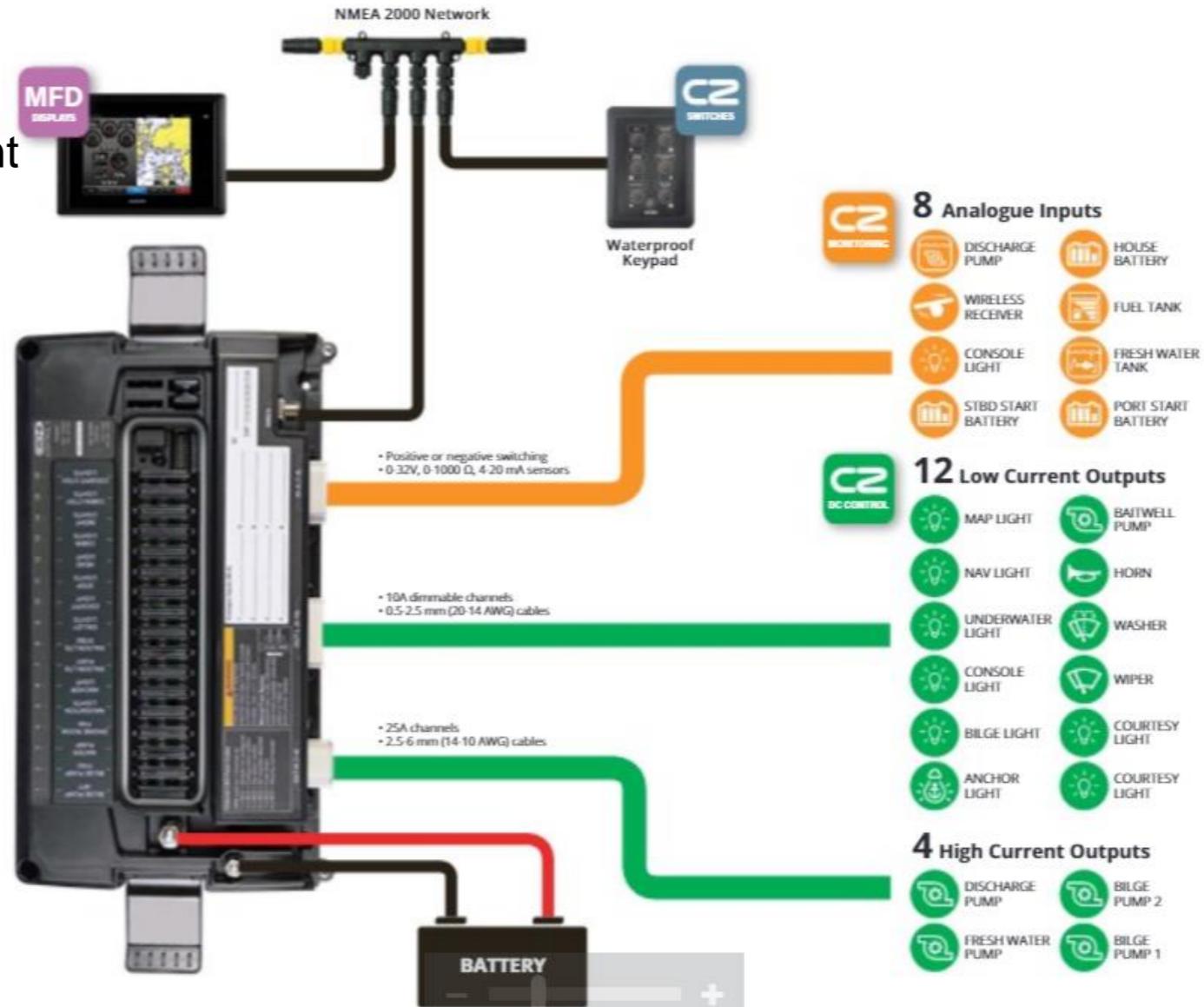
12 Low current outputs (10A) dimming

(PWM 100Hz) **(Total 150 Amps)**

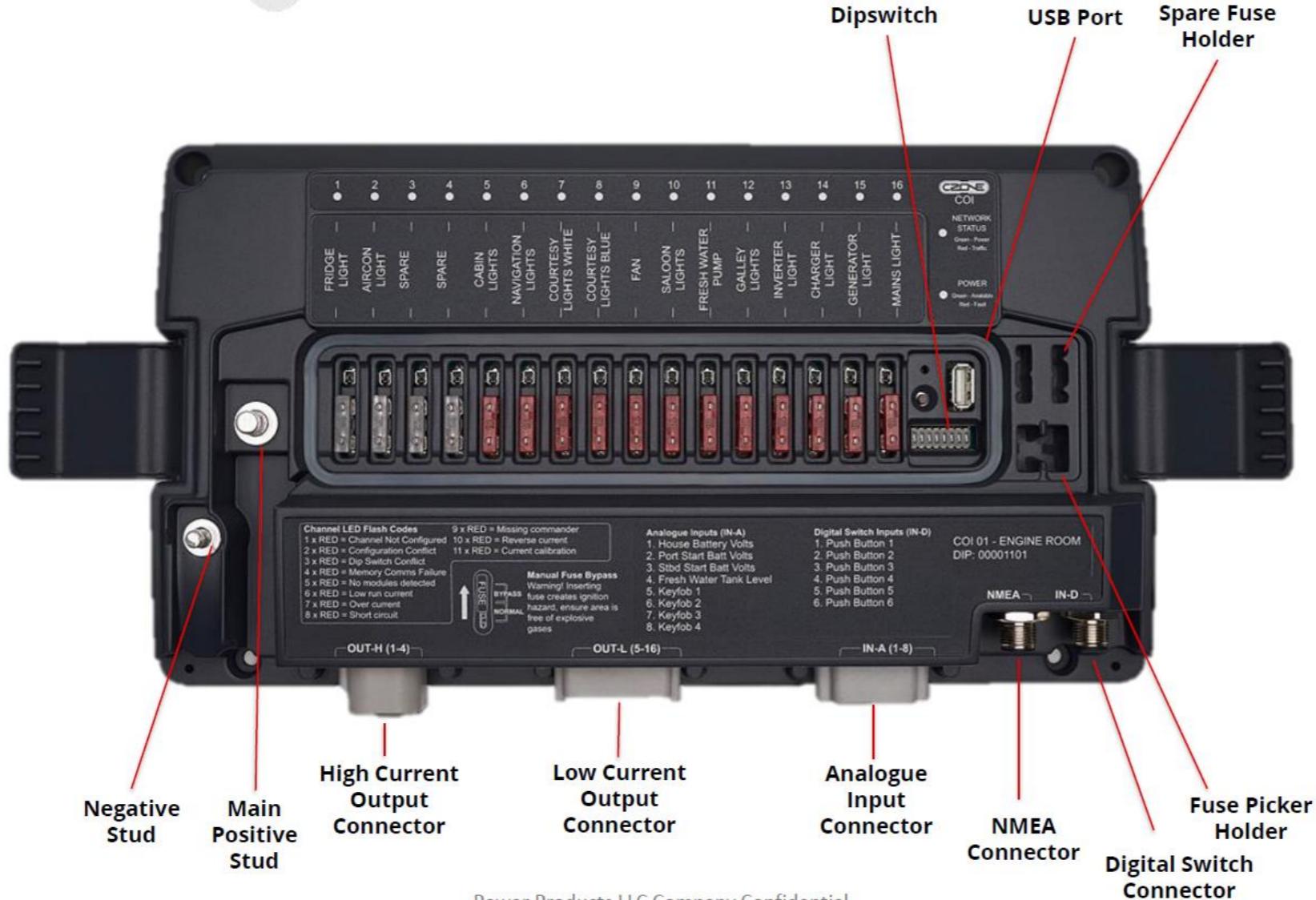
Can monitor voltage from main terminal or using Analogue inputs.

4-20mA Sender Capability

Timers built in

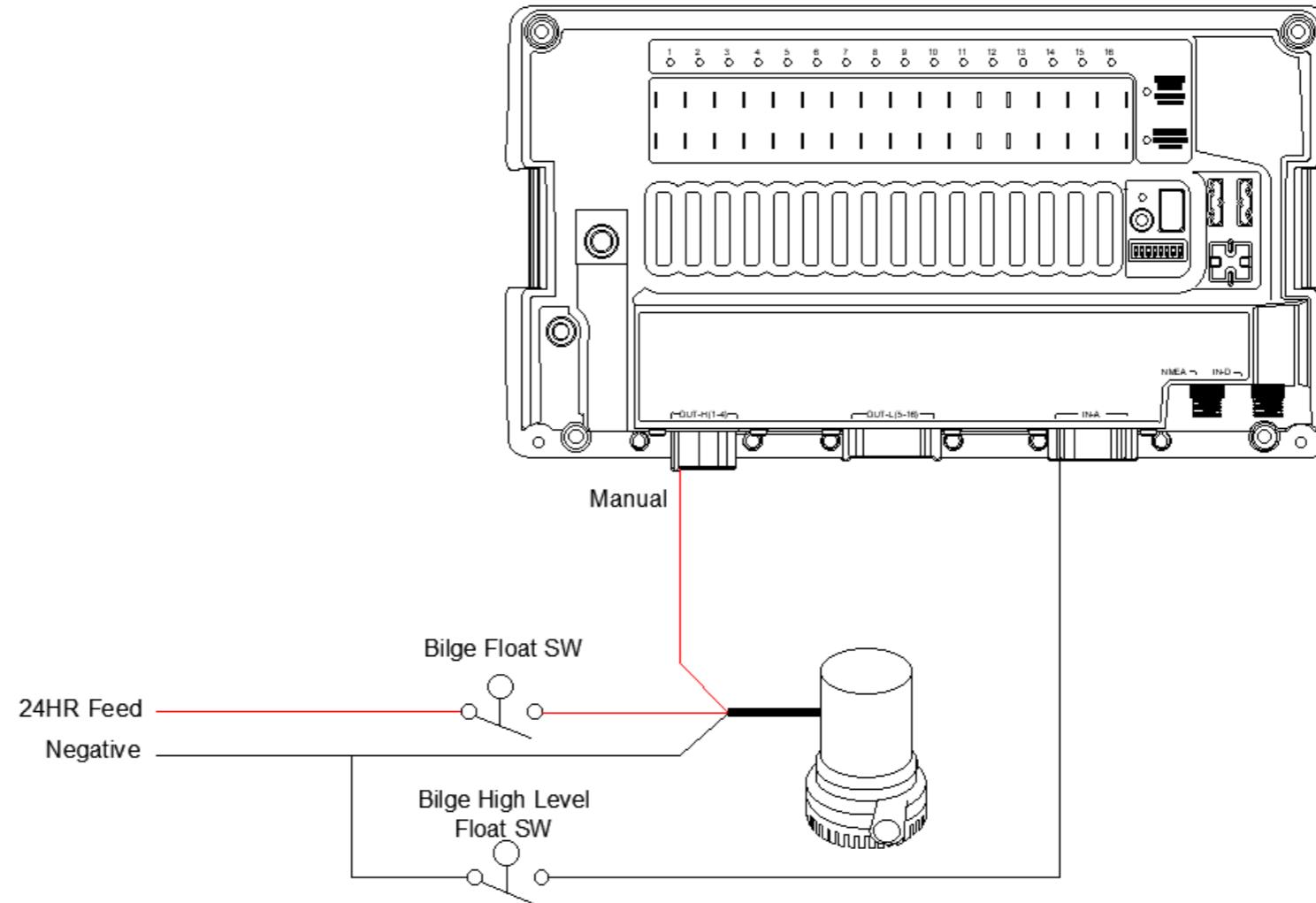


# Combination Output Interface COI



# Combination Output Interface COI

## External Alarm Feedback:



CZone will detect when Low level float is activated and Pump is running  
CZone will detect when High Level float is activated

# Combination Output Interface COI

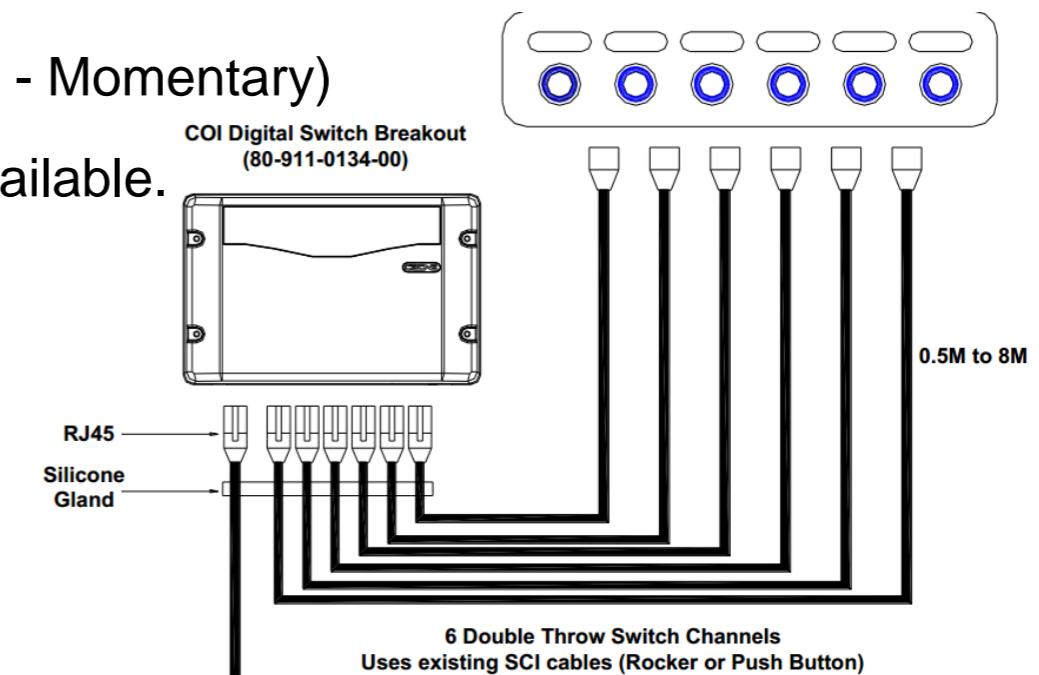
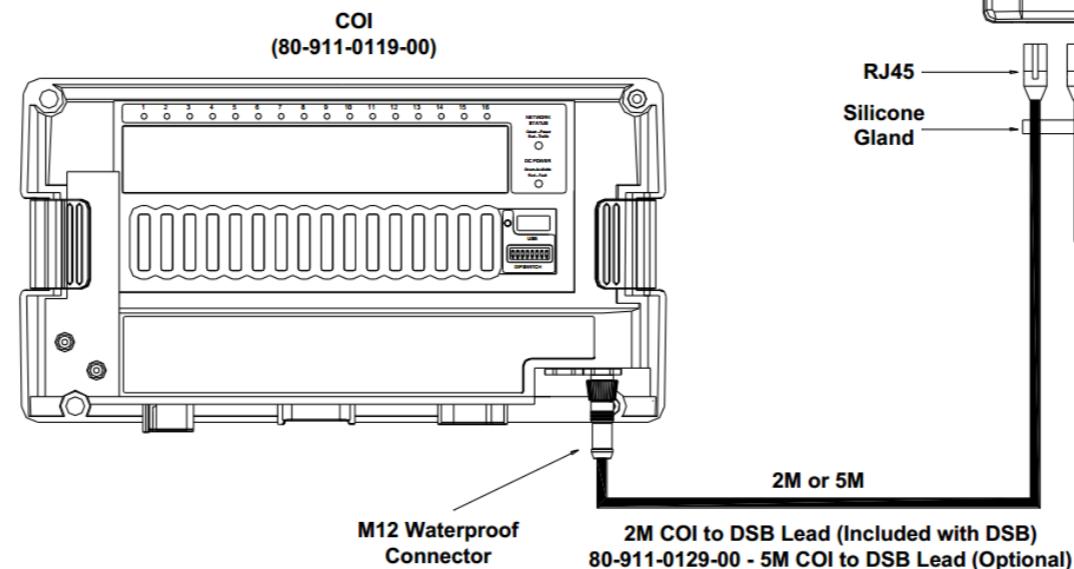
## DSB (Digital Switch Breakout)

Adds capability of 6x Czone Digital switches

6 Inputs meaning up to 12 different switch functions (Double Throw - Momentary)

Supplied with 2Mtr extension from COI; Optional 5Mtr extension available.

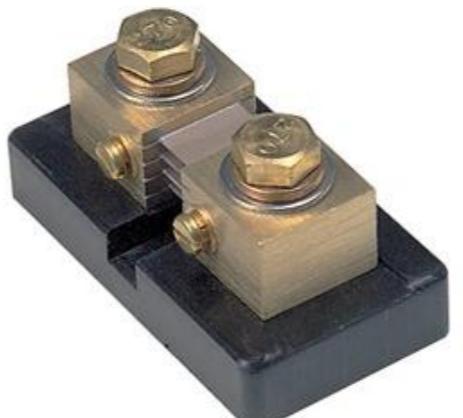
Uses existing SCI Switch cables / Push Buttons



# Meter Interface

## MI

- 3 AC Voltage Inputs via AC-VSEN Transducer
- 2 AC Current Inputs via CT Coils
- Calculates True RMS Power
- 3 DC Voltage Inputs
- 2 DC Current Inputs (via 50 mV Shunt)
- Will monitor State of Charge % of 2 battery banks

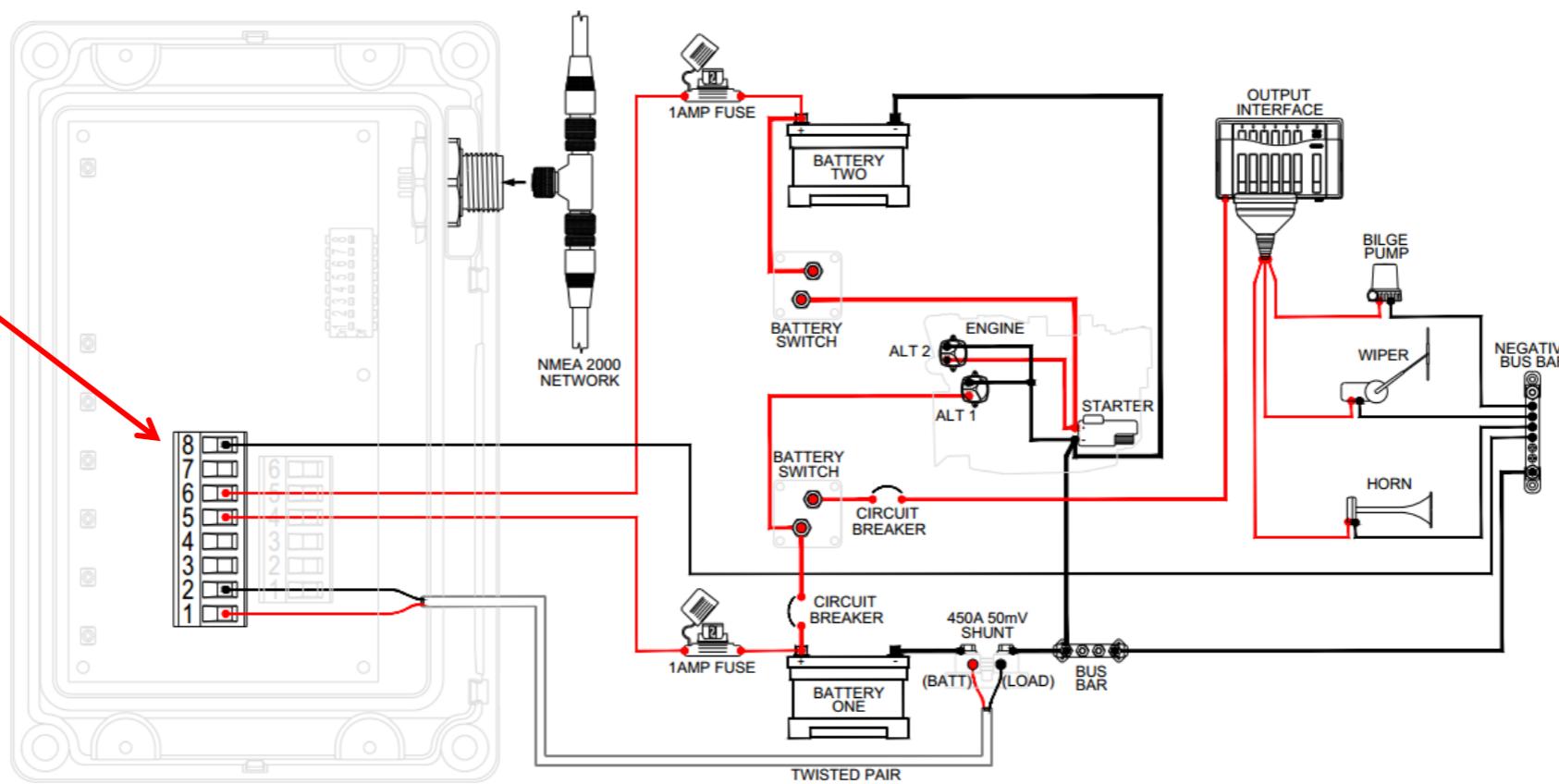


# Meter Interface

## MI

Pin 8 Neg

Reference



8 Way, DC

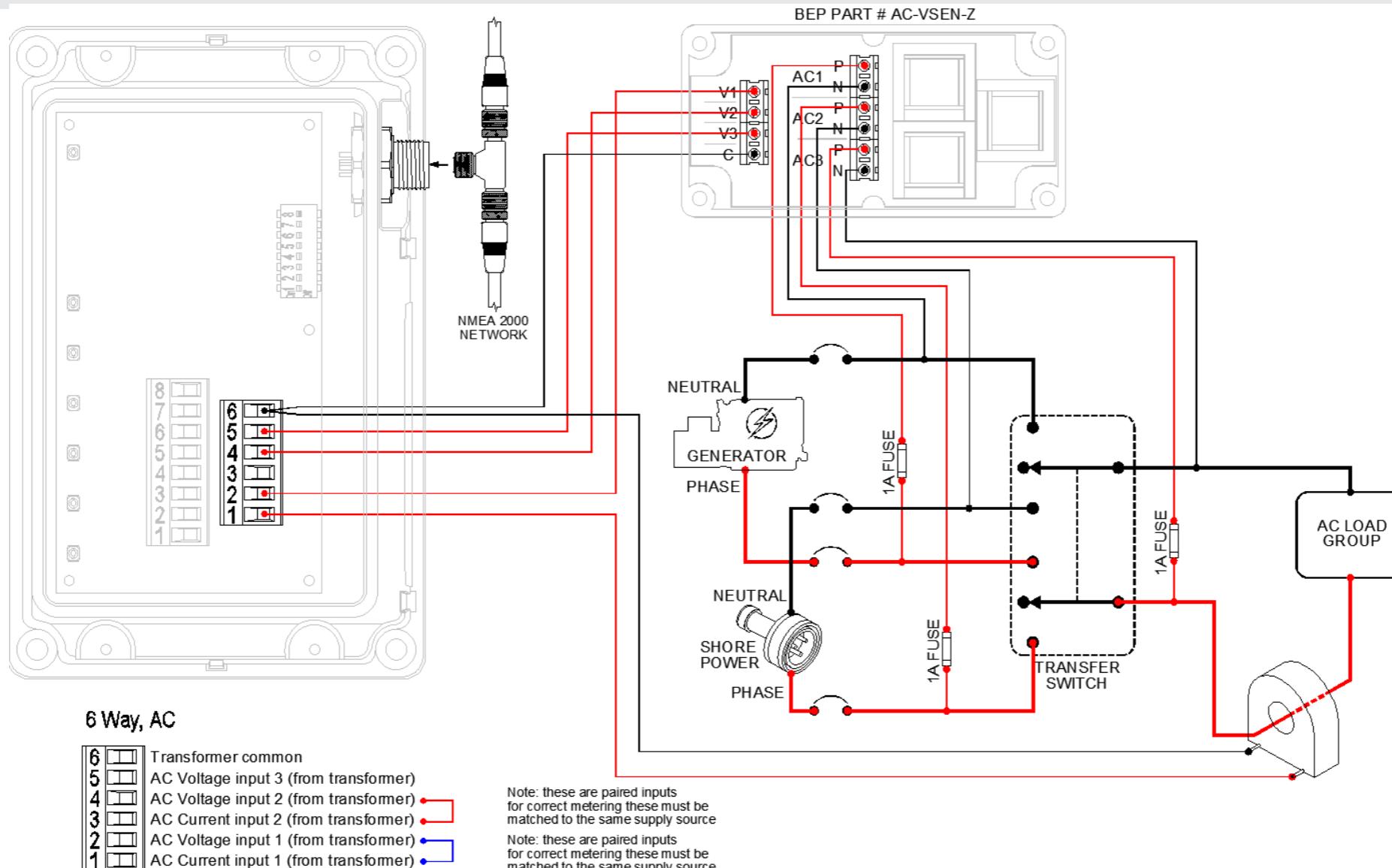
8	DC Negative
7	DC voltage positive input 3
6	DC voltage positive input 2
5	DC voltage positive input 1
4	DC current 2 Shunt input 2 (LOAD)
3	DC current 2 Shunt input 1 (BATT)
2	DC current 1 Shunt input 2 (LOAD)
1	DC current 1 Shunt input 1 (BATT)

