LCD QVGA Color AC and DC Systems Monitors

The next generation in systems monitoring, page 28 and 29

CZone

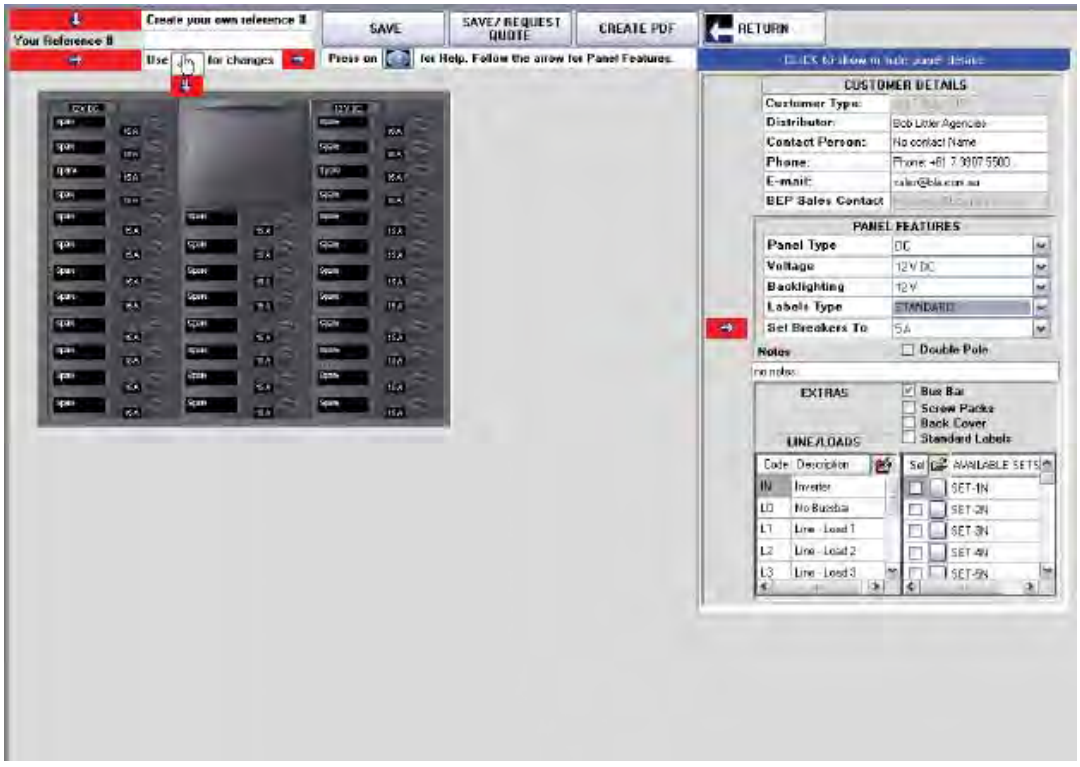
Innovative, network control & monitoring system, page 4

Maxi Fuse Holder

An economical maxi fuse holder, page 67

Panel Configurator

Create, design and modify a custom control panel online at www.bepmarine.com, page 27



Wireless Remote Control

Wireless control of onboard systems, page 47

NEW

CZone™ is what you want in a digital control system designed for manufacturers and installers of Marine, RV and Specialty Vehicles. It simplifies installation of electrical systems through the replacement of complicated, cumbersome wiring to switch and fuse panels, with state of the art, robust interfaces and light NMEA 2000 network cable. It also provides the the end user a sophisticated solution through the automation of complicated control and monitoring issues associated with today's on board systems.

INSTALLATION

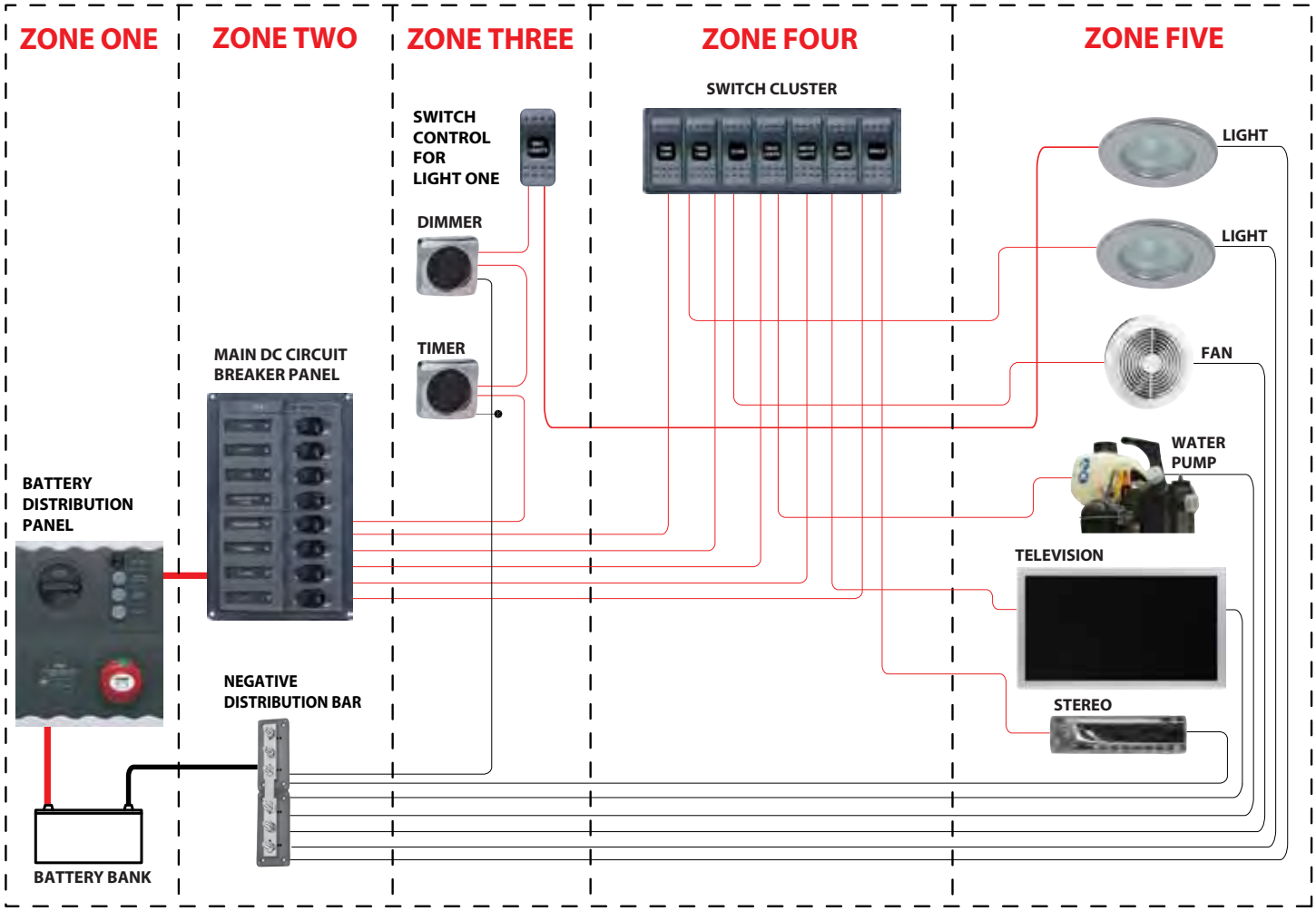
Builders recognize an immediate benefit with reductions in cable usage, harness weights and installation times. CZone™ also integrates many stand alone components into one intuitive system. Wiring is dramatically simplified, CZone™ is designed to remove complex switching clusters and wiring runs. Integrated diagnostics ensures fault finding is simple. CZone™ is the digital networking system that is both cost-effective and scalable. Modules can easily be added into the system to best suit the OEM and end-users' needs.

CONFIGURATION

We provide the tools to help you determine the modules needed based on your specific requirements. Then, simply program with the CZone™ intuitive configuration tool.

TRADITIONAL ELECTRICAL DC WIRING

Wiring DC systems can be complex and installation time can be extensive. The larger the system, the more wire is required, which creates weight and space concerns, not to mention increased cost and complexity of design and manufacturing. Basic maintenance and trouble shooting of traditional wiring systems can be difficult to manage.



- Switch panel wiring is complicated and extremely labor intensive to install
- Cable runs are long and have multiple conductors. Switching of common circuits is complex
- Long wire runs require larger cable, adding weight, increasing cost and reducing space

NEW

INTEGRATION

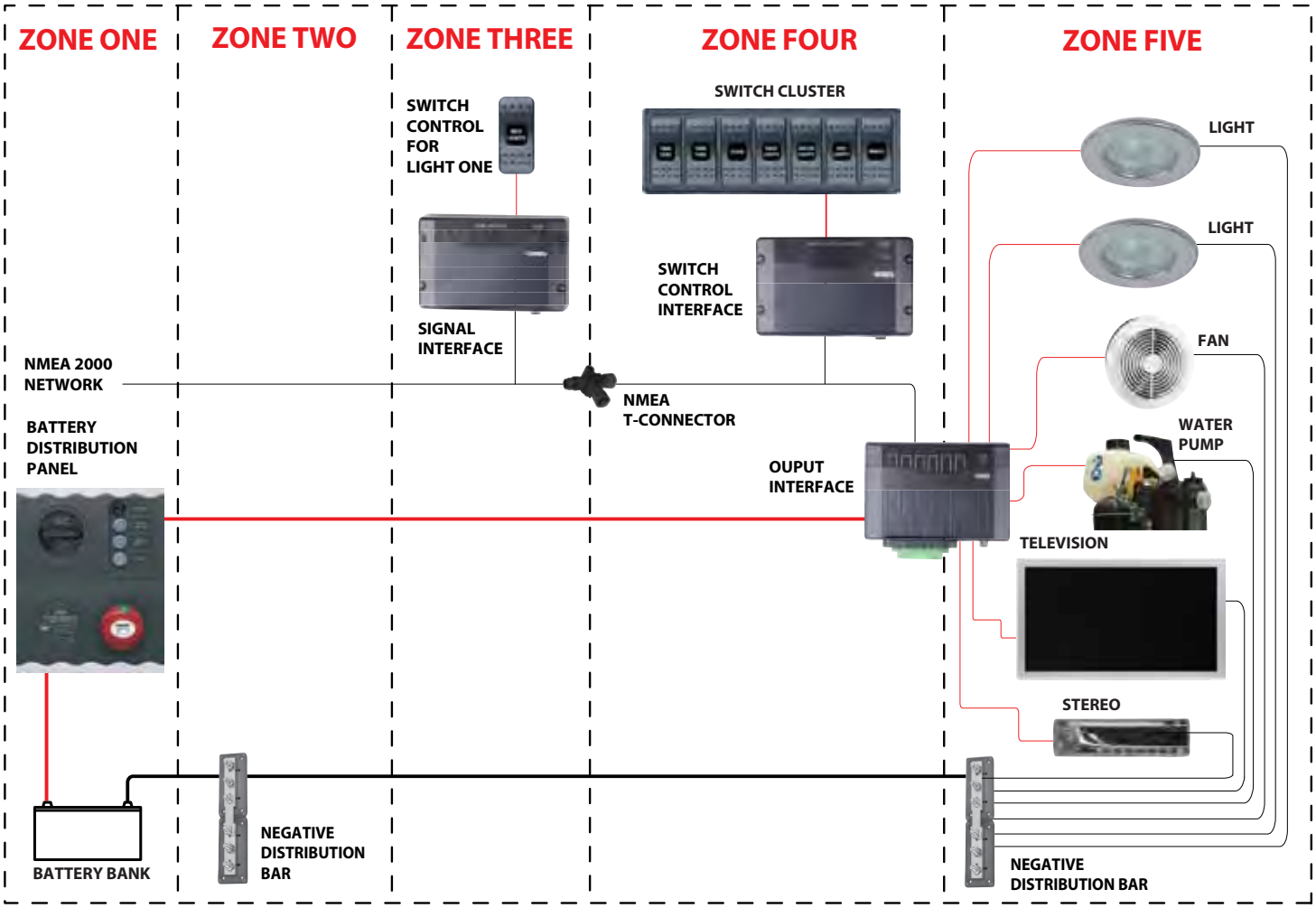
CZone™ is NMEA 2000 compliant and uses the standard Micro cables and connectors. Being NMEA 2000 compliant you can have trust in the networok. This also allows a single network backbone to be installed for multiple systems (CZone™ and other NMEA 2000 devices). Aditionally, CZone™ can share certain monitoring functions with other NMEA 2000 compliant screens.

VERSATILITY & SECURITY

CZone™, designed for 9-32V systems, features built-in timers, dimmers (including support for halogen lighting), alarms, voltage reducers and load shedding. With safety in mind, CZone™ features a manual bypass. Our No-Single-Failure-Point technology ensures a plug-n-play system that is designed to handle mishaps. If a module is damaged, the system will automatically program the replacement module, when it is plugged in. This means any module can be replaced without using high tech service people. Our security features allow custom configurations that can be locked.

CZone™ DC WIRING

CZone™ decentralizes the DC power distribution system, locates circuit control and protection modules closer to loads to shorten cable runs and reduce the size of conductors, significantly decreasing the cost and weight of the electrical wiring harness. The system replaces complex wiring with a single data wire.



- Complex switch panel wiring removed, replaced with single data cable connection
- The grouping of multiple loads into common areas (Zones) with Output Interfaces is the key to the CZone™ system
- Heavy duty battery mains cable, replaced by multiple smaller conductors

DISPLAY INTERFACE

The **CZone™** Display Interface (DI) is the interface between the **CZone™** network and the user. It offers full control of circuits as well as the ability to view important on board systems information such as tank levels and power levels (for both AC and DC supplies), it also provides audiable and visual alarms with systems diagnostics. The DI is extremely intuitive to use with simple controls and a menu structure that is easy to follow.The "modes of operation" feature allows the control of multiple circuits with a single push of a button. For instance, "night running" mode turns pre-selected lights on to dim levels. These modes are all user configurable. The DI can be used to set **CZone™** parameters for initial installation and future system maintenance.

GENERAL SPECIFICATIONS:

- 3.5" Transflective QVGA LCD
- IpX7 water ingress Protection
- Rotary Knob for easy menu navigation
- Simple User Interface
- Power consumption @12V: 180mA (standby 130mA)
- H 105mm (4"3/32) x W165mm (6"7/16) x D 62mm (2"13/32)

POWER CONTROL:

- Turn circuits on and off including timer and light dimming control (see opposite page for detail)

MONITORING:

DC POWER METER:

- Displays voltages of multiple battery banks, includes low and high voltage alarms
- Displays charge and discharge (amps) of multiple battery banks
- Displays battery capacity in ampere hours and % charge/ discharge, includes low ampere hour alarm

AC POWER METER:

- Displays multiple line voltages (230 and 110V), includes high and low voltage alarm
- Displays AC line frequencies, includes high and low frequency alarm and AC power consumption in kW

TANK LEVELS:

- View tank level information for multiple tanks and fluid types

DATA:

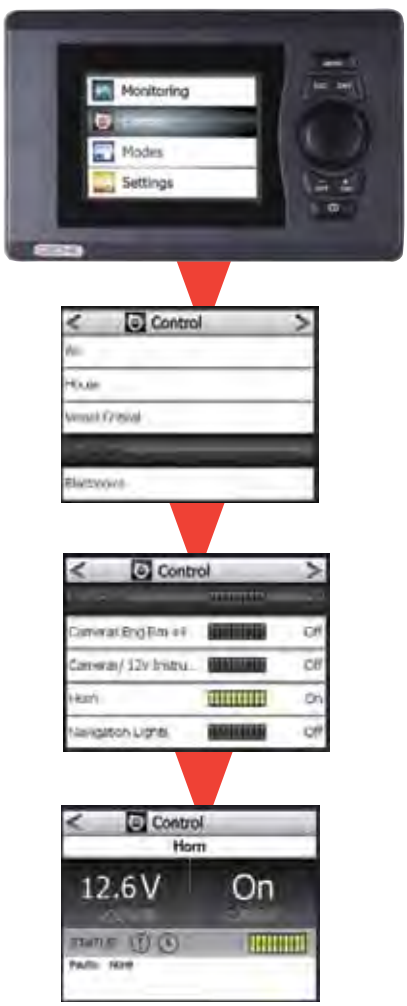
- Displays standard NMEA 2000 information

ALARMS/DIAGNOSTICS

- **CZone™** network status reporting
- Presents alarms for on board faults in audible and Visual form (bilge pump running, smoke alarm)

SET MODES OF OPERATION

CONTROL: Breaks down the circuits into easy to identify groups for quick control, ie., to turn on fresh water pump open "pumps" group. User can open pumps group and select fresh water pump. This screen also allows the user to monitor the status of the circuit ie on, off, fault and current draw.



MONITORING: Allows user to easily monitor AC and DC power, tanks, data, alarms, and circuit status.

DISPLAY INTERFACE

The Display Interface is designed with both the manufacturer and end-user in mind. The easy to use display screen puts the control of all components directly at your fingertips. Multiple Display Interfaces can be used in the same system. The scroll and click interface is simple to use in the roughest of seas or bumpiest of roads. Installation is simple, bringing all the power of the DI to an area with the simple addition of a power and network cable.

SETTINGS: Allows OEM or technician access to the configuration (via password) of a system. No need for computer to set or change configuration settings such as circuit labels, circuit breaker sizes, etc.

MODES: Key to the ease of operation. With one key press, user can turn on a group of circuits, without having to scroll, search for, and turn on the individual circuits that they need for operation of their vessel/vehicle. When leaving vessel or vehicle, simply press "systems off" to turn off all non-essential circuits. Entertainment mode allows preset activation of salon lights, music etc... All functions can be controlled remotely with **CZone™** remote.

PART#	DESCRIPTION
80-911-0001-00	Display Interface, w/power cable, black bezel
80-911-0002-00	Display Interface, w/power cable, grey bezel
80-911-0003-00	Display Interface only, black
80-911-0004-00	Display Interface only, grey

2- pin Power Connector

NMEA 2000 Connector

SWITCH CONTROL INTERFACE

The Switch Control Interface (SCI) provides an interface between the **CZone**™ network and traditional mechanical switches that manufacturers and users are familiar with. This interface converts the signal from those switches into the Control Area Network (CAN) signal needed across a digital network. No need to change existing designs.

Diagnostics are important. Fault codes are provided to quickly identify issues with the network or switches. Information is provided on the Switch Control Interface as well as sent to the **CZone**™ Display Interface.

The SCI simplifies your wiring, supports your existing choice of switches, protects against failures and allows for expanding installation options.

Backlighting and systems in operation lights are dimmable to ensure your night vision is not impared by bright lights on your control area, level control of these can be linked to the backlighting level of any Display Interfaces in close proximity of the SCI.

PART#	DESCRIPTION
80-911-0011-00	Switch Control Interface w/seal
80-911-0012-00	Switch Control Interface only

GENERAL SPECIFICATIONS:

- Single switch position can control multiple OI channels
- Attaches to switch panels via custom SCI cable
- Multiple SCI switches can control single OI channel
- Output for backlighting of switch labels (dimmable)
- Outputs systems on and function/ fault codes to systems on LED of switches (dimmable)
- H 100mm (3"29/ 32) x W156mm (6"3/ 32) x D 42mm (1"5/ 8)
- IPX5 water ingress protection
- Programmable switch types
- 8 inputs per module (16 individual controls)
- Sequential button press functionality

8-Way Connector Bank for SCI Cable Assembly to Switches

Waterproof Cable Seal

NMEA 2000 Connector

SIGNAL INTERFACE

The Signal Interface (SI) connects **CZone**™ to your external sensors, alarms and switching devices. The SI allows intelligent, automated operation of circuits depending on the state of the input. For example, the SI can be easily programmed to allow a fluid transfer pump and an alarm to turn on simultaneously when the SI detects that a low tank level has been reached.

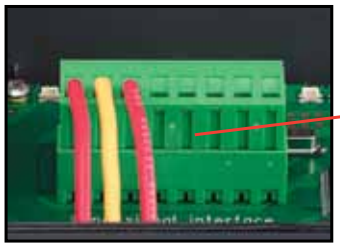
Connect standard switches to the SI to allow control of **CZone**™ outputs.

The module provides LED status indications for each input. This allows fast diagnostics while providing information back to **CZone**™'s Display Interface.

PART#	DESCRIPTION
80-911-0013-00	Signal Interface w/seals, connector
80-911-0014-00	Signal Interface only

CAN Network Status Indicator

Signal Status Indicator



Terminal Block

Waterproof Cable Seal

NMEA 2000 Connector

GENERAL SPECIFICATIONS:

- Accepts inputs from traditional switch types being used to control outputs
- Accepts inputs from switches to trigger alarm i.e. high water float switch
- Accepts inputs from industry standard tank senders (0-5V, 10-180Ohm, 240-33Ohm)"
- Accepts inputs from general voltaic or resistive signals can be used for controlling outputs or to display a physical position i.e. show a hatch is partially open
- LED status indicators for each input
- H 100mm (3"29/32) x W156mm (6"3/32) x D 42mm (1"5/8)
- IPX5 water ingress protection

METER INTERFACE

The Meter Interface (MI) accepts inputs from external AC and DC power metering sensors. It then processes and converts the analog signals into digital strings that can then be presented, by the display, to the user, as one of several, easy-to-understand formats such as:

AC and DC voltage and amps

AC Kilowatts

DC battery capacity in amp hours and % remaining

All with user definable high and low alarms

Intelligence is built into **CZone™**. The MI can calculate the battery capacity as ampere hours and/or percentage of charge remaining. Since **CZone™** provides both monitoring and control for DC systems, it can be configured to turn off non-essential circuits in the event that the battery is discharged to a low level. This helps to ensure that there is enough charge left in the battery to power safety critical circuits.

PART#	DESCRIPTION
80-911-0005-00	Meter Interface, w/seal & plug
80-911-0006-00	Meter Interface only

GENERAL SPECIFICATIONS:

AC

- 3 x AC voltage inputs (multi voltage)
- 2 x AC current inputs
- Calculates true RMS power
- Ignition protected

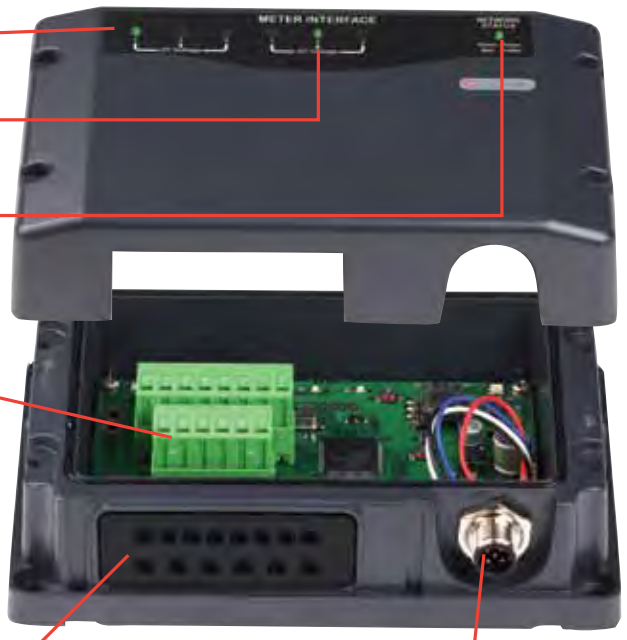
DC

- 3 x DC voltage inputs (multi voltage)
- 2 x DC current inputs
- Calculates battery capacity as Ampere hours and percentage charge remaining
- Resolution for current metering down to 0.1A

GENERAL

- H 100mm (3"29/32) x W156mm (6"3/32) x D 42mm (1"5/8)
- IPX5 water ingress protection

Note: High and low alarm levels can be set for all inputs



Terminal Block

Waterproof Cable Seal

NMEA 2000 Connector

OUTPUT INTERFACE

The Output Interface (OI) provides an intelligent replacement for traditional circuit breaker and fuse panels. It has 6x high power, robust output channels which provide the power supply, control and fusing for a circuit as well as integrating many other built in features such as timers and dimmers.

The OI is behind the **CZone™** concept of decentralising the power distribution, compared to a traditional electrical layouts which are typically based around a large, centralised circuit breaker or fuse panel. The OI's allow the installer to move the circuit control and protection closer to the loads which significantly shortens cable runs and reduces the size of the conductors. This equates to a reduction in the cost and weight of the electrical wiring harness, ie. less copper.

Connection to the unit is simple: a large 6 way plug allows connections to cables of up to 16mm^2 (6AWG) in size, or multiple smaller conductors. No need for specialised crimp terminals and expensive crimp tools to be carried for terminations to **CZone™**, just a blade screwdriver. A protective flexible boot offers protection to the connections from harsh environment conditions.

