Contact 6 PLUS

User & Installation Manual

V1.0

Copyright

Important

BEP Marine strives to ensure all information is correct at the time of printing. However, the company reserves the right to change without notice any features and specifications of either its products or associated documentation.

Translations: In the event that there is a difference between a translation of this manual and the English version, the English version should be considered the official version.

It is the owner's sole responsibility to install and operate the device in a manner that will not cause accidents, personal injury or property damage.

Use of This Manual

This manual serves as a guideline for the safe and effective operation, maintenance and possible correction of minor malfunctions of the Contact 6 PLUS.

TABLE OF CONTENTS

1 OVERVIEW

1.1 DESCRIPTION

The Contact 6 PLUS is a 6-channel output module utilizing CZone's proven solid state switching technology. Designed to be installed with a NMEA2000 Network or as a standalone system with a CZone Smart Harness and Waterproof Keypad. When installed with a CZone Waterproof Keypad the Contact 6 PLUS will work out of the box with a pre-installed factory configuration. To install the Contact 6 PLUS with other CZone modules, or to configure advanced functionality like timers and single button dimming you will need to use the CZone Configuration Tool which is available for download at www.downloads.czone.net.

1.2 PARTS INCLUDED
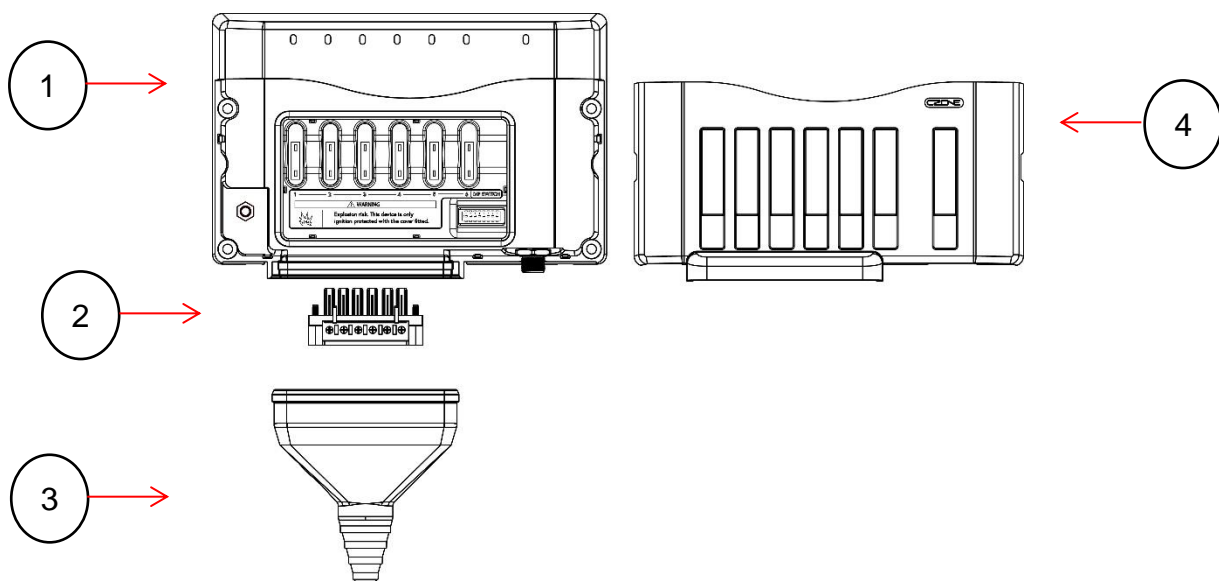
1. Contact 6 PLUS interface
2. Cable connector
3. Cable gland
4. Front cover

1.3 FEATURES

- Entry level digital switching module for Marine and RV applications
- 6 x 15A output channels
- Plug-and-play out-of-the box functionality
- PWM circuit dimming and control on all channels
- Stand-alone or network with other CZone products
- Compatible with CZone integrated Multi-Function Displays (MFD's)
- Uses proven CZone technology
- Full mechanical fuse protection with channel bypass on all circuits
- Blown fuse detection and system warnings
- Status LED's with fault codes for all channels
- IPx5 ingress protection
- NMEA2000 compliant