Note: these are paired inputs  
for correct metering these must be  
matched to the same supply source

Note: these are paired inputs  
for correct metering these must be  
matched to the same supply source

# Meter Interface

## MI



# Output Interface

OI

- 6 outputs (20A) (Total 100 Amps)
- All outputs dimming (PWM 100Hz).
- Timers built in
- Manual Override
- Programmable software fuses
- Parallel channels if required
- No negative switching



# Switch Control Interface

SCI

- 8 Digital switch inputs allows for up to 16 different switch points (Double Throw - Momentary)
- Fault code feedback and backlighting to switches.
- Programmable switch types I.E Momentary, Latching, Double throw, single throw.
- Different switching types can be adjusted in software to allow for modern designs in vessels I.E 'Single Button Dim'



# Signal Interface

SI

- 6x Inputs
- 0-5V, 10-180 Ohm, 240-33 Ohm (0-1000 Ohm or 0-32V)
- Negative / Positive inputs
- No feedback to switches
- Different switch inputs can be configured I.E Momentary / Latching

Note: 'Slosh' factor built in, so immediate resistive switching or PT-100 temp sensors not ideal, small window and hard to calibrate

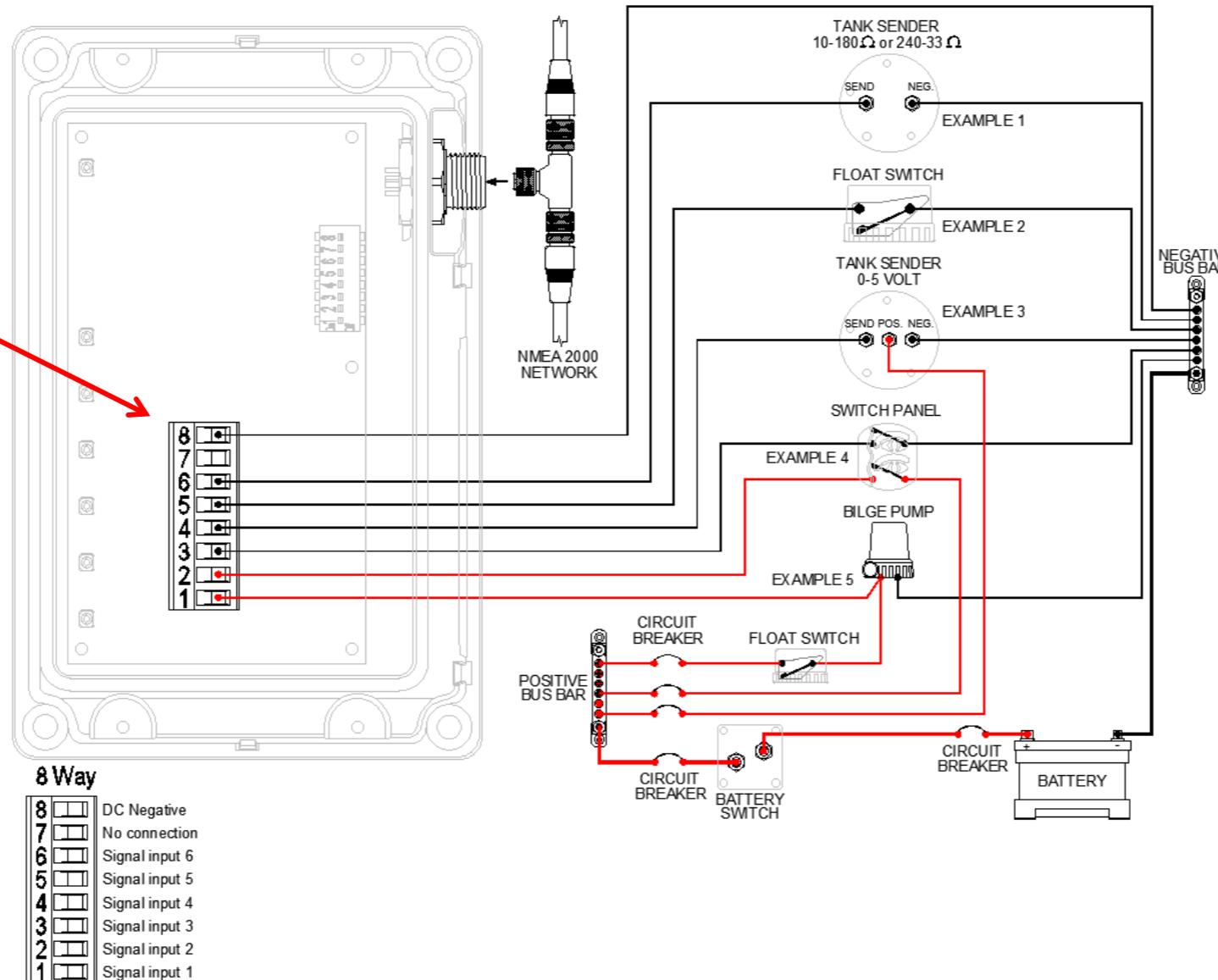


# Signal Interface

SI

Pin 8 Neg

Reference



# Motor Output Interface

## MOI

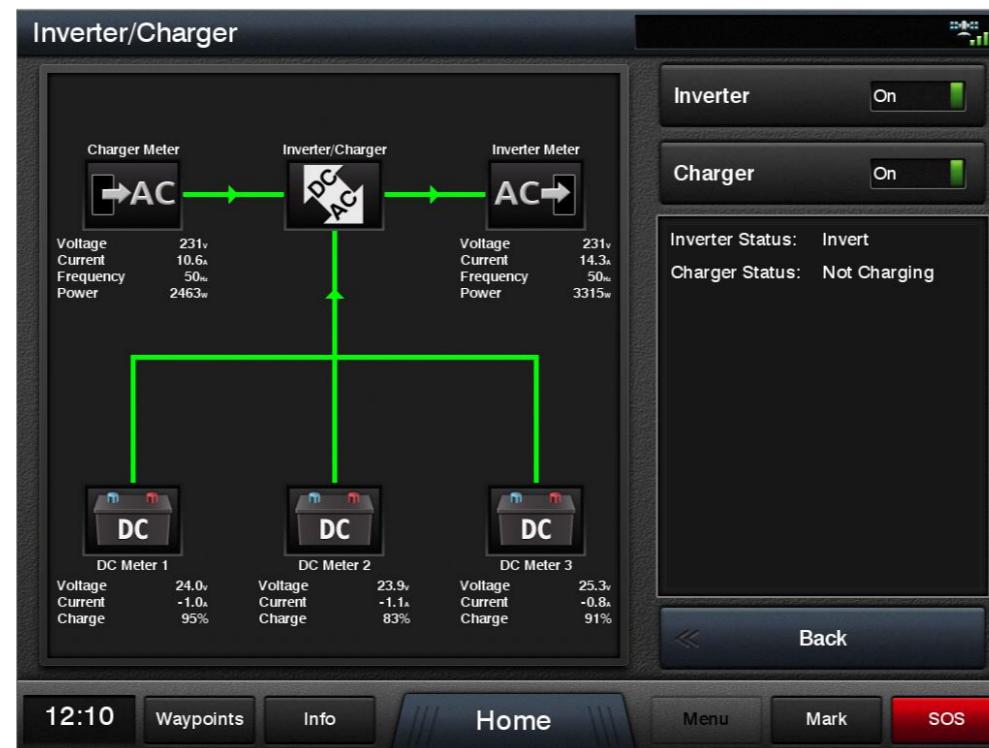
- 1 Reversible output (20A)
- 2x Additional 20A Outputs
- All outputs dimming (PWM 100Hz).
- Timers built in
- Manual Override
- Programmable software fuses
- Parallel channels if required
- Great for Linear Actuator I.E Hatch Lift, TV Lift



# Mastervolt Bridge Interface

MBI

- 16 Control points between Masterbus and CZone
- 16 Monitoring points between Masterbus and CZone
- Allows alarms from Mastervolt items
- Full control and Monitoring of your Mastervolt power electronics



# Contact 6

## C6

- Entry level digital switching module for Marine and RV applications
- Stand alone or networked with other CZone products
- Compatible with CZone integrated Multi Function Displays (MFD's)
- Six independent relay channels with positive and negative switching
- Uses proven CZone technology



# Contact 6 Plus

## C6P

- 6x outputs (15A) (Total 100 Amps)
- All outputs dimming (PWM 100Hz).
- Timers built in
- Manual Override
- Parallel channels if required
- No negative switching
- No Current Sensing, No Electronic Fusing



# Control 1

C1

- Four High current outputs (25A) have Reverse current sensing and alarms; I.E Ideal for Bilge Pump inputs with Low level float
- **No Dimming capability first 4 channels.**
- 12 Low current outputs (10A) dimming (PWM 100Hz). **(Total 150 Amps)**
- Can monitor voltage from main terminal or using Analogue inputs.
- 4-20mA Sender Capability
- Timers built in
- **No Current Sensing, No electronic fusing, No DSB**



# Control 1

C1

## Current Sensing

For circuits with Control 1 or any output **without** current sensing, the Amps values are replaced with ON or OFF next to each circuit on the CZone 'Control' page (Note: all circuits on Favorites pages visually the same as Amps not shown).

Current Sensing

CONTROL			
Anchor Light		OFF	ALL
Bilge Pump Aft		0.3 A	IN OPERATION
Bilge Pump Fwd		3.3 A	PUMPS
Cabin Courtesy Lights		5.9 A	LIGHTING
Cabin Lights		OFF	POWER
Cockpit Courtesy Lights		1.3 A	NAVIGATION
Cockpit Light		3.5 A	FANS/VENTILATION
Engine Room Fan		OFF	HOUSE/HABITAT
Galley Lights		OFF	VESSEL MANAGEMENT
Head Light		OFF	

**BILGE PUMP AFT**

ON | OFF

VOLTAGE: 13.77V

CURRENT: 0.3A

ON COUNT: 0

ON TIME: 0

FAULTS: NONE

No Current Sensing

CONTROL			
Anchor Light		OFF	ALL
Bilge Pump Aft		ON	IN OPERATION
Bilge Pump Fwd		ON	PUMPS
Cabin Courtesy Lights		ON	LIGHTING
Cabin Lights		OFF	POWER
Cockpit Courtesy Lights		ON	NAVIGATION
Cockpit Light		ON	FANS/VENTILATION
Engine Room Fan		OFF	HOUSE/HABITAT
Galley Lights		OFF	VESSEL MANAGEMENT
Head Light		OFF	

**BILGE PUMP AFT**

ON | OFF

VOLTAGE: 13.77V

CURRENT: ON

ON COUNT: 0

ON TIME: 0

FAULTS: NONE

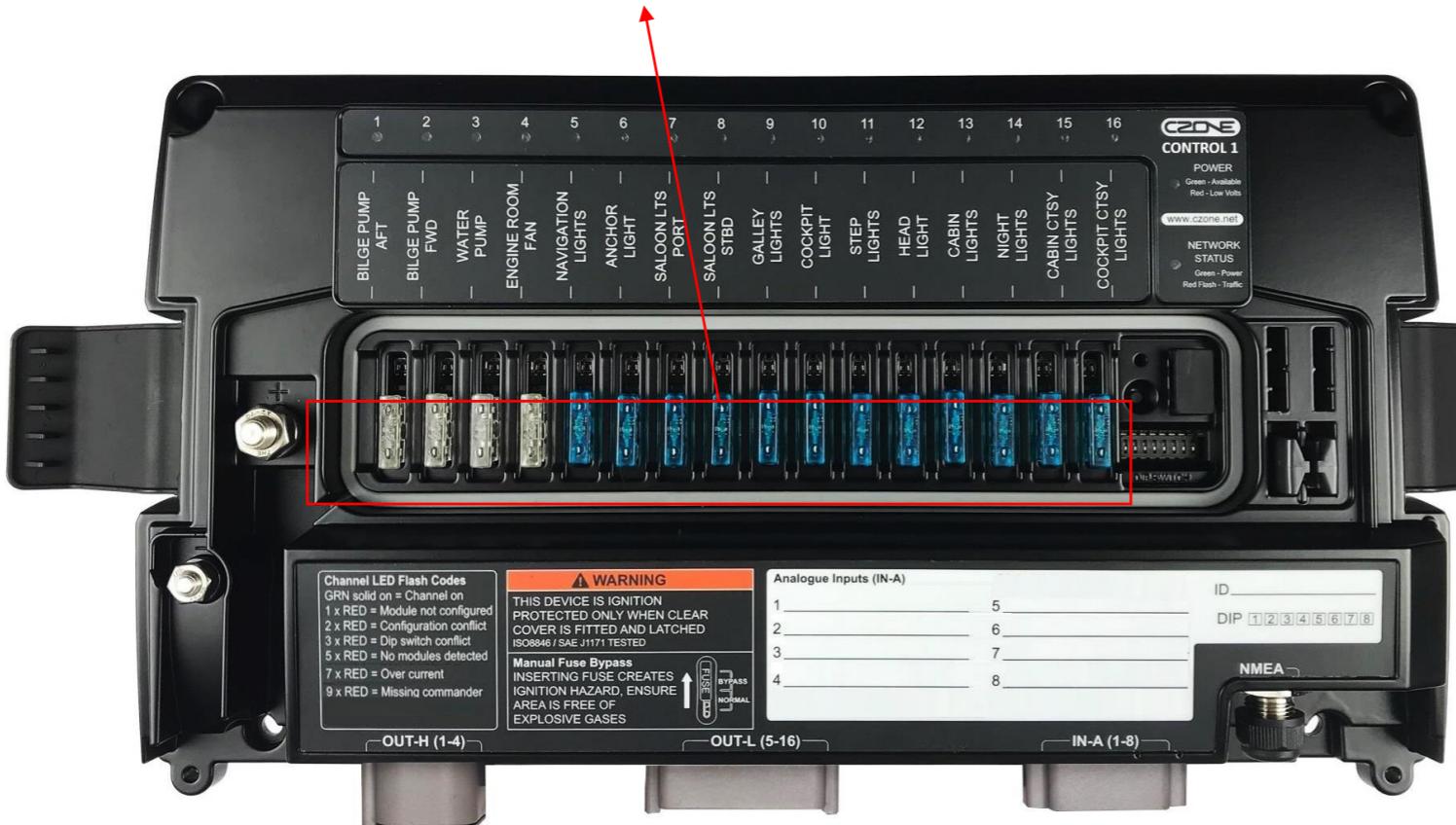
# Control 1

C1

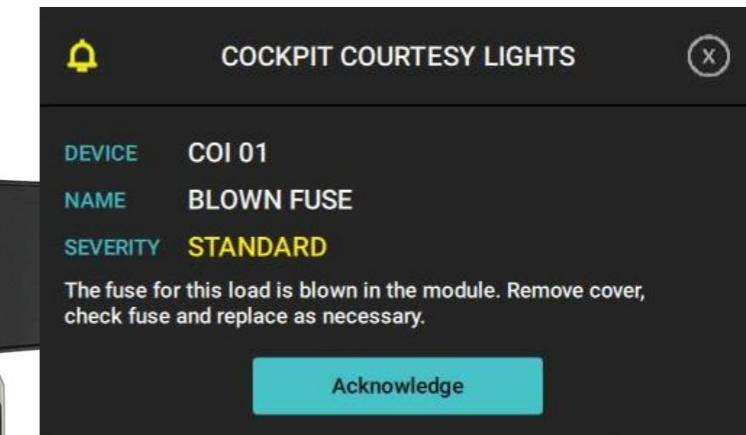
## Software Fusing

No electronic fusing on Control 1 means overcurrent protection is handled by the physical ATC fuse, so each fuse needs to be rated appropriately. If fuse trips an alarm will popup on display, the ATC fuse will then need to be replaced.

**Circuit ATC Fuses**



**Blown Fuse Alarm**



# AC Output Interface

ACOI

- 8 Relays - 50 Amps each
- Pre-wired or as a kit
- Din Rail mounted
- Switches on front of relays must still be accessible
- IP65 Enclosures, customisable
- Pre-wired 110 / 230VAC
- Monitored channels VAC, Power, Current
- Load shedding



# AC Mains Interface

## ACMI

- 6 Monitoring inputs Voltage, Current, Power
- 6 Contactor control inputs
- 12/24VDC Supply to ACMI
- Contactor Over-ride mounted on unit
- IP65 Enclosures
- Software lockouts
- Reverse polarity monitoring
- Priority Level setting
- Gen Auto Start



# AC Mains Interface

## ACMI



# Overview



	Contact 6 Fused	Contact 6 Non Fused	Contact 6 PLUS	Output Interface (OI)	Control 1	Combination Output Interface (COI)
Mechanical Fuse	✓ PTC (auto-rest)		✓ ATC	✓ ATC	✓ ATC	✓ ATC
Tripped Fuse Detection			✓	✓	✓	✓
Circuit Bypass	✓ Electronic	✓ Electronic	✓ Mechanical	✓ Mechanical	✓ Mechanical	✓ Mechanical
Current Sensing				✓		✓
Software Fusing				✓		✓
Dimming (PWM)			✓ All Channels	✓ All Channels	✓ Low Current Outputs	✓ Low Current Outputs
Low Current Outputs	6 x 7.5A	6x 9A			12 x 10A	12 x 10A
High Current Outputs			6 x 15A	6 x 20A	4 x 25A With Bilge Pump Running Detection	4 x 25A With Bilge Pump Running Detection
Negative Output Switching	✓ Per Circuit	✓ Per Circuit				
Reverse Motor Control	✓					
Analogue/Digital Inputs					8 0-1000, 0-32V, 4-20mA, Pos & Neg Switch	8 0-1000, 0-32V, 4-20mA, Pos & Neg Switch
Backlit Digital Switch Inputs						6 Requires DSB Module
Output Voltage	12V	12/24V	12/24V	12/24V	12/24V	12/24V