PART#	DESCRIPTION
80-911-0009-00	Output interface w/connector, boot
80-911-0010-00	Output interface only

Fuses For Emergency Circuit Bypass

Circuit ID Label

Circuit Status Indicator

DC Positive Feed

Connector & Protective Boot

NMEA 2000 Connector

GENERAL SPECIFICATIONS:

- 4 levels of backup fusing including manual override (as required by ABYC)
- 6 x 20 amp circuits
- Programmable software "fuse" sizes
- Multiple channels can be bridged together to offer higher current switching
- Small, non metallic, easy to install case
- IPX5 water ingress protection
- Dimensions: H 128mm (5") x W200mm (7"29/32) x D 45mm (1"3/4)
- Power consumption @12V: 85mA (standby 60mA)

MOTOR OUTPUT INTERFACE

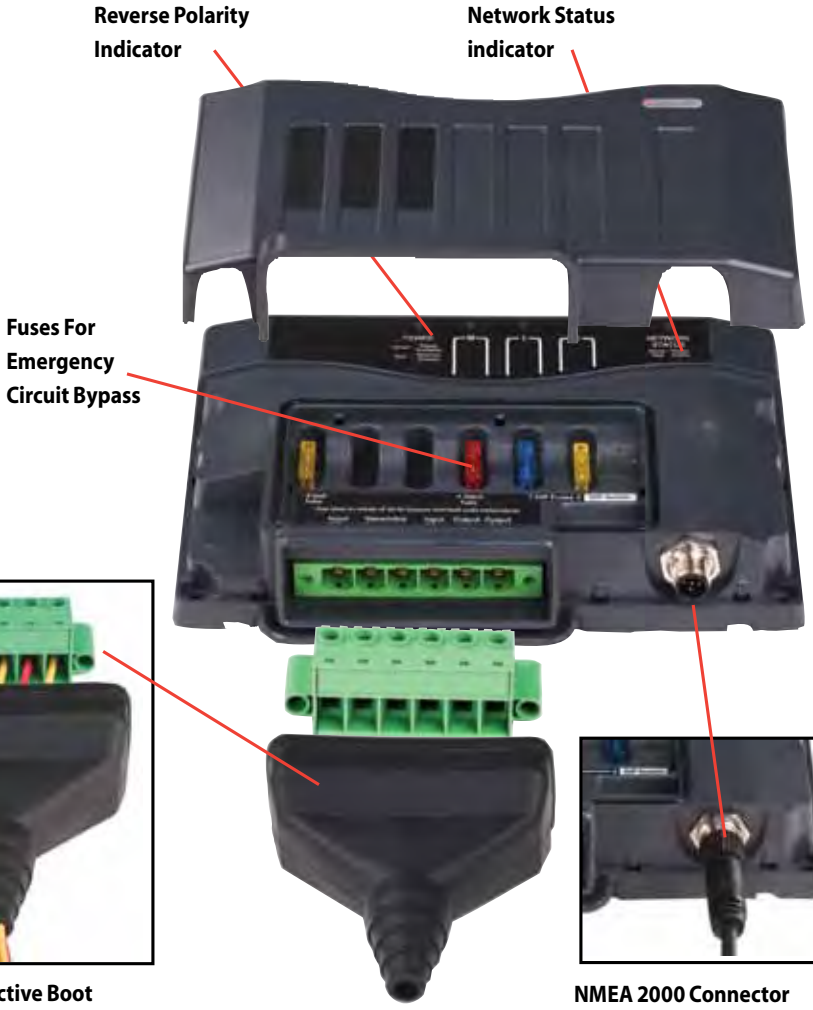
The Motor Output Interface (MOI) has an output pair for controlling DC motors which require a reversal of polarity to change the direction of their mechanical operation. For example, a DC motor for an electric window mechanism will move the window up or down depending on the polarity of the feed to the motor.

Historically the wiring and control circuitry for such installations is complicated and requires a number of individual components, often controls for these devices are mounted remotely to the motor so wiring runs can be long. the MOI replaces all of these devices with one simple solution that can be mounted close to the motor further reducing cable runs.

The MOI can be configured to deliver a "soft start" so that motor driven devices don't start with a sudden and abrupt motion.

The MOI also incorporates two standard output channels such as is found on the OI.

PART#	DESCRIPTION
80-911-0007-00	Motor Output Interface w/connector, boot
80-911-0008-00	Motor Output Interface only



Connector & Protective Boot

NMEA 2000 Connector

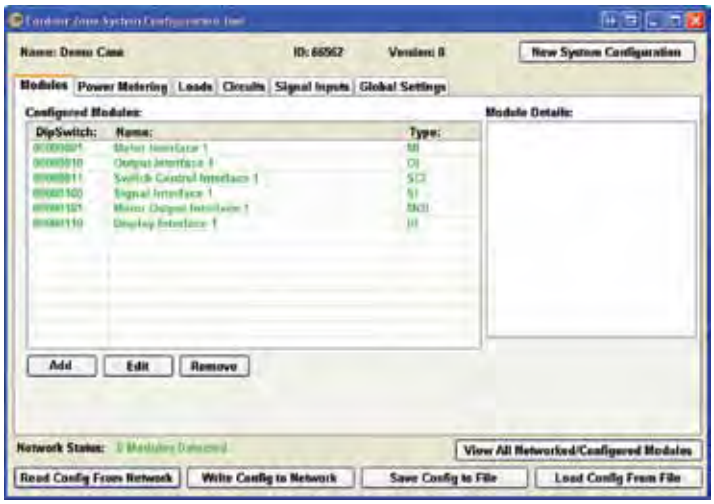
GENERAL SPECIFICATIONS:

- Single motor control and two normal channels per unit, 20A per output
- Built In circuit protection
- IPX5 water ingress protection
- Dimensions: H 128mm (5") x W200mm (7"29/32) x D 45mm (1"3/4)

CONFIGURATION MADE EASY

Historically, generating a configuration for and programming a system is a chore that requires a significant amount of training. The **CZone**™'s configuration tool offers simple, straightforward programming that is easy to learn and to use.

The **CZone**™ Configuration Tool allows the manufacturer to set up programming parameters on a standard PC, (use USB CAN Adapter# 80-911-0044-00) upload a saved configuration into the **CZone**™ network and simultaneously program every interface on-board. Changes and customizations can also be made from the Display Interface and downloaded back to the PC overriding the master configuration. The master template file is now ready to go and can be used on multiple vessels or vehicles during manufacturing.



CZone™ ACCESSORIES

NMEA 2000 Ext. Cable

80-911-0024-00 15 ft 4.57meters
80-911-0025-00 25 ft 7.62 meters
80-911-0026-00 2 ft .61 meters
80-911-0027-00 6 ft 1.82 meters

NMEA 2000 Power Cable

80-911-0028-00 3.2 ft 1 meter

Power Cable for
Display Interface, 2 Pin, 2 meters

80-911-0032-00 6.5 ft 2 meters

USB CAN Adapter

80-911-0044-00

- Connects PC to the CZONE network for configuration and system set up

NMEA 2000 T-Piece

80-911-0029-00

CZone™ Wireless Remote Kit

#80-911-0045-00

- A simple to set up, wireless remote control
- Configure the buttons to operate Individual circuits or to control multiple circuits through a mode of operation

AC-VSEN-4

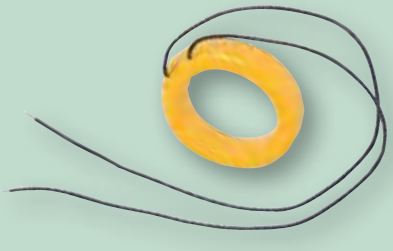
The AC-VSEN-4 includes 3 voltage transformers for up to 3 voltage inputs.

Dimensions: 69 x 140 x 50 mm (2.75 x 5.5 x 2 in)

CT-10-3

Dimensions: 37.5 x 39.2 x 13.7 mm
(1.5 x 1.55 x .55 in)

Hole size: 12 mm (0.5")



CT-HD

CT-HD is available for systems with large mains cables, too large for CT-10-3 (ordered separately).

CT-HD dimensions: Ø 47 x 10.5 mm
(Ø 1.85 x 0.4 in)

Hole size: 32 mm (1.25 in)

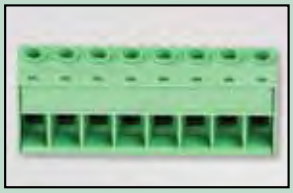
CZone™ ACCESSORIES

Cable Gland for SCI Blk Silicon
80-911-0035-00

Terminal Block for MI, 6 Way
80-911-0042-00

Terminal Block, OI/MOI, 6W
80-911-0041-00

Cable Gland, SI, Blk Silicon
80-911-0036-00



Terminal Block, SI/MI 8W
80-911-0043-00

Cable Gland, MI Blk Silicon
80-911-0033-00

Seal Boot for OI/MOI ,
6-Wire, Blk Silicon
80-911-0034-00

Hole Plugs, Blk
80-911-0016-00 3.2mm
80-911-0017-00 5 mm
3.2mm for MI and SI cable glands
5mm for SCI cable glands

Cable Assembly, SCI
to suit Switches below
80-911-0018-00 .5 meter
80-911-0019-00 1 meter
80-911-0020-00 2 meter
80-911-0021-00 3 meter
80-911-0022-00 4 meter
80-911-0023-00 5 meter

NMEA 2000 Resistors
80-911-0030-00 Female
80-911-0031-00 Male

Custom Switches
80-911-0037-00 ON/OFF
80-911-0038-00 mom ON/OFF
80-911-0039-00 ON/OFF/ON
80-911-0040-00 mom ON/OFF/mom ON

Range Highlights

- Red systems on LED
- Marine grade powder coated aluminium
- ABYC standard voltage indication
- Green LED backlit labels
- Airpax Circuit Breakers
- Stylish clip on contour fascia
- Label sets and buss bar supplied with panels; for additional labels see pages 71 and 72

DC Control Panels - No Meters, 12 V										
Part No.	mm	in	Label Sheet	CB's - Single Pole						Neg Bus
	H x W x 65	H x W x 2.5		5	10	15	20	25	30	
900	115 x 127	4.5 x 5	1	1	2	1				6 way
901H	115 x 239	4.5 x 9.75	"	2	2	3	1			"
901V	200 x 127	7.9 x 5	"	2	2	3	1			"
902NMH	115 x 351	4.5 x 13.9	"	3	4	4		1		"
902NMV	285 x 127	11.25 x 5	"	3	4	4		1		"
904NM	200 x 239	7.9 x 9.75	"	4	5	5	1	1		12 way
904NMH	115 x 463	4.5 x 18.25	"	4	5	5	1	1		"
904NMV	370 x 127	14.6 x 5	"	4	5	5	1	1		"
905NM	200 x 351	7.9 x 13.9	1 - 3	5	8	8	1	1	1	"
905NMV	285 x 239	11.25 x 9.75	"	5	8	8	1	1	1	"
906NMH	200 x 463	7.9 x 18.25	1 - 4	7	11	11	1	1	1	24 way
906NMV	370 x 239	14.6 x 9.75	"	7	11	11	1	1	1	"
NC36NM	285 x 351	11.25 x 13.9	1 - 4, 6	8	12	12	2	1	1	"

Cutout size - 10 mm (3/8 in) inside all external edges

All panels available in 12 or 24 V configuration. All part numbers shown are 12 V backlighting. If 24 V is required, please specify when ordering.


904NMH


905NMV


906NMH


905NM


NC36NM


906NMV

DC Control Panels - Digital Meters										
Part No.	mm	in	Label Sheet	CB's - Single Pole						Neg Bus
	L x W x 65	H x W x 2.5		5	10	15	20	25	30	
900D	200 x 127	7.9 x 5	1	1	2	1				6 way
901DV	295 x 127	11.6 x 5	"	2	2	3	1			"
902D	200 x 239	7.1 x 9.75	"	3	4	4		1		"
902DV	380 x 127	15 x 5	"	3	4	4		1		"
903D	200 x 351	7.9 x 9.75	1 - 3	5	6	7	1		1	12 way
904D	295 x 239	11.6 x 9.75	1 - 2	4	5	5	1	1		"
905D	295 x 351	11.6 x 13.9	1 - 3	5	8	8	1	1	1	"
905DV	380 x 239	15 x 9.75	"	5	8	8	1	1	1	"
906D	295 x 463	11.6 x 18.25	1 - 4	7	11	11	1	1	1	24 way
906DV	455 x 239	18 x 9.75	"	7	11	11	1	1	1	"
907D-24V	380 x 463	15 x 18.25	1 - 5	12	15	15	3	1	2	2 x 24 way

Range Highlights

- Ammeters available in other scales (page 26).
- All panels are available with either Analog or Digital meters
- Label set and bus bar supplied with panel; for additional label sets see pages 71 and 72

DC Control Panels - Analog Meters										
Part No.	mm	in	Label Sheet	CB's - Single Pole						Neg Bus
	H x W x 65	H x W x 2.5		5	10	15	20	25	30	
900A	200 x 127	7.9 x 5	1	1	2	1				6 way
901AV-12V	295 x 127	11.6 x 5	"	2	2	3	1			"
902A-12V	200 x 239	7.9 x 9.75	"	3	4	4		1		"
902AV-12V	380 x 127	15 x 5	"	3	4	4		1		"
903A	200 x 351	7.9 x 9.75	1 - 3	5	6	7	1		1	12 way
904A-12V	295 x 239	11.6 x 9.75	1 - 2	4	5	5	1	1		"
905A-12V	295 x 351	11.6 x 13.9	1 - 3	5	8	8	1	1	1	"
905AV	380 x 239	15 x 9.75	"	5	8	8	1	1	1	"
906A	295 x 463	11.6 x 18.25	1 - 4	7	11	11	1	1	1	24 way
906AV	455 x 239	18 x 9.75	"	7	11	11	1	1	1	"
907A	380 x 463	15 x 18.25	1 - 5	12	15	15	3	1	2	2 x 24 way

All analog panels supplied with one shunt, extra shunts ordered separately. Digital panels supplied with 450 A-50mV shunt.

Cutout size - 10 mm (3/8 in) inside all external edges

All panels available in 12 or 24 V configuration. All part numbers shown are 12 V backlighting. If 24 V is required, please specify when ordering.

Range Highlights

- Mimic panel for quick reference of systems in operation
- Blank space for addition of extra meter eg: tank monitor
- Digital or analog readouts

DC Control Panels - Cruiser Series, 24 Way, 12 V										
Part No.	mm	in	Label Sheet	CB's - Single Pole						Meter
	H x W x 65	H x W x 2.5		5	10	15	20	25	30	
NC32YD	380 x 351	15 x 13.9	1 - 4, 6	7	11	11	1	1	1	Digital
NC36LD	380 x 351	15 x 13.9	"	8	12	12	2	1	1	Digital
NC32YA	380 x 351	15 x 13.9	"	7	11	11	1	1	1	Analog
NC36LA	380 x 351	15 x 13.9	"	8	12	12	2	1	1	Analog

All analog panels supplied with one shunt, extra shunts ordered separately. Digital panels supplied with 450A – 50mV shunt.
Cutout size - 10 mm (3/8 in) inside all external edges
All panels available in 12 or 24 V configuration. If 24 V is required, please spcify when ordering,

Range Highlights - DP Panel

- Double pole panels available in all panel sizes.
- Double pole CBs use twice the space of single pole breakers; an 8-way panel can become a 4-way
- AC or DC versions available
- Single toggle

Range Highlights - Millennium Range

- Compact sizing
- Battery monitoring using BEP multifunction meter (voltage on 3 battery banks, charge, discharge amps and amp-hours remaining on main battery bank (see 600-DCM page 30)

DC Control Panels - Millennium Range, 24 Way, 12 V										
Part No.	mm	in	Label Sheet	CB's - Single Pole						Meter
	H x W x 65	H x W x 2.5		5	10	15	20	25	30	
M28D	370 x 239	14.6 x 9.75	1 - 4	8	8	8	2		2	Digital
M32D	285 x 351	11.25 x 13.9	1 - 4, 6	7	11	11	1	1	1	"
M44D	370 x 351	14.6 x 13.9	"	10	14	14	3	1	2	"
M44DH	285 x 463	11.25 x 18.25	"	10	14	14	3	1	2	"
M56D	455 x 351	18 x 13.9	"	12	18	18	4	2	2	"

Range Highlights

- Ideal for AC shore power installations and on board inverter installations.

REVERSE POLARITY AUTO TRIP BREAKER NOW STANDARD on all 230 V, 50 Hz panels (Euro and Asia-Pacific).

This will automatically trip when it detects reverse polarity.

AIRPAX

CBS-20A-DP-TC230

For standard twin input systems, eg: one shore power and one genset input.

AC Control Panels - No Meters																
Part No.	Volts	mm	in	Label Sheet	CB's - Single Pole						CB's - Double Pole					Neg Bus
		H x W x 65	H x W x 2.5		5	10	15	20	25	30	20	25	30	50	80	
900-ACM2WA	230	115 x 239	4.5 x 9.75	5		2	2				2					IS-6MM-2
900-AC1-110V	110	115 x 239	4.5 x 9.75	5			2	2					2			IS-6MM-2
900-ACM2W	230	115 x 127	4.5 x 5	5		2					1					IS-6MM-2
900-ACM2W-110V	110	115 x 127	4.5 x 5	5			2						1			IS-6MM-2
900-ACM6W	230	200 x 127	7.9 x 5	5		2	3	1			1					IS-6MM-2
900-ACM6W-110V	110	200 x 127	7.9 x 5	5			3	2	1				1			IS-6MM-2
900-ACCH	230	115 x 127	7.9 x 5	5							2					IS-6MM-2
900-ACCH-110V	110	115 x 127	7.9 x 5	5									2			IS-6MM-2

Range Highlights

- All available in 110 V/60 Hz or 230 V/50 Hz
- All supplied with tranducers
- Reverse polarity indicator
- Double pole mains input CBs with slde lockout
- Digital meter shows volts, amps and frequency
- LED wired to indicate live panel with mains breaker either on or off
- AC source selector ensures no cross over between AC inputs (ship or shore power)
- AC voltage/frequency label to comply with ABYC Standards

Reverse polarity auto trip breakers are used as standard for shore power mains inputs (230 V AC panels only)

AC Control Panels - Analog Meters																
Part No.	Volts	mm	in	Label Sheet	CB's - Single Pole						CB's - Double Pole					Neg Bus
		H x W x 65	H x W x 2.5		5	10	15	20	25	30	20	25	30	50	80	
900-ACMA2W	230	200 x 127	7.9 x 5	5		2					2					IS-6MM-2
900-ACMA2W-110V	110	200 x 127	7.9 x 5	5			2						1			IS-6MM-2
900-ACM6WA-V	230	295 x 127	11.6 x 5	5		2	3	1			1					IS-6MM-2
900-ACM6WA-V-110V	110	295 x 127	11.6 x 5	5	1	3	3	1			1		1			IS-6MM-2
900-AC2AH	230	200 x 239	7.9 x 9.75	5	1	3	3	1			1		1			2 x 6 way
900-AC2AH-110V	110	200 x 239	7.9 x 9.75	5		2	3	2	1				1	1		2 x 6 way
900-AC2AV	230	380 x 127	15 x 5	5	1	3	3	1			1		1			2 x 6 way
900-AC2AV-110V	110	380 x 127	15 x 5	5	1	2	3	2	1				1	1		2 x 6 way
900-AC3A	230	200 x 351	7.9 x 13.9	5	1	4	5	1	1		1		1			2 x 12 way
900-AC3A-110V	110	200 x 351	7.9 x 13.9	5	1	3	4	3	1	1			1		1	2 x 12 way
AC Control Panels - Digital Meters																
900-AC2DH	230	200 x 239	7.9 x 9.75	5	1	3	3	1			1		1			2 x 6 way
900-AC2DH-110V	110	200 x 239	7.9 x 9.75	5		2	3	2	1				1	1		2 x 6 way
900-AC2DV	230	380 x 127	15 x 5	5	1	3	3	1			1		1			2 x 6 way
900-AC2DV-110V	110	380 x 127	15 x 5	5	1	2	3	2	1				1	1		2 x 6 way
900-AC3D	230	200 x 351	7.9 x 13.9	5	1	4	5	1	1		1		1			2 x 12 way
900-AC3D-110V	110	200 x 351	7.9 x 13.9	5	1	3	4	3	1	1			1			2 x 6 way
900-AC4D	230	200 x 351	7.9 x 13.9	5	1	5	7	2	1		1			1		2 x 6 way
900-AC4D-110V	110	200 x 351	7.9 x 13.9	5		5	8	2	1				1		1	2 x 6 way

Cutout size - 10 mm (3/8 in) inside all external edges

All panels available in 12 or 24 V backlighting configuration. For 110 V versions add **-110V** to Part No.

Range Highlights

- Designed to insulate exposed rear terminals
- Flame retardant PVC in two styles
- FLANGE MOUNT: for access to control panel back when mounted in place. Attaches to the rear of the same mounting surface as the panel
- PANEL MOUNT: for access only when panel is removed. Supplied with mounting pedestals

AC Back Panel Covers				
Part No.	Mount type	Cover description	mm L x W x 90	in L x W x 3.5
BC-FM1	Flange	1 column 8-12 CBs + meter	380 x 127	15 x 5
BC-FM2	Flange	2 column 8-12 CBs + meter	380 x 239	15 x 9.4
BC-FM3	Flange	1 column 8-12 CBs	285 x 127	15 x 5
BC-FM4	Flange	2 column 8-12 CBs	285 x 239	15 x 9.4
BC-PM1	Panel	1 column 8-12 CBs + meter	360 x 107	15 x 4.2
BC-PM2	Panel	2 column 8-12 CBs + meter	360 x 219	15 x 8.6
BC-PM3	Panel	1 column 8-12 CBs	265 x 107	15 x 4.2

Range Highlights -

We supply two Residual Current Device (RCD) ratings (16 & 32 A). Due to the difference in style of the RCD's, these panels are made to be mounted separately from the main AC panel.

RCD Panels			
Part No.	Rating (A)	mm H x W x 65	in H x W x 2.5
900-RCD-16A	16	115 x 127	4.5 x 5
900-RCD-1X16-32A	32	115 x 127	4.5 x 5
900-RCD-2X16A	16x2	115 x 127	4.5 x 5
900-RCD-2X32A	32x2	115 x 127	4.5 x 5
900-RCD-32A	16x1, + 32x1	115 x 127	4.5 x 5

Cutout size - 10 mm (3/8 in) inside all external edges

For installations in Australia and New Zealand to comply with AS/NZ3004 an approved double pole mains circuit breaker must be mounted upstream of the BEP Control Panel in the form of a RCD or MCB. The MCB-3WENC is an enclosure with IP65 rating. The enclosure and CB is ordered separately. The RCD panels above can also be used for this application, however they would have to be mounted in a dry protected position on the vessel.

Dimensions of MCB-3WENC:
160 mm (6.3") H x
92 mm (3.6") W x
90 mm (3.5") D

MCB-3WENC

RCD (see chart)

MCB (see chart)

CB Options		
Part No.	Rating (A)	Type
RCD16A30MA	16	Residual CB Overload
RCD32A30MA	32	Residual CB Overload
RCD63A30MA	63	Residual CB
MCB16A	16	Miniature CB
MCB32A	32	Miniature CB
MCB63A	63	Miniature CB

Range Highlights

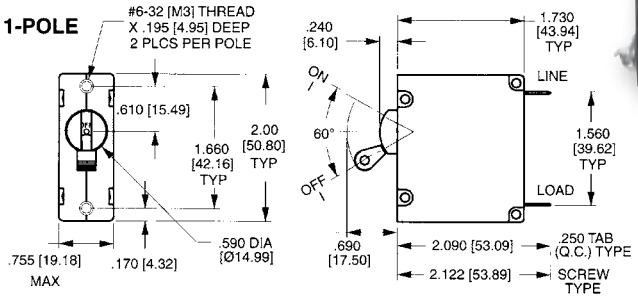
- Spacing compliance: IEC specification 601, 950; VDE 0804, 0805
- UL recognized; CSA certified; VDE 0660 approved; Part 101 & CE compliant
- Available in single or double pole; triple pole available on special orders
- **NOTE**: Part numbers shown are all BEP specific and have no reference to the Airpax part number system.

AIRPAX®

IEG Magnetic CBs

IEG magnetic circuit breakers provide reliable circuit protection and accurate circuit control for equipment in the international market place.

Designed using the latest in sensitive hydraulic magnetic technology, the IEG line adapts itself to many applications and environments. They are ideal for marine applications, data processing and business machines, as well as medical instrumentation, broadcast equipment, vending and amusement machines, military applications and wherever precision operation is required. Temperature differences which affect fuses and other thermal devices are not a concern. One important feature of this breaker line is a 'trip free' action, which means the circuit will trip in the presence of an overload even though the handle is held in the ON position. The delay mechanism senses the fault and the contacts open.