1.4 HARDWARE OVERVIEW
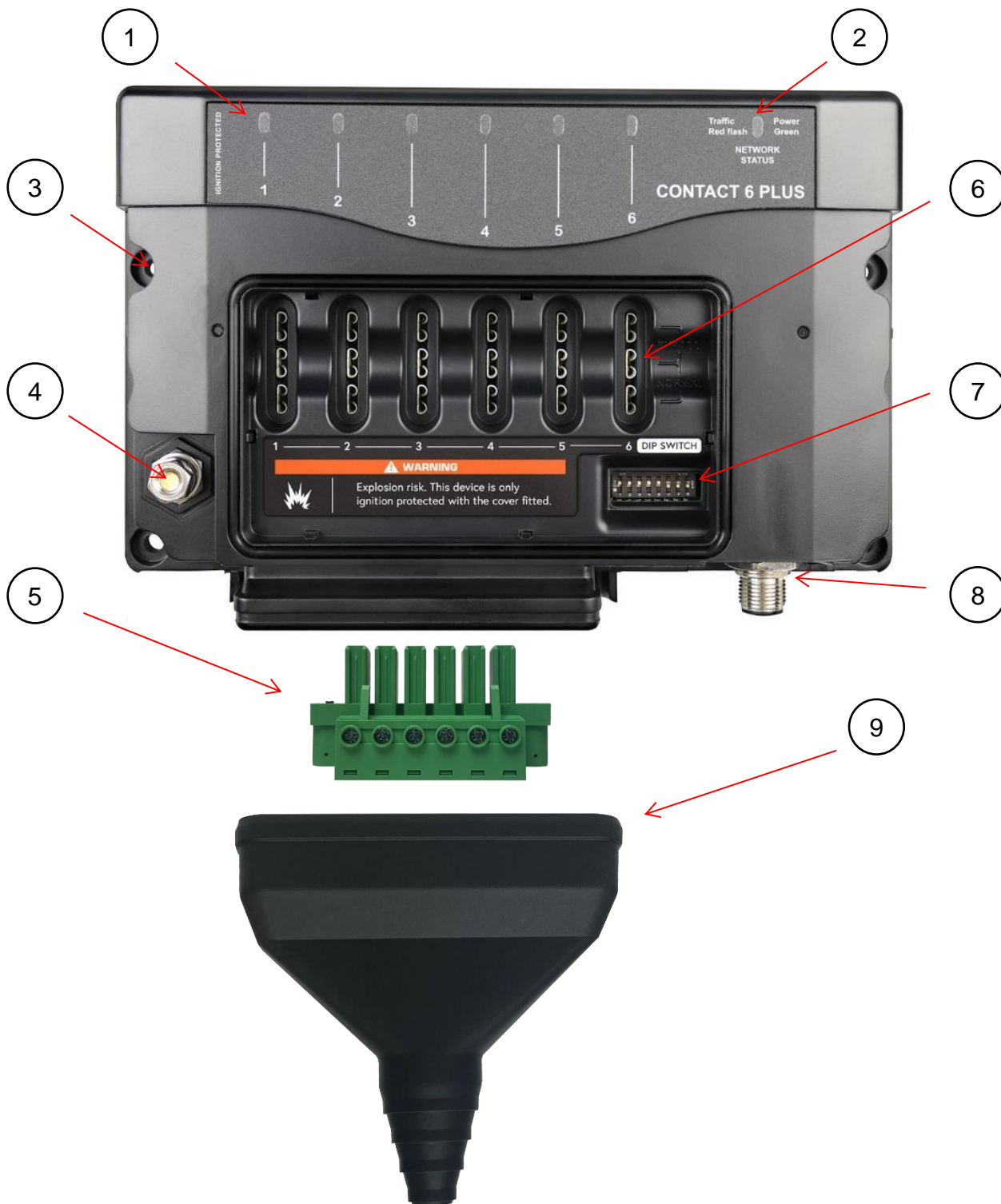
1. Channel Status LED Indicators
2. Network Status LED Indicator
3. Mounting Holes
4. Power Supply M6 Stud
5. Output Connector
6. ATC Fuse Sockets
7. Dipswitch
8. Network / NMEA2000 Micro C Connector
9. Cable Gland

Channel Status LED Indicators

Colour	Description
Extinguished	Channel Off
Green Solid On	Channel On
1 Green Flash	Module Not Configured
2 Green Flash	Configuration Conflict
3 Green Flash	DIP Switch Conflict
4 Green Flash	Memory Failure
5 Green Flash	No Modules Detected
7 Green Flash	Fuse Blown
9 Green Flash	Missing Commander

Network Status LED Indicator

Colour	Description
Extinguished	Network Power Disconnected
Green	Network Power Connected
Red Flash	Network Traffic

2   DESIGN

- Make a list of all outputs to be wired to the Contact 6 PLUS and assign each of them to one of the 6 channels.
- Ensure all cables are appropriately rated for each assigned load.
- Output connector accepts cable gauges 24AWG – 8AWG (0.5 - 6mm).
- Ensure power supply cable to the Contact 6 PLUS is appropriately rated for the maximum continuous current of all loads and is fused appropriately to protect the cable.
- Ensure continuous current draw of each connected load does not exceed maximum channel rating of 15A.
- Ensure the maximum continuous current of all loads does not exceed the 60A total module current.
- Install the appropriately rated fuses for each channel.
- Decide if you will add the Contact 6 PLUS to a NMEA2000 Network or install as a standalone system with the CZone Smart Harness.
- Loads exceeding 15A will require paralleling 2 channels together or an external relay.

## 3   INSTALLATION

3.1   THINGS YOU NEED

- Electrical tools
- Wiring and fuses
- Contact 6 PLUS module
- CZone Waterproof Keypad (if required)
- CZone Smart Harness or NMEA2000 network cables
- 4 x 8G or 10G (4mm or 5mm) self-tapping screws or bolts for mounting the Contact 6 PLUS

3.2   ENVIRONMENT

Obey the following stipulations during installation:

- Ensure the Contact 6 PLUS is located in an easily accessible location and indicator LED's are visible.
- Ensure there is enough clearance above the Contact 6 PLUS to allow the cover to be removed.
- Ensure there is at least 10mm clearance around the sides and top of the Contact 6 PLUS.
- Ensure the Contact 6 PLUS is mounted on a vertical flat surface.
- Ensure there is sufficient space for the wires to exit the product.