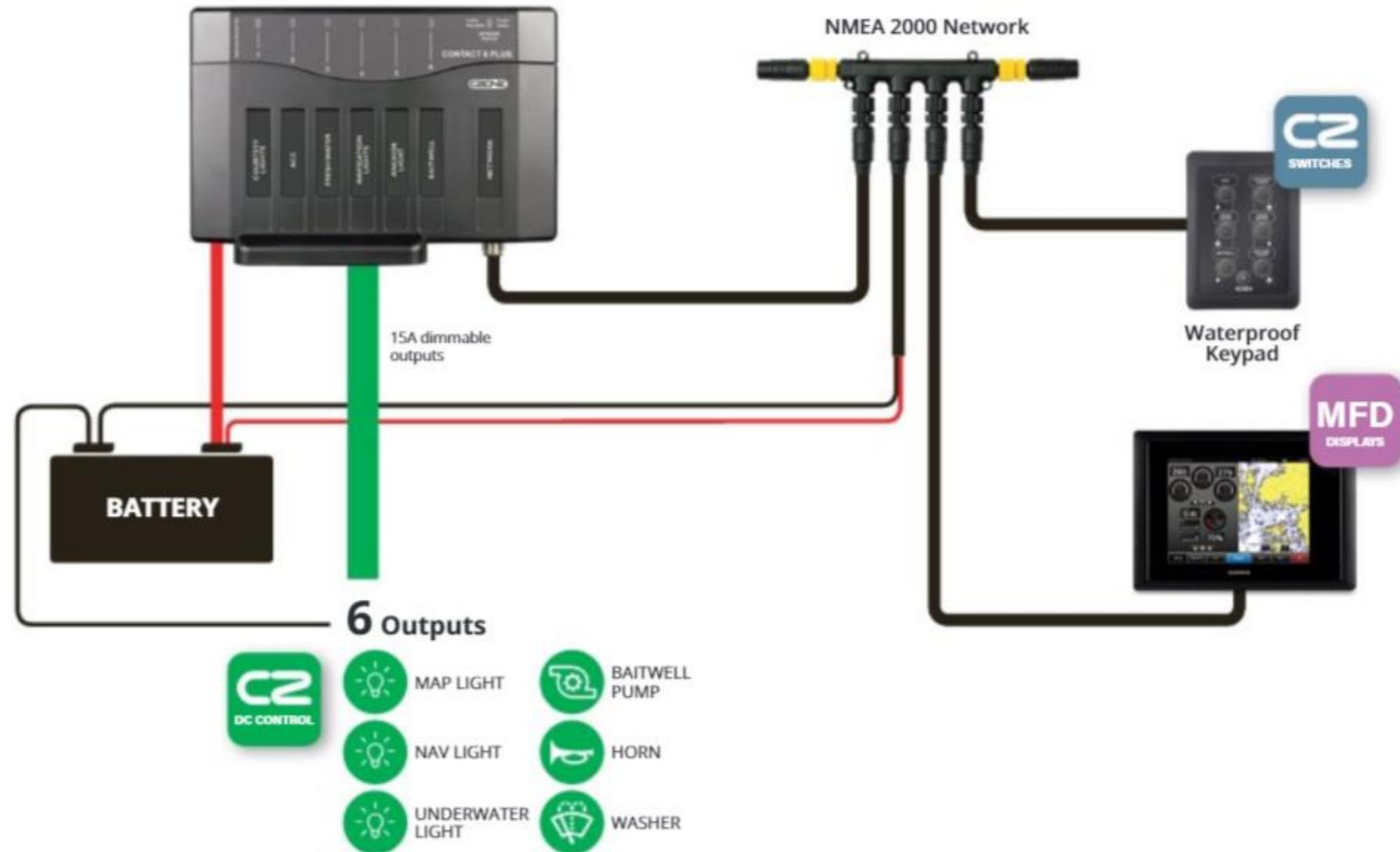


## Example Installations



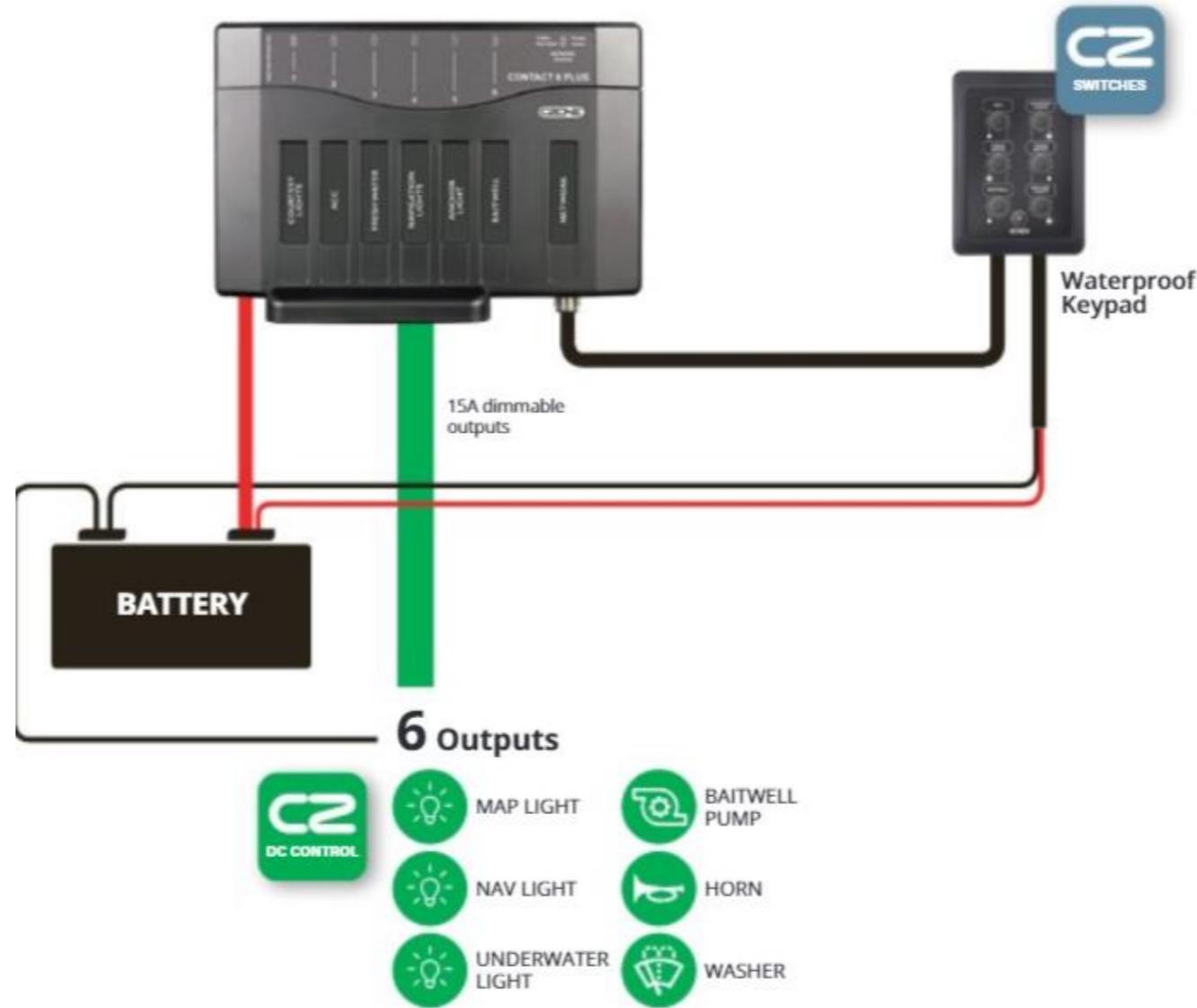
CZONE®

# Contact 6 Plus, Full Network System Example



# Contact 6 Plus, Smart Harness 6 Way

## System Example

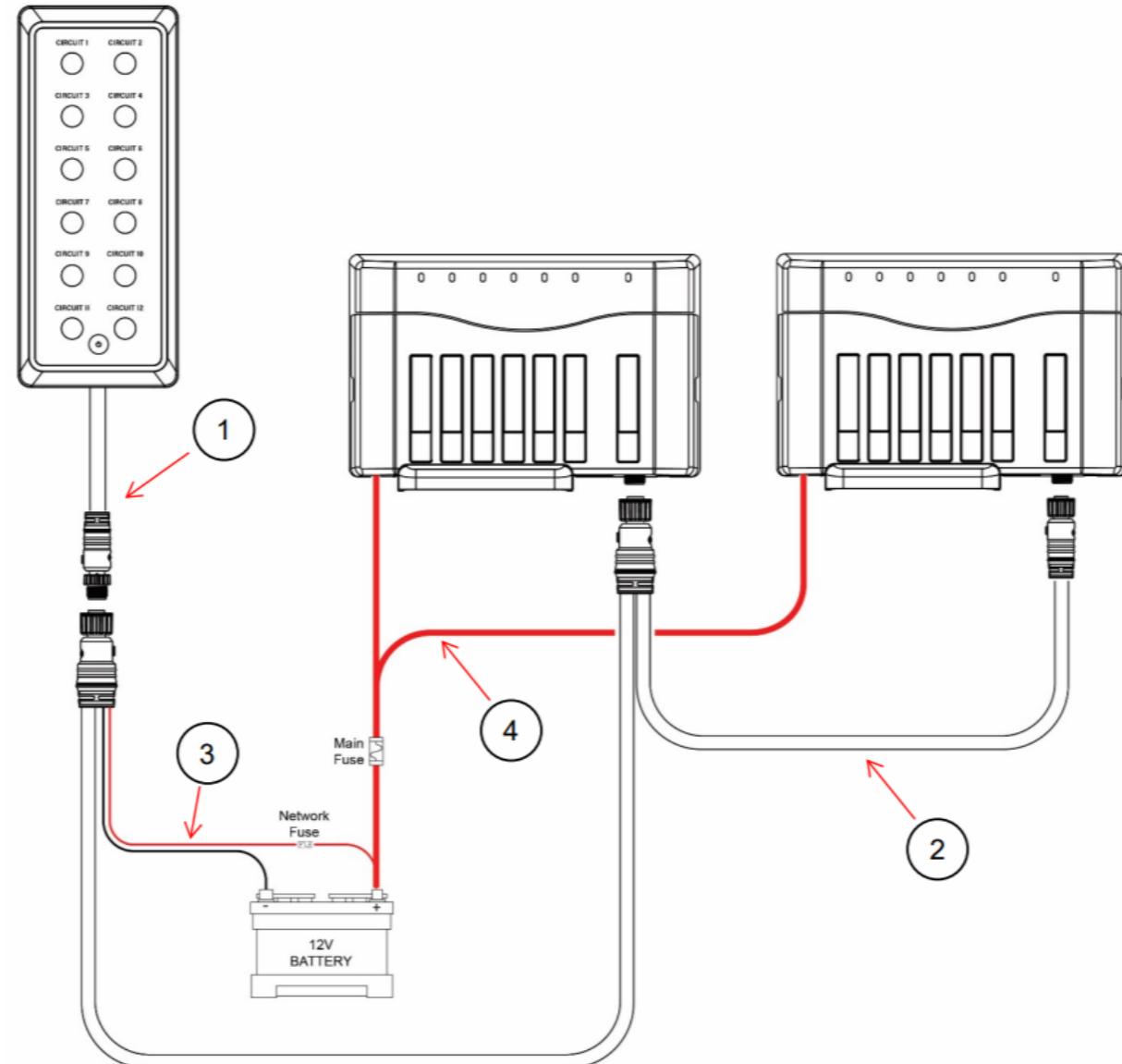


# Contact 6 Plus, Smart Harness 12 Way

## System Example

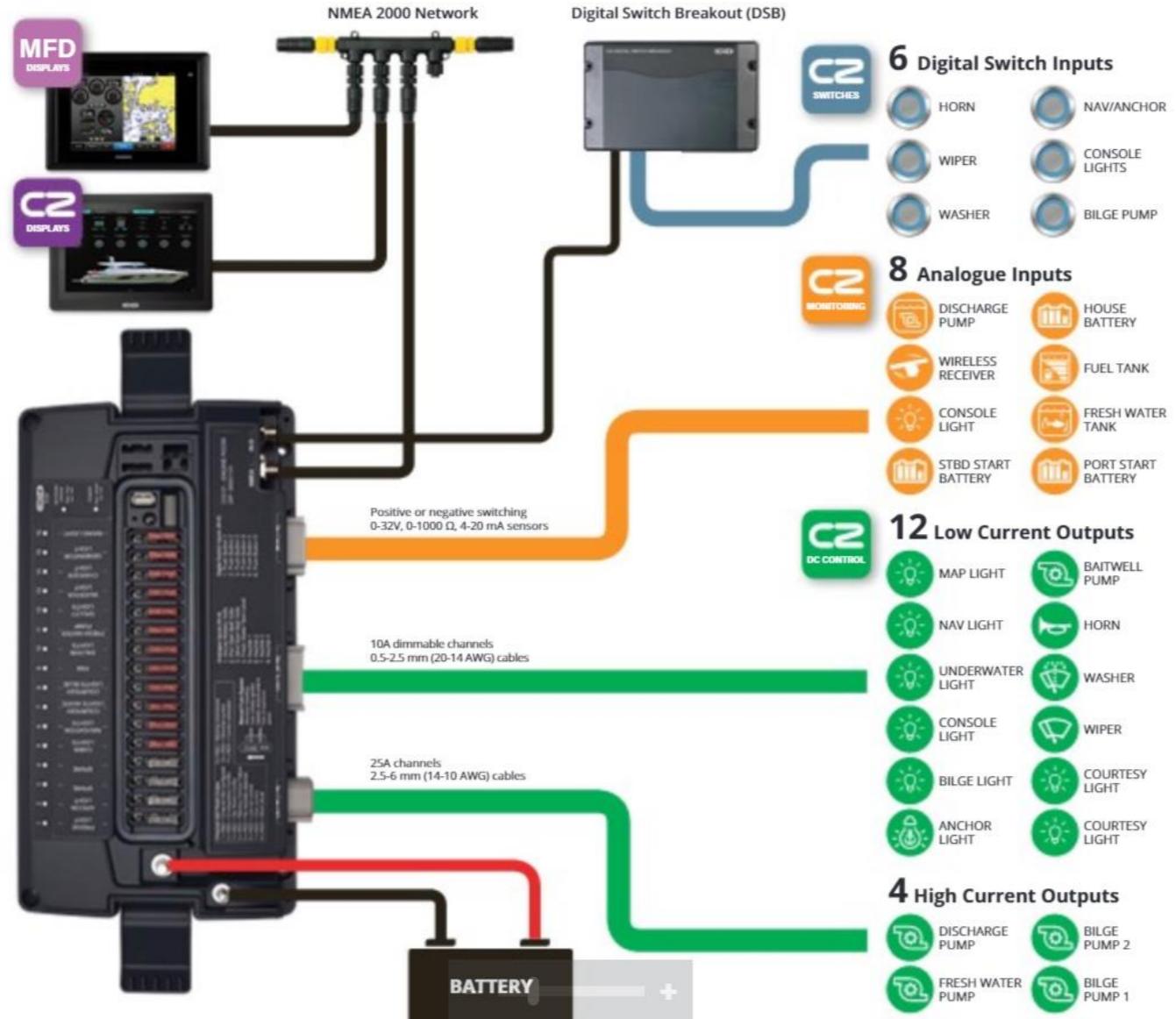
2x Contact 6 Plus w/ 12 Way Keypad

1. Keypad Drop Cable
2. 3 Module Smart Harness
3. Power Supply Modules
4. Power Supply Network



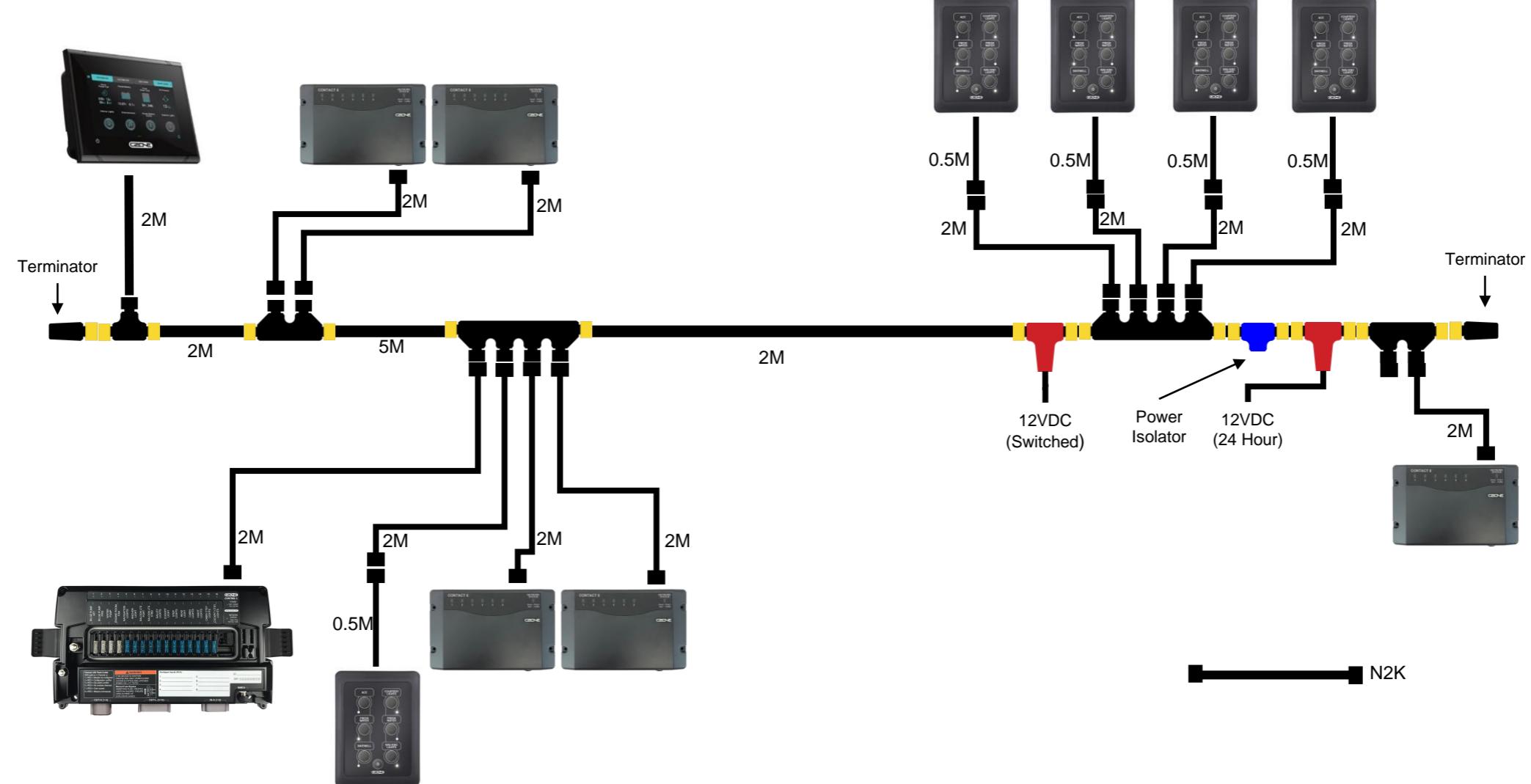
# COI with DSB

## System example



# RV system with full network

## System Example



# Install Examples





## Integration Partners



CZONE®

# Raymarine

## Integration Partners

Lighthouse 3 software for AXIOM, AXIOM Pro & AXIOM XL MFD's



# Raymarine

## Integration Partners

- Create complete custom multi page layouts
- Add boat mimics and status indicators
- Split screen layout support
- Select from library of switches and data cells
- Upload images (i.e., backgrounds, branding logos)
- Text customization - fonts, colors and size options
- Repeat NMEA2000 Data
- Available to Raymarine Partners
- New Auto Populate feature added basic controls



### Garmin Home Screen Customization

- Available now for new GPS Map units
- Put CZone controls and monitoring directly on the home screen
- Place switches for individual circuits or modes anywhere
- Place monitoring for tanks & batteries anywhere
- Customizable by OEM, instructions are available
- Contact Garmin or work with OEM to implement



# Garmin

## Integration Partners

### Garmin Home Screen Customization



- TZ2 Touch series only
- Control pages are able to be edited ‘Drag and Drop’
- Switches show dimming control level
- Monitoring pages are able to be edited
- Drop any control or monitoring item to combo pages
- Slide in Modes

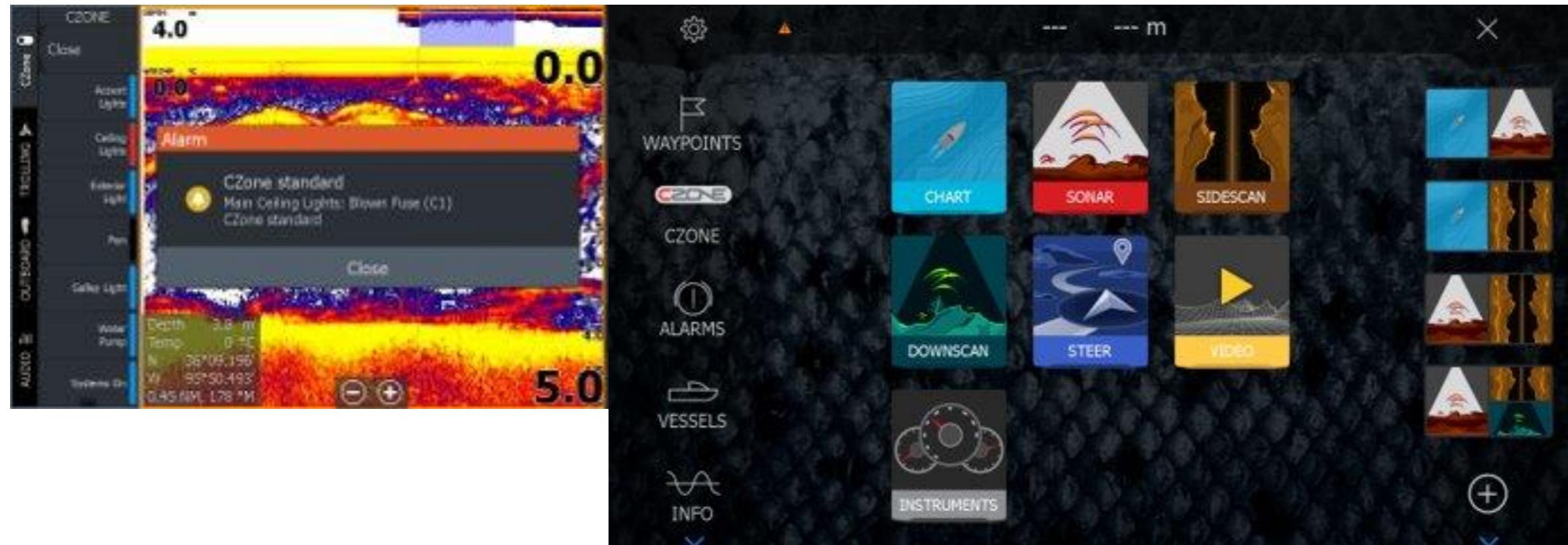


# Simrad, Lowrance, B&G

## Integration Partners

CZone displayed on home page

Side bar NOS 20.1 update



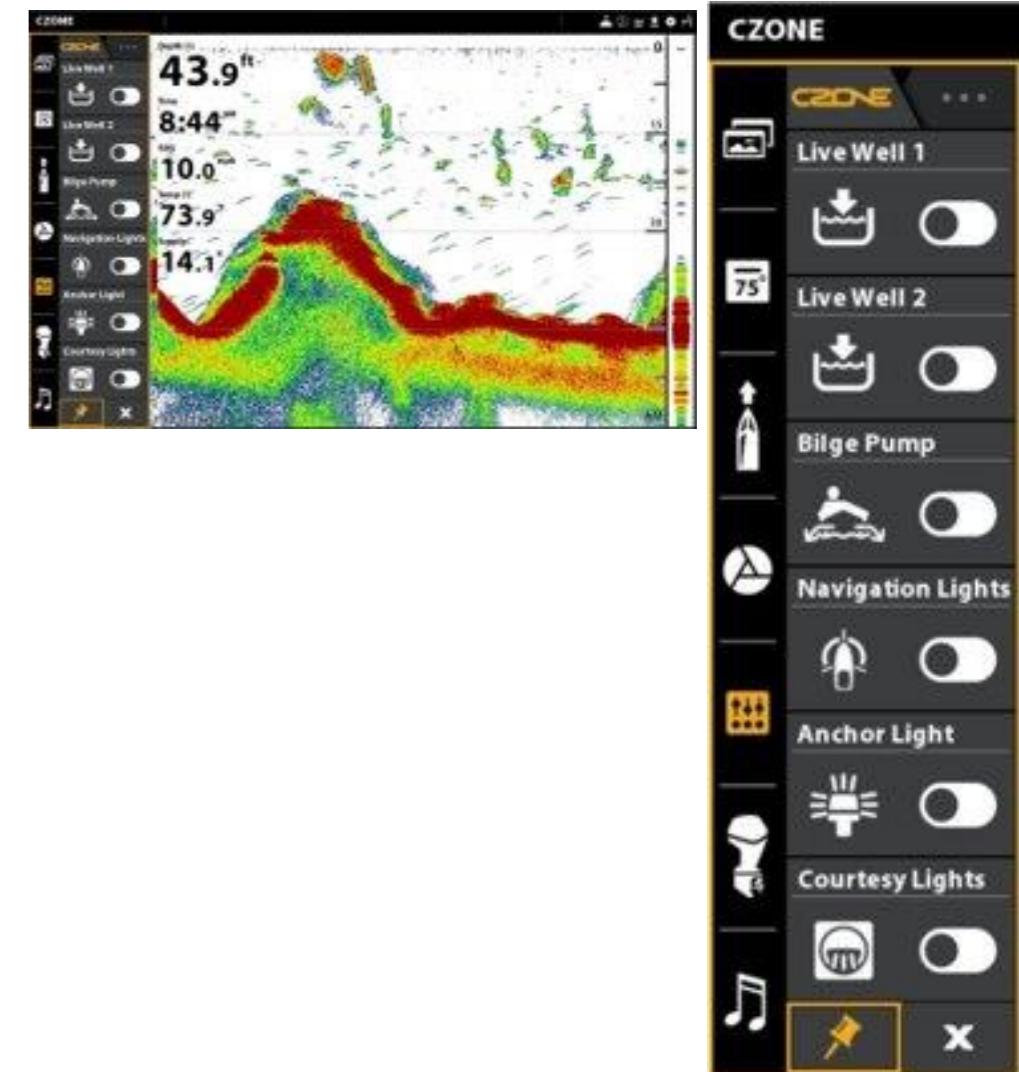
# Humminbird

## Integration Partners

### Humminbird MFD Side Bar (Humminbird Solix model only)

- Humminbird supports one Contact 6 PLUS module and is a plug & play set up once configured in the CZone configuration file
- The Humminbird Solix display supports 6 circuits and 6 modes.
- The order that the circuits appear are determined by the CZone configuration file.
- User selectable Icons with a push & hold of the circuit
- Toggle between switch or modes panel
- Available now with Humminbird Update v.3.500.