CBS-50A-SP-IGP

CBS-50A-DP

121-710-1101/1

121-710-1101

Image shows "handle lock" as used in all our battery management panels for essential CBs to prevent accidental or unintended actuation of essential circuits CB's from either the "on" or "off" position. (ordered separately)

Single Toggle 1-2 & 3 Pole Small Frame					
Single pole	Rating (A)	Double pole	Rating (A)	Triple pole / Rating (A)	Rating (A)
CBS-2.5A-SP	2.5	CBS-2.5A-DP	2.5	CBS-30A-TP / 30	30
CBS-5A-SP	5	CBS-5A-DP	5	CBS-50A-TP / 50	50
CBS-10A-SP	10	CBS-10A-DP	10	D/Pole trip coil	Volts (V)
CBS-15A-SP	15	CBS-15A-DP	15	CBS-15A-DP-TC230	230
CBS-20A-SP	20	CBS-20A-DP	20	CBS-20A-DP-TC230	230
CBS-25A-SP	25	CBS-25A-DP	25	CBS-30A-DP-TC230	230
CBS-30A-SP	30	CBS-30A-DP	30	CBS-50A-DP-TC230	230
CBS-40A-SP	40	CBS-40A-DP	40		
CBS-50A-SP	50	CBS-50A-DP	50		

Single Toggle 1-2 & 3 Pole Large Frame					
Single pole	Rating (A)	Double pole	Rating (A)	Triple pole	Rating (A)
CBL-50A-SP	50	CBL-50A-DP	50	CBL-50A-TP	50
CBL-60A-SP	60	CBL-60A-DP	60	CBL-80A-TP	80
CBL-75A-SP	75	CBL-75A-DP	75	CBL-100A-TP	100
CBL-100A-SP	100	CBL-100A-DP	100		

IUL Magnetic CBs

provide reliable circuit protection and accurate circuit control for equipment in the international market place. BEP uses the IUL range of circuit breakers where current requirements exceed 50 A and are within 100 A. Available in single and double pole with triple pole available on special orders.

CBL-50A-SP

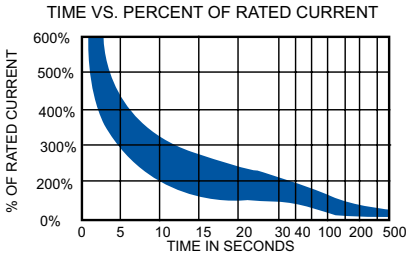
CBL-100A-DP

Busmann® Heavy Duty

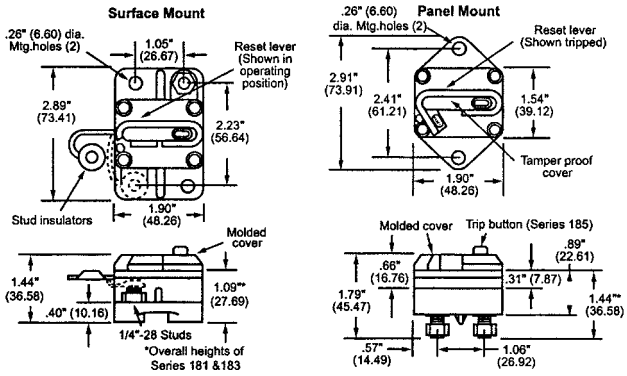
Single Pole Thermal Type Breakers	
Ratings:	50 A to 150 A; 30 V DC, 3000 A interrupt capacity
Operating Temperature:	-25°F (-32°C) to 180°F (82°C)
Storage Temperature:	-30°F (-34°C) to 300°F (149°C)
Applications:	Auxiliary and accessory circuits – trucks, buses, RVs and marine applications, battery chargers and DC audio systems. Series 181, 184 & 185 are sealed for engine compartment and bilge area applications.
Housing:	Thermoset plastic; UL rated 94VO; 311°F (155°C). Stud insulators are provided on covered units with F (Surface Mount) bases
Mounting:	Panel or surface
Indicator:	Series 184 & 185 have a unique reset mechanism providing visible indication of tripped condition
Approvals:	Complies with SAEJ1625

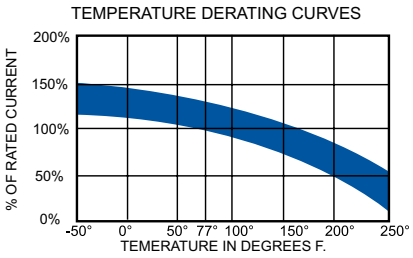
184150P-01-1

185100F-01-1



Manual Reset		
Part No.	Rating (A)	(P)anel mount / (F)lush mount
184060P-01-1	60	P
184150P-01-1	150	P
184100F-01-1	100	F
184150F-01-1	150	F





Switchable Reset		
Part No.	Rating (A)	(P)anel mount / (F)lush mount
185050P-01-1	50	P
185070P-01-1	70	P
185080P-01-1	80	P
185100P-01-1	100	P
185135P-01-1	135	P
185150P-01-1	150	P
185050F-01-1	50	F
185080F-01-1	80	F
185100F-01-1	100	F
185150F-01-1	150	F

Carling CLB Series Push Reset Thermal Circuit Breakers

Specifications:

Ratings:	5—40 A; 200 A @ 250 V AC Interrupt Capacity
Operating Temperature:	-10—60° C
Interrupting capacity:	2500 A
Ressettable overload capacity:	10 x rated current
Approvals:	UL, CUL, TUV, CE, UL1500ISO8846 for ignition protection/marine

CLB-BOOT

CLB-20

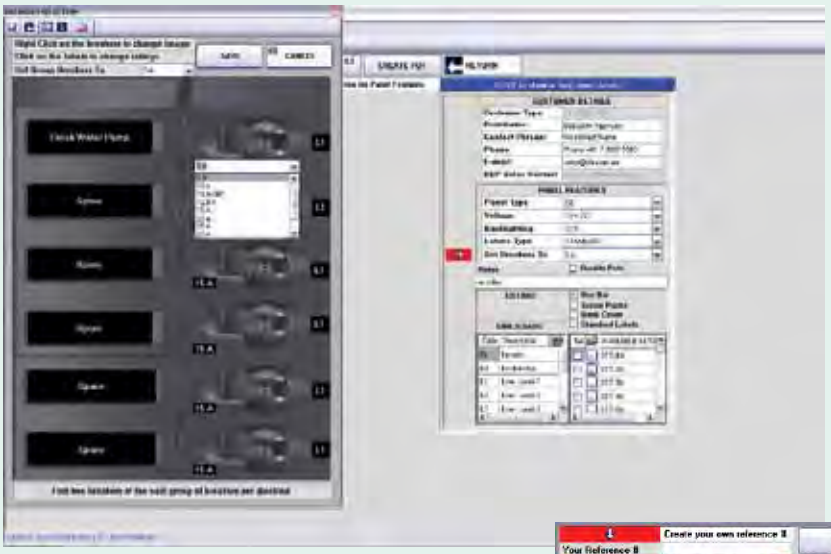
Push To Reset	
Part No.	Rating (A)
CLB-05	5
CLB-10	10
CLB-15	15
CLB-20	20
CLB-25	25
CLB-30	30
CLB-40	40
CLB-BOOT	BOOT

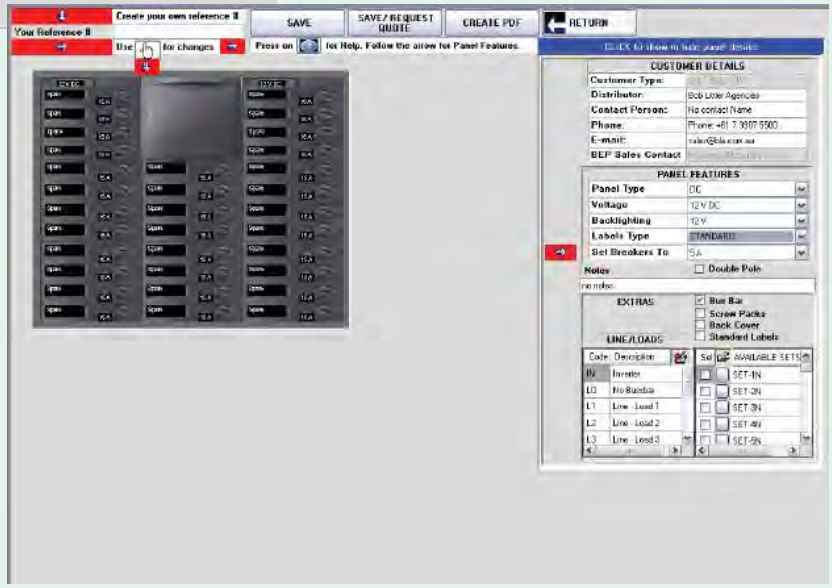
Panel Configurator

The BEP Panel Configurator is a software program designed for do-it-yourself creation and modification of standard circuit breaker panels. The user friendly software is available to both account and non-account holders.

Designed for the creation and modification of standard panels, the software provides the end user prompt turn around for panel requirements. Additionally, the built-in communication tool allows for customer created drawings to be transferred with ease to BEP customer service for quotation. The use of the software greatly streamlines the entire panel production process – reducing design and modification time, decreasing correspondence and cutting lead time.

To learn more and to download the software, go to www.bepmarine.com.





NEW

Range Highlights

Monitors:

- Charge/discharge amps for two banks
- Capacity remaining in A/h and %
- Battery condition
- Tank fluid level
- Circuit status

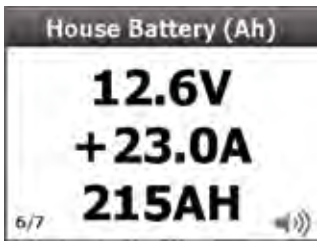
Features:

- 8 Generic, user configurable inputs
- Programmable high/low audio/visual alarms for volts, amps and tank levels
- Backlit keypad and dimmable screen
- Can be panel or surface mounted

Specifications:

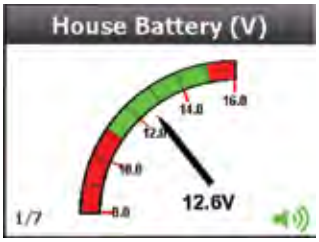
- 2.8" Colour QVGA LCD
- Input voltage 8-32VDC
- Dimensions Width 38mm (1.50") x High 40mm (1.57")
- Backlit keypad

80-600-0021-00 (DCSM including 1x shunt and cable)
80-600-0022-00 (DCSM excluding shunt)



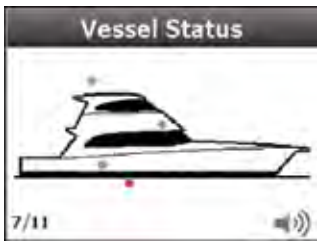
DC Power Meter

- Displays voltages of multiple battery banks (0-32VDC)
- Displays charge and discharge (amps) of 2 battery banks
- Displays battery capacity in amp hours
- High/Low level alarms



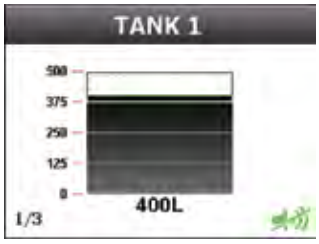
Display Type

- Configure the DCSM to show the data in analogue, digital and graphic form



Circuit Status

- View the status of important circuits (on/off)
- In graphic and numeric form



Tank Level

- View tank level information for multiple tanks in numeric and graphic forms. Resetable when leaving boat

The BEP Digital Monitoring System

Designed and manufactured by BEP, these state of the art full color monitors are made to meet the systems monitoring requirements of today's modern vessel and recreational vehicle. Complex AC and DC electrical installations onboard are becoming more common place.

Additionally the increase in tank monitoring requirements for fuel, fresh, grey and black water, accurate monitoring of these systems is essential.

The DCSM and ACSM displays feature clear, extra large type face. This allows for more detailed on-screen information and increased clarity. The screen has backlighting for easy night time viewing.

Installation Cable Kit

2 core screened cable in
2 lengths pre-terminated.

600-DCM-5M 5 m (16.45") cable
600-DCM-10M 10 m (32.9") cable

600-DCM-5M

450A / 50 mV shunt supplied
supplied with 80-600-0021-00
83L x 45W x 44H mm
(3.25L x 2.8W x 2.75H in)

LB-450-50

Specifications:

- 2.8" Colour QVGA LCD
- Input voltage 8-32VDC
- Dimensions Width 38mm (1.50") x High 40mm (1.57")
- Backlit keypad

80-600-0023-00 (ACSM) includes 1X AC-VSEN-4 and 2X CT-10-3

Range Highlights

Monitors:

- AC volts, amps and frequency

Features:

- 3 Generic user configurable inputs
- Displays data in analogue, digital and graphic forms
- Output for load shedding
- Programmable high/low audio/visual alarms for each input

AC Power Meter

- Displays AC volts, amps frequency and power for two supplies with a third position for monitoring AC volts and frequency of a third supply
- Displays AC power in kW (true RMS)

AC Volts/Frequency

- Displays AC voltage and frequency, 80-264 Vac 50 & 60 Hz

AC Amps

- Displays Current for 2x AC supplies (0-75A)

Alarms

- High and low alarms for each input
- User selectable alarm levels
- Mutable

AC-VSEN-4

The AC-VSEN-4 includes 3 voltage transformers for up to 3 voltage inputs.

Supplied with 80-600-0023-00

Dimensions: 69 x 140 x 50 mm (2.75 x 5.5 x 2 in)

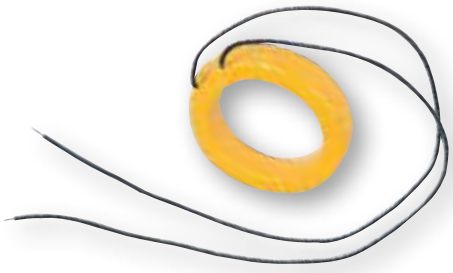
CT-10-3

One **CT-10-3** current transformer is supplied with 600-ACM. If a twin line system is in use, a second CT must be ordered

Supplied with 80-600-0023-00

CT-10-3 dimensions: 37.5 x 39.2 x 13.7 mm (1.5 x 1.55 x .55 in)

Hole size: 12 mm (0.5")



CT-HD

CT-HD is available for systems with large mains cables, too large for CT-10-3 (ordered separately).

CT-HD dimensions: Ø 47 x 10.5 mm (Ø 1.85 x 0.4 in)

Hole size: 32 mm (1.25 in)

Range Highlights

Monitors:

- Volts on up to 3 battery banks
- Amps for charge/discharge (One battery bank only)
- Capacity remaining in A/h and %
- Software uses Peukerts Exponent
- 24-hour bilge pump monitor

600-DCM

Specifications:

- Input voltage 10-35 V DC
- Power consumption 45 mA; power consumption 65 mA (backlighting on)
- Dimensions page 31

Voltage Monitor

- Voltage monitoring for up to 3 battery banks
- 12 custom selectable legends
- Hi /Low voltage alarms on all 3 banks

Amps charge & discharge (on house bank only)

- Meter supplied with a 450-50 mV shunt
- 0.1 A resolution up to 40 A. 1.0 A resolution over 40 A.

Percentage remaining in A/h (on house bank only)

- Software uses Peukerts exponent
- Suitable for use on battery banks from 60 - 3000 A/h
- Low A/h alarm (for remote alarm operation use part no. 54-27C4)

Bilge monitor

- Monitors bilge pump functions 24 hours, 7 days a week. Stores bilge pump operations and accumulated time
- Resetable when leaving boat

(Function only available when third voltmeter position is not used.)

The BEP Digital Monitoring System

Designed and manufactured by BEP is made to meet the requirements of modern boating and recreational vehicles. Electrical installations on-board the modern boat now incorporate complex AC & DC systems along with extensive tankage for items such as fuel, fresh water, sewage and grey water.

Accurate monitoring of such systems is essential, as a malfunction in any one of the above areas could cause major damage to expensive equipment and ultimately endanger the vessel or peoples lives. The dot matrix display incorporated in this series allows for more detailed on-screen information and clarity of viewing. The screen has backlighting for easy night time viewing.

Installation cable kit ordered separately.

2 core screened cable in 2 lengths pre-terminated.

600-DCM-5M 5 m (16.45") cable
600-DCM-10M 10 m (32.9") cable

600-DCM-5M

450A / 50 mV shunt supplied with 600-DCM
83L x 45W x 44H mm
(3.25L x 2.8W x 2.75H in)

LB-450-50

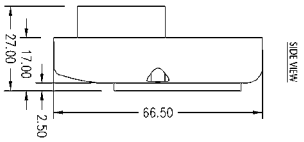
Specifications:

- Input voltage 10-35 V DC
- power consumption 45 mA
  power consumption 65 mA (back lighting on)
- for remote alarm operation use part no. 54-27C4
- See below

600-ACM

Range Highlights

- Monitors single or twin line inputs
- Supplied with AC transducer
- Draws 70% less current than equivalent LED screens

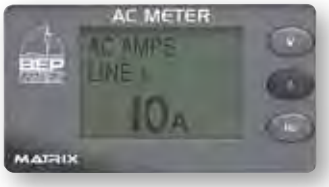


AC Volts Functions

- 3 inputs with selectable legends – AC volts Line 1, AC volts Line 2, AC volts L1 + L2, AC volts panel & AC volts transfer
- High / low volts alarms

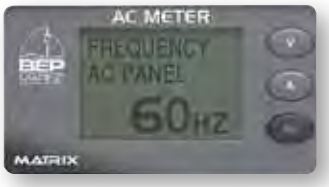
AC Volts expanded screen

- Shows all voltage inputs on one screen



Amp Functions

- 2 AC amps inputs
- Selectable legends AC amps, AC amps line 1 & AC amps line 2
- High amps alarm



Frequency Function

- 0-100 Hz
- Frequency alarm selectable for 50 or 60 Hz

Panel mounting kit available for MATRIX monitors.
Includes fascia, fastenings and template: part no 600-PMK

AC-VSEN

The **AC-VSEN** includes 3 voltage transformers for up to 3 voltage inputs.

Supplied with 600-ACM.

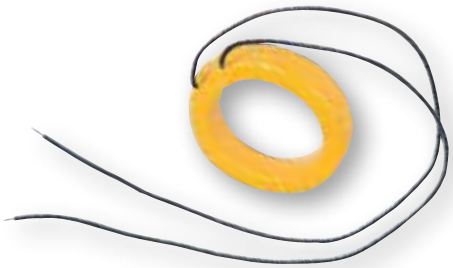
Dimensions: 69 x 69 x 50 mm (2.75 x 2.75 x 2 in)

CT-10-3

One **CT-10-3** current transformer is supplied with 600-ACM. If a twin line system is in use, a second CT must be ordered

CT-10-3 dimensions: 37.5 x 39.2 x 13.7 mm (1.5 x 1.55 x .55 in)

Hole size: 12 mm (0.5")



CT-HD

CT-HD is available for systems with large mains cables, too large for CT-10-3 (ordered separately).

CT-HD dimensions: Ø 47 x 10.5 mm (Ø 1.85 x 0.4 in)
Hole size: 32 mm (1.25 in)

Range Highlights

- Monitoring for up to 3 tanks
- 14 selectable legends for tank descriptions eg. Fuel, Water, Blackwater
- Hi/Low level alarms for 3 tanks
- Graphic or percentage display
- Backlit display for night viewing
- Audible alarm with mute

Single or Multi-tank display

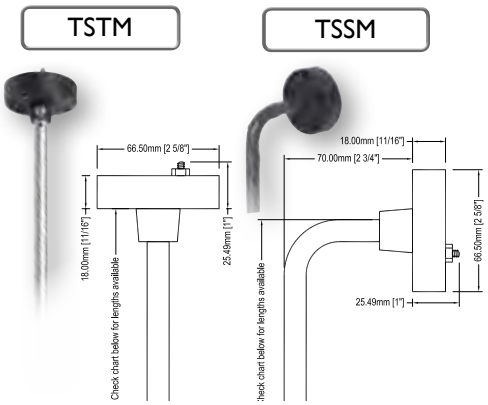
Specifications:

- Litres, imperial or US gallons
- Power supply 10-35 V DC
- Interfaces directly with pre-calibrated TS1 Sender 0-5 V output. (see page 33).
- If fitting an uncalibrated TS1 Sender, calibration can be done on site within the 600-TLM-N meter.

Easy to install probe senders

Fully adjustable to suit the 600-TLM-N (no moving parts). Available for fuel or water tanks in two mounting styles, top (TSTM) or side mount (TSSM).

Please note: These fuel and water senders are 0-5V output and do not require a 600-TLM-SIF.



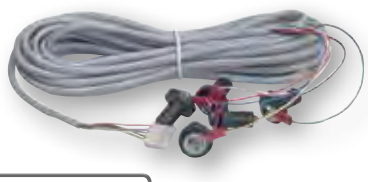
Fuel & Water Tank Senders				
Part No.	Tank Depth (probe adjust range)	Fuel	Water	Mounting
TSTMF-15-30 N	150-300	Yes	No	Top
TSTMF-30-60 N	300-600	Yes	No	Top
TSTMF-60-100 N	600-1000	Yes	No	Top
TSSMF-15-30 N	150-300	Yes	No	Side
TSSMF-30-60 N	300-600	Yes	No	Side
TSSMF-60-100 N	600-1000	Yes	No	Side
TSSMF-15-30 N	150-300	No	Yes	Top
TSTMW-30-60 N	300-600	No	Yes	Top
TSTMW-60-100 N	600-1000	No	Yes	Top
TSTMW-15-30 N	150-300	No	Yes	Side
TSTMW-30-60 N	300-600	No	Yes	Side
TSTMW-60-100 N	600-1000	No	Yes	Side

600-TLM-SIF Tank sender interface module

- Is only required when using VDO (10-180 Ω) or Teleflex (240-33 Ω) senders to produce a 0-5 V signal to operate the 600-TLM-N.
- Switchable link for VDO or Teleflex signal. 10-32 V supply.
- One unit per sender required.

Dimensions:
60 x 34 x 22 mm (2.4 x 1.3 x .9 in)

Suits tanks with maximum depth of 280 mm and a maximum wall thickness of 10 mm, and a maximum hole size of 22 mm. Comes with 5 m cable.



Well nut hole size 9 mm (3/8"). Cable length 5 m. (One kit supplied with 600-TG).

LED Tank Gauge

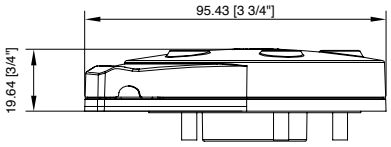
The 600-TG offers economical monitoring for fresh or grey water tanks **(plastic or fibreglass only)**. Using 600-TGSK strategically mounted well nuts will give 4 tank levels. Supplied with one sender kit. Second sender ordered separately.
Also available is the RV-TS-5M Tank sender. Only one hole is required for installation, the sender is sealed via external lock nuts. Suitable for tanks with maximum depth of 280 mm.

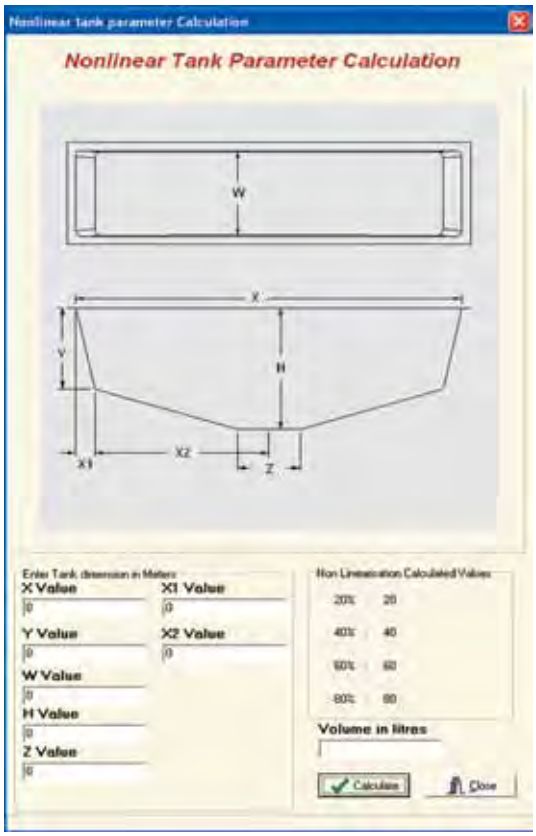
BEP Ultrasonic Tank Sender - No Moving Parts

Specifications:

- Operating voltage: 10-32 V
- Current draw: 25 mA with 5 V gauge output
- Measurement method: Acoustic sonic measurement
- Tank depth: 0–2000 mm (6.5 ft)
- Accuracy Distance: 0–2000 mm (6.5 ft) at 2 mm accuracy
- Mounting: SAE 5 stud mounting pattern with gasket, seal and screws (top mount only).
- Environmental temperature: 4–65 °C
- Chemical resistance: Petrol, diesel, water, toilet chemicals
- Tank type style: Metal and plastic with non linear capacity
- Works with petrol, diesel, fresh water, grey water and black water

TS1





Range Highlights

- Handles common outputs – 240-33 Ω, 10-180 Ω, Vetus 10-300 Ω and 0-5 V tanks from BEP, Teleflex, Faria, VDO and many other popular instrument brands. (When connecting to non-adjustable gauges the TS1 must be pre-calibrated)
- Low Profile Design and standard SAE 5 hole mounting pattern, allowing it to be retrofitted to practically all other sender brands.
- Can be set for tank dimensions via computer using BEP Marine's propietary TS1 software, avoiding experimental tank filling on site
- Connects directly to the BEP 600-TLM-N digital tank monitor when configured to a 0-5 V output
- Is set for 0-2000 mm depth off the shelf (not suitable for tank depths less than 200 mm)

PRACTICAL SAILOR
This product has been tested and recommended by
Practical Sailor™
the independent consumer magazine for sailors. For more information, go to
www.practical-sailor.com
2009 EDITORS' CHOICE

…the most unique and sophisticated system of any tank monitor tested… the ultrasonic technology is extremely accurate.