3.3 MOUNTING
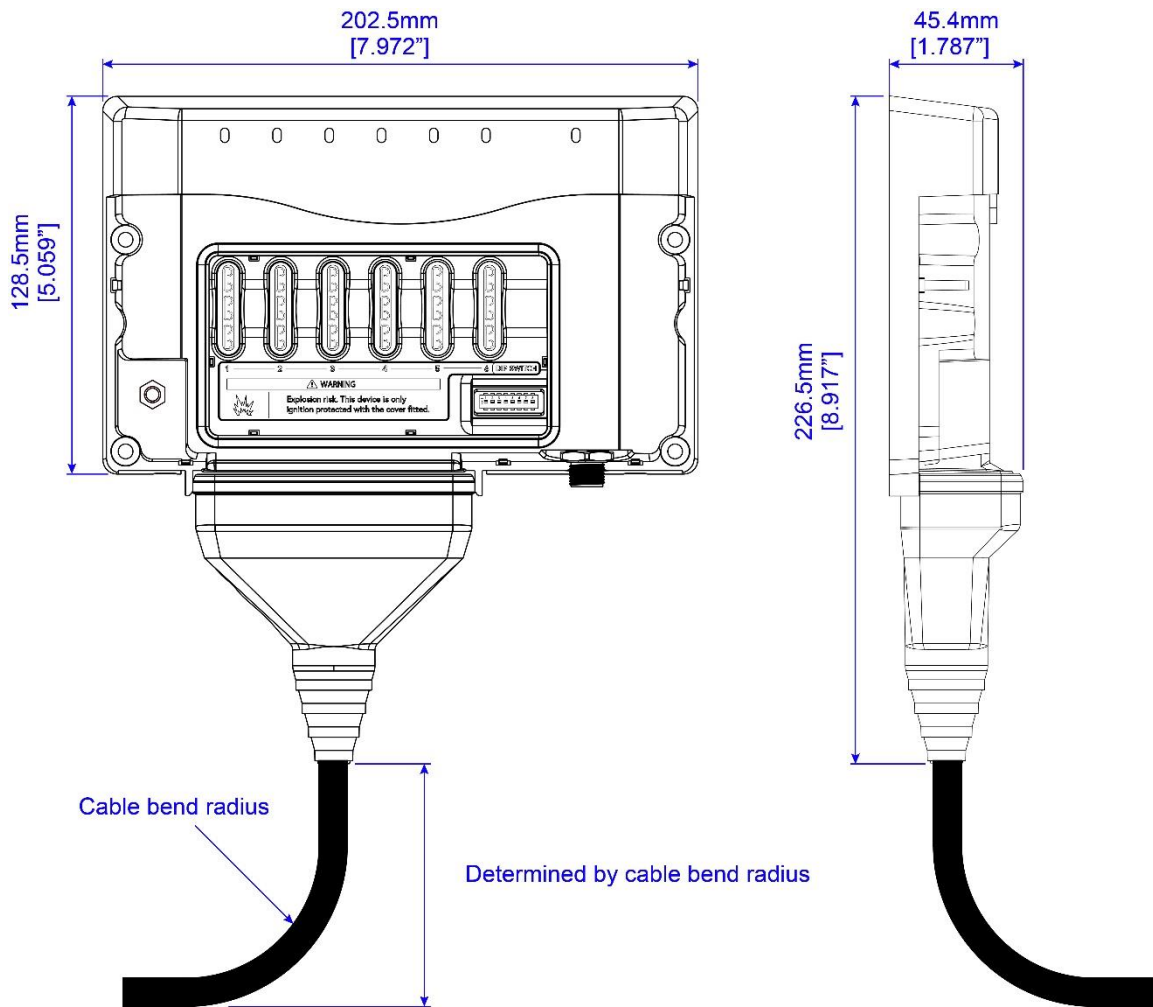
1. Mount the Contact 6 PLUS on a vertical surface with the cables exiting downwards.
2. Allow enough space below cable grommet for wiring bend radius.
   - Note - Cable radius determined by wiring manufacturer.
3. Fasten the Contact 6 PLUS by using 4 x 8G or 10G (4mm or 5mm) self-tapping screws or bolts (not supplied).
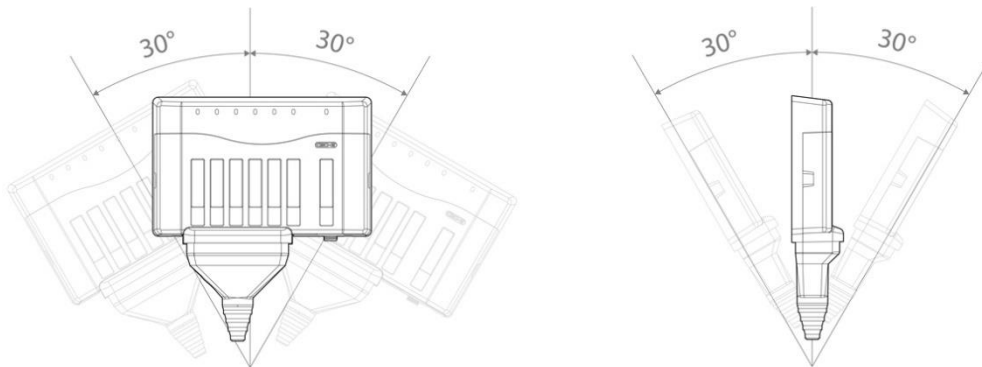
⚠ **IMPORTANT** - The Contact 6 PLUS must be mounted within 30 degrees from the vertical position to ensure water correctly runs away from the product if mounted in a location where water can contact the product.