An example configuration with Switch Bank PGN control enabled has been uploaded to the CZone portal under ‘Design Tools’



# Integration Partners

---

CZone outputs and can accept standard NMEA PGN's

Check with manufacturer / model if the MFD can accept the PGN number

CZone can use PGN for switching; I.E SOG to turn on a Mode

Check the CZone configuration manual for a list of PGN's

Common misconception is that you need Full control and monitoring for CZone.

- Using a Meter Interface with a MFD that accepts correct PGN you can display Voltage, SOC & Current.
- Using a SI and MI for simple monitoring package brings Tank Levels and Battery levels to MFD



# Mercury

## Integration Partners

### Mercury Display Integration Vessel View VV502 & 702



# Isotta Wheels

## Integration Partners

### ISOTTA WHEELS

- CZone integration now available
  - Control CZone circuits conveniently from the steering wheel
  - Combines well with a glass helm solution for quick access to modes and frequently used switches
- 
- Contact your local ISOTTA rep for ordering information

<http://www.isotta.com>

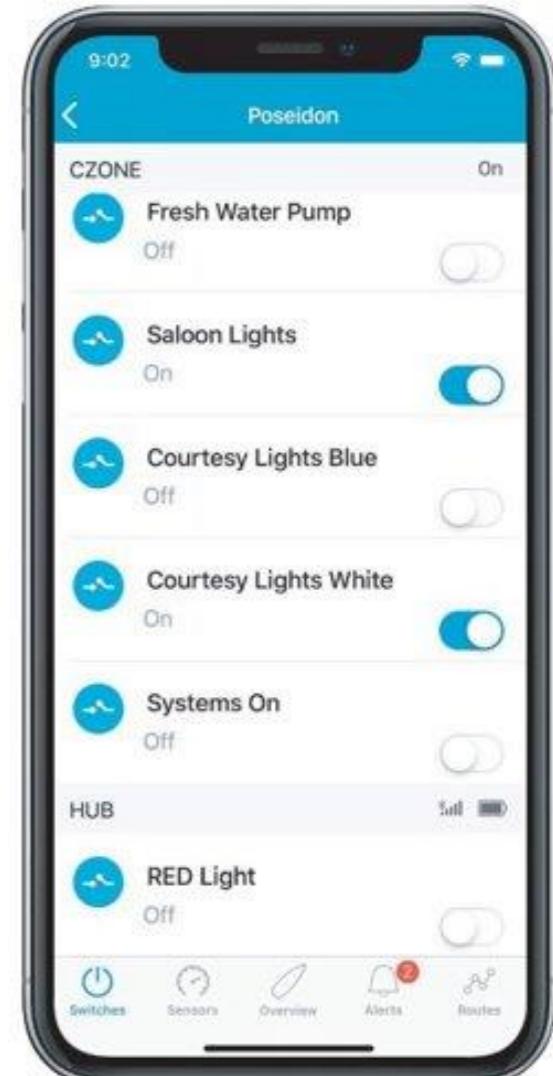


### Alerts plus 10 slots for Switches and Sensors

- With Lite, alerts need to be cleared manually in the Sentinel app in order to receive new alerts from the CZone system (from same source).
- Other pricing plans available for no latency and more circuits

<https://www.sentinelmarine.net/faq/what-is-the-difference-between-czone-lite-and-czone-unlimited>

<https://sentinelmarinesolutions.freshdesk.com/support/solutions/articles/26000038818-czone-integration-licensing>



# Dometic

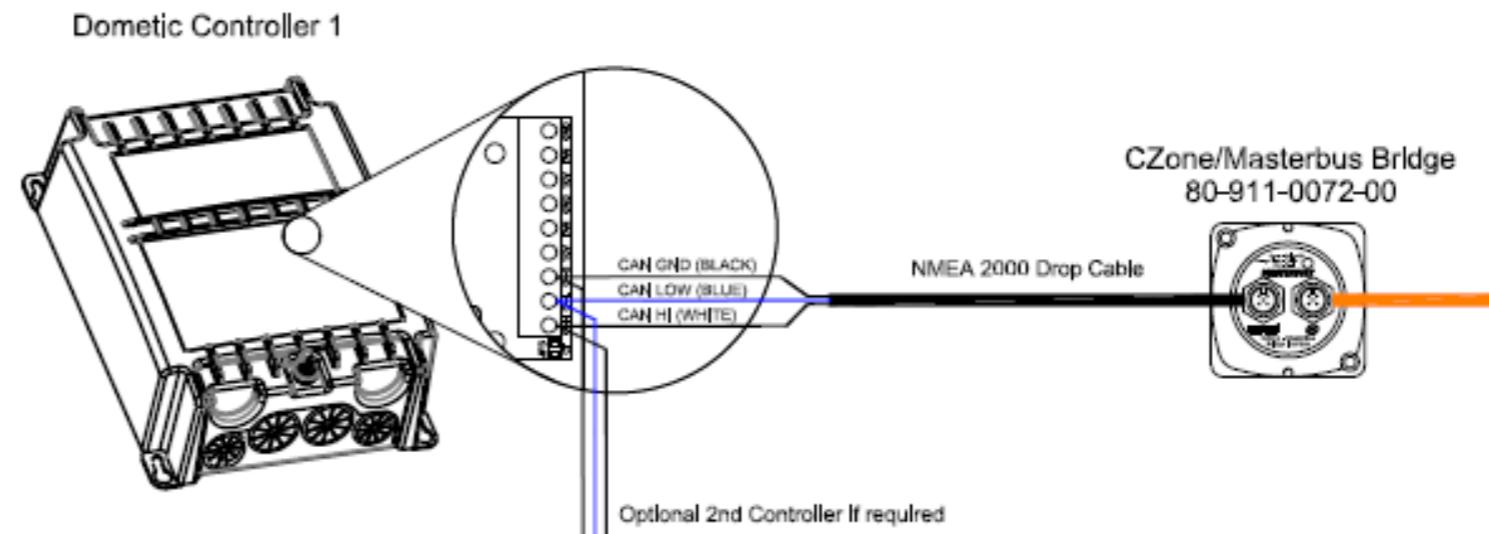
## Integration Partners

### Dometic HVAC Support RV

Control/Monitoring of Dometic HVAC such as:

Temp, Operating Mode, Fan mode/Fan speed.

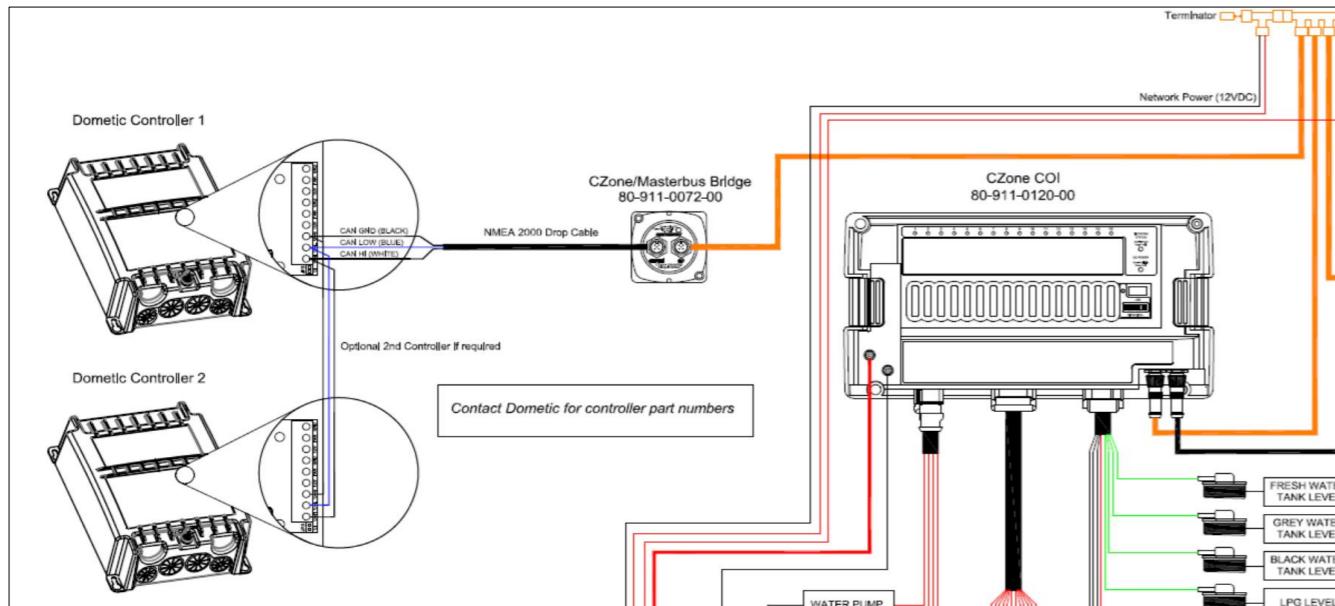
\*Ask local dealer for a list of compatible Dometic units



# Dometic

## Integration Partners

- Climate controls CZone 2.0 Displays/iPad app
- Set operating mode, set point temp and fan speeds with intuitive controls
- Compatible with any networked Dometic HVAC unit that supports Elite, Elite II or Smart Touch controllers.
- Simple configuration – drag and drop configured HVAC's using Favourites Tool



# Sea Recovery

## Integration Partners

- Control of Sea Recovery water makers.
- Display/control: Start Production, Start Flushing, Rinsing, Emergency stop.
- Aqua Matic, Aqua Whisper DX & Aqua Matic XL. Units with direct connection to NMEA.



# Portal

<https://downloads.czone.net>

- Register and Log In.
- Added to mail outs for firmware updates / new features.
- All software and Info packs can be downloaded here.
- Firmware
- Training
- Manuals



## New Products



CZONE®

# Smart Battery Hub

## SBH

The all-in-one battery management system.

Designed to simplify battery management with remotely activated switches, automatic Voltage Sensitive Switching and emergency parallel functionality. Enclosed in a robust easy to install, Ignition Protected IPX7 enclosure.

Monitor and transmit battery voltages and full house battery state of charge over NMEA2000 for integration with multi-function displays.



# Smart Battery Hub

## Features



- All in one battery monitoring and management system in a robust IPX7 Ignition Protected enclosure
- Remotely activated battery switches over NMEA2000 or physically wired switch inputs
- Dual-direction voltage sensitive switching
- Remotely operated emergency parallel switches
- Manual override of all switches for safety and servicing
- Twin or Triple engine configurations
- Remotely operated magnetic latching switches
- Remotely operated emergency parallel switches
- Configurable voltage sensitive switch thresholds
- Start batteries voltage monitoring
- House battery State of Charge monitoring
- 2 x additional sensor inputs
- Safety manual override for all battery switches
- 12 or 24 volt systems

# Smart Battery Hub

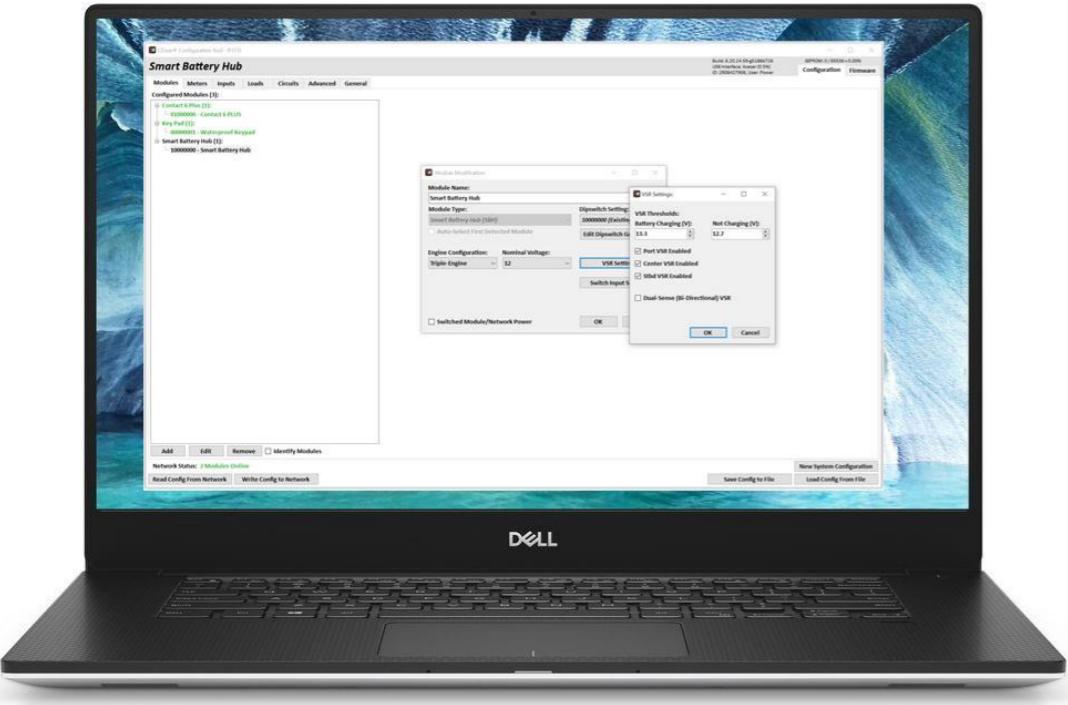
## Features



- Reduced installation complexity designed to minimise battery cable lengths and simplify installations for OEM's
- All cable connections from one side
- Large reduction in installation footprint
- Magnetic latching 300A interrupt switching technology
- Ultra low power consumption with manual and automatic sleep states
- NMEA2000 compatible
- Out of the box plug and play configurations for standalone systems
- Works with CZone®
- 24 hour house output with current and state of charge monitoring

# Smart Battery Hub

## Features

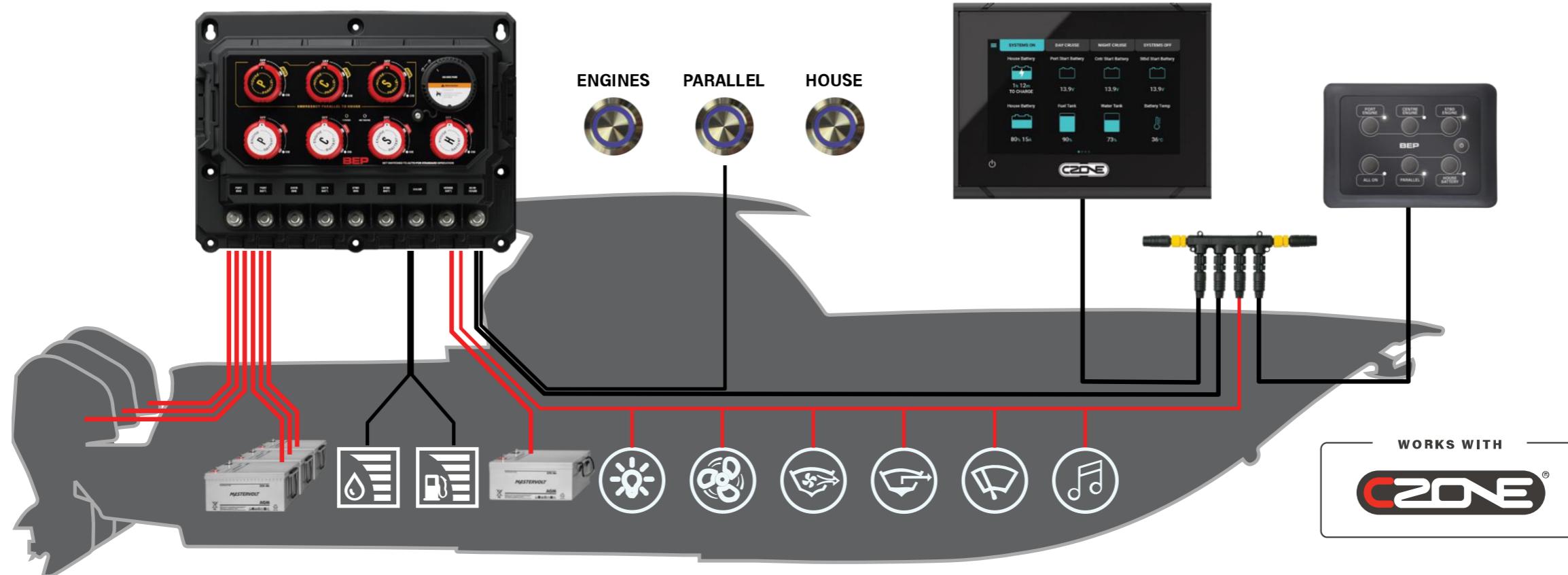


- Configurable settings via the CZone® configuration tool
- Write configurations to system with USB to CAN adapter, or via the Smart Battery Hub's USB port
- Configurable VSS voltage thresholds
- Enable/disable VSS functionality
- Enable/disable remotely operated emergency parallel feature
- Battery chemistry for state of charge calculation
- Circuit lock out and automatic switching based on sensor inputs or CZone® modes of operations
- Assign each switch input to any switch position or function
- Assign sensor inputs for volts, fluid, temp, or repurpose as additional switch inputs
- USB port can also be used to update firmware and CZone® configurations for a complete CZone® network

# Smart Battery Hub

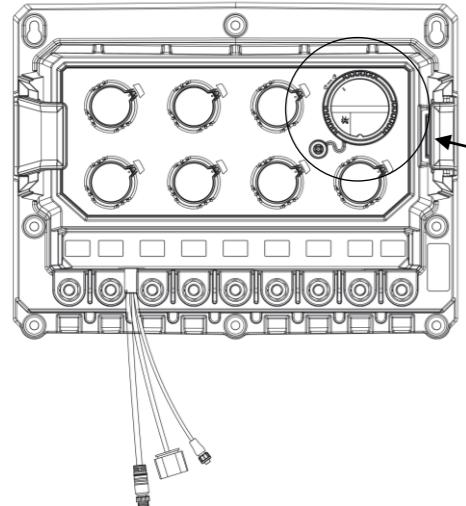
## System Example

Control and monitor over NMEA2000 with CZone® or compatible multi-function displays



# Smart Battery Hub

## SBH

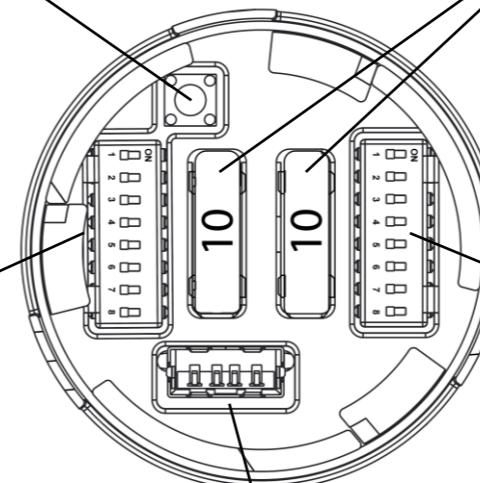


Function button

Dipswitch 1

10A Fuse

Dipswitch 2



USB port

Function button	Initiate firmware update from USB port Initiate configuration read/write from USB port Hardware reset button
10A Fuses	10A fused 24-hour house outputs. Blown fuse detection and state of charge monitoring.
Dipswitch 1	Safety lockouts for VSS and emergency parallel functionality.
Dipswitch 2	CZone® device address. Or, standalone house battery configuration.
USB Port	Firmware update the BMS or any CZone® module on the network. Read/write CZone® configurations.