Practical Sailor Magazine, July 2009

BEP's proprietary Window's based software application allows for TS1 senders to be programmed specific to tank shape, size and fluid type via a computer's USB port.

Programming is a simple process and can be carried out by downloading free software from www.bepmarine.com and purchasing a programming kit TS1-PK.

Once programmed, the specific tank parameters are stored in the non-volatile memory of the TS1. Find more detailed information at www.bepmarine.com

TS1-PK

Range Highlights

- More information, one screen
- Legends can display detailed info, rather than just digits
- Draws 70% less power than equivalent LCD screens
- Supplied with LB-450-50 mV shunt
- Compatible with TS1 Ultrasonic Tank Sender (p 33)

The 600-DCTLM is designed for installations where space is not available to fit both the 600-DCM and 600-TLM-N.

Selectable legends allow full information to be clearly shown on the screen unlike other digital meters which only show confusing digits.

- **V/A** pressed repeatedly cycles through 3 voltage inputs and amps charge and discharge

- **C** pressed repeatedly cycles through amphour capacity and percentage of charg

- **T** pressed repeatedly cycles through tank 1, 2, 3, 4, and multitank screen (up to 4 tanks)

Range Highlights

- Designed to be surface mounted or recessed into a panel with a contour panel fascia
- Audible alarm with mute function
- Power supply 10-35V
- Display is backlit for easy night time viewing
- Current consumption 45 mA
- Current consumption 65 mA (backlight on)

Voltmeter Bilge Monitor

The 600-VM3 offers the ability to have 3 voltage inputs with Hi/Low alarms. It can also be configured as a bilge monitor with selectable legends for different bilge areas. This allows the 600-VM3 to be either fully configured as a voltmeter or partially as volts or bilge, eg: position 1 volt meter, position 2 & 3 bilge monitor.

Selectable legends allow full information to be shown on the screen, unlike other digital meters available which only show confusing digits. LCD screen draws 70% less than equivalent LED screens.

The BEP Detectors use microprocessor control to ensure correct sensor sensitivity. The Detectors have the capability to control two sensors which detect both LPG and Petrol, with visual and audible alarms.

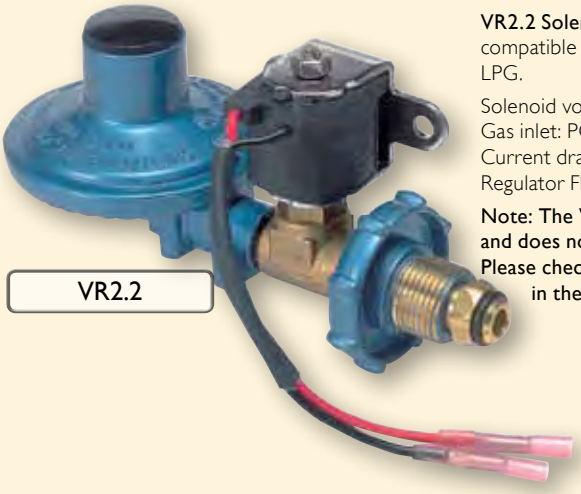
Range Highlights

- Dual sensors for LPG and Petrol
- Visual and audible alarms; provision for external alarm
- Self-testing
- Automatic shut-off solenoid control with pulse and hold circuit for low power draw (600-GDL only)
- Provision of bilge blower
- 66.5 x 88 x 17 mm
  2.4 x 3.5 x 0.7 in

600-GD will detect LPG, Petrol and CNG fumes. Supplied with one sensor, with an option for a second sensor, Part no BL-SL-L output for remote alarm and blower unit. 600-GD can be used on 12 or 24 V systems.

600-GDL has the same features as the 600-GD, with the ability to switch a valve on. It contain a unique "Pulse & Hold" circuit within the detector.This allows the valve to be pulled in at 12 V and then once energized it will step down to hold the valve in place. This reduces power consumption and heat while the gas is turned on.

Contour Matrix Gas Detectors - 600GD, 600GDL, FD-2	
Voltage (V DC)	10 - 32
Current (mA)	350 max.
Alarm Sensitivity	20% lower explosive limit
Current@Out (mA)	800 max.
Solenoid (mA)	700 pulse, 250 hold



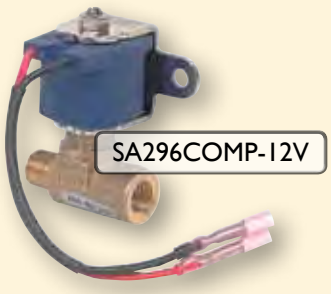
VR2.2 Solenoid Valve and Regulator kit, compatible with 600-GDL Gas Detector or 600-LPG.

Solenoid voltage: 12 V or 24 V; Gas outlet: 3/8 BSP; Gas inlet: POL Thread; Current draw: 800 mA; Current draw with GDL or PH-12V: 0.2 A; Regulator Flow Rate: 3 kPa.

Note: The VR2.2 may not comply in some countries, and does not comply with USCG requirements. Please check with you local gas installer. Not for sale in the USA.

One Sensor lead supplied (5 m) with GD & GDL. Second Sensor lead ordered separately

Part no **BL-SL-L**



The **SA296COMP-12V** is suitable for countries where VR2.2 is not approved. The CE approved SA296COMP-12V can be installed by an approved gas installer using approved components from within specific markets. 12 V or 24 V options available. Uses 1/4" BSP thread.

600-GDRV has the sensor mounted in the front facia creating a stand alone unit. The unit is designed to be surface mounted at the vessel's lowest point.

600-LPG is a stand alone gas shut-off system with no gas detection ability. For 12 V systems order **VR2.2** separately. For 24 V systems order **VR2.2-24V**.

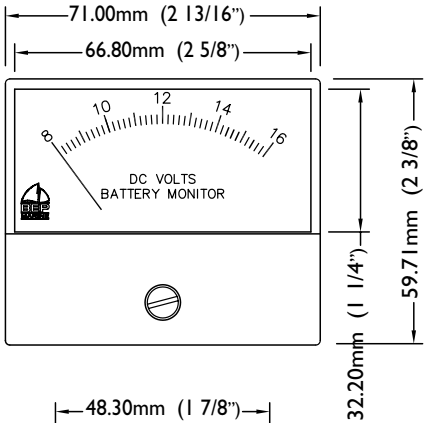
FD-2 is designed for an economic in-dash installation. Supplied with sensor (5 m cable) which is capable of detecting combustible gases.

Range Highlights

- Analog meters as used in BEP Contour circuit breaker panels.
- All analog meters accurate to within 2.5%

CT-10-AN must be ordered

when using N060ACT or N0100ACT.



Meters	Part No.	Range	Division Marks
Volt (DC)	N816DCV	8-16 V DC	0.2 V
	N1632DCV	16-32 V DC	0.4 V
Volt (AC)	N0150ACV	0-150 V AC	10 V
	N0300ACV	0-300 V AC	20 V
Amp (AC)	N060ACT	0-60 A AC	5 A
	N0100ACT	0-100 A AC	5 A

Meters	Part No.	Range	Division Marks	Shunt Type
Amp (DC)	N010A	0-10 A DC	0.5 A	Internal
	N020A	0-20 A DC	1 A	Internal
	N050A	0-50 A DC	2 A	50A-50mV
	N0100A	0-100 A DC	5 A	100A-50mV
	N0150A	0-150 A	1 A	150A-50mV

When ordering optional external shunt ammeters, shunts must be ordered separately.

SOP Panels

- 10 mm red LED's giving important systems on information
- Ideal for flybridge or remote dash position. Also available with alarm and mute switch.
- Backlit labels

SOP Panels						
Part No.	mm L x W x 40	in L x W x 1.6	Label Sheet	LEDs	Alarm	Mute switch
SOP1	115 x 127	4.5 x 5	1	4	No	No
SOP1-AL	115 x 127	4.5 x 5	1	3+1 switch	Yes	Yes
SOP2	115 x 239	4.5 x 9	1 - 2	8	No	No
SOP2-AL	115 x 239	4.5 x 9	1 - 2	7+1 switch	Yes	Yes

MS1 Analog Battery Condition Meter (expanded scale)

- Panel switchable to show 3 different battery banks.
- Available 12V (8-16V) or 24V (16-32V)

MS2 Analog Ammeter Panel

- Panel switchable for use on up to 3 different ammeter shunts
- Supplied with 1 shunt, meter scales available, 0-50A 0-100A 0-150A (refer table left)

MS3 Digital Battery Monitor

- Same functions as 600-DCM (p.30)
- Supplied with 450A-50mV shunt

MS4 Digital AC Monitor

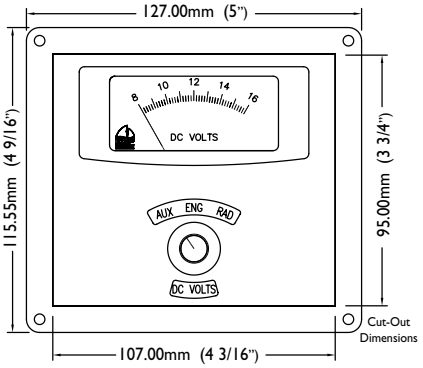
- Same functions as 600-ACM monitor (as shown on page 31)
- Supplied with volts and amps transducer and current transformer (CT)

Range Highlights

- Contour panel/front facia complements Contour range
- All Contour Matrix monitors can fit into this style of panel

MS1		
Part No.	Range	Inputs
MS1-12V	8 - 16 V DC	3
MS1-24V	16 - 32 V DC	3
MS1-0150V	0 - 150 V AC	1
MS1-0300V	0 - 300 V AC	1

MS2		
Part No.	Range	Inputs
MS2-050	0 - 50 A DC	3
MS2-0100	0 - 100 A DC	3
MS2-0150	0 - 150 A DC	3



Range Highlights

- Molded gasket incorporates fastening covers
- Switches clip easily into rear of panel and can be removed to replace with different function switches eg. on/on, on/off/on, off/(on) and (on)off(on)
- Mini fuses accessible from front of panel with removable cartridge
- Custom designed toggle cover with unique sealing feature
- Panel supplied with label LBL-CMP (page 73)

Specifications				
Part No.	mm L x W x 65	in L x W x 2.5	Label Sheet	Switches
CMP-4WP	95 x 107	3.75 x 4.25	LBL-CMP	4
CMP-6WP	95 x 107	3.75 x 4.25	LBL-CMP	6
CMP-5WPS	95 x 107	3.75 x 4.25	LBL-CMP	5

Replacement Fuses ATM		
Part No.	Type	Operation
603905	5	2
603910	10	2
603915	15	2
603920	20	2
603930	30	2

ATM fuses are supplied in packs of 2.

Range Highlights

- Compact panel size
- Sprayproof inline fuse holders with fuses included
- Waterproof power receptacles (16A) in five and three way models
- Waterproof to IP56
- Panel supplied with label LBL-WP (page 73)

Specifications				
Part No.	mm L x W x H	in L x W x H	Label Sheet	Switches
900-3WPS	95 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	3
900-3WPSW	95 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	3
900-4WP	96 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	4
900-4WPW	96 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	4
900-5WPS	96 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	4
900-5WPSW	96 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	4
900-6WP	96 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	6
900-6WPW	96 x 107 x 75	3.75" x 4.25 x 2.9	LBL-WP	6

Range Highlights

- Replaceable clip-on contour wave (customized colors available for OEMs)
- Mounting screws covered by switch cover
- Backlit LEDs
- Flexible overshot cover allows for easy switch operation
- Ribbed gasket provides watertight seal with switch cover
- Molded gasket on panel base creates watertight seal against mounting surface
- Unique design allows labels to be read whether mounted vertically or horizontally.
- Panel supplied standard with label SET-G2-1 (labels SET-G2-2 ordered separately, page 75)

The **Contour Generation II spray proof range** offers unique styling using the latest techniques in injection molding.

The switch tray is molded plastic with a rubber gasket and seal molded into the plastic.

The cover is molded in a clear plastic with a rubber over-mold allowing the flexibility to operate the switches through the front of the panel while providing a clear window for label backlighting.

The contour wave strip is interchangeable allowing for custom colors for OEM applications. Standard color supplied is black panel with charcoal strip.

G2 can be mounted vertically or horizontally and is available in 2, 4 and 6 way configurations.

A joiner (CG2-JB) is available for multiple panel installations. Supplied complete with on/off switches, these can be interchanged with a variety of different switch options.

CG2-6W

CG2-4W

CG2-JB

CG2-2W

SW-CG1

Spare Switches for Contour Generation II	
Part No.	Switch type
SW-CG1	On/Off
SW-CG2	On/Off Momentary
SW-CG3	On/Off/On
SW-CG4	Momentary On/Off/Momentary On
SW-CG5	On/On

Available upon request: Different custom color combinations for Contour strip and rubber over-mold.

Specifications				
Part No.	Color	Switches	Fuses	Label Sheet
CG2-2W	Black	2	No	SET-G2-1
CG2-2W-F	Black	2	1	SET-G2-1
CG2-4W	Black	4	No	SET-G2-1
CG2-4W-F	Black	4	2	SET-G2-1
CG2-6W	Black	6	No	SET-G2-1
CG2-6W-F	Black	6	3	SET-G2-1
CG2-2W-W	White	2	No	SET-G2-1
CG2-2W-F-W	White	2	1	SET-G2-1
CG2-4W-W	White	4	No	SET-G2-1
CG2-4W-F-W	White	4	2	SET-G2-1
CG2-6W-W	White	6	No	SET-G2-1
CG2-6W-F-W	White	6	3	SET-G2-1

Bilge alarm and bilge pump control panel includes: 1 on/off/on switch for auto manual control; 1 warning light and alarm for high water level alarm. (Float switch ordered separately – Part No. SB1-FS)

1 x 2 way switch, 1 x 3 momentary switch

2 x 10 mm LEDs showing systems in operation

Range Highlights

- Green LED backlit labels; red when on
- Full range of text or graphic labels available; mix n' match labels and panels to suit
- Switching rated 20 A DC
- 86 x 58 x 28 mm (3.4 x 2.3 x 1.2 in)
- Waterproof to IP56
- Label see LBL-MIC included; additional label sets available, see page 75

2 x 2 way switches

1 x 2 way switch, 1 x 3 way double pole switch

CSP6 Includes 6 switches unfused for installation where separate fused supply is available.

CSP6-F Includes 6 switches and 3 inline fuse holders with fuses behind panel.

CSP6-PTC fuses are solid state resettable fuses which change to a high resistance device on over-current. The panel is supplied with 6 x 9A PTC fuses mounted internally. **No more changing fuses!**

Range Highlights

- CSP6-PTC uses the latest in overload protection technology - Positive Temperature Co-efficient
- Green LED backlit labels; red systems on indicator
- Switching rated 20 A DC
- Removable cover plates conceal screws & water drain
- Label set SET-1SP included, additional label sets available, see page 73

Specifications					
Part No.	mm L x W x H	in L x W x H	Label Sheet	Fuses	PTC
CSP6	158 x 112 x 65	6.25 x 4.4 x 2.5	SET-1SP	No	No
CSP6-F	158 x 122 x 75	6.25 x 4.4 x 2.5	SET-1SP	3	No
CSP6-PTC	158 x 112 x 75	6.25 x 4.4 x 2.5	SET-1SP	No	6

1000-6W

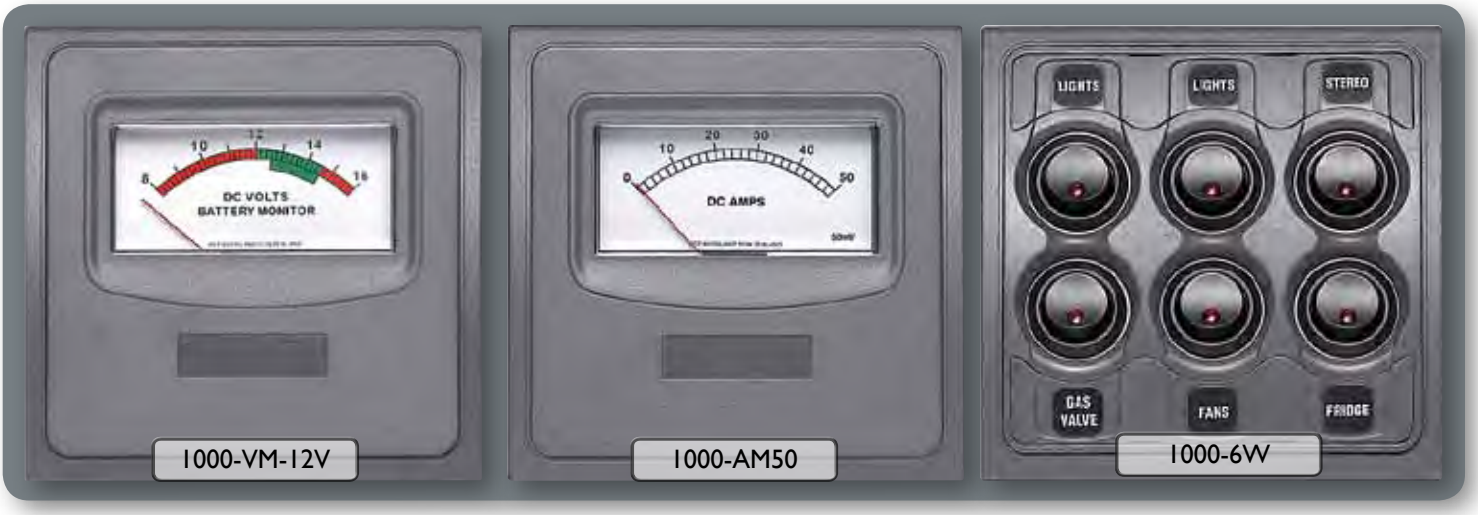
Contour Interior Switch Panel Series

The smart, economical interior option for smaller vessels.

Fully modular and built with ease of access in mind.

Range Highlights

- Removable frame conceals mounting screws
- Concealed ATC fuses accessible from front of panel; ATC fuses supplied
- 16 A rocker switches
- Panels are modular and square for vertical or horizontal stacking.
- LED Systems On light
- Supplied with: Spacer for accurate mounting placement, label sheet part no. SET-1000 (page 75)
- Maximum panel load 50 A



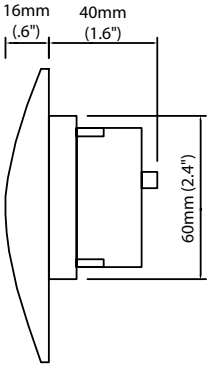
1000-VM-12V | 1000-AM50 | 1000-6W

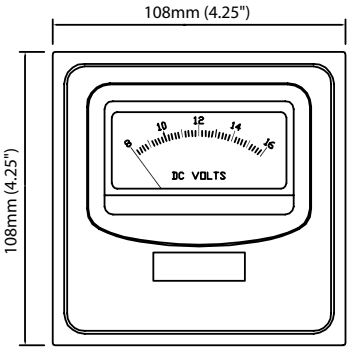
VOLTMETER | AMMETER | SWITCH PANEL

1000-VM-12V 12 Volt Systems
1000-VM-24V 24 Volt Systems

1000-AM10 10 A Ammeter (internal shunt)
1000-AM20 20 A Ammeter (internal shunt)
1000-AM50 50 A Ammeter (external shunt, supplied)

Specifications			
Part No.	Switches	Fuses	Voltage
1000-6W	6	6	12






SW-RVS2 ON/OFF

The 1000-DFR is designed to take the BEP 600 series products.

Frame and digital meter ordered separately.


1000-DFR

The Contour Interior switch can be either surface or recess mounted and is available in black, gold, chrome and white.

The interior series is supplied standard with a three terminal on/on switch which can be used for on/off circuits or two way light installations. For applications, eg: shower drain pumps or electric toilets, momentary switches can be interchanged into the switch plate.

Switches can be turned 90° for horizontal mounting, and all are current rated at 10 A DC.


1101-GD

All switches come supplied with a label sheet.
For reference, see page 73


1100-BK


1101-BK


1101-CH

Exterior Switches


1101-BK-TS


1100-BK-TS

Interior Switches - Rated 10 A			
Part No.	Color	Single/Double	L x W x H
1100-BK	Black	Single	60 x 30 x 18 mm 2.4 x 1.2 x 0.75 in
1100-CH	Chrome		
1100-GD	Gold		
1100-WH	White		
1101-BK	Black	Double	91 x 30 x 18 mm 3.6 x 1.2 x 0.75 in
1101-CH	Chrome		
1101-GD	Gold		
1101-WH	White		

Exterior Switches - Rated 10 A			
Part No.	Color	Single/Double	L x W x H
1100-BK-TS	Black	Single	60 x 30 x 18 mm 2.4 x 1.2 x 0.75 in
1100-WH-TS	White		
1101-BK-TS	Black	Double	91 x 30 x 18 mm 3.6 x 1.2 x 0.75 in
1101-WH-TS	White		

Supplied with on/off 20 A DC rated switches. For other operations, eg: momentary, see table below.