3.4 CONNECTIONS

The Contact 6 PLUS has a convenient output connector that requires no crimping tools and accepts cables from 24AWG to 8AWG (0.5 - 6mm). The unit has no power key and will turn on when power is applied to the network. The module will continue to draw power even when it is not in operation. It is recommended that a battery isolator switch is installed for when the system is not in use.
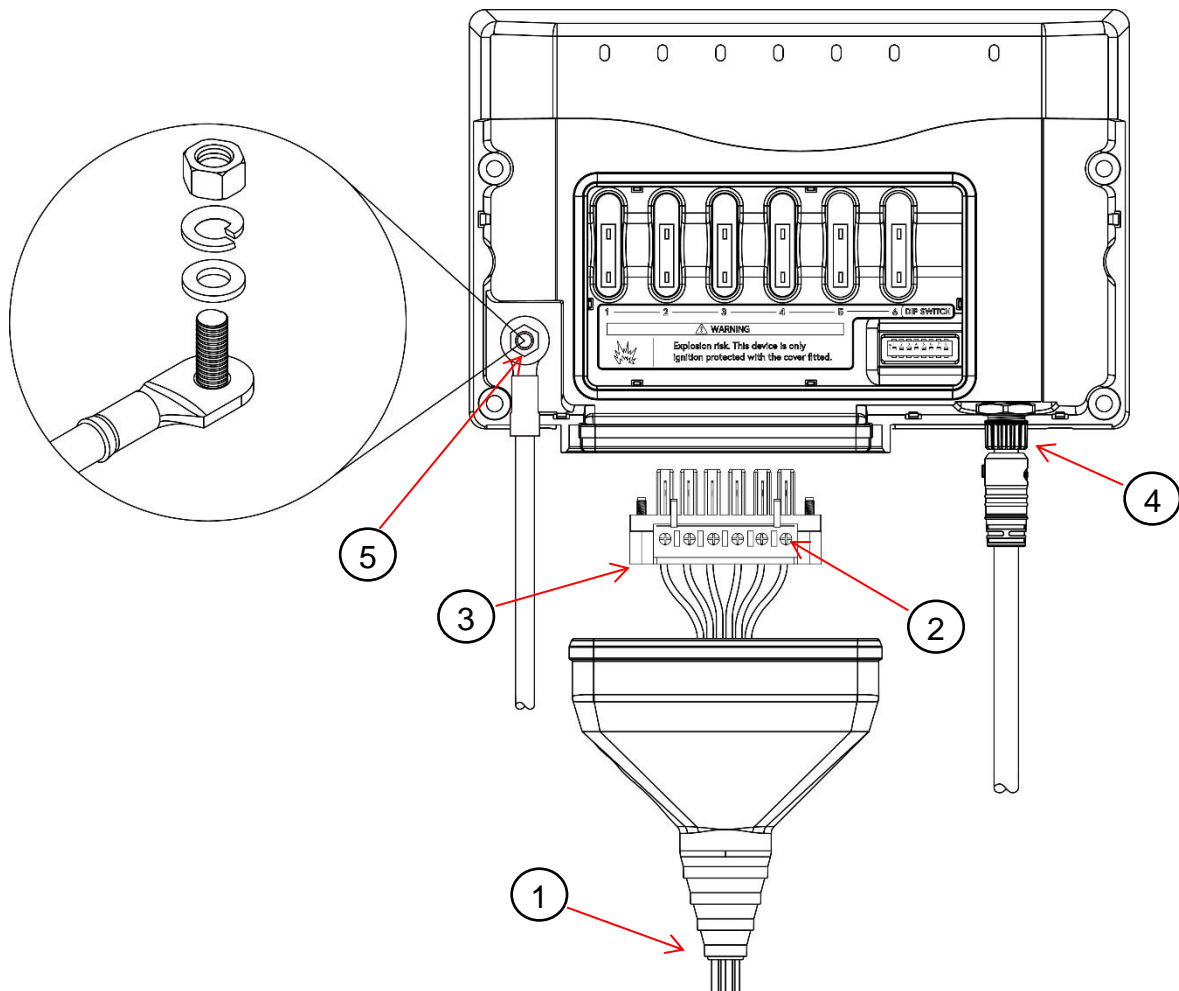
1. Feed output wires through cable grommet
2. Strip and insert each wire into the connector ensuring the correctly rated wire is used for each load and tighten screws to 4.43 in/lbs (0.5NM).
3. Insert plug firmly into module and tighten 2x retaining screws.
4. Connect CZone Smart Harness to network port. If not using the CZone Smart Harness, connect a NMEA2000 drop cable from the NMEA2000 backbone (do not power up network yet).
5. Connect the appropriate size power supply cable to the M6 positive stud and tighten to 35 in/lbs (4NM), ensuring washers are installed as per diagram.

⚠ **IMPORTANT** - The positive cable must be sufficient size to carry the maximum current of all loads connected to the Contact 6 PLUS. It is recommended to have a fuse/circuit breaker rated to protect the cable.

3.5 INSERTING FUSES

The Contact 6 PLUS provides ignition protected circuit protection for each individual channel via standard ATC fuses (not supplied). Appropriately rated fuses should be selected and installed for each channel to protect the load and the wiring for each circuit.

Fuses In Normal Operation

1. Select the appropriate fuse rating for each individual circuit.
2. Insert the correctly rated fuses into the NORMAL (bottom) position of all circuits.
3. The ATC fuse should be rated to protect the connected load and the wiring from the Contact 6 PLUS to the load and also the ground wire.

3.6 MECHANICAL BYPASS

The Contact 6 PLUS includes a mechanical bypass feature for redundancy purposes. Moving any fuse to the BYPASS (top) position will supply constant battery power to that output. See below diagram showing circuit #3 in the BYPASS position.

Fuse in Bypass Position

⚠ **WARNING** – Ensure area is free of explosive gasses before removing/replacing fuses or placing fuses in the bypass position as sparks may occur.

3.7   NETWORK CONFIGURATION

CZone modules communicate with each other over a NMEA2000 CAN BUS network. Each module needs a unique address, this is achieved by carefully setting the dipswitch on each module with a small screwdriver. The dipswitch on each module must match the setting in the CZone configuration.