# Control X

## Features

- IPX7 waterproof enclosure
- Moulded in Deutsch receptacles
- Configurable I/O channels for ultimate flexibility
- Multiplex switch inputs
- Manual override touch panel
- RGBW light controller
- Wiper motor control with synchronisation
- LIN bus communication future proofing



# Control X

## Features

Control X uses the latest smart MOSFET switching technology.

The new MOSFETS include switching, current monitoring and overcurrent protection on single discreet components



### Benefits

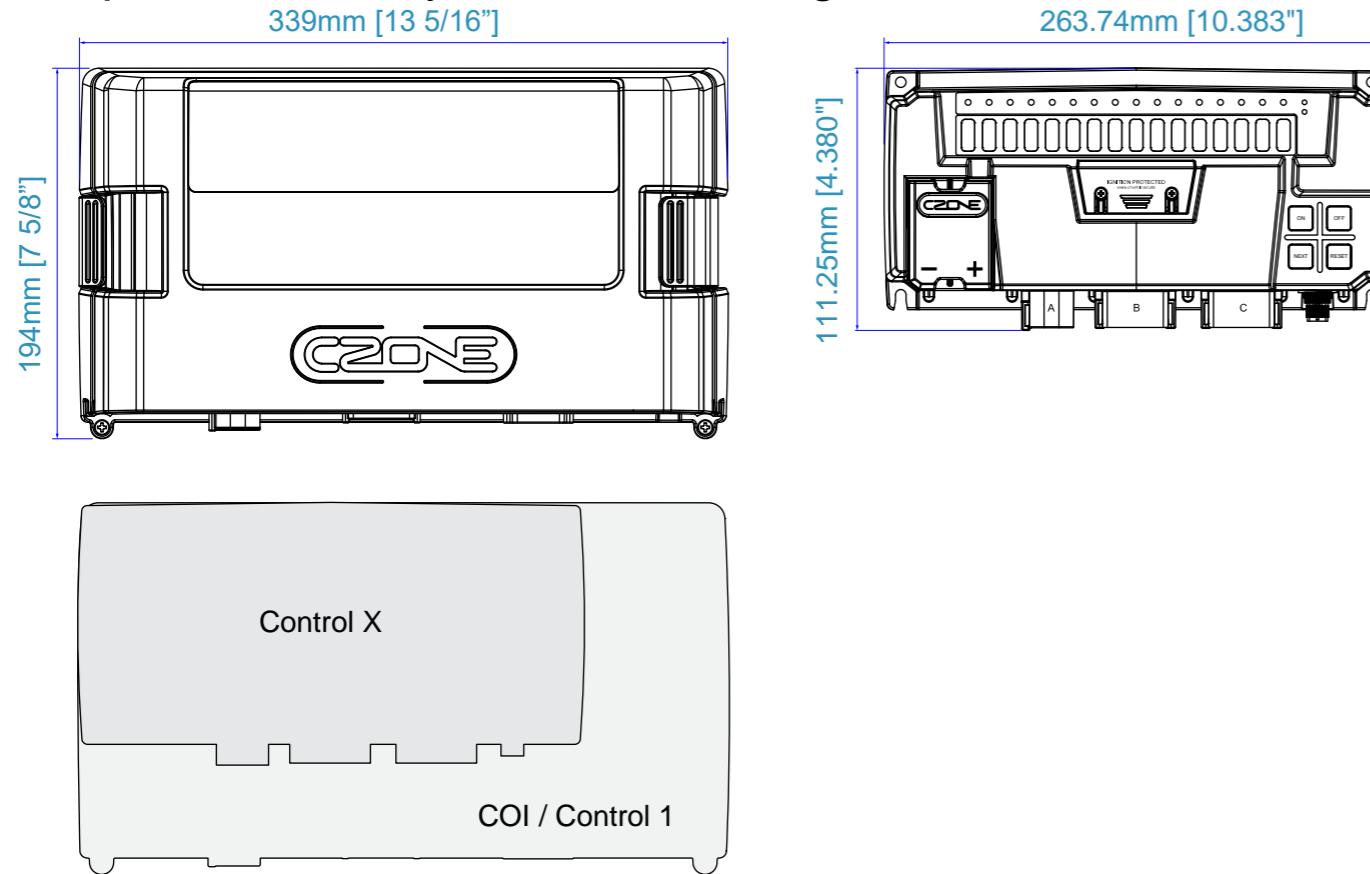
- 100% solid state switching provides improved reliability, silent operation & smaller footprint than traditional relays
- Current is monitored and displayed for each circuit and also provides overcurrent protection and low current/systems on detection
- Software fuse ratings entered in configuration file, no need to purchase and install physical fuses

# Control X

## Features

45% smaller footprint than COI/Control 1 with flexible configuration options.

The small footprint has been achieved with an all-new electrical design and molding the connector receptacles directly into the housing.

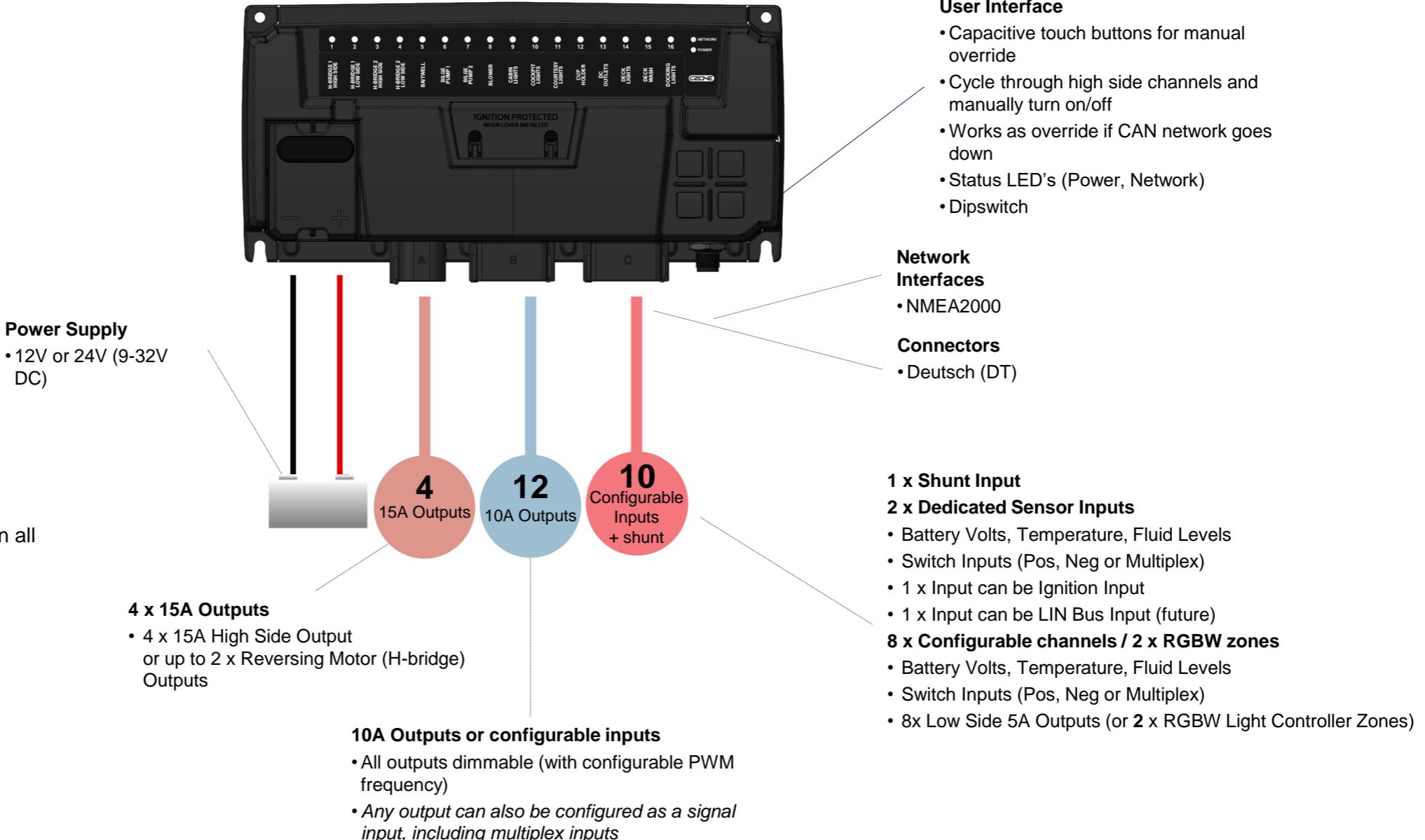


### Benefits

- Compact size ensures ease of installation on wide range of boats and RV's where space is limited
- IPX7 enclosure allows for installation in all environments
- Flexibility allows customers to purchase one SKU for multiple installation options whilst not needing to pay for unused channels

# Control X

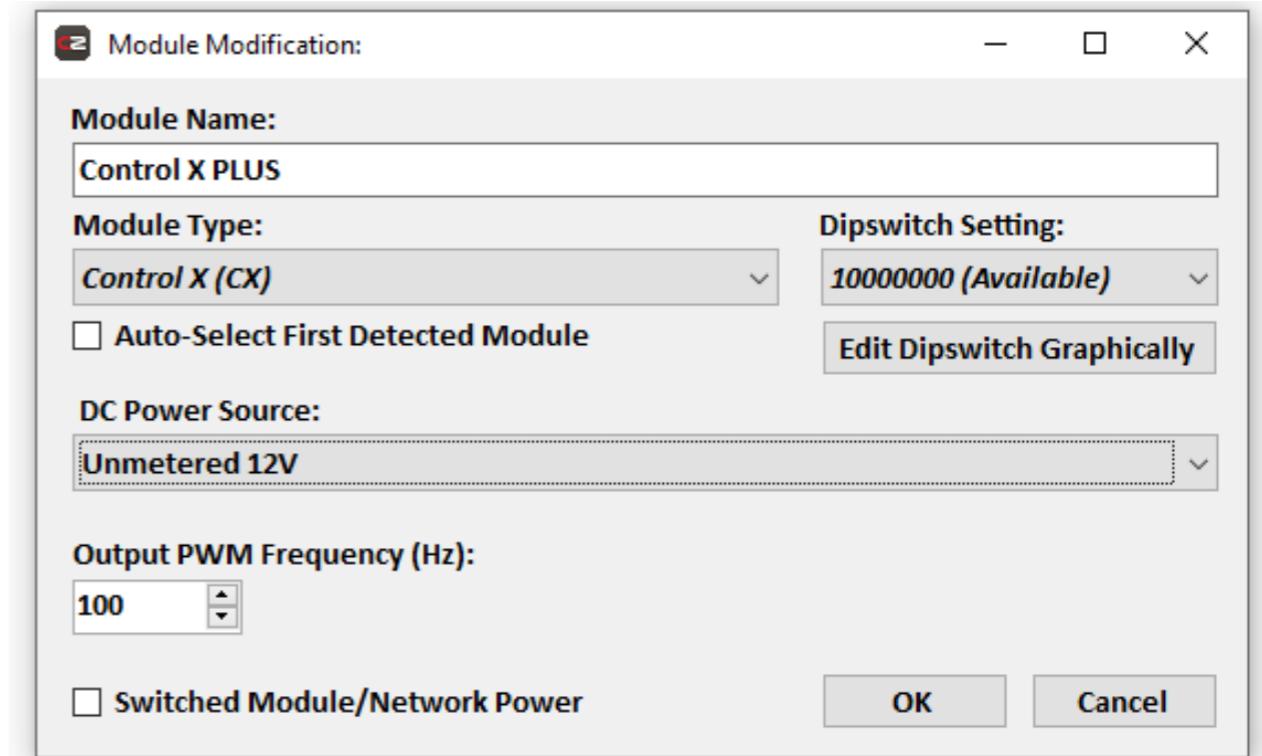
## Overview



# Control X

## PWM

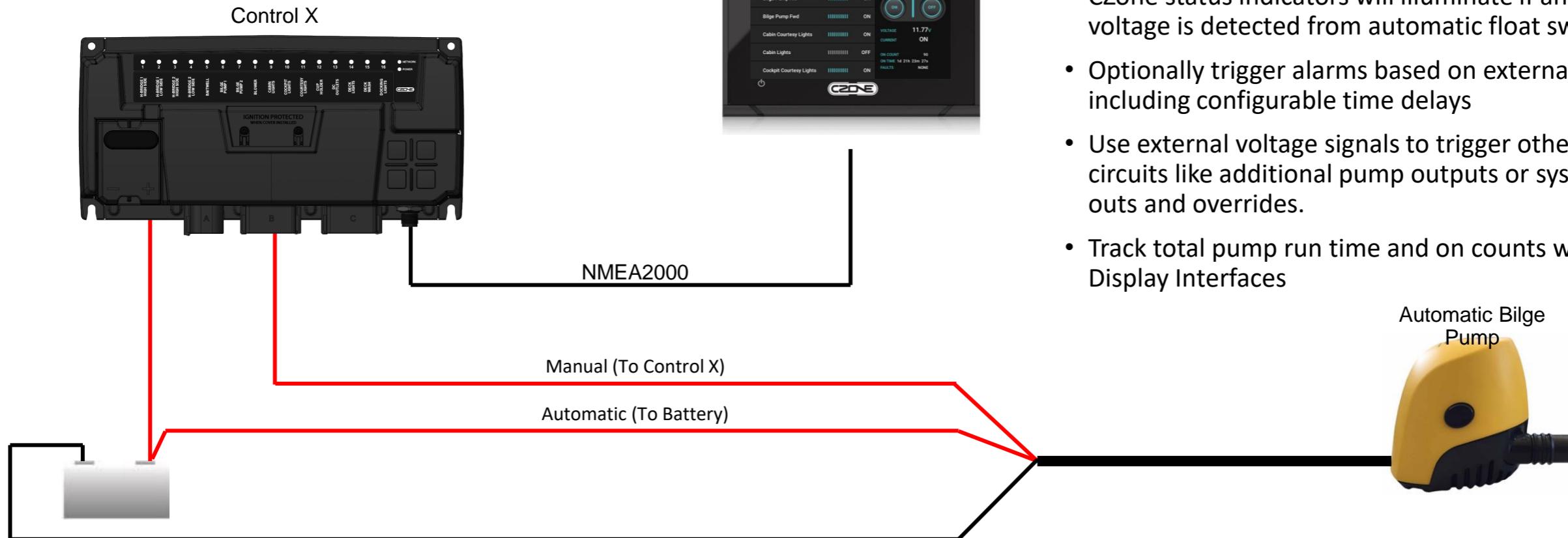
- Configurable PWM frequency
- The Control X allows you to configure the frequency that the outputs can PWM.
- The frequency can be set between 100 and 250Hz.
- PWM frequency is a module specific setting.



# Control X

## Bilge Pump Monitoring

The Control X has advanced bilge pump functionality on all high side output channels. This allows pump control and external (automatic) voltage detection from a single wire.



### End User Functionality

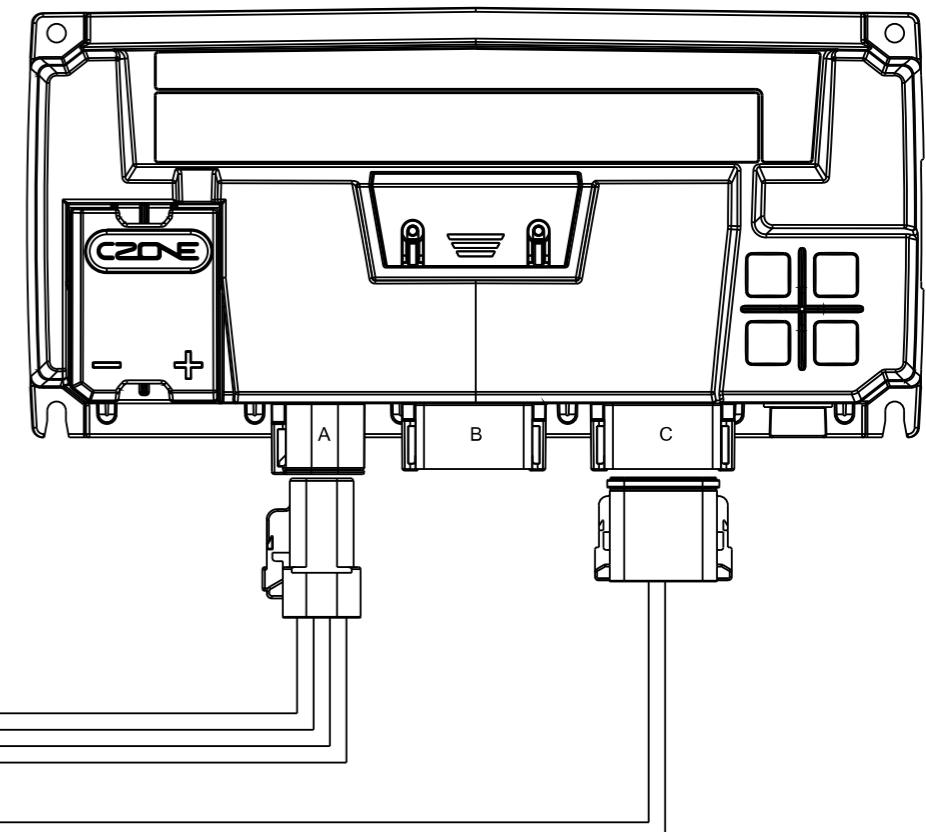
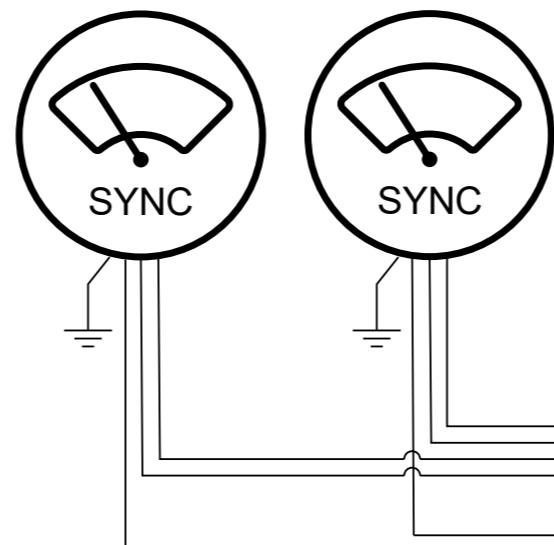
- CZone status indicators will illuminate if an external voltage is detected from automatic float switches
- Optionally trigger alarms based on external volts, including configurable time delays
- Use external voltage signals to trigger other CZone circuits like additional pump outputs or system lock outs and overrides.
- Track total pump run time and on counts with CZone Display Interfaces

# Control X

## Wiper Motor Control

Important: Dual speed wiper motors must be connected to the 15A high output channels for protection against back EMF voltage spikes induced in the unused wiper motor channel while the motor is running.

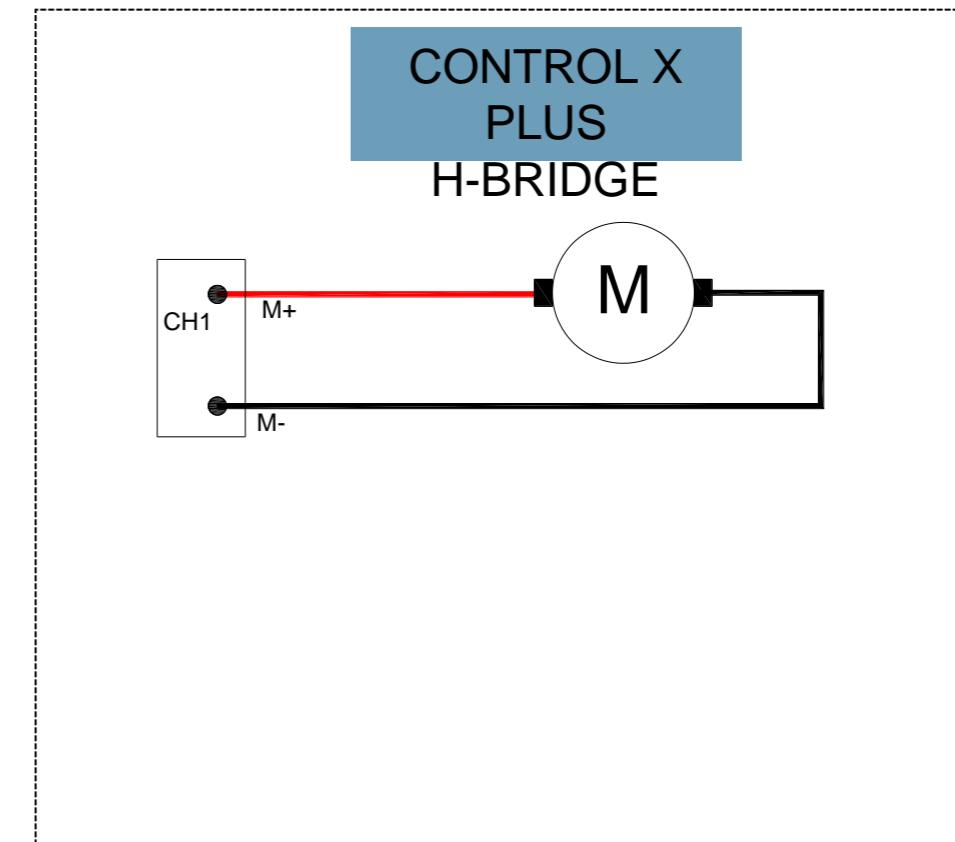
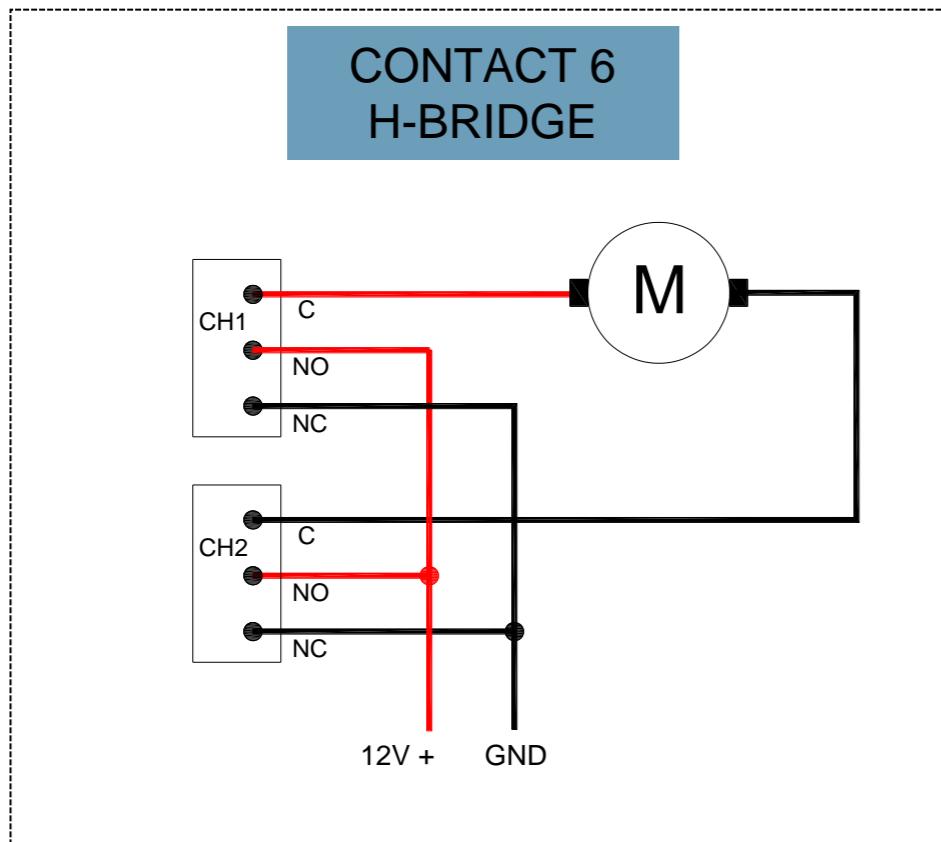
Dual speed wiper motor controller with synchronization for up to 4 motors with configurable 3 intermittent timer settings.