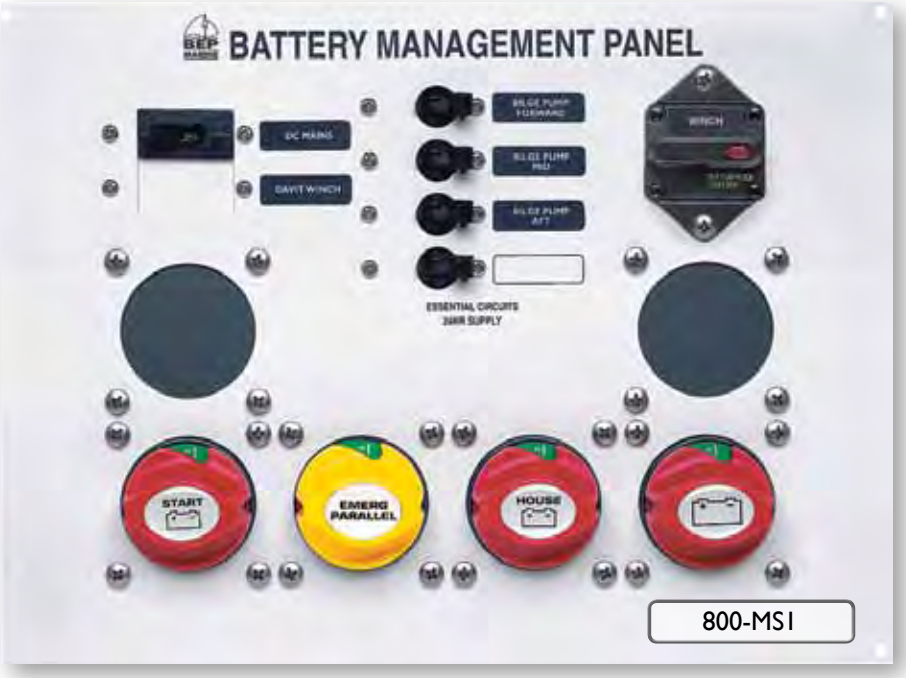

Replacement and/or different operational switch

SW-6064B3P

Specifications	
Part No.	Description
SW-6064B3P	On/On (On/Off)
SW-6064C3P	On/Off/On
SW-6064D3P	On/Off Spring-loaded in "on" position

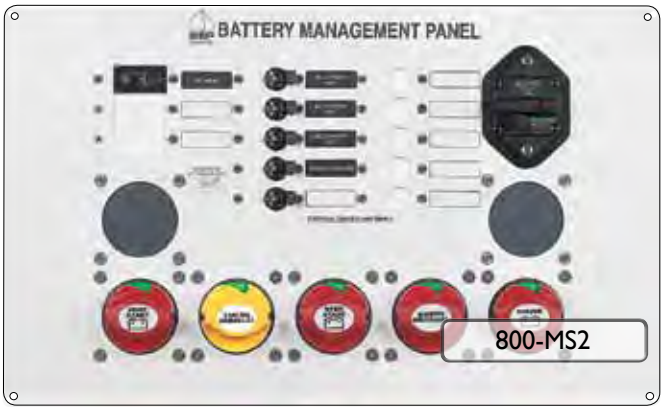
Range Highlights

- Essential circuits, 24 hour supply
- Mains breakers for control panels, davit winches, or treatment systems
- Panels are supplied with a BEP 703-300A/B heavy duty negative bus, to accommodate all the negative connections at the battery. (Please note: 800-MS4 is supplied with 702B negative stud)
- Heavy duty breakers for anchor winches
- Powder coated aluminum panel
- Supplied with a full label set for panel circuit breakers - Part No SET-MSP; additional label sets available (see page 73)
- Spare positions for additional battery switches and circuit breakers for extras such as radio batteries and genset batteries

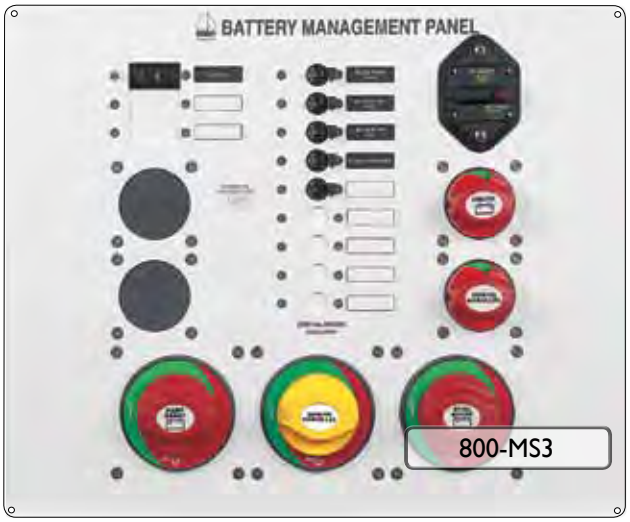


The 800-MS1 panel is designed for power or sail boats between 10–12m (32.9-39.5 ft) with single engines.
260 x 351 x 75 mm (10.25 x 13.8 x 2.9 in)

The 800-MS2 panel is designed for power boats between 10–12 m (32.9 - 39.5 ft) with twin engines. 281 x 463 x 75 mm (11.1 x 18.25 x 2.9 in)



The 800-MS3 panel is designed for power boats between 12 –16 m (39.5 – 52.5 ft) with larger diesels. 380 x 463 x 95 mm (15 x 18.25 x 3.75 in)



The 800-MS4 panel is designed for sail boats up to 14 m (46 ft) and power boats up to 10 m (32.9 ft) with single engine. 160 x 239 x 75 mm (6.3 x 9.4 x 2.9 in)

Auxiliary Parts (ordered separately)		Circuit Breakers
701	Battery switches to fit panel cutouts	**CBL-50A-SP** 50 A
713	Battery switch label sheet	**CBL-75A-SP** 75 A
		CBL-100A-SP 100 A
		For treatment systems, davit winches and sub-mains.

The 701 Contour Battery Master Switch offers a number of unique features, the highlight being the patented Contour Locking System, allowing it to be a stand alone unit, or locked together with other switches.

The 701 also features a control knob which cannot be removed while in the ON or OFF position, however, can be removed by switching to an counter-clockwise 45° position. The control knob also features an interchangeable labeling system allowing a full range of applications (Part number 713 or 715: page 74).

The 701 also features removable side plates on 4 sides for access of up to 1/0 cables plus a rear cover insulating the rear terminals against any short circuits. This ensures the switch meets ABYC requirements.

The 701 can be either surface or recess mounted by cutting a 52 mm hole (2.1 in)

The 721 Heavy Duty Battery Switch fits into the same contour lock system as used on the battery distribution system. Rated at 600 A continuous and 2500 A cranking. It is well suited to larger vessels.

As with the 701, the 721 can be recessed or surface mounted. The 721 uses the same style of self cleaning sliding contact as used in the 701 and uses the same label sheet (part number 713 or 715 refer page 74).

BEP's patented Contour Locking System is an innovative feature that allows for multiple battery management components to be connected to each other providing for a clean finished installation. These locking tabs can be found on battery switches, heavy duty buss bars, fuse holders, distribution studs and breaker modules.

Specifications - All recessed or surface mount, tin-plated copper studs & nuts, ignition-protected								
Part No.	mm	in	Rating (A DC)			Voltage	Operation	Stud size
	L x W x H	L x W x H	Continuous	Intermittent	Cranking	(V DC)		[Studs x (mm / in)]
700	68 x 68 x 110	2.7 x 2.7 x 4.3	275	455	1250	48	On/Off	2 x (10 / 3/8)
701	69 x 69 x 75	2.75 x 2.75 x 3	275	455	1250	48	On/Off	2 x (10 / 3/8)
701S	69 x 69 x 75	2.75 x 2.75 x 3	200	300	1000	48	1-2-Both-Off	3 x (8 / 5/16)
720	102 x 102 x 90	4 x 4 x 3.5	600	800	2500	48	On/Off	2 x (12 / 1/2)
720-DP	102 x 102 x 90	4 x 4 x 3.5	400	525	1500	48	On/Off 2 poles	4 x (12 / 1/2)
721	102 x 102 x 90	4 x 4 x 3.5	350	500	1500	48	1-2-both-Off	3 x (10 / 3/8)

701S Mini Battery Selector Switch

The 701S is the most compact selector switch available on the market. Housed in the same dimensions as the 701, and includes the same removable side plates and back cover. While BEP recommends isolated battery systems as outlined with our distribution clusters, the 701S offers a simple economical way of separating two batteries.

Please note selector switches will not separate electronics from harmful engine starting spikes.

721 Battery Selector Switch

The 721 Battery Selector Switch is our heavy duty selector switch. Housed in the same module as the 720, it includes the same removable plates and back cover. While BEP recommends isolated battery systems as outlined with our distribution clusters, the 721 offers a simple economical way of separating two batteries.

Please note selector switches will not separate electronics from harmful engine starting spikes.

Specifications for these items on page 44

The 700 Easyfit Battery Switch

Following customer feedback about installations where switches need to be recessed through varying thicknesses of panels, we developed the 700 Easyfit. It achieves this through an easily removable threaded ring allowing for panel thicknesses up to 19mm (3/4"). It uses the same features as the 701 with the removable key 45° past the off position, labelled handle and a removable back cover covering exposed terminals to meet ABYC specifications.

The switch can also be surface mounted offering a unique style compared to other switches available on the market.

The 700 Easyfit can easily be retro - fitted in place of most European post and lever type switches.

720-DP Double Pole Battery Switch

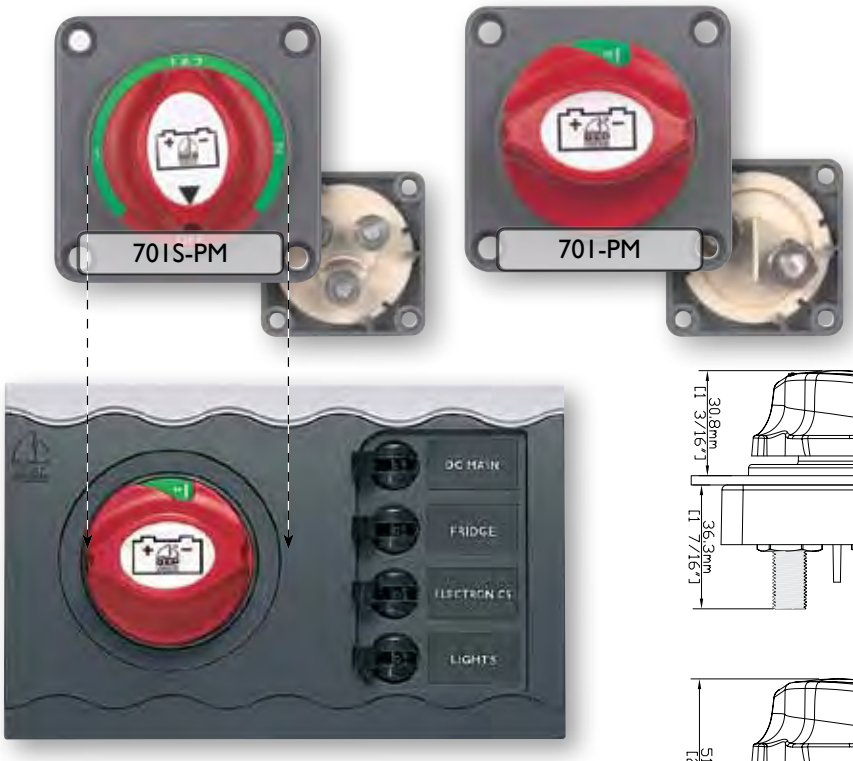
The 720-DP Double pole battery switch Is a welcome addition to the BEP battery switch range. It has the same dimensions and features as the 720 battery switch. The 720-DP also meets the needs of systems where positive and negative supplies must be isolated at the same time.

SAFETY NOTE: BEP recommends the 720-DP for isolating positive and negative circuits. We do not recommend it for switching house and start battery systems at the same time. We recommend separate switches for house and start for safety reasons. You may need to isolate your engine battery in an emergency and not your house battery, which typically powers the communications.

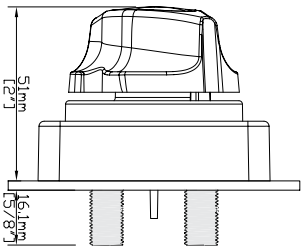
The panel mount range of battery switches are designed specifically for panel mount applications. This range gives a very compact, versatile solution.

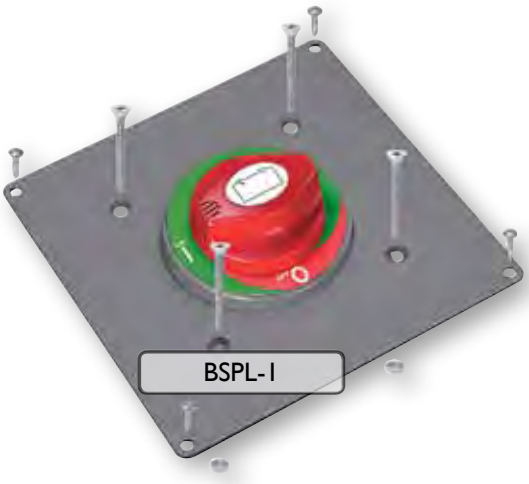
Range Highlights

- Compact, lightweight
- Same specifications as model 701 and 701S (see pages 44 and 45)
- Removable key on 701-PM
- Countersunk recesses for surface mount application
- Standard 52 mm (2 1/16 in) hole cut out (same as standard gauge hole)
- Inside: captive inserts for 4.8 mm (3/16 in) nuts; full access for cables - no restrictions
- Standard BEP interchange label system (page 74)

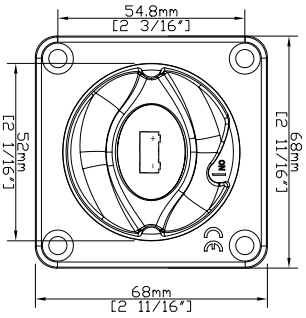


As shown in Contour Connect panels





With the growing number of builders installing BEP battery switches in panels greater than 10 mm (3/8 inch) thickness, BEP realized the need to supply simple mounting plates for single or multiple switches in our small and large battery switch ranges. These are supplied with all the mounting hardware and come in a matching grey finish.



701 Battery Switch Accessory

For applications where emergency parallel switch needs to be highlighted.

Ordered separately - replaces existing knob.

Mounting Plates for Battery Switches				
For	Part No.	mm L x W	in L x W	Description
701	BSP-1	95 x 95	3.75 x 3.75	Single recessed
720	BSPL-1	170 x 170	6.75 x 6.75	Single recessed
	BSPL-2	170 x 273	6.75 x 10.75	Dual recessed
	BSPL-3	170 x 379	6.75 x 14.9	Triple recessed

Due to the increased load requirements and large increases in the cost of copper battery cable, the MD range of battery switches allows you to install the battery switch very close to the battery, reducing cable lengths to starter motor. They are also ideal for remote isolation of bow thrusters.

Range Highlights

- Remote operation
- Battery switch can be mounted alongside battery, reducing cable lengths and cable sizes to starter motor. (Large cost saving in copper cables)
- Reduced installation labor, due to shorter battery cable runs
- Manual override option to meet CE requirements
- Power Draw: Switch off: 12mA. Switch on: 15 mA, switch operating 120 mA for 3 seconds @ 12 v nominal
- LED status identification for remote control switch
- Same capacities/specifications and mounting options as standard BEP battery switches
- Uses same interchangable labeling system as BEP battery switches (page 74)

High-Current Remote Operated Battery Switches All recessed or surface mount, tin-plated copper studs & nuts, ignition-protected								
Part No.	mm L x W x H	in L x W x H	Rating (A DC)			Voltage (V DC)	Function	Stud size Studs x (mm/in)
			Continuous	Intermittent	Cranking			
701-MD	68 x 68 x 101	2.7 x 2.7 x 4	275	455	1250	9.5 - 32	On/Off	2 x (10 / 3/8)
720-MD	102 x 102 x 110	4 x 4 x 4.33	500	700	2500	9.5 - 32	On/Off	2 x (12 / 1/2)

80-724-0006-00

For the remote operation of the 701-MD and 720-MD battery switches (above).

It can be mounted standalone or within the Contour Connect panel range.

NEW

Wireless Remote Control

You can now wirelessly operate your BEP motorized battery switches from a distance of up to 80 meters (250 feet) away

80-911-0045-00

Control up to 4 separate 5 A circuits; eg, 701/720-MD battery switches, anchor light, navigation lights, and courtesy lights

No more lifting hatches to turn on battery switches — it's now all controlled from the remote keyfob

Control battery switches easily (On / Off) from the dock

Remote has a rolling code, for security

Range Highlights

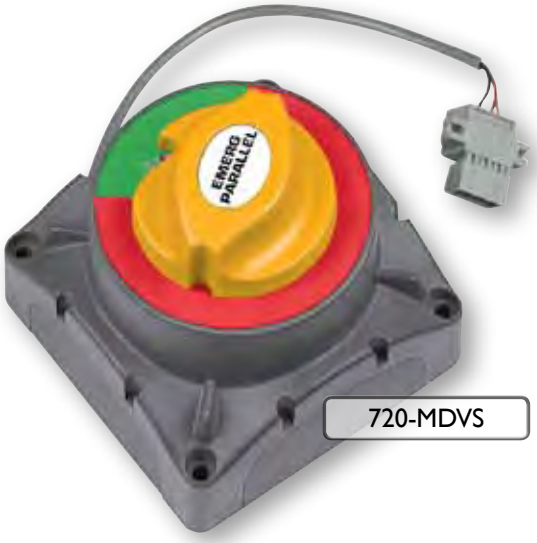
- Dual battery sensing
- Remote emergency parallel function: the 701-MDVS and 720-MDVS can be operated through a momentary button on the dash which will parallel the batteries for a preset time of 10 minutes. Once this 10 minutes has passed, if the voltage is up high enough for the voltage sensitive switch to operate, it will stay engaged. If not, it will disengage.
- Engine run sensing: VSR will engage when the voltage on either start or house battery reaches 13.7 volts. If the combined battery voltage drops below 13.0 volts and the engine is not running, after 5 seconds the contacts will open and stay open until the start or house battery voltage exceeds 13.7 volts. If the combined battery voltage drops below 12.2 volts and the engine is running, after 5 minutes the contacts will open and stay open until the start or house battery voltage exceeds 13.7 volts. If voltage drops below 13 volts and stays above12.2 volts on either start or house battery while engine is running, the VSR will stay engaged.
- Manual override option
- The advantages of using a high current VSR is that it will cover your dual battery charging requirements and emergency parallel operation in one unit.

701-MDVS

Dual Operation VSR and Emergency Parallel

The High Current Remote Operated VSR (Voltage Sensitive Relay), uses the same operation as the motor driven Battery Switches.

Also available in Emergency parallel only (no voltage sensitive function). See table.



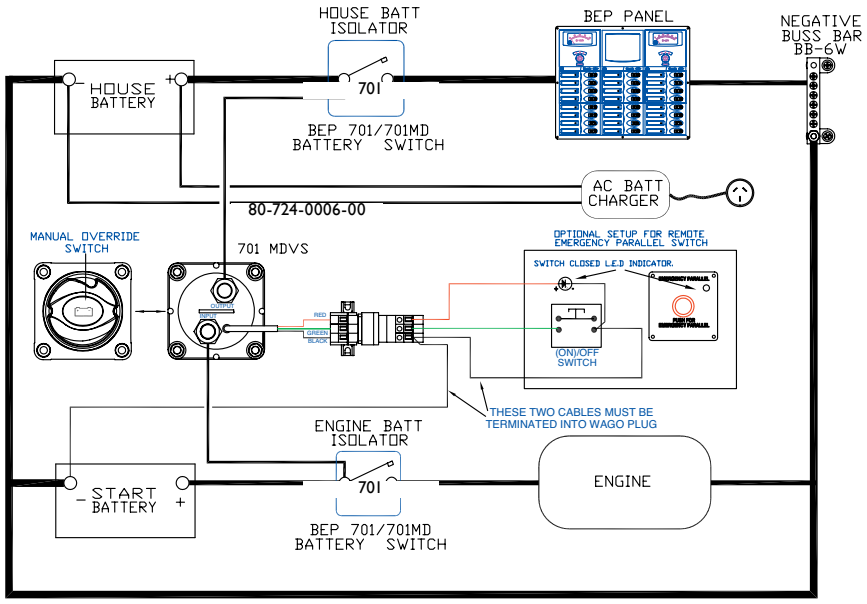
720-MDVS

80-724-0007-00

For the remote operation of the 701-MDVS and 720-MDVS voltage sensitive battery switches. It can be mounted standalone or within the Contour Connect panel range.

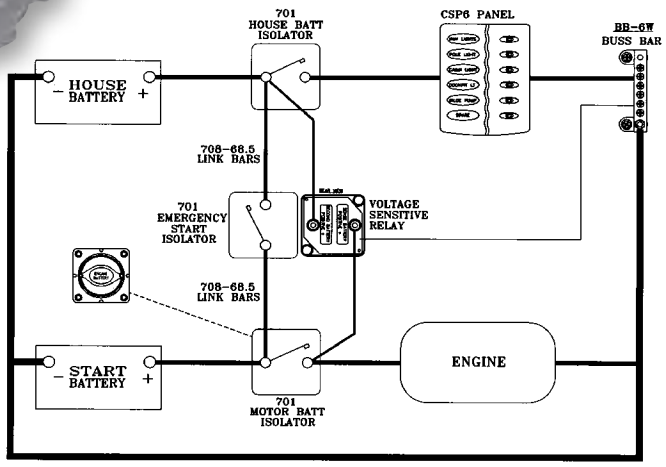
High Current Remote Operated VSR		
Part No.	mm L x W x H	in L x W x H
701-MDVS	68 x 68 x 101	2.7 x 2.7 x 4
720-MDVS	102 x 102 x 110	4 x 4 x 4.3
701-MDVS-24V	68 x 68 x 101	2.7 x 2.7 x 4
720-MDVS-24V	102 x 102 x 110	4 x 4 x 4.3
80-701-0018-00	68 x 68 x 101	2.7 x 2.7 x 4
80-720-0018-00	102 x 102 x 110	4 x 4 x 4.3

High Current Remote Operated VSR				
Part No.	Volts (V)	Rating (A)	Engages (V DC)	Disengages (V DC)
701-MDVS	12	275	13.7	12.2 - 13.00
720-MDVS	12	500	13.7	12.2 - 13.00
701-MDVS-24V	24	275	27.4	24.4 - 26.00
720-MDVS-24V	24	500	27.4	24.4 - 26.00
80-701-0018-00	12/24	275	Emergency Parallel Only	
80-720-0018-00	12/24	500	Emergency Parallel Only	



710-125A (Single Sense) VSR operation

The Voltage Sensitive Relay (VSR) allows two batteries to be charged at the same time. When the engine is started and the start battery reaches 13.7 volts, the VSR engages, allowing two battery banks (start and house) to be charged simultaneously. When the voltage drops below 12.8 volts (eg the engine is stopped), the VSR disengages, separating the batteries. This system eliminates the possibility of draining the start battery and protects sensitive electronic equipment, powered from the house battery, from harmful engine start up spikes.



Wiring diagrams indicative of installation only, for full instructions see the BEP website: **www.bepmarine.com**

Range Highlights

- Modern charging systems must be able to safely charge two or more different types of batteries from one engine. BEP's VSR (Voltage Sensitive Relay) allows for fully charged engine starting batteries and deep cycle house batteries with one easy-to-install charging system.
- Case allows for surface or panel mount (52mm - 2 1/16 hole). Fits standard into Contour Connect panels
- Easy 3 wire connection at the battery. No need to bypass existing alternator wiring
- VSR's have no volt drop. Conventional diode isolators incur a minimum of 0.6 V drop
- Compact size – no large heat sink
- Lower cost

710-125A-DS (Dual Sense) VSR Operation

Same as the 710-125A with the added feature of dual sensing. This allows the unit to sense the voltage of both batteries that it is connected between. If either battery is receiving a charge the VSR will activate paralleling the two battery banks. The 710-125A-DS is designed for situations where a battery charger or second charging source is used into the house battery.

Voltage Sensitive Relays - Ignition protected							
Part No.	mm L x W x 50	in L x W x H	Volts (V)	Rating (A)		Engages (V DC)	Disengages (V DC)
				Continuous	Intermittent		
710-125A	69 x 69	2.75 x 2.75 x 2	12	125	150	13.7	12.8
710-125A-DS	69 x 69	2.75 x 2.75 x 2	12	125	150	13.7	12.8
710-100A-24V	69 x 69	2.75 x 2.75 x 2	24	100	130	27.4	25.6

24V version only available in dual sense

Low Voltage Sensitive Relay

The LVSR is BEP's latest innovation in battery protection. If your vessel's primary voltage falls below 11 V, the LVSR automatically detects this and switches the essential circuit load to a second battery. When the LVSR detects a rise to 13 V on the primary battery, it reverts to its original state, and the LVSRs alert light switches off. The primary application for this is to ensure power is available for bilge pumps on unattended boats during heavy rain conditions. If a second battery is not connected to the LVSR, it will act as a low voltage disconnect. Ideal for charter boats.

Range Highlights

- Avoids batteries being totally discharged
- Easy 3 wire connection at the battery.
- No need to bypass existing alternator wiring VSR's have no volt drop.
- Conventional diode isolators incur a minimum of 0.6 V drop.

Voltage Sensitive Relays - Ignition protected						
Part No.	mm L x W x H	in L x W x H	Volts (V)	Rating (A)	Engages (V DC)	Disengages (V DC)
80-710-0014-00	69 x 69 x 50	2.75 x 2.75 x 2	12	40	13	11

With the successful release of the BEP battery distribution system, BEP saw the need for ready assembled clusters for different applications to make the installation within the battery area even easier. Following is the range as outlined in each diagram, which are overviews only.

All clusters are completely bused and pre-wired internally and are supplied with mounting fastenings along with easy to follow instructions. These include all connecting points clearly marked with ABC labels as shown in all illustrations.

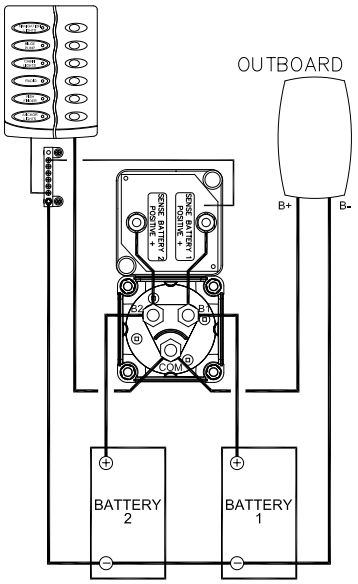
Single Engine, Two Battery Banks

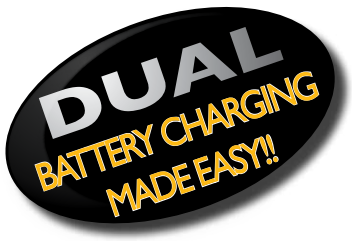
714-100A

The 714-100A uses a dual sensing VSR (710-125A-DS). A welcome alternative to the 701 selector switch, it ensures you will always have a fully charged reserve battery. When the switch is in position one, it becomes the sensing battery for the VSR. Battery two, which is in isolation, will be charged via the VSR when the engine is running ensuring it is always fully charged. When the switch is in battery two position, this becomes the sensing battery and battery one is charged via the VSR. The fact that there is always a fully charged battery in reserve is a huge safety factor.