The Contact 6 PLUS comes pre-loaded with a factory configuration to provide plug-and-play functionality when installed with a CZone Waterproof Keypad. The factory configuration provides basic switching functionality with one-to-one switch input to channel output mapping.

Standalone Installation

- Set the dipswitch on the Contact 6 PLUS and Waterproof Keypad to match the below table.
- Connect the Contact 6 PLUS to the Waterproof Keypad with the CZone Smart Harness or NMEA2000 network.
- Change any desired circuits to have momentary functionality instead of latching (see Initial Power up section).

Networked Installation

- To install the Contact 6 PLUS with other networked CZone modules, or to achieve advanced functionality such as timers, load shedding or one touch Modes of operation, a custom configuration needs to be installed.
- Set the dipswitch on the Contact 6 PLUS to match the configuration file.
- All other CZone modules must have the dipswitch set to same as the configuration file.

The example below shows a dipswitch setting of 01101100 where 0 = OFF and 1 = ON
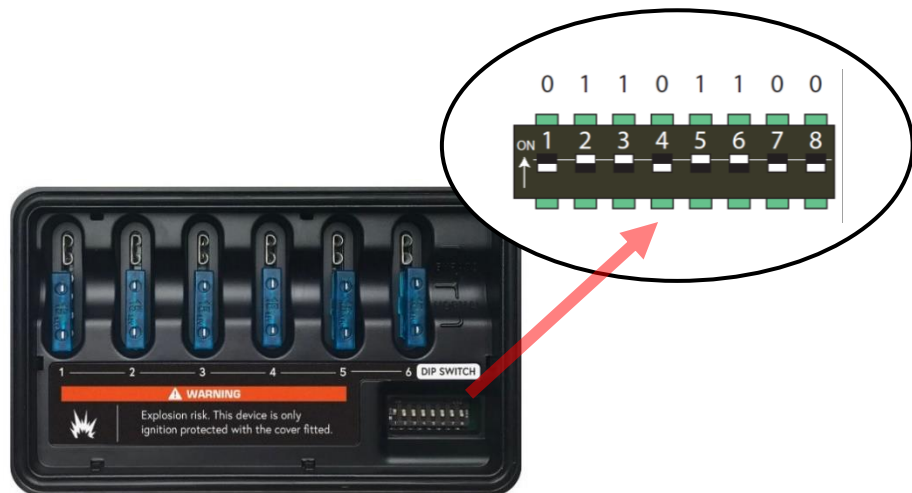
Setting Dipswitch

⚠ **IMPORTANT -** Each CZone device must have a unique dipswitch number and the dipswitch of the device must match the dipswitch set in the configuration file.

1. **Factory configuration table**

Module	Dipswitch
Contact 6 PLUS	10000000
Portrait Waterproof Keypad	00000001
Landscape Waterproof Keypad	00000011
Display Interface	11101000

NOTE - If you have a compatible MFD or Display Interface, the factory configuration will work and populate circuits 1 - 6 on the display for basic on/off control.

3.8 FIT THE COVER

Cover Installed

1. Slide the cable gland up the output wires ensuring it is correctly seated.
2. Firmly push the top cover on to the Contact 6 PLUS until you hear it click into pace on each side.
3. Ensure the cable gland is still correctly in place.
4. Install circuit labels if you have purchased a label sheet.

⚠ **WARNING!** The Contact 6 PLUS is only ignition protected with the cover correctly installed.

3.9 INITIAL POWER UP

Standalone Installation

1. Power up the system.
2. Check that the Network Status LED lights up.
3. Turn the switch/circuit breaker on supplying power to the input stud (if fitted), system will flash all outputs for a short time while booting.
4. To toggle a circuit to momentary switching, press and hold the power button and the button for that circuit together on the CZone Waterproof Keypad for 5 seconds.
5. Test all circuits for ON/OFF functionality.
6. Check the circuit status LED's for each individual circuit. Refer to LED codes to diagnose any faults which need to be rectified.