# Control X

## Motor control

2 x 15A H-Bridge channels are included on the Control X PLUS allowing reversing motors to be connected directly to the module. This simplifies installations and reduces the need for external solenoids or relays.



# Control X

## Manual Override Touch Panel

Manually overridden states (ON or OFF) will persist until either manually reset or the Control X has been power cycled.

A Control X with any circuit forced ON via manual override will not be able to be put to sleep until the circuit has been reset. This is designed as a fail safe / get home state incase something on the network is forcing the system to sleep.



The Control X has a capacitive touch panel for manual override of output channels. Manual override will take priority over any commanded circuit state, from CZone or any other device on the NMEA2000 network.

Manual override is available for the 16 output channels and not the 5A low side output channels.

# Control X

## RGBW Control

- The Control X introduces an RGB light controller built into the module for simplified installation and seamless lighting control as part of the CZone system.
- The Control X has single RGBW zone and the Control X PLUS has two independent RGB zones.
- Each zone allows independent color selection, brightness level and lighting effects. Additionally, you can independently dim each light circuit on the same zone allowing complete control of the system.
- Each zone can also be configured as an RGB or RGBW light controller.

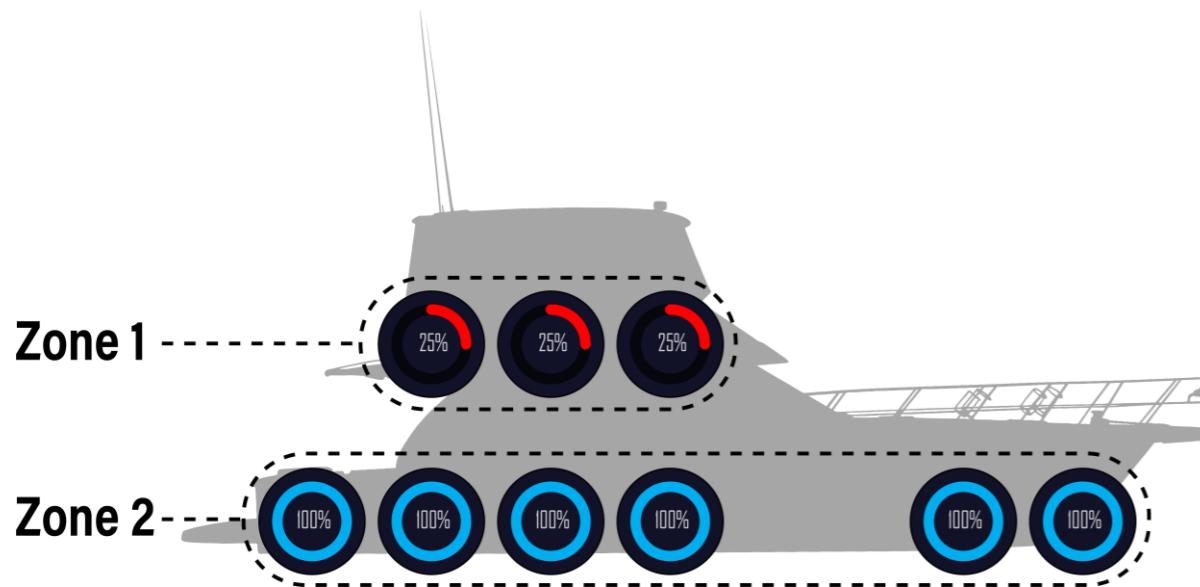


# Control X

## RGBW Control

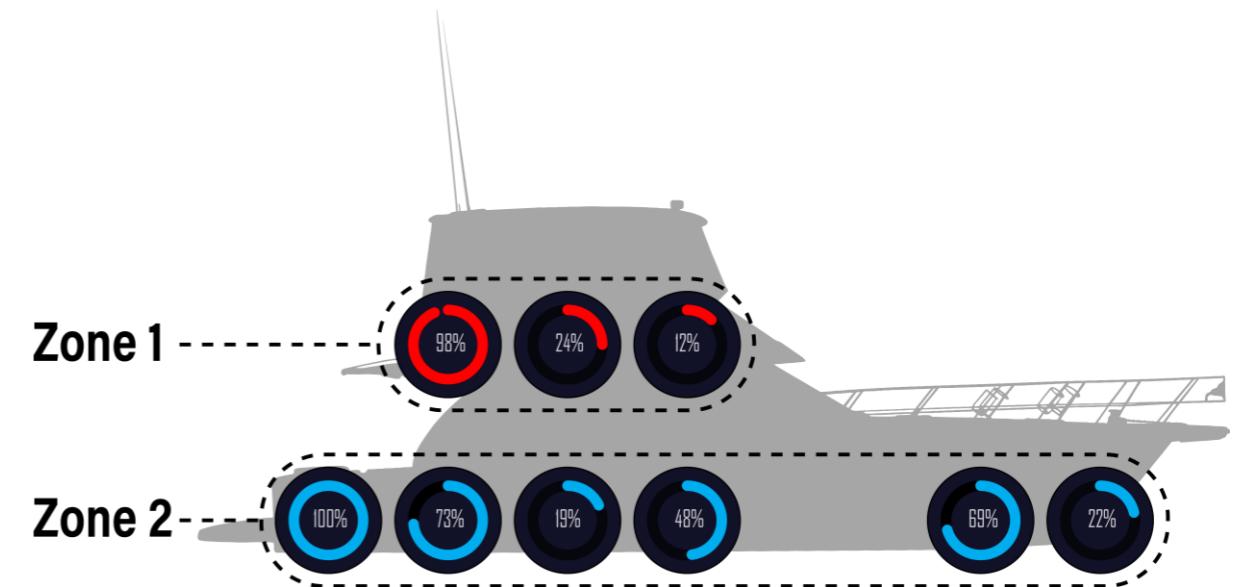
### Competitors

Traditional RGB controllers force all lights connected to the same colour zone to have the same brightness level.



### CZone Independence

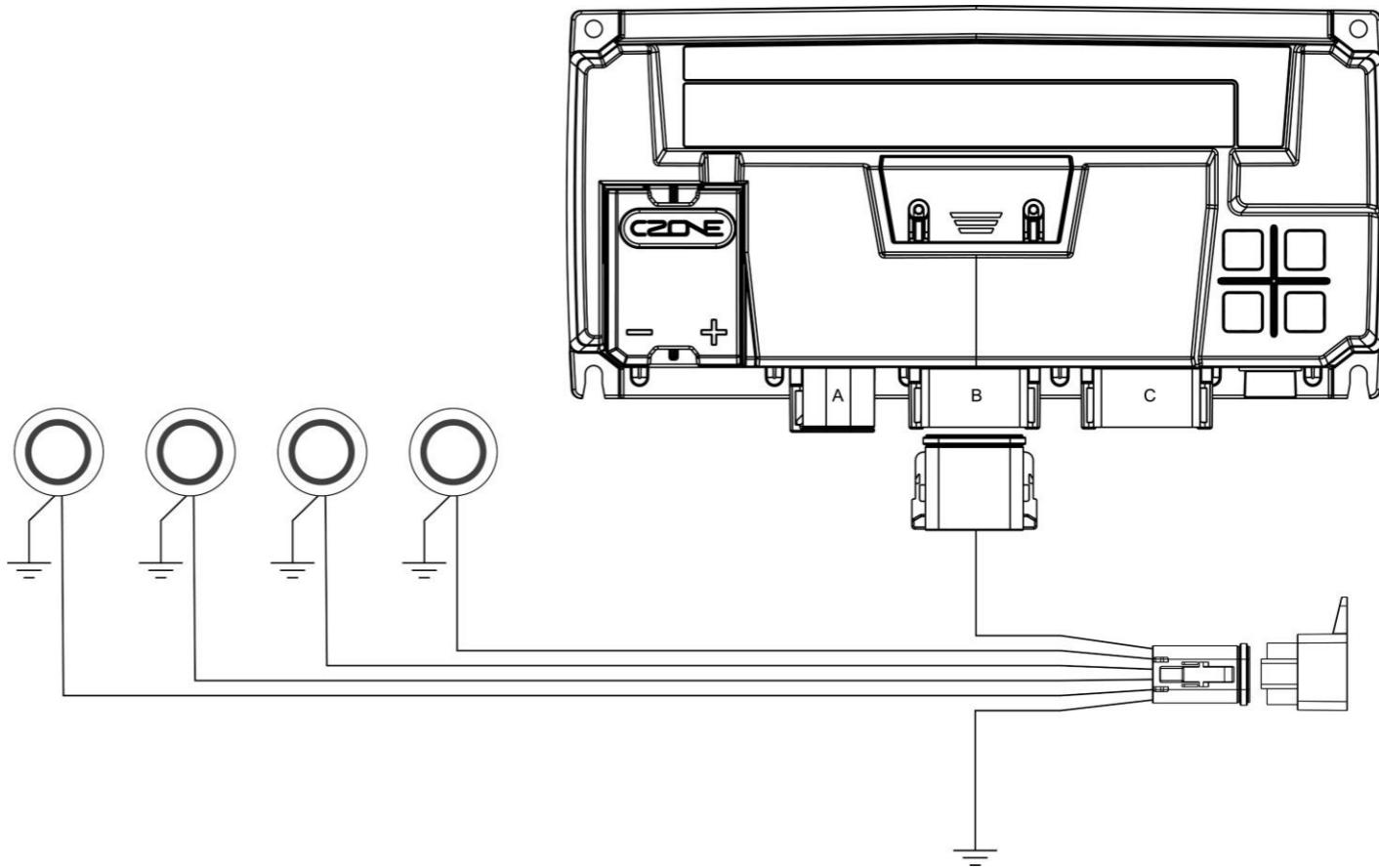
CZone allows independent dimming of all lights on the same colour zone for complete control.



# Control X

## Multiplex Switching

Support for multiplex switch inputs means multiple mechanical switches can be connected to a single input channel. When combined CZONE sequential button types you can achieve ultimate control through minimal inputs.



# Dynamic Digital Switching Module

## DDS Overview

Introducing the CZone DDS module to the CZone produce line. Utilizing the Navico DDS (Dynamic Digital Switching) hardware, converted to run on the CZone operating system.



# Dynamic Digital Switching

## Mixed Technology

The DDS module uses a combination of relay output channels and MOSFET switching technology to achieve a desirable price point.

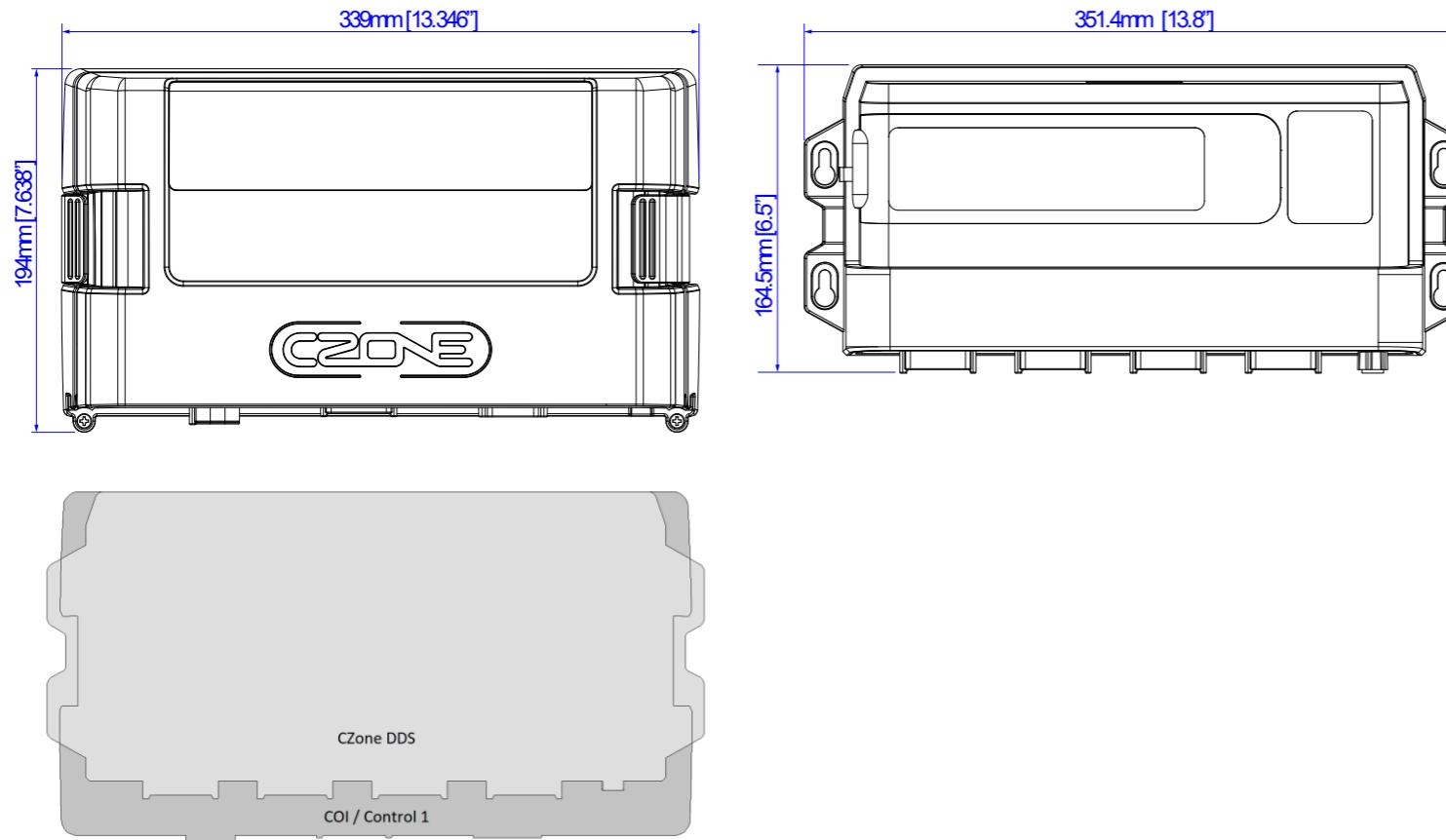


- Compact
- Affordable
- Mechanical Bypass

# Dynamic Digital Switching

## Compact Design

Similar footprint to COI/Control 1 while boasting 40 channels! The small footprint has been achieved with a mixture of relay and MOSFET output channels and the use of mini-automotive fuses.



### Benefits

- Compact size ensures ease of installation on wide range of boats and RV's where space is limited
- IP65 Ignition Protected enclosure

# Digital Dynamic Switching

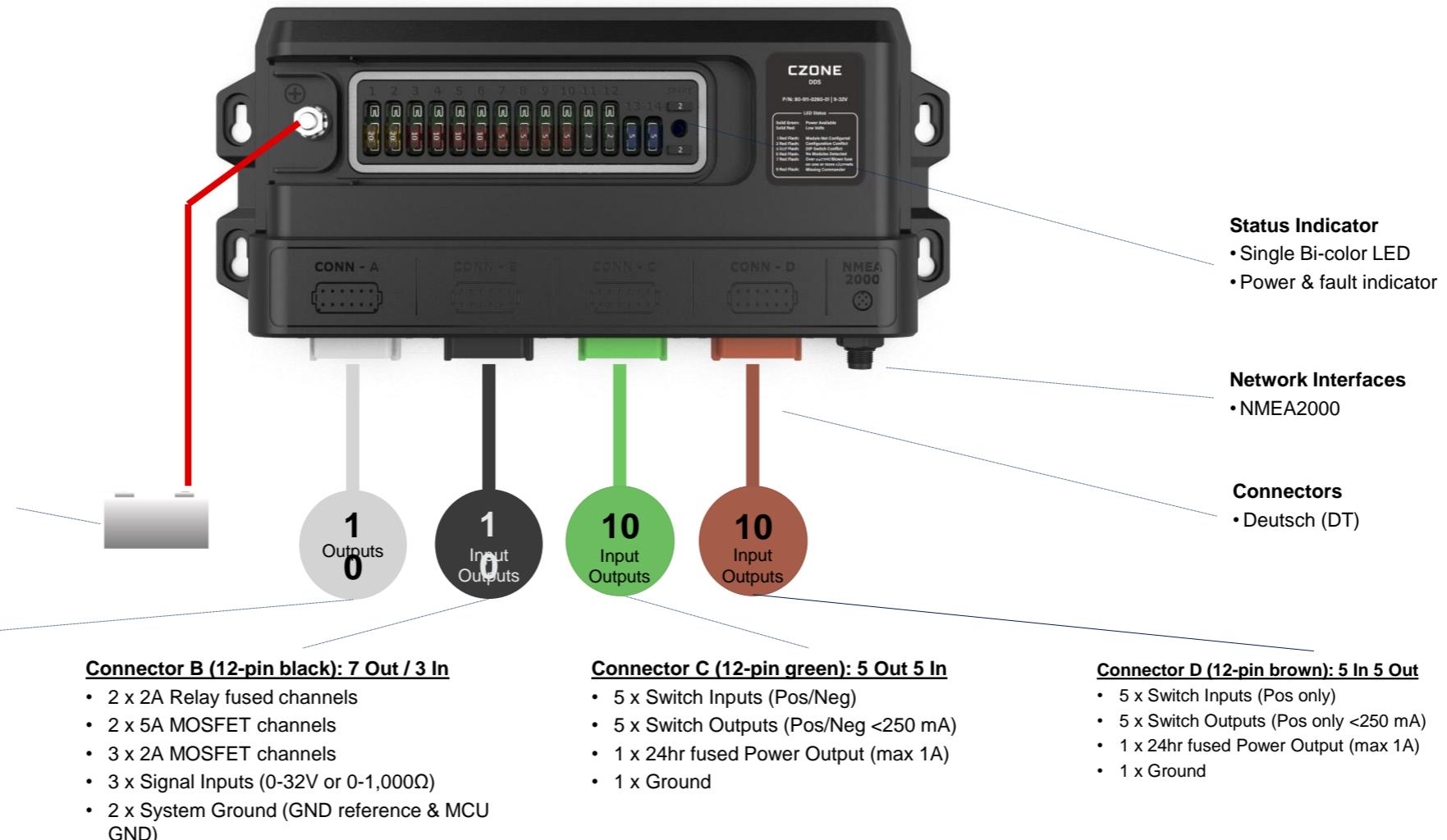
## Overview

### Features

- High density 40 channel module
- 12 or 24V system voltage (60A max)
- NMEA2000 interface
- 12 Relay channels
- 5 MOSFET channels with Over-Current Protection
- 3 Analog Inputs (Voltage or Resistance)
- 10 Digital Outputs/Inputs (5 high/low)
- Automotive mini fuses
- 12 True bypass fuse position for relays
- Compliance – CE, RCM, FCC, UK-CA

### Power Supply

- 12V or 24V (9-32V DC)
- Input stud power meter



### Connector A (12-pin gray): 10 Out

- 2 x 20A Relay channels\* (uses 2-pins each)
- 4 x 10A Relay channels\*
- 4 x 5A Relay channels

\*24V systems max channel current is 5A

### Connector B (12-pin black): 7 Out / 3 In

- 2 x 2A Relay fused channels
- 2 x 5A MOSFET channels
- 3 x 2A MOSFET channels
- 3 x Signal Inputs (0-32V or 0-1,000Ω)
- 2 x System Ground (GND reference & MCU GND)

### Connector C (12-pin green): 5 Out 5 In

- 5 x Switch Inputs (Pos/Neg)
- 5 x Switch Outputs (Pos/Neg <250 mA)
- 1 x 24hr fused Power Output (max 1A)
- 1 x Ground

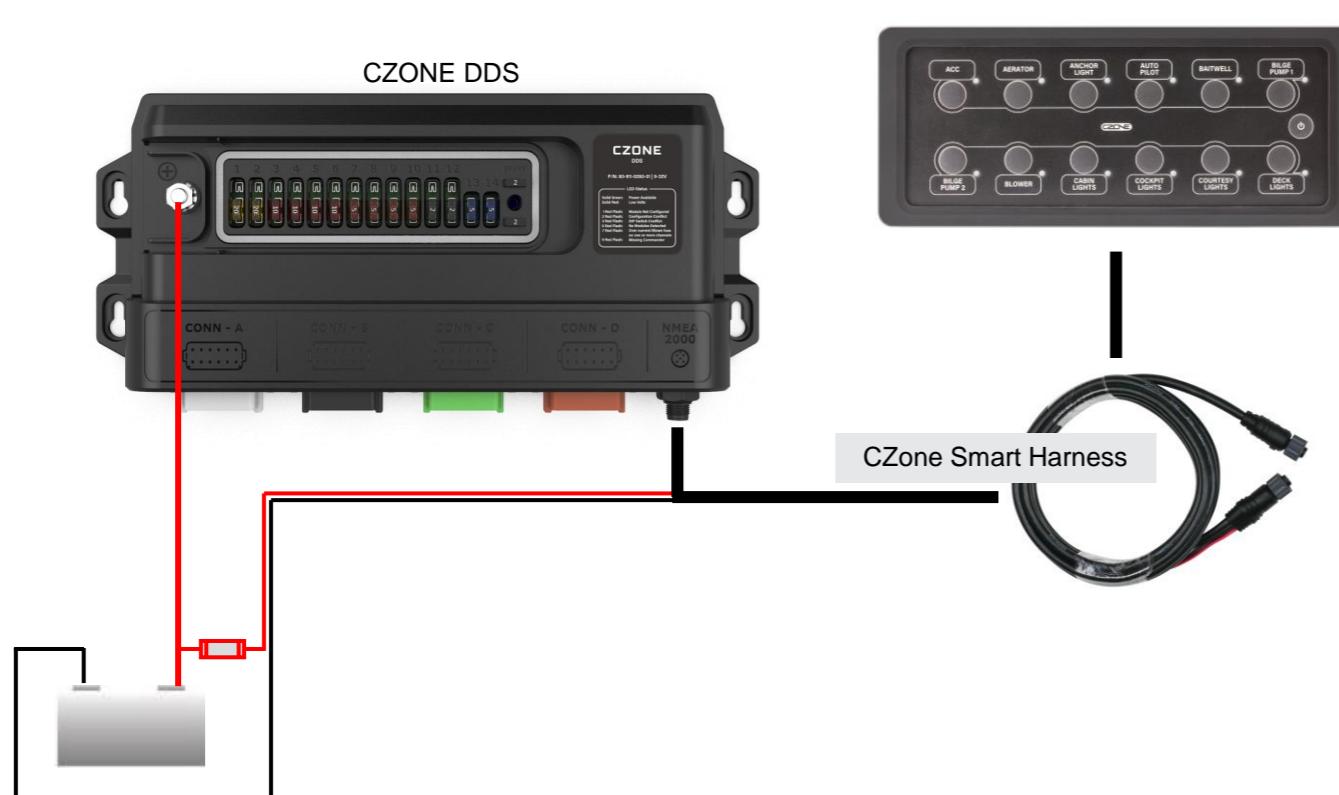
### Connector D (12-pin brown): 5 In 5 Out

- 5 x Switch Inputs (Pos only)
- 5 x Switch Outputs (Pos only <250 mA)
- 1 x 24hr fused Power Output (max 1A)
- 1 x Ground

# Dynamic Digital Switching

## Basic Installation - Standalone

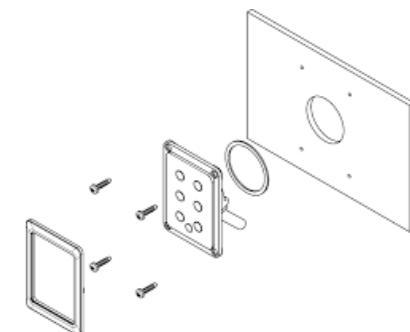
The CZone DDS can be installed as a standalone module with a single Keypad or Display Interface.