Please note: With the 714-100A the electronic loads are run off the same battery as the engine starting battery.

See tables on page 52 for specifications.





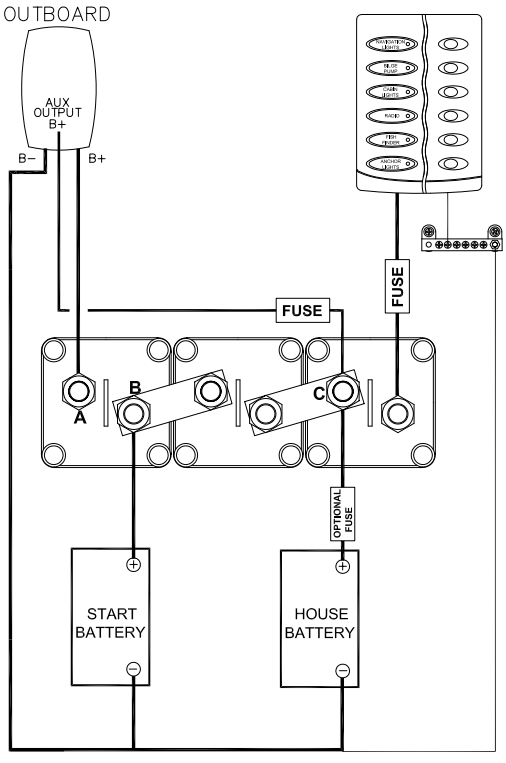
715-V

715-H and 715-V

Available as Horizontal or Vertical units.

To be used in the following systems:

1) Single outboard dual battery bank
2) Single alternator dual battery bank
3) Twin alternator dual battery bank



Single Engine, Two Battery Banks

An ideal replacement for a Battery Selector Switch. Just remove selector switch and connect existing wires to a **716 cluster**, no extra wires are required for a fully automatic battery management system.

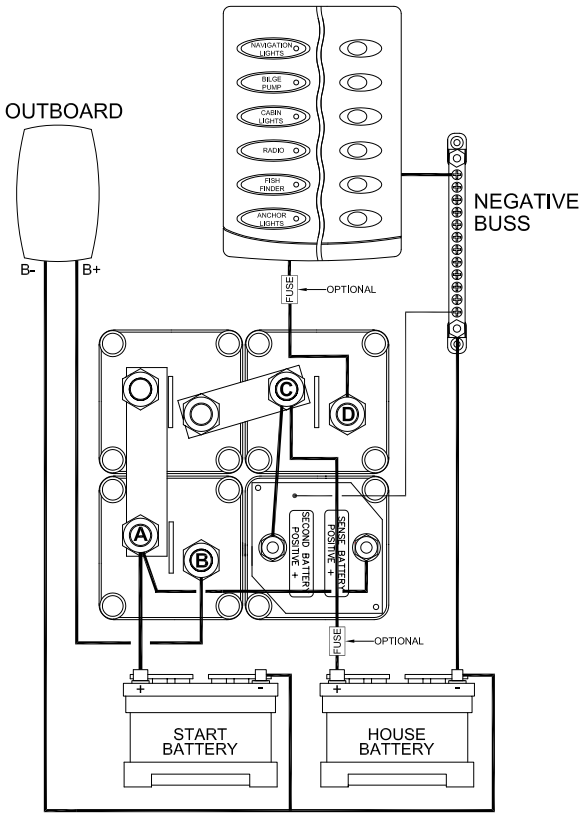
No more flat start batteries.

Electronics protection from harmful engine start spikes.

DUAL BATTERY CHARGING MADE EASY!!

716-SQ-100AVSR

716-H-100AVSR



The 716 cluster is for use on charging systems up to 125A. To be used in the following systems:

1. Single outboard dual battery bank.
2. Single alternator inboard engine dual battery bank.

The 716 cluster replaces battery isolator systems. For VSR operation, see page 49.

Twin Engine, Two Banks

The 715-S allows the house loads to be switched between port and starboard batteries.

The selector switch can also be used to parallel the batteries when in both positions.

715-S

Twin Engine, Three Banks

The **718-100A** is designed for twin inboard systems when it is not practical to have both engine alternators in parallel because of the types of regulators used on these alternators. The house battery is charged from the port engine when the VSR is engaged. (for VSR operation read page 49).

718-100A

Twin Outboard, Three Banks

This system is designed for twin outboard installations using outboards without AUX outputs. It will allow the port engine to charge the port start battery and the house battery when the VSR is engaged. It will also allow the starboard engine to charge the starboard start battery and the house battery when the starboard VSR is engaged, giving a combined charge from two outboards into the house battery until the voltage regulators on both engines control the charge. It will also allow the house battery to be charged if steaming on one engine.

717-100A

Triple Outboard, Four Banks

This system is designed for triple outboard installations. Once again using multiple VSR's off each start battery giving combined charge from all 3 outboards into the house battery via VSRs.

719-100A

Battery Distribution Clusters VSR Charging Current: 125 A, Battery Switch Rating: 275 A			
Engine type / battery (banks)	Part No.	mm L x W x 75	in L x W x 3
Single inboard or outboard / 2	714-100A	138 x 69	5.4 x 2.75
	715-H	207 x 69	8.1 x 2.75
	715-V	69 x 207	2.75 x 8.1
	716-SQ-100AVSR	138 x 138	5.4 x 5.4
	716-H-100AVSR	276 x 69	10.85 x 2.75
	716-V-100AVSR	276 x 69	10.85 x 2.75
Twin inboard or outboard / 2	715-S	210 x 69	8.1 x 2.75
Twin outboard / 3	717-100A	138 x 207	5.4 x 8.1
Twin inboard / 3	718-100A	207x 138	8.1 x 5.4
Triple outboard / 4	719-100A	207 x 207	8.1 x 8.1

Manual Clusters using Motorized VSR

Offers the same features as the 716-SQ-100AVSR (page 51), with two important differences.

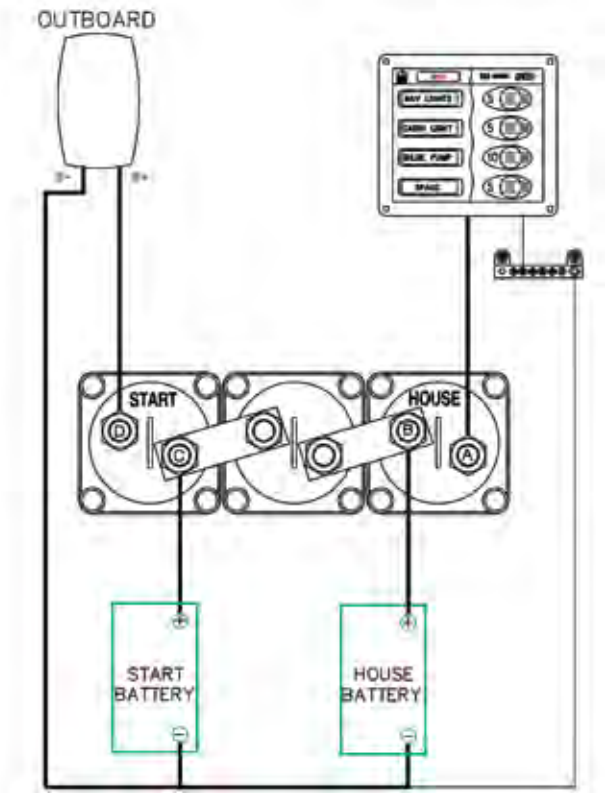
The VSR and Emergency parallel switch are combined into one voltage-sensitive switch, and that switch is able to be remote-operated. For features of the motorized VSR, see page 48. The layout allows all cables to be attached from the bottom of the cluster.

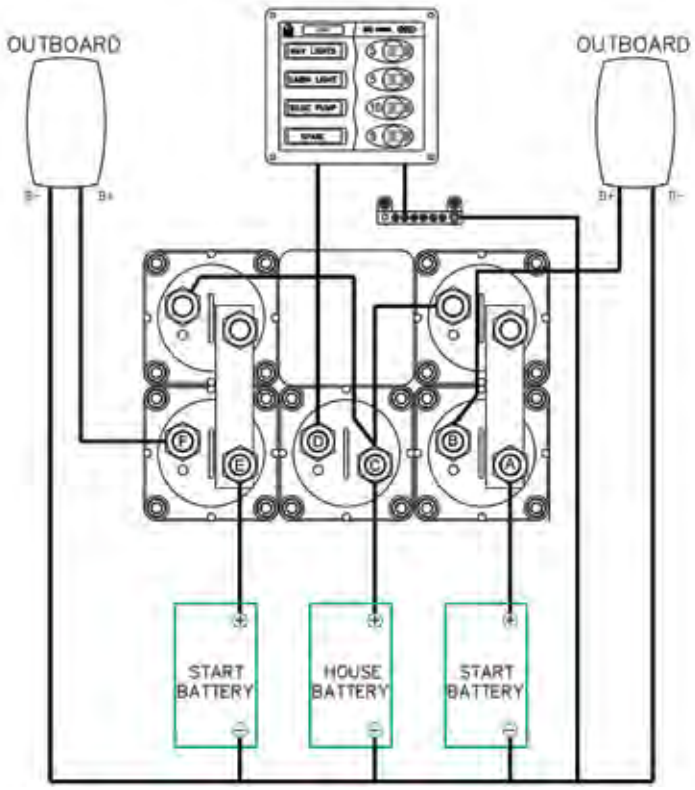
80-716-0017-00

Offers the same features as the 717-100A (see page 52).

The VSR and Emergency parallel switch are combined into one voltage-sensitive switch, and that switch is able to be remote-operated. For features of the motorized VSR, see page 48. The layout allows all cables to be attached from the bottom of the cluster.

80-716-0018-00





Range Highlights

- Control all battery switches from one convenient position
- Isolate each battery via key switch or designated battery banks via breaker
- LED Status indicators for battery switch status.
- Uses Contour Connect molding to match other BEP products. (see Contour Connect panel range)

Essential Circuits

If you're installing a single engine system, there will be 2 spare CBs which can be used for essential circuits, eg. stereo memory, bilge pumps. If installing a dual system, only one CB is available.

Battery Switch Control Centers	
Part No.	Description
80-700-0050-00	Single engine remote
80-700-0051-00	Twin engine remote
80-700-0052-00	Triple engine remote

Sophisticated Electrical Systems Need Reliable Automation. That's Key. Centralize power handling with the BEP Battery Control Center…

…and BEP's latest line of rugged **remote-operated switching banks**, Cluster or Contour Connect mounted, delivers hard-handling, good-looking power management where it's needed. The Battery Control Center (BCC) is equipped with locks on each battery switch position. This ensures group operation at the turn of the key. Any switch can be isolated by disengaging its lock and toggling the switch off.

Single Engine

Dual Engine

Triple Engine

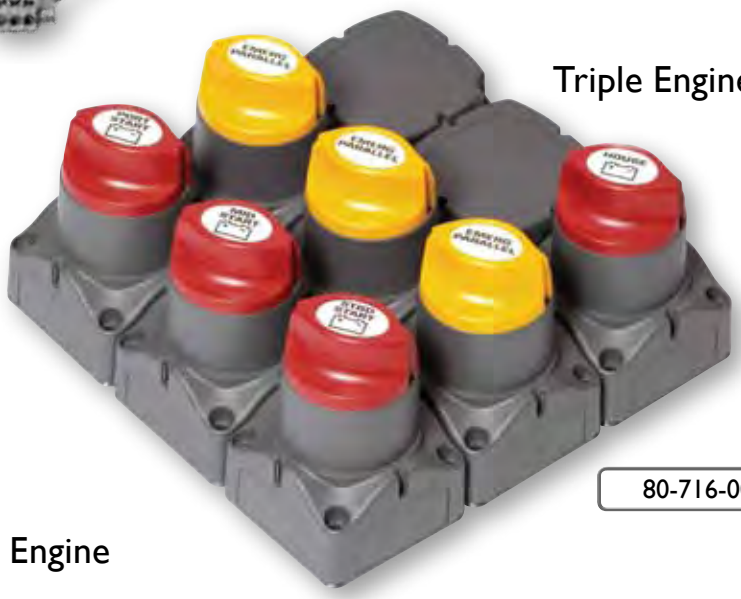
Range Highlights

- Complete system including all cable links (Battery Control Center ordered separately)
- Offers all features of motorized battery switches and Motorized VSRs in one kit. Makes ordering easy!
- Contour Connect panels can be flush-mounted for tidy installation and can be combined with other Contour Connect products (page 58-61)
- Clusters are surface mount, and can be rearranged to meet specific needs, such as port and starboard configurations and can be combined with other battery distribution products (page 67-70)
- Available in single, dual and triple engine configurations

Single Engine

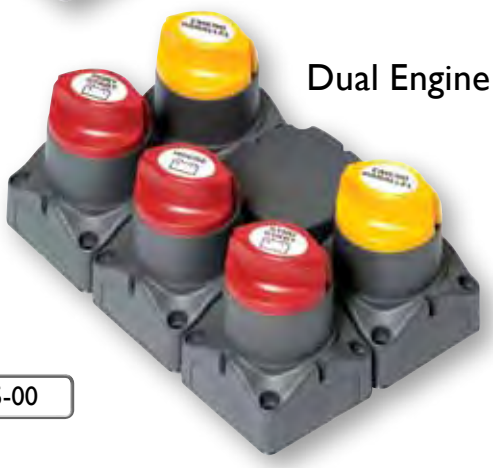
80-716-0014-00

Triple Engine



80-716-0016-00

Dual Engine



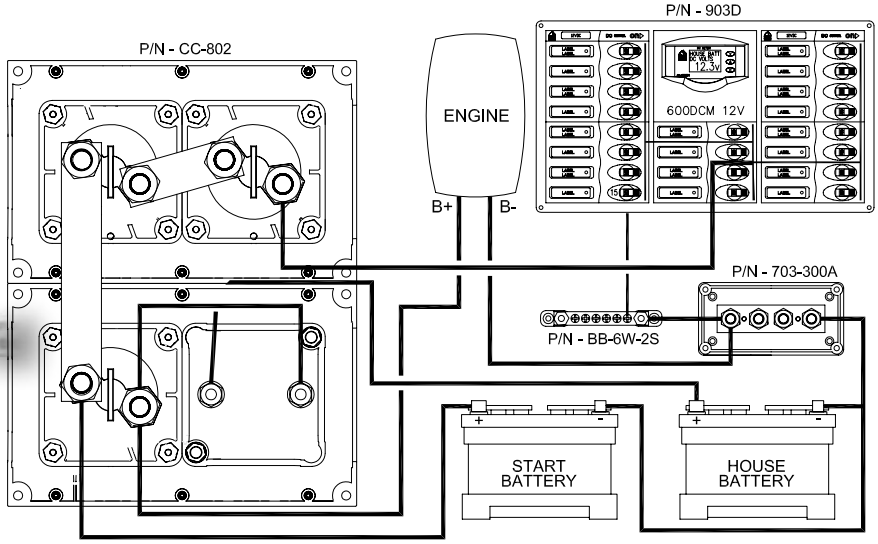
80-716-0015-00

Dimension guide

Clusters are made from uniformly square switches, each side 69 mm (2.7")

Single Engine, Two Battery Banks

80-700-0054-00



Offers the same features as the CC-802.

The VSR and Emergency parallel switch are combined into one voltage-sensitive switch, and that switch is able to be remote-operated.

Fewer components, more compact.

The layout allows all cables to be attached from the bottom of the cluster.

For features of the voltage sensitive relay, see page 48.

Dimensions				
Part No.	L x H x D mm		L x H X D in	
	Module	Cut-out	Module	Cut-out
CC-801	166 x 106 x 55	146 x 86	6.5 x 4.2 x 2.2	5.75 x 3.4
CC-802	166 x 212 x 55	126 x 192*	6.5 x 8.3 x 2.2	5.75 x 7.5*
80-700-0054-00	233 x 106 x 55	213 x 86	9.2 x 4.2 x 2.2	8.5 x 3.4

* Single hole only.

The CC-801 incorporates a version of our very successful 714-100A cluster (see page 50)

The CC-801 is supplied pre-wired with back cover and with a CC-J joiner to allow it to be combined with other modules.

The CC-801 is supplied standard in charcoal with light grey wave strip. Other trim colors are available for volume OEM orders.

The CC-802 incorporates a version of our very successful single engine battery switch cluster (page 51).

The CC-802 is supplied loosely assembled with links and joiners to allow it to be assembled in either the vertical or horizontal orientation as shown in illustrations.

Full wiring instructions are supplied to allow pre assembly for both orientations.

Twin Outboard, Three Battery Banks

CC-803N

The CC-803N incorporates a version of our very successful dual engine battery switch cluster (page 52).

The CC-803N is supplied with cables to allow for horizontal or vertical configurations.

The components can also be easily removed and reconfigured if the factory layout does not suit your application.

Dimensions				
Part No.	L x W x H mm		L x W X H in	
	Module	Cut-out	Module	Cut-out
CC-803N	223 x 212 x 55	213 x 86*	9.2 x 4.2 x 2.2	8.5 x 3.4*
80-700-0055-00	223 x 212 x 55	213 x 86*	9.2 x 4.2 x 2.2	8.5 x 3.4*
CC-804	166 x 106 x 55	146 x 86	6.5 x 4.2 x 2.2	5.75 x 3.4

80-700-0055-00

The 80-700-0055-00 offers the same features as the CC-803N.

The VSR and Emergency parallel switch are combined into one voltage-sensitive switch, and that switch is able to be remote-operated.

Fewer components, more compact.

The layout also allows all cables to be attached from the bottom of the cluster.

Installation diagrams are available on our website: **www.bepmarine.com**

The CC-804 is equipped to cover essential circuits requirements (bilge, pumps etc) and is fitted with one 50 A CB for DC mains or treatment systems.

It is also supplied with a 135 A 185 Series CB for anchor windlass.

The CC-804 compliments the other modules for either single or dual engine installations.

The CC-810 is supplied standard with 3 x 701-PM battery switches pre-assembled. Ideal for installing alongside any other Contour Connect Modules.

Both the CC-811T and CC-811PR can be mounted as a stand alone panel or can be attached to other Contour Connect Panels using a CC-J joiner (supplied with panel). Supplied with 2 x 10 A and 2 x 15 A toggle or push-reset CBs and Set-CC-1 label sheet (see page 74).

Panels can be joined together to create a clean and compact system.

The **CC-BLANK** will cover an unused hole in **CC-1** and **CC-2**. Attached from the rear of the panel, it allows for expanding with other options at a later date.

The CC-12VRC allows a DC outlet socket to be placed within the Contour Connect panels. It will fit into the CC-1, CC-2 or CC-5 panels.

	Dimensions - All Units This Page			
Part No.	L x W x H mm		L x W X H in	
	Module	Cut-out	Module	Cut-out
CC-801	166 x 106 x 55	146 x 86	6.5 x 4.2 x 2.2	5.75 x 3.4
CC-810	233 x 106 x 55	213 x 86	9.2 x 4.2 x 2.2	8.5 x 3.4
CC-811PR	101 x 106 x 55	82 x 86	4 x 4.2 x 2.2	3.5 x 3.4
CC-811T	101 x 106 x 55	82 x 86	4 x 4.2 x 2.2	3.5 x 3.4

The CC-805T is supplied pre-wired with one battery switch, 2 x 10 A and 2 x 15 A toggle circuit breakers. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals.

The CC-805PR is supplied pre-wired with one battery switch, 1 x 5 A, 2 x 10 A and 1 x 15 A push reset circuit breakers. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals.

The CC-806T is supplied pre-wired with one battery selector switch, 2 x 10 A and 2 x 15 A toggle circuit breakers. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals.

The CC-806PR is supplied pre-wired with one selector battery switch, 1 x 5 A, 2 x 10 A and 1 x 15 A push reset circuit breakers. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals.

The CC-807T is supplied pre-wired with 2 x 5 A, 2 x 10 A, 3 x 15 A and 1 x 20 A toggle CBs. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals. An economical 8 way circuit breaker panel option. Stackable for vertical or horizontal mounting.

The CC-807PR is supplied pre-wired with 2 x 5 A, 2 x 10 A, 3 x 15 A and 1 x 20 A push reset circuit breakers. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals. Suitable for essential circuits where circuit breaker needs to be left on. Ideal for helm area giving protection for switching.

The CC-807T-PR is supplied pre-wired with 2 x 10 A, and 2 x 15 A toggle circuit breakers and 2x 10 A and 2 x15 A push reset circuit breakers. Supplied with SET-CC-1 label sheet (page 74) and back cover to enclose exposed terminals.

Dimensions - All Units This Page			
L x W x H mm		L x W X H in	
Module	Cut-out	Module	Cut-out
166 x 106 x 55	146 x 86	6.5 x 4.2 x 2.2	5.75 x 3.4

The Contour Connect Kit set Panels are designed for applications where the OEM or panel builder wishes to construct a custom system. They're supplied as empty panels with all necessary mounting hardware, including one CC-joiner.

The CC-1 module will house the following components.

701-PM	Panel mount battery on/off (page 46).
701S-PM	Panel mount battery selector switch (page 46).
185 Series	Heavy duty circuit breakers (page 26). (CC-HDBM must be ordered with 185 circuit breakers, one per breaker).
710-125A	Voltage sensitive relay (page 29).
710-125A-DS	Voltage sensitive relay dual sense (page 49).

The CC-2 module will house the following components:

CLB series (push reset) Carling circuit breakers (page 26).

Toggle Magnetic Hydraulic Airpax Carling circuit breakers (page 25).

The CC-3 module will house the following components:

CLB series (push reset) Carling circuit breakers (page 26)

Toggle Magnetic Hydraulic Airpax Carling circuit breakers (page 25)

The CC-4 module is designed for different applications.

Application One: For fitting insulated studs in back of panel to prewire assembled panel. (IS-10MM-2). The CC-4 will also accept the 703-300A or 703-500A heavy duty bus bars (page 69) This can be used to terminate negatives at back of panel or for multiple outputs from battery switches.

Application Two: For installing ancillary equipment associated with battery management area.

The CC-5 module will house all the same components as the CC-1.

709-300/BD Flexible links are supplied pre-connected with spare links for different orientations (horizontal or vertical) of Contour Connect panels.

Must be ordered separately when ordering CC Kitset panels.

NCB-CC Link bar between circuit breakers. Same bar fits toggle or push reset CBs. Bar can be cut to bring multiple feeds to circuit breakers. Supplied with 800 Series panels or CC-Kitset panel.

708-42.5 Solid terminal links supplied pre-connected with spare links for different orientations (horizontal or vertical) of Contour Connect panels.

Must be ordered separately when ordering CC Kitset panels.

Flexible Links

Part No.	Link (mm x mm, g)	Terminals (mm, mm)
LD-6R-120-CE	6 x 120, 10	6, 10
LD-6R-150-BD	6 x 150, 10	6, 10
LD-6R-210-BD	6 x 210, 10	6, 10
LD-6R-300-BD	6 x 300, 10	6, 10
709-150/BD	25 x 150, 4	6, 10
709-250/BD	25 x 250, 4	6, 10
709-300/BD	25 x 300, 4	6, 10
709-150/DD	25 x 150, 4	2 x 10
709-250/DD	25 x 250, 4	2 x 10
709-300/DD	25 x 300, 4	2 x 10

Solid Links

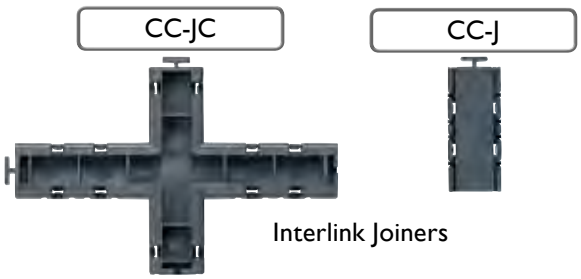
Part No.	Application
708-42.5	For horizontal linking of battery switches in the same panel
708-70.0	For horizontal linking of battery switches studs between 2 separate panels
708-107	For vertical linking of battery switches between panels

The CC-BC back cover clips into the rear of all CC-1 to CC-4 modules (page 60) ensuring all exposed terminals are covered to comply with ABYC specifications. Supplied standard with all CC panel combinations. Ordered separately when ordering CC Kitset panels.

Busman CB Panel Mount

The **CC-HDBM** module must be ordered separately if ordering Busman 184 & 185 series circuit breakers. Mounting hardware for CB and panel attachment is supplied with module.

The Contour Connect panels are supplied standard. Wave strips can be ordered separately and are supplied in pairs of top and bottom strips.