Networked Installation

1. Power up the NMEA2000 Network, system will flash all outputs for a short time while booting.
2. Check that the Network Status LED lights up. It may also be flashing if other devices are on the network and transmitting data.
3. Turn the switch/circuit breaker on supplying power to the input stud (if fitted).
4. Check the software version on the Contact 6 PLUS with the CZone Configuration Tool and update if necessary.
5. Write the configuration file to the network (Refer to the CZone Configuration Tool Instructions for details on how to write a CZone configuration file).
6. Test all outputs for correctly configured functionality.
7. Check the circuit status LED's for each individual circuit. Refer to LED codes to diagnose any faults which need to be rectified.
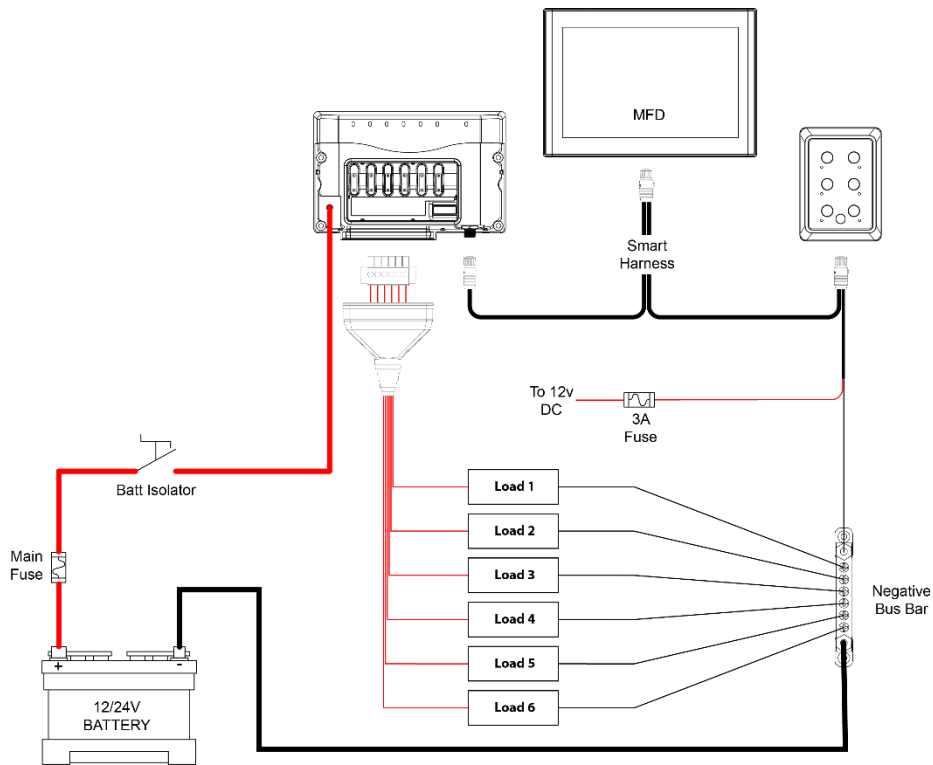
3.10   SYSTEM DIAGRAM EXAMPLES
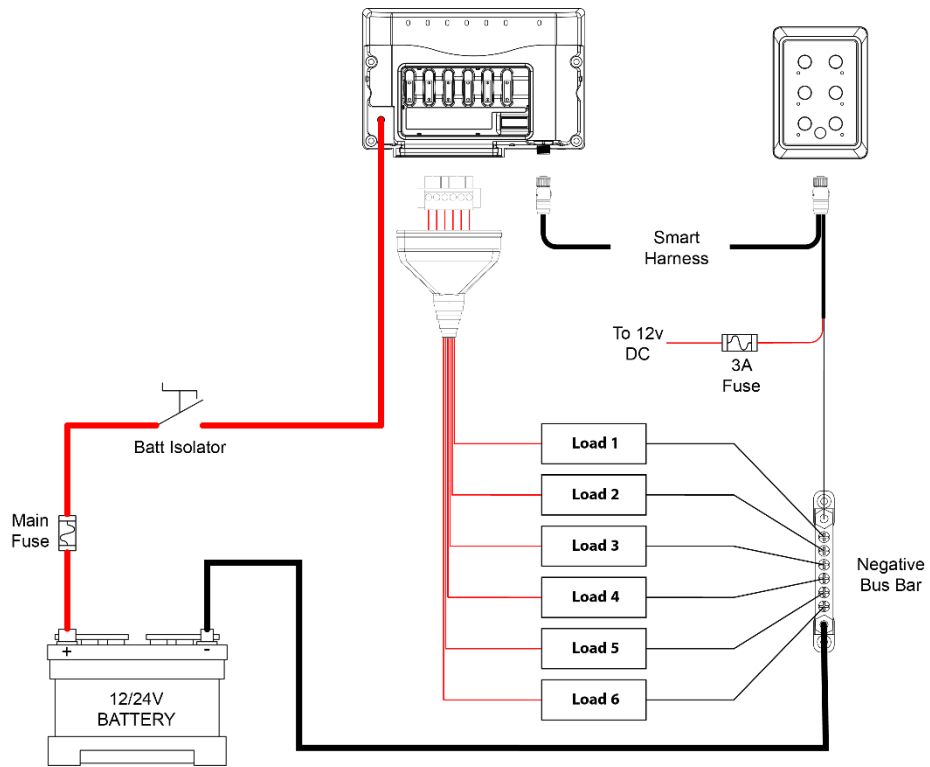
Basic System Diagram

Basic System Diagram with Extra Display
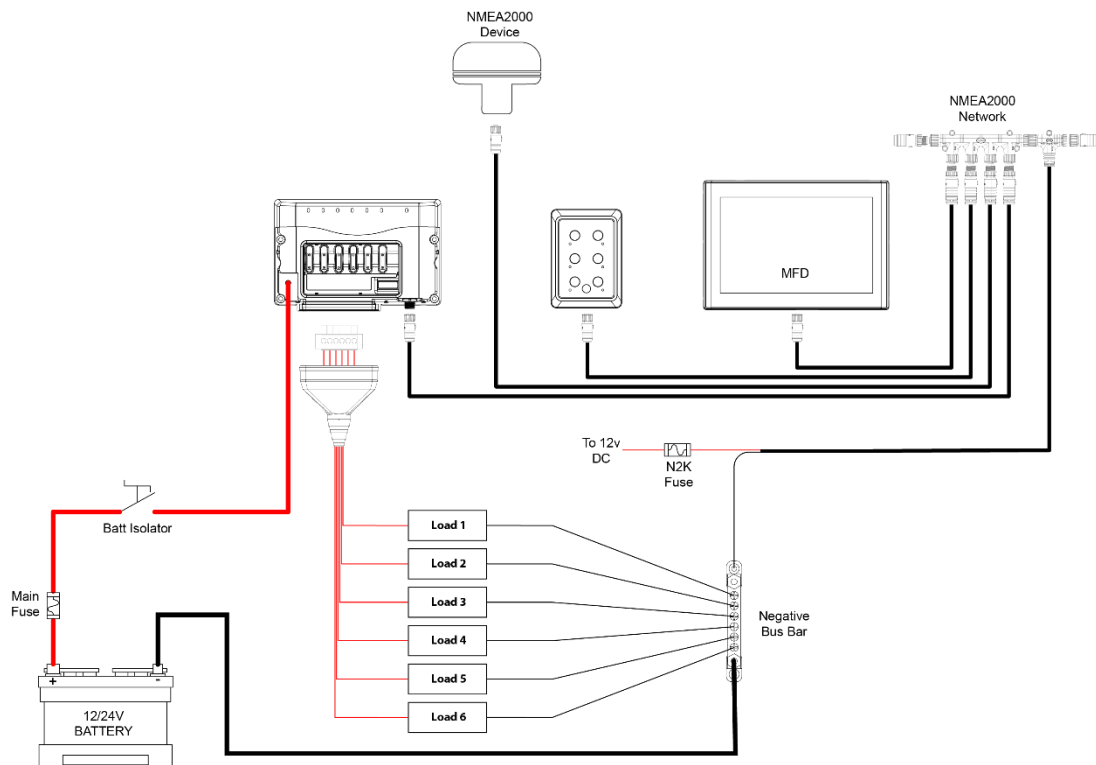
Advanced NMEA2000 System Diagram