The CZone waterproof keypad has been designed for simple space saving installations via a single 52mm hole saw while the CZone Smart Harness replaces the entire NMEA2000 network with an affordable space saving system.

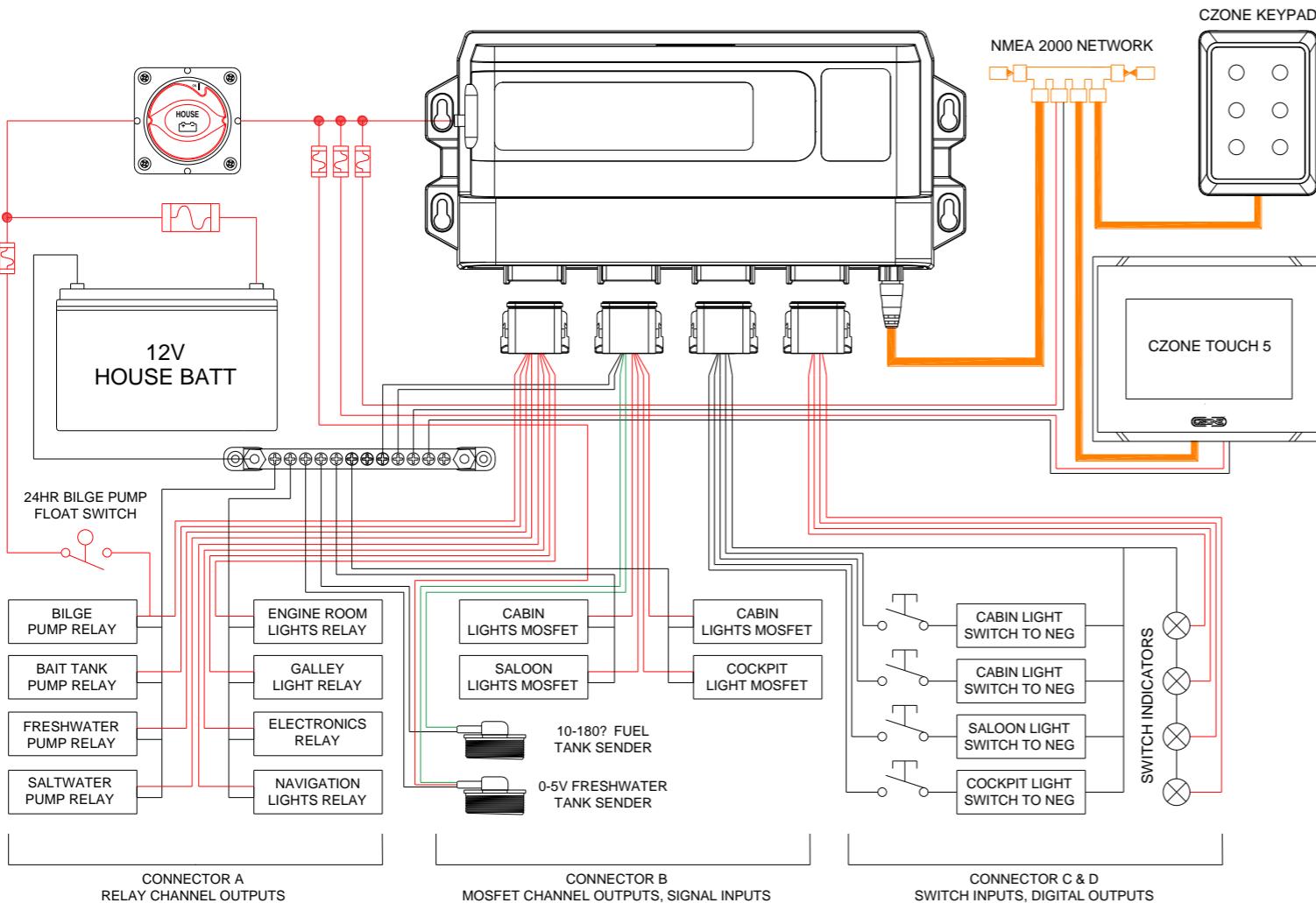
### End User Functionality

- Via the use of Modes and grouping circuits together, many circuits can be controlled via a small number of buttons or switch inputs.
- Clean and tidy dashboards and interfacing points reduces the amount of confusion when controlling systems.
- Sequential button presses intuitively allows control of similar loads on the vessel while keeping dash clutter to a minimum. For example; Navigation and Anchor lights or Wiper motor controls; Int -> Slow -> Fast -> Off, (long press for Washer).



# Dynamic Digital Switching

## Advance System Example



- The CZone DDS is like any other CZone module, meaning it supports all advanced CZone features. For example, load shedding, logic blocks, data switching, custom PGN support, NMEA2000 audio control.
- Any switch inputs into the DDS can control any CZone circuit on the network.
- Switch inputs support multiple types of switches; Latching switches, momentary switches, sequential button presses, single button dimming.

# Dynamic Digital Switching

## Specifications

Specifications	
Main Supply Voltage	12V/24V DC (9V-32V min/max)
Circuit protection	MINI Blade Fuse, Max Interrupting Capacity 1000A, Max Voltage 32VDC
NMEA2000 connectivity	1 x CAN Micro-C port, 1 LEN
Supported Switch Bank PGN's	2
Output wire range	0.5 - 6mm (24AWG – 8AWG)
Maximum current	60A 12V/24V Total Module Current
Power consumption sleep	<120mA
Power supply	M8 Positive Terminal (Max Torque 3.9Nm (34.5in/lbs))
Network Supply voltage	9-16V via NMEA2000
Circuit bypass	Mechanical Bypass on 12x Relay Output Channels
Ingress protection	IP65 (with fuse cover in place)
Maximum Shock Resistance	20G
Compliance	FCC, CE, RCM, NMEA2000, UK-CA
Warranty period	2 years
Operating temperature range	-25C to +70C (-13F to +158F)
Storage temperature range	-40C to +85C (-40F to +185F)
Dimensions W x H x D	351.4mm x 164.5mm x 53.0mm
Weight	1040g (no connectors)



# Configuration Tool R20.1 (6.25.16.0)

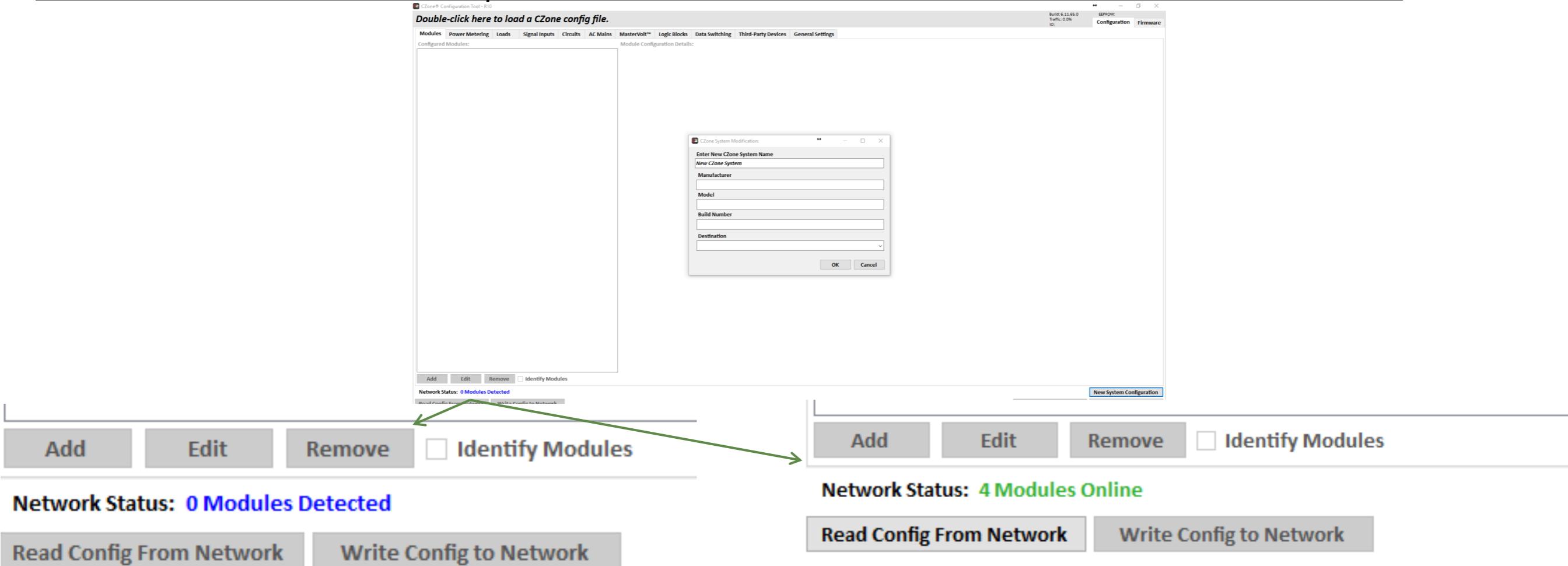


CZONE®

# Configuration

Configuration can be completed '**ONLINE**' or '**OFFLINE**'

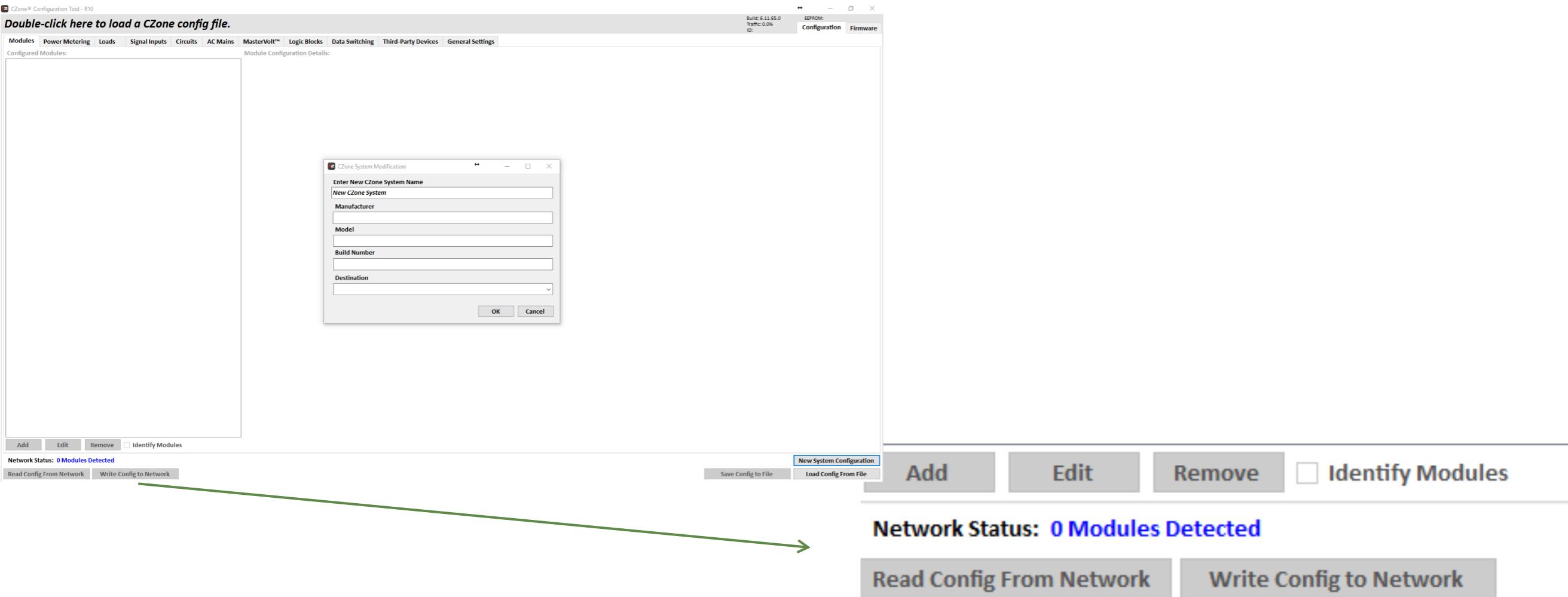
**\*Modules must have at least 1 dipswitch on to be seen on the network I.E 01000000 not 00000000\***



# Configuration

## Read/write

'Read' and 'Write' configuration; allows send or retrieval of the CZone configuration file.

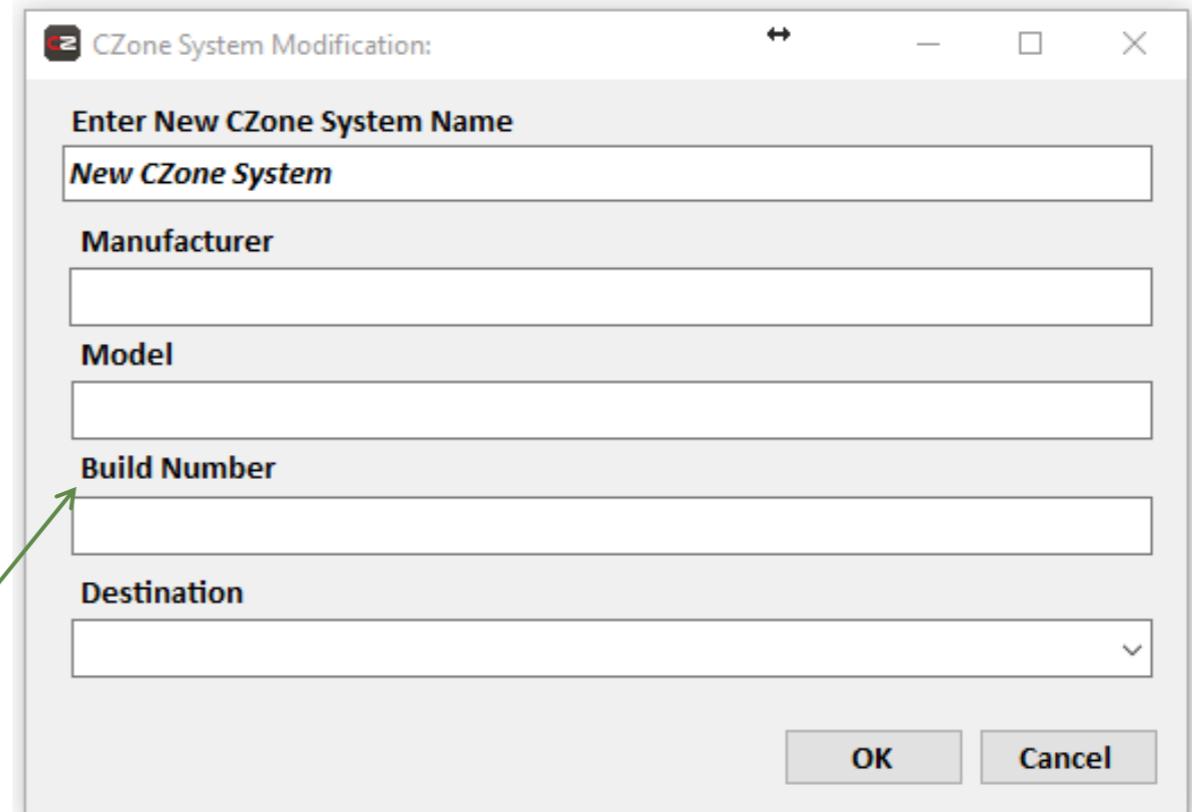
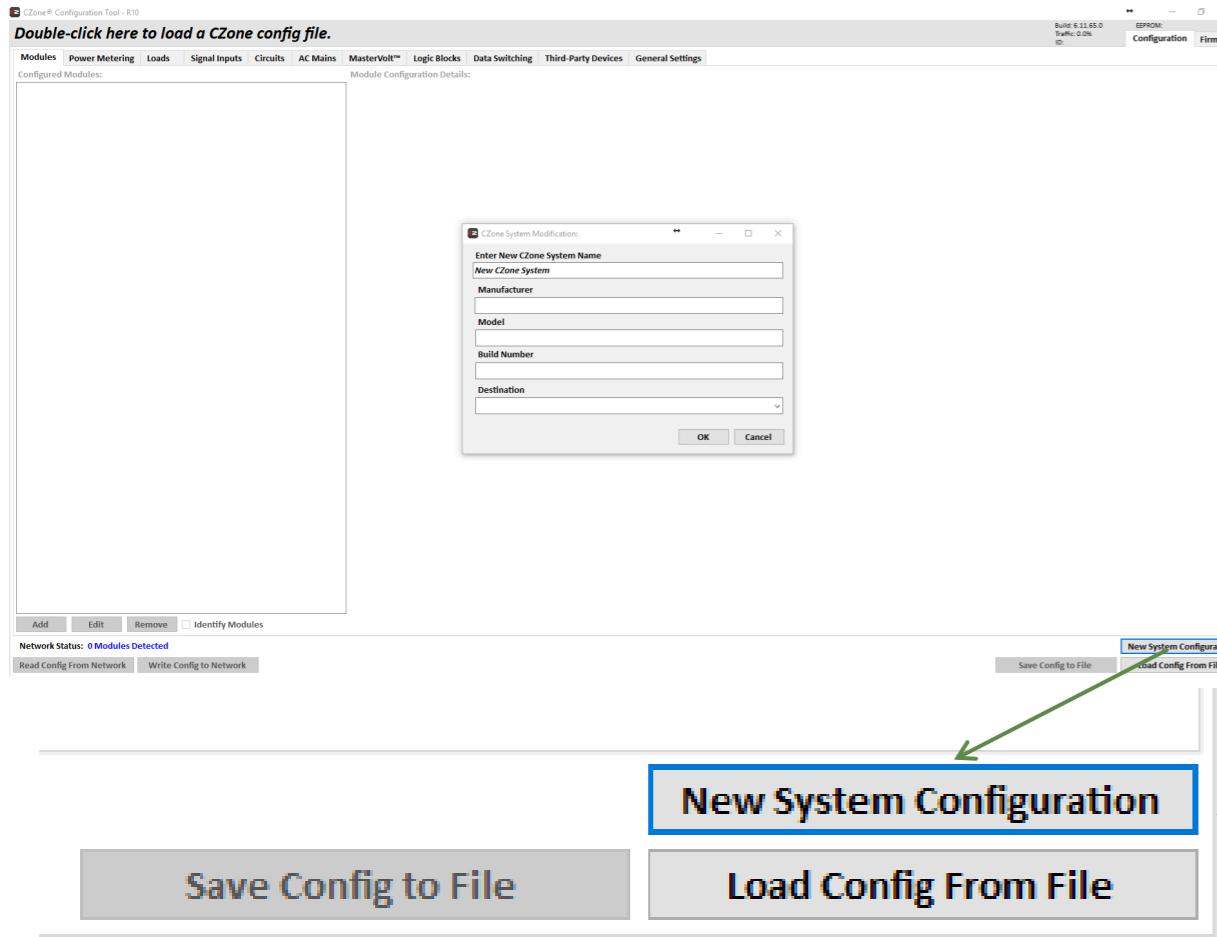


# Configuration

## New Configuration

Begin by starting a 'New Configuration'

- Insert manufacturer name, boat model/number.



A report can be generated at the end of the configuration and at commissioning.