Interlink Joiners

Interlink corner cross joiner for extra rigidity when four corners are placed together. Ordered separately.

The BEP ATC Fuse Holder provides compact, easy access to fuses with the design integrity only BEP can offer.

ATC-6W

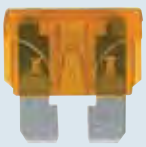
Fuse holder also available without cover for OEM installation.

Fuse holder Link Part no. 708-00015-00 included with display packed product.

Range Highlights

- Allows for multiple fuse holders and Bus bars to be joined together, increasing the number of circuits protected
- Fuse holder inputs can be linked together to form a single continuous fuse holder
- Includes patented Contour Lock system, see-thru clip-on cover and label set (See page 75)
- Available with screw terminals or quick connect terminals
- Max. current/circuit: 30 A; Max. current/block: 100 A; Max. voltage: 32 V DC; Base & cover material: polycarbonate
- Positions for spare fuses
- ATC Fuse holder: 80 x 90 x 47 mm (3.1 x 3.6 x 1.9 in)
- ATC Bus bar: 35 x 90 x 47 mm

ATC Fuses



Fuses available 3-30 A

Interrupt capacity: 1000 A DC

Maximum voltage 32 V DC

ATC Fuses	
Part No.	Rating (A)
604003	3
604005	5
604007	7.5
604010	10
604015	15
604020	20
604025	25
604030	30

ATC Fuse Holders		
Part No.	Description	Pack
80-712-0039-01	6 Way bus/ with 5 mm input stud, cover, joiners	Bulk 24/pack minimum order OEM use only
80-712-0039-00	6 Way bus/ with 5 mm input stud, cover, joiners	Display (blister pack)
ATC-6W/B	6 Way fuse holder screw terminals/with cover	Bulk 24/pack minimum order OEM use only
ATC-6WQC/B	6 Way fuse holder Quick Connect/with cover	Bulk 24/pack minimum order OEM use only
ATC-6W	6 Way fuse holder screw terminals/with cover and link	Display (blister pack)
ATC-6WQC	6 Way fuse holder Quick Connect/with cover and link	Display (blister pack)

80-712-0039-00

ATC Bus Bar

The expandable ATC negative Bus uses the BEP Contour Lock system to allow it to be joined to the ATC fuse holder. This keeps wiring tidy and conveniently located.

Current rating 100 A.

12VRC

Easy to install, with supplied mounting plate for front panel installation locking ring for rear access installation.

12 V Receptacle

Watertight sealing cap

Compatible with standard 12 V plugs

Maximum current 16 A

12VPG

Moisture seal ring

LED power indicator light

Interchangeable fuse

Internal strain relief and cord seal

Compatible with standard 12 V receptacles

Range Highlights

- Corrosion-resistant, marine-grade materials
- Marinco-exclusive, moisture resistant connection system that locks plugs to receptacles securely

12VBR

12VBP

12VBR-BP-DSP

Range Highlights

- 50 A plugs & sockets for heavy duty DC connections
- Receives 10 AWG (6 mm) cable

Spare Parts for Sprayproof panel range, rated 20 A DC (see page 38 and 41)		
Part No.	Type	Operation
SW-32111	Switch	on/off
SW-32113	Switch	on/on
SW-32114	Switch	on/off/on
SW-32115	Switch	(on)off/ momentary
SW-32120	Switch	(on)off(on) momentary
SW-32123	Switch	on/off/on double pole
SW-M331	Boot	Splash proof cover
WAFH-14#		Fuse holder
12VPG	Plug	16 A

SW-M331

SW-32111

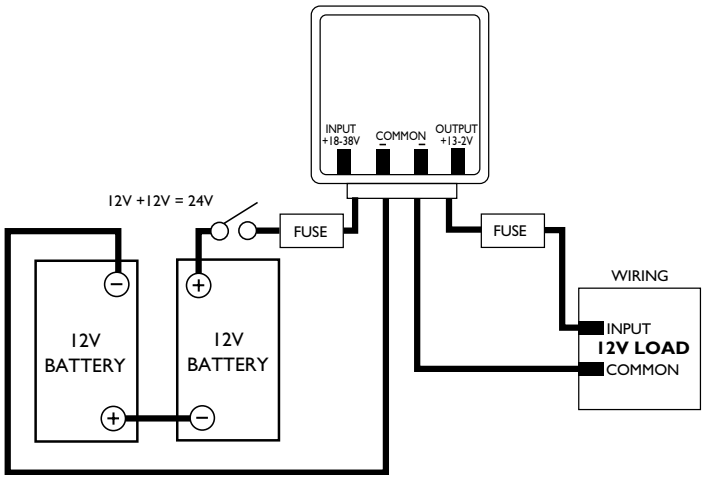
WAFH-14#

Inline ATC fuseholder

54-27C4

Remote buzzer for matrix range

Ideal for running 12 V DC electronics (I.E. HF/SSB Radios, high power audio, TV's, and appliances) off 24 V DC electrical systems, the DC Converter range is the compact, efficient solution to stepping down the load.



Range Highlights

- Compact, lightweight 24-12 V DC-DC converter
- High efficiency (>90%) switchmode voltage converter
- Short circuit protected: output drops to 0 V
- Reverse polarity protected: reverts when corrected
- Fast shutdown protects equipment and wiring
- Does not rely on fuses to protect equipment
- Case floating (no DC connection)
- LED state indicators
- Crimp on cable connectors and clip-on mounted bracket supplied
- EMC compliant – As/NZS 2064

Specifications								
Part No.	mm L x 75 x 32	in L x 2.9 x 1.25	Weight (g)	Input (V)	Output (V)	Continuous Load (A)	Peak Load (A)	No Load (mA)
DCVR-7A	80	3.2	198	15 - 38	13.2	7	10	< 15
DCVR-10A	90	3.5	212	15 - 38	13.2	10	14	< 15
DCVR-20A	160	6.25	343	18 - 38	13.2	20	24	< 15

Not recommended for use with halogen lights

4531001

4531011

Range Highlights

- Gold plated terminals provide superior corrosion resistance for harsh environment exposure
- Prevent galvanic corrosion due to dissimilar metals between boats
- Block DC current from flowing through shore power cable
- Ignition Protected

Galvanic Isolators - 115-230 V, 50/60 Hz AC		
Part No.	Rating (A)	Voltage (V AC)
4531001	30	115/230
4531011	50/60	115/230

2436 SHAFT BRUSH

2436 Shaft Brush

Connects prop shaft to bonding system. Eliminates electronic frequency noise from rotating shaft. Arm length 300 mm (12")

Range Highlights

- Now with easy-fit covers to ABYC standards, with polarity ID
- 4 mm (5/32") stainless steel screws with shakeproof washers
- 2 x 6 mm (1/4") input studs
- Tin-plated, brass-insulated mounting bases with recessed mounting holes to avoid accidental shorts on aluminum surfaces
- Supplied standard with all BEP AC & DC control panels

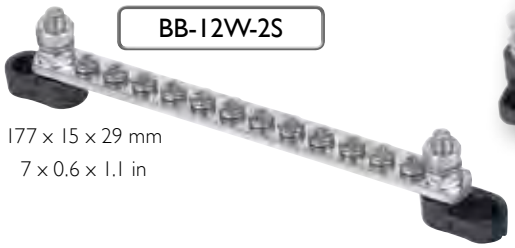
Covers

- Flame-resistant flexible plastic
- Color-coded for polarity
- Unique push-on fit
- Supplied standard with bus bars when ordered in display packs (for bulk packaging ordered seperately)

BB-6W-2S

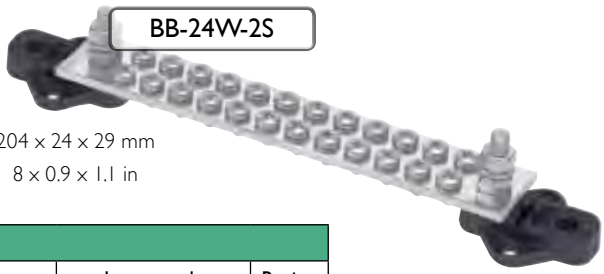
117 x 15 x 29 mm
4.6 x 0.6 x 1.3 in

BB-12W-2S



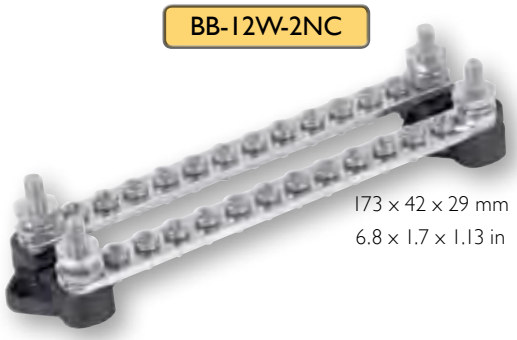
177 x 15 x 29 mm
7 x 0.6 x 1.1 in

BB-24W-2S



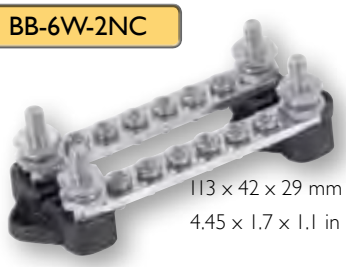
204 x 24 x 29 mm
8 x 0.9 x 1.1 in

BB-12W-2NC



173 x 42 x 29 mm
6.8 x 1.7 x 1.13 in

BB-6W-2NC



113 x 42 x 29 mm
4.45 x 1.7 x 1.1 in

BB-4S-150A

138 x 35 x 29 mm
5.4 x 1.4 x 1.1 in

Bus Bars					
Part No.	Pack Type	Bus Type	Output screws (4 mm / 5/32")	Input studs (6 mm / 1/4")	Rating (A)
BB-6W-2S/DSP	Display	Single	6	2	100
BB-12W-2S/DSP	Display	Single	12	2	100
BB-24W-2S/DSP	Display	Single	24	2	150
BB-6W-2NC/DSP	Display	Double	2 x 2	2 x 6 way	100
BB-12W-2NC/DSP	Display	Double	2 x 12	2 x 12 way	100
BB-4S-150A/DSP	Display	4 -way	1 x 4	4 x 6 mm (1/4 stud)	150
BB-6W-2S	Bulk	Single	6	2	100
BB-12W-2S	Bulk	Single	12	2	100
BB-24W-2S	Bulk	Single	24	2	150
BB-6W-2NC	Bulk	Double	2 x 2	2 x 6 way	100
BB-12W-2NC	Bulk	Double	2 x 12	2 x 12 way	100
BB-4S-150A	Bulk	4 -way	1 x 4	4 x 6 mm (1/4 stud)	150

All Bus bars in display packs are supplied standard with covers.

Bus Bar Covers, 6 W	
Part No.	Description
BBC-6WR	Positive
BBC-6WBK	Negative

Bus Bar Covers, 12 W	
Part No.	Description
BBC-12WR	Positive
BBC-12WBK	Negative

Bus Bar Covers, 24 W	
Part No.	Description
BBC-24WR	Positive
BBC-24WBK	Negative


IS-6MM-1


IS-6MM-2


IS-10MM-1


IS-10MM-1R


IS-10MM-2


IS-10MM-2/L


ISC-6-2


ISC-10R


Reducing sleeve for 8 mm studs, supplied in display packs. Order as ISC-10BK-S for black or ISC-10R-S for red.

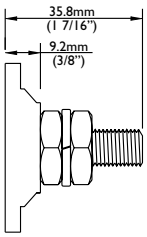
Range Highlights

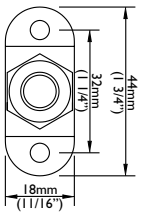
- Made with high temperature plastic bases
- Stud covers push securely over the threaded stud covering to ABYC standards
- Dual studs deal for +ve / -ve connections, branch circuits, windlass or inverter installations.

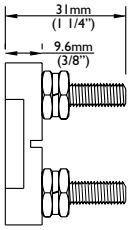

ISC-10BK

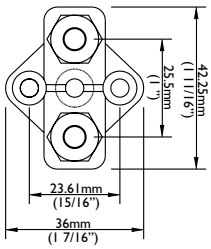
IS-10MM-8MM

Designed for Yamaha engine installations where the positive cable is supplied with a 10 mm (3/8") lug and the negative cable is supplied with an 8 mm (5/16") lug.





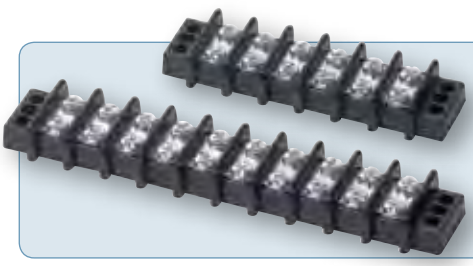




Single Studs			
Part No.	Pack Type	Stud Size (mm / in)	Polarity
IS-6MM-1R/DSP	Display	6 / 1/4	Positive
IS-6MM-1/DSP	Display	6 / 1/4	Negative
IS-8MM-1R/DSP	Display	8 / 5/16	Positive
IS-8MM-1/DSP	Display	8 / 5/16	Negative
IS-10MM-1R/DSP	Display	10 / 3/8	Positive
IS-10MM-1/DSP	Display	10 / 3/8	Negative
IS-6MM-1R	Bulk	6 / 1/4	Positive
IS-6MM-1	Bulk	6 / 1/4	Negative
IS-8MM-1R	Bulk	8 / 5/16	Positive
IS-8MM-1	Bulk	8 / 5/16	Negative
IS-10MM-1R	Bulk	10 / 3/8	Positive
IS-10MM-1	Bulk	10 / 3/8	Negative

Dual Studs		
Part No.	Pack Type	Stud Size (mm / in)
IS-10MM-2/DSP	Display	2 x [10 / 3/8]
IS-10MM-2/L/DSP	Display	2 x [10 / 3/8] linked
IS-10MM-8MM/DSP	Display	1 x [10 / 3/8], 1 x [8 / 5/16]
IS-6MM-2/DSP	Display	2 x [6 / 1/4]
IS-10MM-2	Bulk	2 x [10 / 3/8]
IS-10MM-2/L	Bulk	2 x [10 / 3/8] linked
IS-10MM-8MM	Bulk	1 x [10 / 3/8], 1 x [8 / 5/16]
IS-6MM-2	Bulk	2 x [6 / 1/4]

Stud Covers		
Part No.	Pack Type	Description
80-712-0033-00	Display	Red positive 10 mm
80-712-0031-00	Display	Black negative 10 mm
80-712-0035-00	Display	Double 6 mm
ISC-10R	Bulk	Red positive 10 mm
ISC-10BK	Bulk	Black negative 10 mm
ISC-6-2	Bulk	Double 6 mm



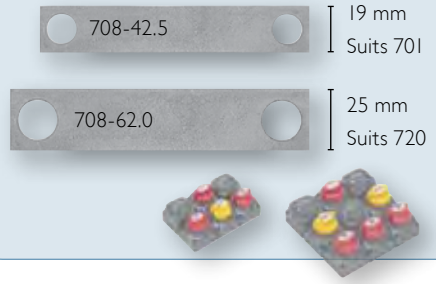
Terminal blocks

TB-118-10P: 10 connections; **TB-118-6P**: 6 connections

Ideal for isolated connections up to 30 A. Suitable for connecting tails from AC and DC panels.

Base material: Phenolic; Current rating 30 A; Max. voltage rating: 300 V AC/DC; Screw size: 6.3 mm (0.25 in)

708 Terminal Links



The 708 links are designed for space saving interconnections of terminals when battery distribution modules are linked together. Four standard solid links are available for interconnection of the 701 battery switch with other Battery Distribution products and two larger links which are intended for the heavy duty battery switch.

708 Terminal Links		
Part No.	Distance between centers, Hole diameter	
	mm	in
708-42.5	42.5, 10	1.7, 3/8
708-54.5	54.5, 10	2.2, 3/8
708-64.5	64.5, 10	2.6, 3/8
708-68.5	68.5, 10	2.7, 3/8
708-62.0	62.0, 12	2.45, 1/2
708-102	102, 12	2.45, 1/2

709 Terminal Links (Flexible)

In some installations the solid links are not suitable or will not reach the correct terminal. For this purpose we supply the following lengths of flexible links.

709 Flexible Terminal Links	
709-25MM-150	709-25mm- 150 mm (6")
709-25MM-200	709-25mm- 200 mm (8")
709-25MM-300	709-25mm- 300 mm (12")
709-25MM-500	709-25mm- 500 mm (20")

Heavy Duty Fuse Holders

704-HDBFH Dual Fuse Holder – housed in same double case as the 700 series products. Stackable with single or double fuse holders. 138 x 69 x 50 mm (5.3 x 2.75 x 2 in)

702-HDBFH Single Fuse Holder – housed in the same single case as the 700 series products. Stackable with single or double fuse holders. 69 x 69 x 50 mm H (2.75 x 2.75 x 2 in)

An economical way of fusing heavy loads 30-80 A. Ideal for battery charger outputs or mains feeds. 6 mm (1/4") studs accept ring terminals and cables up to 25 mm^2 (4 gauge). Fuse is clamped between tinned brass clamps for positive connection. Covers enclose exposed terminals to meet ABYC standards. Fuse holder part numbers are for display packed product. For Bulk packed product add B to part number.

HDBFH Inline Heavy Duty Fuse Holder

For installations where space is tight and fuse needs to be installed inline with the cable. Supplied with 8 mm (8G) tails for inline connections. An economical solution to heavy duty fusing. 80 x 55 x 15 mm (3.15 x 2.15 x .6 in)

Maxi-Blade Fuses

Fuses available 30-80 A

Interrupt capacity: 1000 A DC;

Maximum voltage: 32 V DC

Maxi-Blade Fuses	
Part No.	Rating (A)
BFHD-30A	30
BFHD-40A	40
BFHD-50A	50
BFHD-60A	60
BFHD-70A	70
BFHD-80A	80

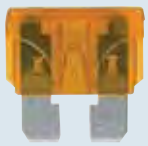
ATC Fuses	
Part No.	Rating (A)
604003	3
604005	5
604007	7.5
604010	10
604015	15
604020	20
604025	25
604030	30

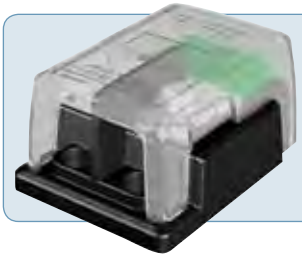
ATC Fuses

Fuses available 3-30 A

Interrupt capacity: 1000 A DC

Maximum voltage 32 V DC





Maxi Fuse Holder

702-MFH Maxi Fuse Holder

An economical way of fusing heavy loads 30-80 A. Ideal for battery charger outputs or mains feeds. 6 mm (1/4") studs accept ring terminals and cables up to 25 mm^2 (4 gauge). Fuse is clamped between tinned brass clamps for positive connection. Covers enclose exposed terminals to meet ABYC standards. 71 x 53 x 36 mm (2.8 x 2 x 1.42 in)

702 Distribution Stud

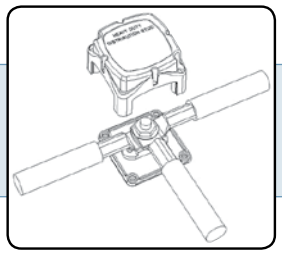
The Contour Distribution Stud allows terminating of heavy duty cables for one or more connections. Contour Lock housing has removable side plates which allows for connections from all sides.

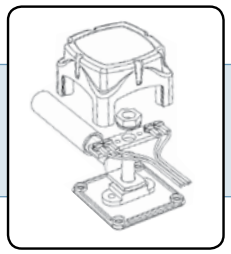
Stud size: 10 mm (3/8 in); 69 x 69 x 50 mm (2.75 x 2.75 x 2 in)

702-2S Dual Distribution Stud

Designed specifically for transom areas for connecting battery cables from outboards. It also has many other applications where heavy duty positive and negative connections need to be terminated.

(702-2S/L same dimensions as 702-2S including link bar same as IS-10MM-2/L - see page 66.)





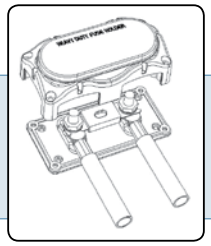
702SB Secondary Bus

Fitted to Distribution Stud 702 allows for small wire connections without cluttering main stud. Terminal screws 4 mm (1/8 inch).

704-4S

The 704-4S was designed for multiple heavy duty connections which need to be isolated from each other. This model completes the range of heavy duty connectors and meets ABYC standards for exposed terminals.

Stud size: 4 x 10 mm (3/8 in); 138 x 69 x 50 mm (5.3 x 2.75 x 2 in)



Fuse viewing window

704-ANL Fuse Holder Heavy Duty

Allows fusing of heavy duty accessories between 80-500 A. Mounted in Contour lock mouldings with removable sides. Meets ABYC Standards for exposed terminals.

Stud size 10 mm (3/8 in); 138 x 69 x 50 mm (5.3 x 2.75 x 2 in)

Specifications			
Part No.	mm L x W x H	in L x W x H	Stud Size mm, in
702	69 x 69 x 50	2.75 x 2.75 x 2	10, 3/8
702-2S	69 x 69 x 50	2.75 x 2.75 x 2	2 x (10, 3/8)
704-4S	138 x 69 x 50	5.3 x 2.75 x 2	4 x (10, 3/8)
704-ANL	138 x 69 x 50	5.3 x 2.75 x 2	10, 3/8

BEP's patented Contour Locking System is an innovative feature that allows for multiple battery management components to be connected to each other providing for a clean finished installation. These locking tabs can be found on battery switches, heavy duty buss bars, fuse holders, distribution studs and breaker modules.

IP250

Ignition protected

Tin plated

Visible fuse status window

6000 A interrupt capacity

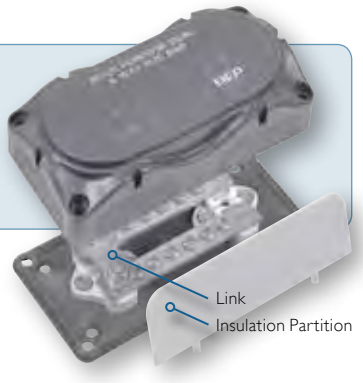
Maximum voltage 32 V DC

ANL Fuse Specifications	
Part No.	ANL Fuselinks Rating (A)
IP80	80
IP100	100
IP150	150
IP200	200
IP250	250
IP300	300
IP425	425
IP500	500

Multi-purpose Bus Bar		
Part No.	mm	in
BB-6W-2	138 x 69 x 50	5.75 x 2.75 x 2
Stud size	**Terminal screws**	**Rating (A)**
6 mm (1/4")	4 mm (5/32")	100

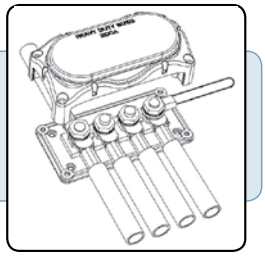
BB-6W-2 Multi purpose Bus Bar (Rated 100 A)

Allows for Bus bars to be separated using insulation partition as supplied (as illustrated) or Bus bars can be combined using the link supplied. For DC negative & positive common or separated, or AC Neutral Earth (linked or separate)

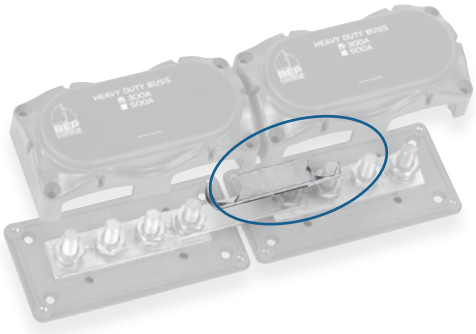


703-300A Distribution Bus

Allows multiple terminations for heavy duty negative or positive connections. Modular sizing with Contour Lock housing allows easy grouping and meets ABYC standards for exposed terminals.



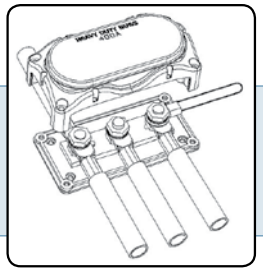
Specifications				
Part No.	mm	in	Stud Size mm, in	Rating (A)
703-300A	138 x 69 x 50	5.4 x 2.75 x 2	4 x (10, 3/8)	300
703-500A	138 x 69 x 75	5.4 x 2.75 x 2.9	3 x (10, 3/8)	500



Use the **708-64.5** link (page 68) for optional expansion on either the **703-300A** or the **703-500A**.

703-500A Distribution Bus

Designed to take loads from Heavy Duty Starter Circuits. Taller cover allows for more bulky cables and lugs.



711 Ammeter Shunt Enclosure

The 711 provides a protective housing for shunt termination meeting ABYC standards. Shunts ordered separately (see page 30 and 36).