4   ORDERING INFORMATION

Part Numbers and Accessories

Part Number	Description
80-911-0160-00	CZONE CONTACT 6 PLUS INTERFACE
80-911-0179-00	CZONE CONTACT 6 PLUS CONNECTOR & SEAL KIT
80-911-0171-00	CZONE 2 MODULE SMART HARNESS
80-911-0172-00	CZONE 3 MODULE SMART HARNESS
80-911-0162-00	CZONE WATER PROOF KEYPAD (LANDSCAPE)
80-911-0163-00	CZONE WATER PROOF KEYPAD (PORTRAIT)

5   SPECIFICATIONS

5.1   TECHNICAL SPECIFICATIONS

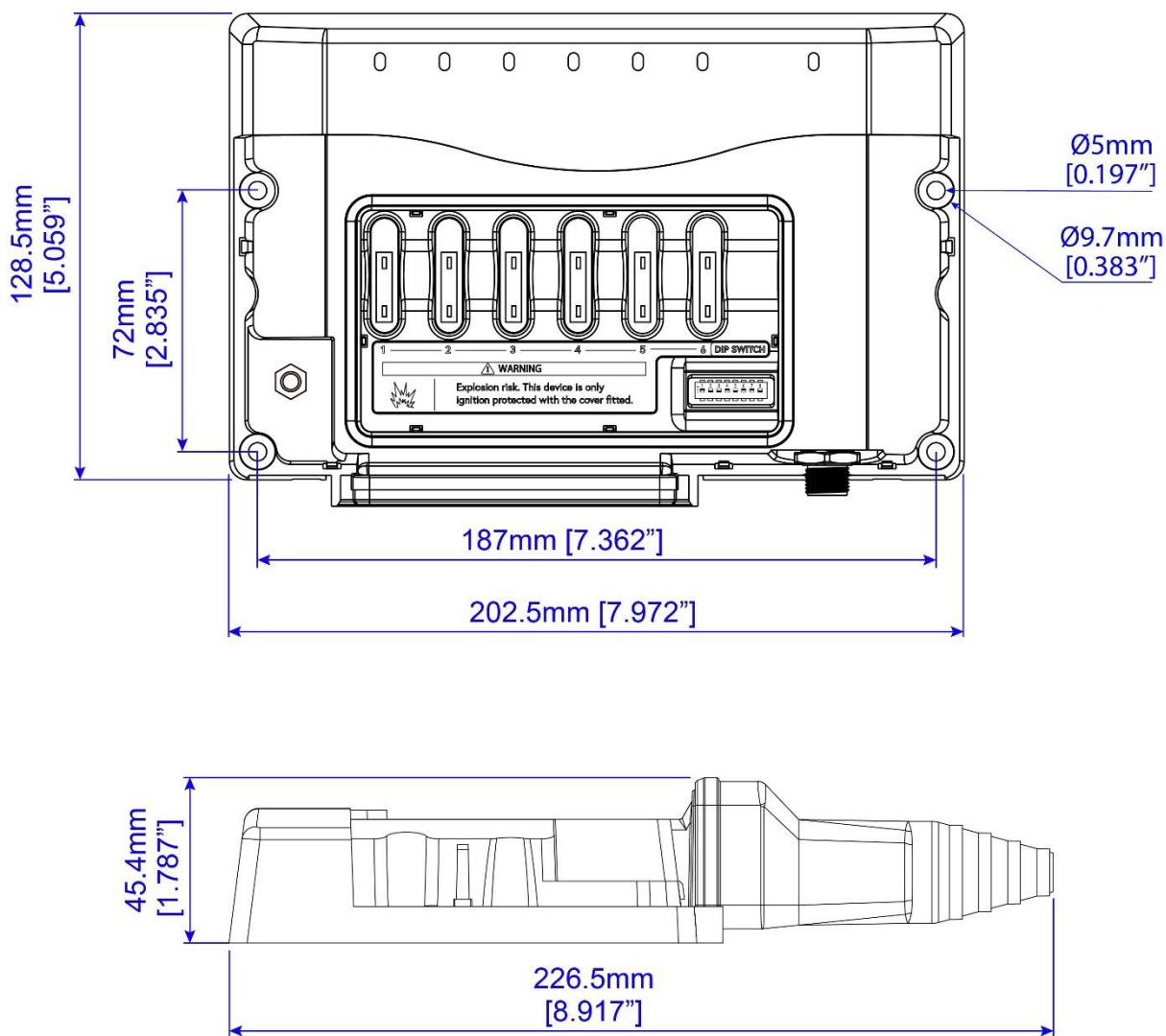|	
Circuit protection	ATC Fuse with Blown Fuse Alarms
NMEA2000 connectivity	1 x CAN Micro-C port
Output wire range	0.5 - 6mm (24AWG – 8AWG)
Output channels	6 x 15A 12/24V
Maximum current	60A Total Module Current
Dimming	All channels, PWM @100Hz
Power supply	M6 (1/4") Positive Terminal (9-32V)
Network Supply voltage	9-16V via NMEA2000
Circuit bypass	Mechanical Fuse Bypass on all Channels
Ingress protection	IPx5 (mounted vertical on bulkhead and flat)
Compliance	CE, ABYC, NMEA, ISO8846/SAEJ1171 Ignition Protected
Power consumption max	75mA
Power consumption standby	0.3mA
Warranty period	2 years
Operating temperature range	-15C to +55C (-5F to +131F)
Storage temperature range	-40C to +85C (-40F to +185F)
Dimensions W x H x D	202.5 x 128.5 x 45mm (7.97 x 5.06 x 1.77”)
Weight	600g (1.32lbs)