# Configuration

## Modules

Modules   Meters   Inputs   Loads   Circuits   Advanced   General

Add all modules to be installed in the system.

**Add**   **Edit**   **Remove**    Identify Modules

Network Status: 4 Modules Online

**Read Config From Network**   **Write Config to Network**

**Module Modification:**

**Module Name:** OI - 01 Engine Room

**Module Type:** Output Interface (OI)   **Dipswitch Setting:** 00000111 (Detected on Network)

Auto-Select First Detected Module   **Edit Dipswitch Graphically**

**DC Power Source:** Unmetered 12V

Switched Module/Network Power

**OK**   **Cancel**

Configured Modules (1):

Output Interfaces (1):  
00000111 - OI - 01 Engine Room

# Configuration

## Meters

Modules   Meters   Inputs   Loads   Circuits   Advanced   General

Add DC or AC Meters as required to be displayed on Monitoring page on Display/s:

The image displays two configuration dialogs side-by-side, connected by green arrows indicating a workflow.

**Left Dialog: DC Meter Configuration**

- Buttons:** Add DC Meter, Add AC Meter, Edit, Remove.
- Network Status:** No Modules Online
- Fields:**
  - Meter Name: House Battery
  - Metering Device: MI 01
  - NMEA2000 DC Instance: 0
  - Nominal Voltage: 12
  - DC Type: Battery
  - Display Options:
    - Show Volts
    - Show Current
    - Show State of Charge
- Buttons:** OK, Cancel

**Right Dialog: AC Meter Configuration**

- Buttons:** Minimize, Close.
- Fields:**
  - Meter Name: (empty)
  - Meter Interface Input: MI 01 - AC 1 (Volts/Amps/Watts)
  - AC Instance: 0
  - AC Line: 1
  - Nominal Voltage: 240
  - Nominal Frequency: 50
  - Display Options:
    - Show Volts
    - Show Current
  - Message Type:
    - AC Input
    - AC Output
  - Buttons:
    - Calibrate Voltage
    - Calibrate Current
    - Alarm/Switch Settings
    - OK
    - Cancel

# Configuration

## Meters

Modules    Meters    Inputs    Loads    Circuits    Advanced    General

DC Meter Configuration:

Meter Name: House Battery

Metering Device: MI 01

NMEA2000 DC Instance: 0

Nominal Voltage: 12

DC Type: Battery

Display Options:

- Show Volts
- Show Current
- Show State of Charge

Input/Channel: Input 1 (Volts/Amps/Watt)

Calibrate Voltage

Calibrate Current

Alarm/Switch Settings

Battery Configuration

OK    Cancel

- Which Metering device is this configured to.
- Changes on its own. Useful for larger configuration files.
- Selects how meter is displayed within CZone/Third Party.
- No change to CZone configuration.
- What should be displayed on monitoring page.

# Configuration

## Inputs

Modules Meters Inputs Loads Circuits Advanced General

Signal Input Channel Modification:

Name of Input – will be shown on CZone display

Location of Input wiring

Select input type, (0-1000Ohm, 0-32VDC):  
10-180 Ohm (0-1000 Ohm)  
240-33 Ohm (0-1000 Ohm)  
4-20mA (COI Only)  
Positive (0-32VDC)  
Negative

Output Data Type relates to PGN display on MFD

Signal Input Name: Fuel Tank

Signal Input Module: SI 01

Input Number: Input 1

Input Type: 0 - 5V Sender

Output Data Type: Fluid Level

Fluid Level

Pressure

Temperature

Trim

Edit Calibration

Alarm/Switch Settings

OK Cancel

# Configuration

## Inputs

Modules   Meters   **Inputs**   Loads   Circuits   Advanced   General

**Edit Calibration**   **Alarm/Switch Settings**

**Fluid Level Calibration**

Fuel Tank

Fluid Type: Fuel   Tank Capacity: 1000   Nmea2k Fluid Level Instance: 0

Litres    Gallons

Table of Calibrated Points:

Sender Output:	% of Capacity:	Fluid Level:

New Auto Table   Add Point   Edit Point   Remove Point(s)

OK   Cancel

Fluid Level Calibration Auto-Table Setup:

Fuel Tank - 1000l

Select the Number of Calibration Points to Enter: 6

Maximize   OK   Cancel

OK   Cancel

Set tank Capacity first

```
graph LR; A[Edit Calibration] --> B[Fluid Level Calibration]; B --> C[Auto-Table Setup];
```

# Configuration

## Inputs

Modules   Meters   **Inputs**   Loads   Circuits   Advanced   General

Fluid Level Calibration Auto-Table:

Fuel Tank - 1000L

Sender Output: (V)	% of Capacity:	Fluid Level (l):
2	40.00	400
<input type="checkbox"/> Use Live Data		
<input checked="" type="checkbox"/> Auto-Increment Level		
Set Point		
Go Back One Point		

Table of Calibrated Points: (2/6)

Sender Output:	% of Capacity:	Fluid Level:
0.000V	0.00%	0l
1.000V	20.00%	200l

OK   Cancel

Use live data when connected to system for most accurate filling points.

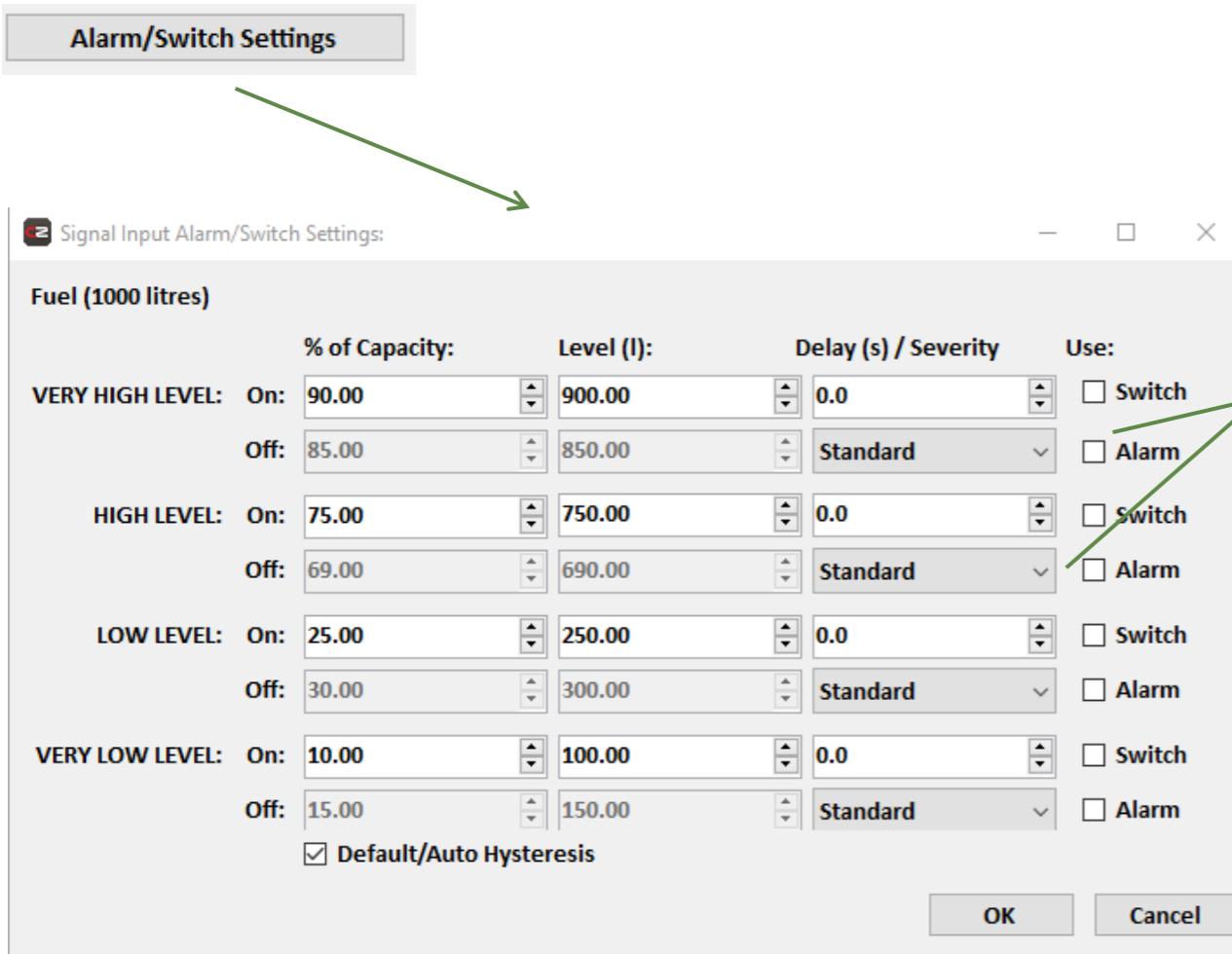
De-selecting checkbox allows manual value input.

Set Point to move to next calibration value.

# Configuration

## Inputs

Modules Meters Inputs Loads Circuits Advanced General

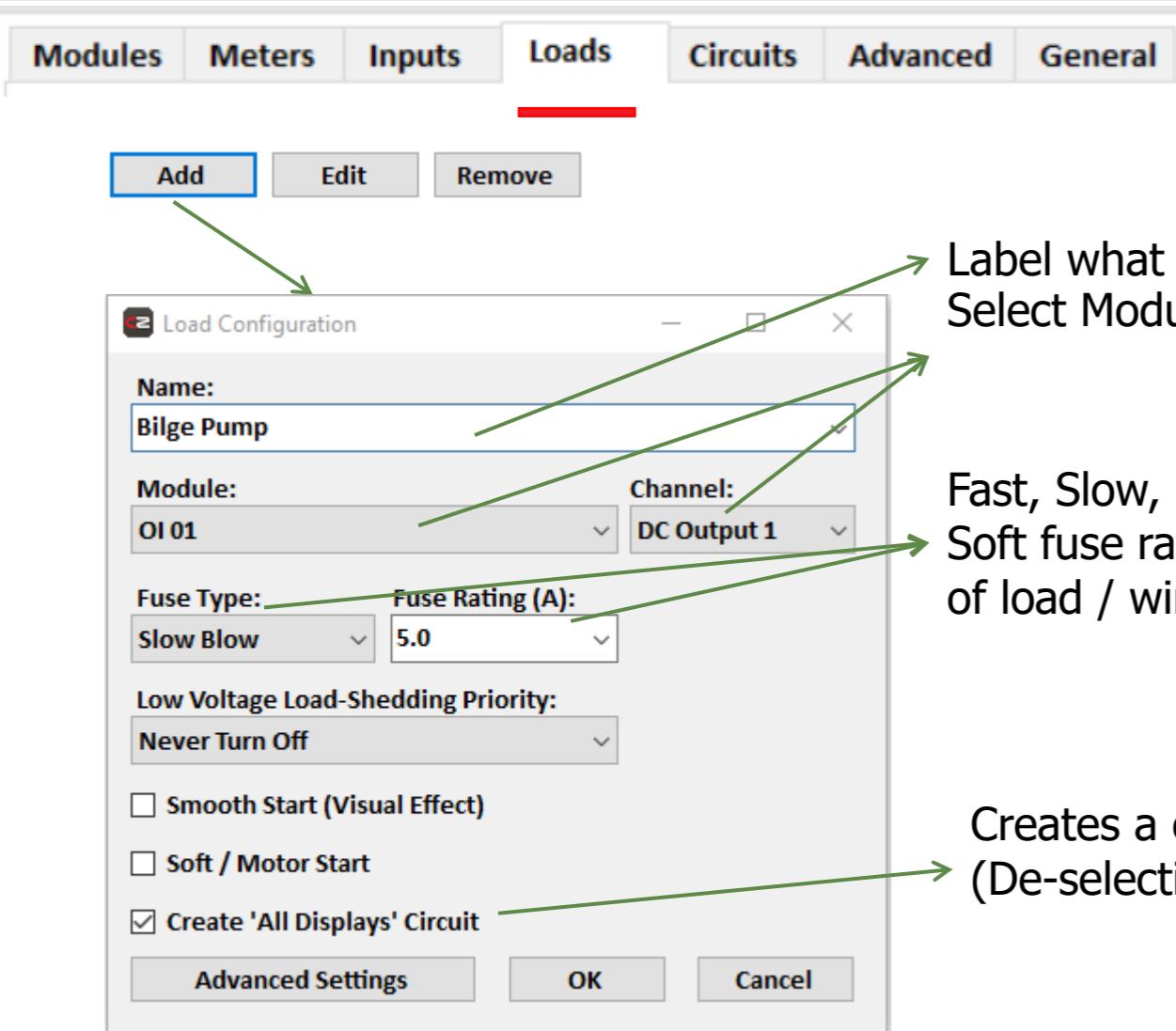


Set alarms to be displayed and switches to use via CZone configurations.

Alarms are not active until selected!

# Configuration

## Loads



Label what is actually wired to the output.  
Select Module and Output load is wired too.

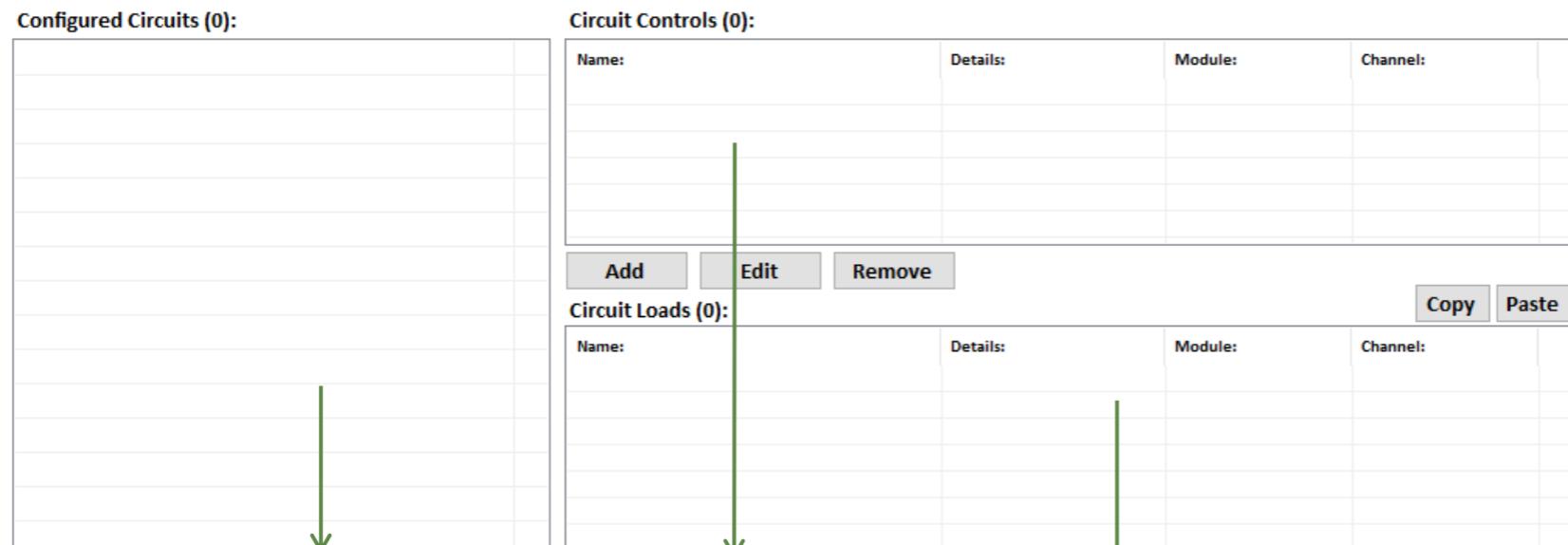
Fast, Slow, Motor Start (B, C or D-Curve ratings).  
Soft fuse rating should be set to nominal fuse rating  
of load / wiring

Creates a circuit automatically.  
(De-selecting this will disable it for future loads)

# Configuration Circuits

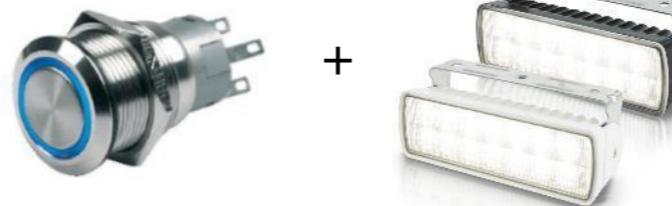
Modules	Meters	Inputs	Loads	Circuits	Advanced	General
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Circuits take all configured Loads, Inputs, Logic etc and create the operation of the system.



Configured Circuits = Circuit controls + Circuit loads

# Flood Lights

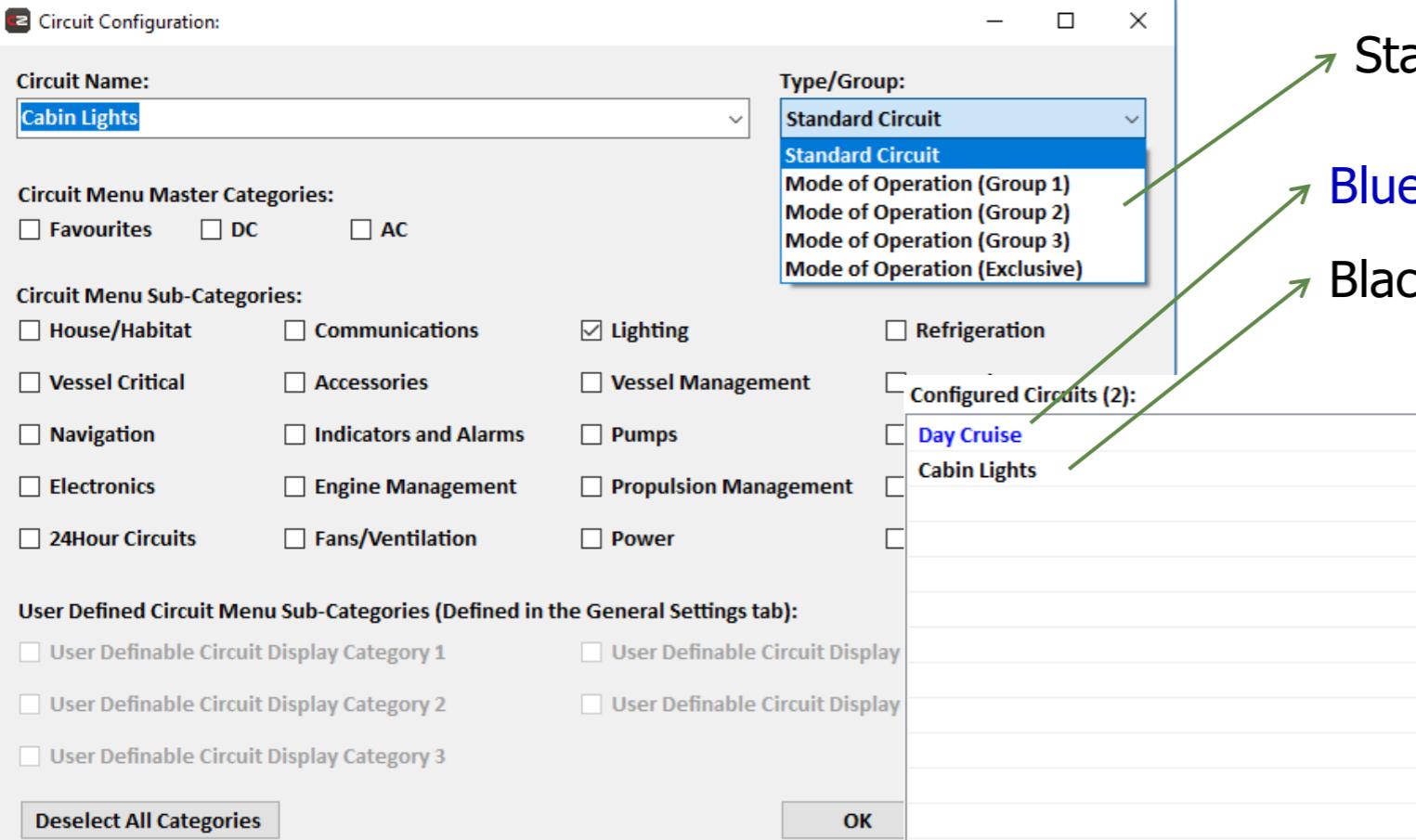


# Configuration

## Circuits

Modules   Meters   Inputs   Loads   Circuits   Advanced   General

Circuit Configuration: This can be seen by the user – or just be a background control.

Circuit Configuration:

Circuit Name: Cabin Lights

Type/Group: Standard Circuit

Configured Circuits (2): Day Cruise, Cabin Lights

Annotations:

- Standard Circuit or Mode. (points to Standard Circuit in the dropdown)
- Blue denotes 'Mode of operation' (points to Day Cruise in the list)
- Black denotes 'Standard circuit' (points to Cabin Lights in the list)

Circuit Menu Master Categories:

Favourites    DC    AC

Circuit Menu Sub-Categories:

<input type="checkbox"/> House/Habitat	<input type="checkbox"/> Communications	<input checked="" type="checkbox"/> Lighting	<input type="checkbox"/> Refrigeration
<input type="checkbox"/> Vessel Critical	<input type="checkbox"/> Accessories	<input type="checkbox"/> Vessel Management	<input type="checkbox"/> Configured Circuits (2):
<input type="checkbox"/> Navigation	<input type="checkbox"/> Indicators and Alarms	<input type="checkbox"/> Pumps	<input type="checkbox"/> Day Cruise
<input type="checkbox"/> Electronics	<input type="checkbox"/> Engine Management	<input type="checkbox"/> Propulsion Management	<input type="checkbox"/> Cabin Lights
<input type="checkbox"/> 24Hour Circuits	<input type="checkbox"/> Fans/Ventilation	<input type="checkbox"/> Power	<input type="checkbox"/>

User Defined Circuit Menu Sub-Categories (Defined in the General Settings tab):

User Definable Circuit Display Category 1    User Definable Circuit Display  
 User Definable Circuit Display Category 2    User Definable Circuit Display  
 User Definable Circuit Display Category 3    User Definable Circuit Display

Deselect All Categories   OK

Circuit Controls (0):

Name:	Details:	Module:	Channel:
<input type="button"/> Add <input type="button"/> Edit <input type="button"/> Remove			

Circuit Loads (0):

Name:	Details:	Module:	Channel:
<input type="button"/> Copy <input type="button"/> Paste			

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