5.2   DIMENSIONS

128.5mm [5.059"]

72mm [2.835"]

Ø5mm [0.197"]

Ø9.7mm [0.383"]

187mm [7.362"]

202.5mm [7.972"]

WARNING

Explosion risk. This device is only ignition protected with the cover fitted.

DIP SWITCH

45.4mm [1.787"]

226.5mm [8.917"]

6 COMPLIANCE

EU declaration of conformity
EU-conformiteitsverklaring
EU-Konformitätserklärung
Déclaration UE de conformité
Declaración UE de conformidad
Dichiarazione di conformità UE

CE

Name and address of the manufacturer:
Naam en adres van de fabrikant:
Name und Anschrift des Herstellers:
Nom et adresse du fabricant:
Nombre y dirección del fabricante :
Nome e indirizzo del fabbricante

BEP Marine Ltd
42 Apollo Drive, Rosedale
Auckland 0632
PO Box 101 739 NSMC
New Zealand

This declaration of conformity is issued under the sole responsibility of the manufacturer.
Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant.
Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller
La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.
La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante.
La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante

Object of the declaration:
Voorwerp van de verklaring:
Gegenstand der Erklärung:
Objet de la déclaration :
Objeto de la declaración
Oggetto della dichiarazione:

Czone Contact 6 PLUS
Czone Keypad 6W Portrait
Czone Keypad 6W Landscape

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:
Het hierboven beschreven voorwerp is in overeenstemming met de desbetreffende harmonisatiewetgeving van de Unie:
Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:
L'objet de la déclaration décrit ci-dessus est conforme à la législation d'harmonisation de l'Union applicable :
El objeto de la declaración descrita anteriormente es conforme con la legislación de armonización pertinente de la Unión:
L'oggetto della dichiarazione di cui sopra è conforme alla pertinente normativa di armonizzazione dell'Unione:

- **2011/65/EU (RoHS directive)**
- **2013/53/EU (Recreational Craft Directive)**
- **2014/30/EU (Electromagnetic Compatibility Directive)**

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:
Vermelding van de toegepaste relevante geharmoniseerde normen of van de overige technische specificaties waarop de conformiteitsverklaring betrekking heeft:
Angabe der einschlägigen harmonisierten Normen, die zugrunde gelegt wurden, oder Angabe der anderen technischen Spezifikationen, in Bezug auf die die Konformität erklärt wird:
Références des normes harmonisées pertinentes appliquées ou des autres spécifications techniques par rapport auxquelles la conformité est déclarée:
Referencias a las normas armonizadas pertinentes utilizadas, o referencias a las otras especificaciones técnicas respecto a las cuales se declara la conformidad:
Riferimento alle pertinenti norme armonizzate utilizzate o riferimenti alle altre specifiche tecniche in relazione alle quali è dichiarata la conformità:

- **ISO 8846:2017** Small craft – Electrical devices – Protection against ignition of surrounding flammable gasses (ISO 8846:1990)
- **EN 60945:2002** Maritime navigation and radiocommunication equipment and systems

Auckland, New Zealand – 30th April 2019
BEP Marine LTD

Mark Griffith
Engineering Leader

EU Type Examination Certificate

This is to certify that the product listed below conforms to the requirements of the

Recreational Craft and Personal Watercraft Directive

2013/53/EU, Module B Annex II of Decision 768/2008/EC

Certificate Number	HPiVS/R1217-006-I-01		
Date of Issue	14-May-2019	**Date of Expiry**	13-May-2029

Manufacturer
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P.O. Box 101739,
North Shore Mail Centre
Rosedale, Auckland
New Zealand

Product Description
Contact 6 PLUS

Type of product
Digital switch system

Output Channel
6 x 15A Dimmable

Annex II Type
1 - Ignition-protected equipment for inboard & stern drive petrol engines and tank spaces

Standard applied
EN ISO 8846:2017 Electrical devices - Protection against ignition of surrounding

Check this certificate is genuine

Managing Director

Technical Manager

This certificate is supported by a report bearing the same certificate number.
This certificate is the property of HPi Verification Services Ltd. & may not be amended or issued to others.
The manufacturer must inform HPi Verification Services Ltd. of any changes that affect any of the assessed Essential Requirements. Failure to do this will invalidate the Certificate.
The applied conformity assessment module does NOT allow the client to affix the Notified Body's identification number on the product.

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