711 Ammeter Shunt Enclosure Specifications			
Part No.	mm	in	Description
711L	138 x 69 x 50	5.4 x 2.75 x 2	Takes 2 mini or one maxi shunt
711S	69 x 69 x 50	2.75 x 2.75 x 2	Takes 1 mini shunt
Digital	Maxi: 450 A - 50 mV		
Analog	Mini: 50 A - 50 mV, 100 A - 50 mV, 150 A - 50 mV		

707 Circuit Breaker Module

Provides 3 CBs ideal for medium duty loads, like waste treatment systems and electric toilets. Designed to separate these loadings from the main DC panel, avoiding voltage spikes. Supplied standard with 1 x 50 A and 2 x 25 A B Series CBs in a Contour Lock housing for easy modulation. Extra CBs available (page 25).

138 x 69 x 75 mm (5.5 x 2.75 x 2.9 in) Labels ordered separately: SET-714.

Contour Circuit Breaker HD All 138 x 69 x 75 mm (5.3 x 2.75 x 3")	
Part No.	Rating (A)
705-50A	50
705-80A	80
705-100A	100
705-135A	135
705-150A	150

705 Contour Circuit Breaker HD

Allows switchable protection for heavy duty circuits like Windlasses or Davit winches using Busman Heavy Duty thermal circuit breakers (page 26). Modular sizing with Contour Lock housing allows easy grouping. LED to indicate circuit is on. Five standard ratings available.

706-4W 24hr Service Circuit Breaker Module (4 W)

Consists of one 5 A and three 15 A push to reset Carling CLB Series thermal CBs. Suitable for essential circuits such as bilge pump, auto float switch supplies and stereo memory circuits. The push to reset function ensures essential 24hr circuits cannot be switched off inadvertently. This is contained in the contour lock double module. For spare circuit breakers see page 26. Labels: SET-714 Dims:138 x 69 x 75 mm (5.3 x 2.75 x 3")

706-2W 24hr Essential Circuit Module

Designed for smaller systems where only 2 circuit breakers are required. Supplied with 2 x 10 A Carling CLB Series circuit breakers – push to reset. Dims: 69 x 69 x 70 mm (2.75 x 2.75 x 2.75")

ACCESSORIES

SET-1N
Accessories
Anchor Light
Auto Pilot
Bilge Pump
Cabin Lights
Cabin Lights
Cockpit Lights
Compass Lights
DC Outlets
Depthsounder
Freezer
Freshwater Pump
GPS
Instruments
LPG Control
Mast Light
Navigation Lights
Saltwater Pump
Shower Drain Pump
Spare
Spotlight
Spreader Light
Steaming Light
Stereo
Trim Tabs
VHF
Winch
Wiper

BAIT TANK PUMP

SET-2N
Bait Tank Pump
Bilge Pump Aft
Bilge Pump Forward
Bilge Pump Mid
Bilge Pump Port
Bilge Pump Starboard
Blower
Boarding Light
Cabin Lights Aft
Cabin Lights Fwd
Cabin Lights Mid
Cabin Lights Port
Cabin Lights Starboard
Deck Wash Pump
Electric Toilet
Engine Room Lights
Fridge
Horn
Nav Lt's Port
Nav Lights Starboard
Panel Lights
Radar
Saloon Lights
SSB
Start
Stern Light
Stop
Tri Light

12 V OUTLETS

SET-3N
12V Outlets
24V Outlets
Aft Deck Light
Bilge Auto Man.
Bow Lights
Docking Lights
Emergency Parallel
Engine Alarm
Engine Blowers
Extraction Fan
Flood Lights
Fore Deck Light
Galley Lt
Generator Lights
Holding Tank Pump
House Batteries
Lazerette Light
Port
Radio Battery
Search Light
Starboard
Start Batteries
Step Light
Strobe Light
Toilet Lt
Weather Fax
Windex Light
Window Washers

AFT LIGHTS

SET-4N
Aft Lights
Bedroom/Converter
Davit Winch
Engine Alternator
Fire System
Fish Finder
Fishing Light
Galley/Bath
House Alternator
Intercom
Load
Locker Light
Mid Wiper
Mid Lights
Mizzen Spreader Light
Plotter
Port Wiper
Preheat
Sole Light
Heater Fans
Starboard Wiper
Sub Main
Sump Pump
Tank Room Lights
Toilet Pump
Towing Light
TV/Stereo
Walvac

AC MAINS

SET-5N
AC Mains
AC Outlets
AC Outlets
Air Conditioning
Battery Charger
Cook Top
Dishwasher
Dive Compressor
Dryer
Frequency
Genset
Heater
Hotwater Cylinder
Ice Maker
Inverter
Inverter Outlets
Microwave
Oven
Refrigeration
Reverse Polarity
Ships Power
Shore Power
Trash Compactor
TV
Video
Washing Machine
Waste Master
Water Maker

AC MAINS

SET-6N
AC Mains
Accessories
Anchor Wash
Automatic
Autopilot
Auxiliary
Bilge Auto Manual
Bilge Lights
Boom Furl
Bridge Lights
Burglar Alarm
Cabin Fan
CB Radio
Cell Phone
Computer
DC Mains
Fuel Transfer
Galley Fan
Hatch Controls
Hydraulics
Loud Hailer
Macerator
Manual
Night Lights
Pelmet Lights
Solar Panel
Stove
TV Antenna

AFT PEAK LIGHT

SET-7N
Aft Peak Light
Deck Flood Lights Fwd
Deck Flood Lights Aft
Deck Lights
Deck Lights Port
Deck Lights Starboard
Deck Lights Forward
Deck Lights Aft
Fishing Lights
Fishing Lights White
Fishing Lights Red
Fishing Lights Green
Fish Room Lights
Fish Room Pump
Fore Deck Light
Focsle Light
Mast Flood Lights Fwd
Mast Flood Lights Aft
Net Recorder
Not Under Command
NUC Lights
Plotter
Port Flood Lights
Shower Lights
Stbd Flood Lights
Toilet Fan
Toilet Light
Winch Flood Lights

ANCHOR LIGHT

SET-8N
Anchor Light
Baragraph Power
Cabin Fans
Cabin Fans Fwd
Cabin Fans Aft
Courtesy Lts
Courtesy Lts Fwd
Courtesy Lts Mid
Courtesy Lts Aft
Diesel Heater
Fire System
Fuel Pump
Hailer
Lectrasan
Lectrasan Fwd
Lectrasan Stbd
Port Engine Controls
Port Ignition
Sat Com
Shower Light
Saloon Lights
Spare
Spare
Stabilizer
Stbd Engine Controls
Stbd Ignition
Toilet Light
Waste Treatment

BOILER/HEATER

SET-9N
Boiler / Heater
Bow Thruster
DC/DC Converter
Deck Lights Forward
Decklights Aft
Decklights Mid
Decklights Upper
Defroster
Galley Lights
Grey Water Pump
Guest State Lights
Head Pump 1
Head Pump 2
Master State Lights
Nav Lights
Oil Pump
Pilot House Lights
Saloon Lights
Search Light
Spare
Spare
Stereo
Trim Tab Control
V-Berth Lights
VHF Lower
VHF Upper
Wash Down Pump
Windlass

AIR COMPRESSOR

SET-10N
Air Compressor
Air Con Galley
Air Con Guest Room
Air Con Master State
Air Con Pilot House
Air Con Salon
Air Con Saloon
Air Con State Room
Air Con V-Berth
Air Conditioning
Air Conditioning 1
Air Conditioning 2
Air Conditioning 3
Central Vacuum
Charger Generator
Charger House
Charger Inverter
Compactor
Engine Room Fans
Hot Circ Pump
Ice Maker Lower
Ice Maker Upper
Outlets Engine Room
Outlets External
Outlets Galley
Outlets Lower Deck
Outlets Upper Deck
Water Heater

12-12 V REDUCER

SET-12N
24-12V Reducer
Aerator
Ballast Aft
Ballast Control
Ballast Fwd
Black Tank Aft
Black Tank Fwd
Black Water Pump
Boom Light
Bridge Lights
Bridge Supply
Dining Lights
Fire Alarm
Flow Alarm
Interior Lights
Luff Light
Modem
Nav Area Fan
Outlets Aft
Outlets Fwd
Outlets Mid
Outlets Port
Outlets Stbd
Port Engine
Stbd Engine
Step Lights
Strobe
Riding Light

AFT BILGE ALARM

SET-13N
Aft Bilge Alarm
Bilge Alarm
Bilge Alarm Test
Bilge Auto
Bilge Lights
Bilge Manual
Bilge Pump Auto/Manual
Fwd Bilge Alarm
High Water Alarm
Mid Bilge Alarm
Port Aft Bilge Alarm
Port Aft Bilge Auto
Port Aft Bilge Manual
Port Fwd Bilge Alarm
Port Fwd Bilge Auto
Port Fwd Bilge Manual
Port Mid Bilge Alarm
Port Mid Bilge Auto
Port Mid Bilge Manual
Stbd Aft Bilge Alarm
Stbd Aft Bilge Auto
Stbd Aft Bilge Manual
Stbd Fwd Bilge Alarm
Stbd Fwd Bilge Auto
Stbd Fwd Bilge Manual
Stbd Mid Bilge Alarm
Stbd Mid Bilge Auto
Stbd Mid Bilge Manual

210KHz TX

SET-14N
210KHz TX
33KHz TX
Aft Hold Light
Cockpit Freezer
Engine Controls
Fridge/Freezer
Fire Pump
Fluxgate Compass
Flybridge Freezer
Fuel Gauge
Fuel Transfer Port
Fuel Transfer Stbd
Fwd Hold Light
Gantry Lights
Holding Tank Port
Holding Tank Stbd
Masthead Light
Pilot Light Red
Pilot Light White
Port Fuel Filter
Rudder Indicator
Stbd Fuel Filter
Steering
Toilet Aft
Toilet Fwd
Towing Light Amber
Towing Light White
Tuna Tubes

12 V OUTLETS FLYBRIDGE

SET-15N
12v Outlet Flybridge
Arch Lights
Bilge Pump Clutch
Cabin Heater
Compass
Dry Head Pump
Demister
Engine Clutch Pump
Flybridge Hatch
Flybridge Wipers
Freezer Clutch
Fwd Stateroom Lights
Greywater Pump 1
Greywater Pump 2
Guest Cabin Stereo
Inmarsat
Instrument Lights
Instruments Flybridge
Instruments Pilothouse
Master Head Lights
Nav Area Lights
Overhead Lights
Overhead Saloon Lights
Saloon Wipers
Security System
Underfloor Lights
24v DC Mains
Bow Bilge High Water

AC OUTLETS AFT

SET-16N
AC Outlets Aft
AC Outlets Aft Cabin
AC Outlets Cockpit
AC Outlets Deck
AC Outlets Fwd
AC Outlets Fwd Cabin
AC Outlets Galley
AC Outlets Guest Cabin
AC Outlets Mid
AC Outlets Port
AC Outlets Salon
AC Outlets Saloon
AC Outlets Staterooms
AC Outlets Stbd
AC Outlets Wheelhouse
Aircon Aft
Aircon Aft Deck
Aircon Cabin
Aircon Fwd
Aircon Fwd Deck
Aircon Helm
Aircon Pump
Aircon Port
Aircon Stbd
Airhandler Fwd Stateroom
Airhandler Mstr Stateroom
Airhandler Pilothouse
Airhandler Saloon

24 HOUR CIRCUITS

SET-17N
24 Hour Circuits
Aft Bilge Pump Auto / Man
Aft Head
Alarm Mute
Depth / Speed
Electronics
Engine Alarm
Fans
Fwd Bilge Pump Auto / Man
Fwd Head
Galley / Head Vent
Galley Fridge
Gas Stove
Gauges
Head Pump
Level Indicator
Lights
Mid Bilge Pump Auto / Man
Nav & Inst Lights
Oil Pressure
Pt Engine
Pt Engine Start / Stop
Stbd Engine
Stb Engine Start / Stop
Sum Log
Synchronizer
Water Temp
Windshield

27 MEG

SET-18N
27 Meg
Aft Holding Tank
Aft Water Heater
Cabin Outlets
Cockpit Fridge
DC Mains 1
DC Mains 2
Dehumidifier
DVD
Engine Blower
Engine Room Outlets
Entertainment
Flybridge Main
FWD Holding Tank
FWD Water Heater
Galley
Gas Solenoid
Generator
GFCI Outlet
Hatch Lifter
Helm Main
Hour Meter
Laundry
LPG/Cooktop
Navigation
Range
TV /DVD
UHF

12 V BATTERY CHARGER

SET-19N
12V Battery Charger
24hr Bilge Pump
24V Battery Charger
12V Battery Charger
Bilge Pump Port Fwd
Bilge Pump Port Mid
Bilge Pump Stbd Aft
Bilge Pump Stbd Fwd
Bilge Pump Stbd Mid
Boarding Platform
Bulwark Lights
Bunk Lights
Cable Master
Desalinator
Dishwasher
Electric Windows
Engine Controls
Macerator
Oil Pump
Pitch Control
Port Air Con
Port Engine
Sonar
Storeroom Lights
Spa
Stbd Air Con
Stbd Engine
TV

12 V AUX HORN

SET-20N
12v Aux Horn
Aft Fridge
Alternator
Anchor Winch
Bathroom Fan
Bathroom Outlets
Bridge Supply
Docking Lights
Engine Room Bilge Alarm
Fax
Fish Finder
Holding Tank Gauge
Icemaker
Inverter/Charger
Lake Water
Master Head
RCD
Reset
Salon Lights
Shaver Outlets
Sounder
Speed
Sum Log
Toilet Port
Toilet Stbd
TV lift
Wind Instruments

BOILER/HEATER

SET-22N
Alarms
CCTV
Cockpit Fridge
Communications
Control Max 2.0
Deck Lights
Earth Leakage Lights
Emergency Parallel
Engine Room Main
Equipment Room
Flybridge Lights
Fresh Water Pump Port
Fresh Water Pump Stbd
Genset Start
Genset Stop
Grill
Head/Galley Vent
HF Radio
Ignition Start
Mid Hold Lights
Radio Light
Radios
Refrigerator
Reverse Polarity Test
UHF Radio
VHF Radio
Wheelhouse Lights
Wine Cooler

AIR CON FLYBRIDGE

SET-23N
Air Con Flybridge
Air Con Fwd
Air Con Port
Air Con Stbd
Berth Lights
Blower
Cabin Lights Main
Cooling Pump 1
Cooling Pump 2
Discharge
Discharge
Discharge
Discharge
Emergency Lights
Gallery Fridge
Helm Lights
Macerator
Master Cabin Lights
Port Engine Controls
Port Engine Controls
Port Engine Controls
Quartz Lights
Stbd Engine Controls
Stbd Engine Controls
Stbd Engine Controls
Stereo Memory
Storage Bin Pump
Waterblaster

CABINE AVANT

SET-FRENCH
Cabine Avant
Cabine Babord
Cabine Tribord
Dessalinisateur
Divers
ECL Interieur
Essuie-Glace
Feu De Hune
Feu De Mouillage
Feu De Pont
Feux De Navigation
Flaps Trim Tabs
GPS
Groupe D'Eau
Guindeau
Instruments
Pilote Automatique
Pompe De Cale
Prise 12V
Refrigerateur
Salle De Bain
Salle Machine
Sondeur
Stereo
Table A Carte
Timonerie
Ventilateur De Cale
VHF

AUXILIARE 1

SET-FRENCH 2
Auxiliaire 1
Auxiliaire 2
Avertisseur
Cabin 2
Cabin 3
Cabine 1
Centrale Nav
Chauffage
Chauffe-Eau
Confort
Congelateur
Divers
Eclairage Babord
Eclairage Carre
Eclairage Nacelle
Eclairage Tribord
Electronique
Feu Tricolore
Hi-Fi
Micro-Ondes
Pompe Babord
Pompe De Lavage
Pompe Douche
Pompe Tribord
Radar
Spots
Toilettes
Winch

CSP6

ACCESSORIES

SET-1SP
Anc. Light Nav. Lights
Accessories
Aerator
Anchor Light
Autopilot
Bait Tank Pump
Bilge Pump
Bilge Pump Auto Man
Blower
Cabin Lights
Cockpit Lights
DC Outlets
Deck Wash
Depth Sounder
Flood Lights
Freshwater Pump
Fridge
GPS
Horn
Inst. Lights
Instruments
Navigation Lights
Radio
Saltwater Pump
Spot Lights
Trim Tabs
Winch
Wiper

CSP6

ANCHOR LIGHT

SET-2SP
Anchor Light
Bilge Auto Man
Boom Light
Cabin Light
Cockpit Lights
Compass Light
Deck Lights
Depth Sounder
E/R Blower
Freezer
Hot Tub Light
Hot Tub Pump
Instruments
Locker Lights
Nav Lights
Port Nav Lights
Port wiper
Shower Drain Pump
Spare 1
Spare 2
Spare 3
Stbd Nav Lights
Stbd Wiper
Steaming Light
Stern Light
Sumlog
Transom Lights
Tri Light

CSP6

ACCESSORIES

SET-1SP/F
<Mouillage Navigation>
Accessoires
Accessoires
Aerateur
Appliques De Cockpit
Appliques Interieures
Avertisseur
Essuie-Glace 1
Essuie-Glace 2
Essuie-Glace 3
Feu De Mouillage
Feu De Navigation
Frigo
GPS
Groupe D'Eau
Instruments
Lecteurs De Cartes
Pilote Automatique
Pompe Cale <Auto
Manuel>
Pompe De Cale
Pompe De Lavage
Pompe De Vidange
Prises De Courant
Radio
Sondeur
Spots
Ventilateur
Winch

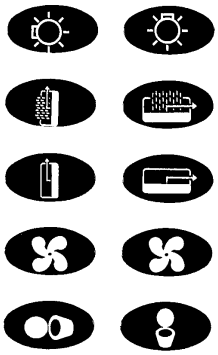
900-6WP

NAVIGATION LIGHTS

SET- LBL-WP
Accessories
Aerator
Anchor Lights
Autopilot
Bait Tank Pump
Bilge Pump
Blower
Cabin Lights
Cockpit Lights
DC Outlets
Deck Wash
Depth Sounder
Freshwater Pump
Fridge
GPS
Horn
Inst. Lights
Instruments
Log
Navigation lights
Radar
Spare
Spot Lights
Stereo
Stern Light
Trim Tabs
VHF
Wiper

NOTE:
The 900-6WP applies to the superceded WP-Panel range - 4WP, 6WP and 5WPS.
The complete range of BEP labels are listed in a quick reference table on our website:
www.bepmarine.com

Interior series switch plates



CMP-6WP

FRESHWATER PUMP

SET- LBL-CMP
Accessories
Aerator
Anchor Lights
Autopilot
Bait Tank Pump
Bilge Pump
Blower
Cabin Lights
Cockpit Lights
DC Outlets
Deck Wash
Depth Sounder
Freshwater Pump
Fridge
GPS
Horn
Inst. Lights
Instruments
Log
Navigation lights
Radar
Spare
Spot Lights
Stereo
Stern Light
Trim Tabs
VHF
Wiper

800-MS1-4

ALARM SYSTEM

SET-MSP
Alarm System
Bilge Pump FWD
Bilge Pump MID
Bilge Pump AFT
Bilge Pump Port
Bilge Pump Starb
Bilge Pump Engine Room
Boarding Platform
Cable Master
24 Hour
Davit
DC Mains
Engine Controls
Engine Room Lights
Engine Controls Port
Engine Controls STBD
Electric Toilet
Fire System
Fridge
Flybridge Main
Halyard Winch
Inverter
Lectrasan
Oil Transfer Pump
Sheetwinch
Shower Drain Pump
Stereo Memory
Sump Pump
Waste Treatment
Winch

800-MS1-4

AFT BILGE OVERRIDE

SET-MSP2
Aft Bilge Overide
Auto Pilot
Battery Charger
Battery Charger
Bow Thruster Control
DC Outlets
Deckwash
Electronics
Cockpit Pumps
Engine Memory
Engine Room Lights
Entertainment
Flybridge Fridge
Fresh Water Pump
Fwd Bilge Overide
Galley Fridge
High Water
Holding Tank
Horn
Lights
Lights
Mid Bilge Overide
Nav Lights
Saltwater Pump
Spot Light
Pasarelle
Trim Tabs
VHF
Winch
Wipers

800-MS1-4

24 HOUR LIGHTS

SET-MSP3
24Hour Lights
Bow Bilge Pump
Bow bilge Override
Bow Thruster
Cathodic Protection
Charts/Sounder
Cockpit Main
CO Detector
Cockpit Fridge
Electronics Main
Electric Controls
Electric Head
Genset Battery Charger
Hatch Lifter
Helm Main
Head Macerator
Port Battery Charger
Port Engine Blower
Port Controls
Saloon Mains
Stbd Controls
Stereo
Stereo Amplifier
Stbd Battery Charger
Stbd Engine Blower
Wiper Mid
Wiper Port
Wiper Stbd
Accessories
Controls

800-MS1-4

24V HOUSE VOLTMETER FEED

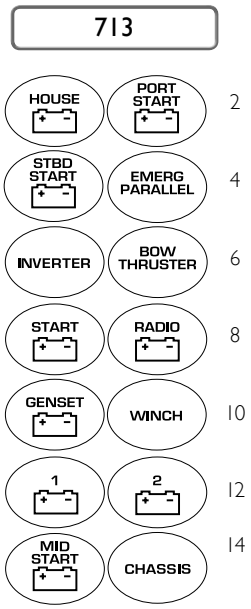
SET-MSP4
24V House Voltmeter Feed
Bilge Alarm
Bilge Pump 24hr
Bilge Pump Aft High Water
Bilge Pump Fwd High Water
Bilge Pump Mid High Water
Bilge Pumps
Bilge Pumps Main
Flybridge 12V Mains
Flybridge 24V Mains
Genset Blower
High Water Alarm
House Battery Charger
House Battery Meter
House Main
Lower 12V Mains
Lower 24V Mains
Port Aft Bilge Pump
Port Batter Meter
Port Fwd Bilge Pump
Port Mid Bilge Pump
Shower Sump
Stbd Aft Bilge Pump
Stbd Battery Meter
Stbd Fwd Bilge Pump
Stbd Mid Bilge Pump
Toilet
Twin Disk
Twin Disk Port
Twin Disk Stbd

706 - 707

WINCH

SET-714
Anchor Winch
Bilge Pump Aft
Bilge Pump Fwd
Bilge Pump Mid
Bilge Pump Port
Bilge Pump Starb
Bow Thruster
Davit Winch
DC Mains 1
DC Mains 2
Halyard Winch
Head 1
Head 2
Holding Tank
Inverter
Memory Circuits
Security System
Sheet Winch
Spare
Waste Treatment 1
Waste Treatment 2

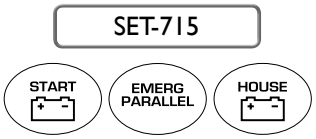
Battery Switches 701-720



Labels can be purchased separately under the following part numbers

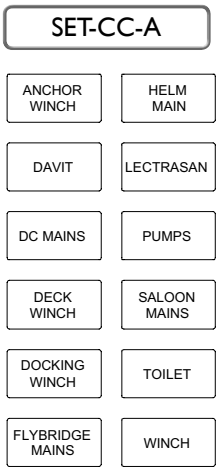
1. 713-HB	6. 713-BT	11. 713-B1
2. 713-PS	7. 713-SB	12. 713-B2
3. 713-SS	8. 713-RAD	13. 713-MS
4. 713-EP	9. 713-GEN	14. 713-CH
5. 713-INV	10. 713-W	

Battery Switches



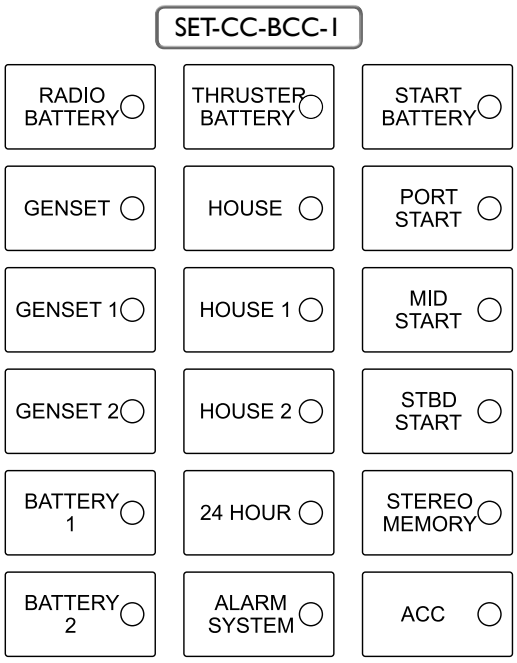
SET-715 contains the 3 most commonly requested labels out of set 713 without the need to purchase a full label set.

Heavy Duty Circuit Breaker Modules

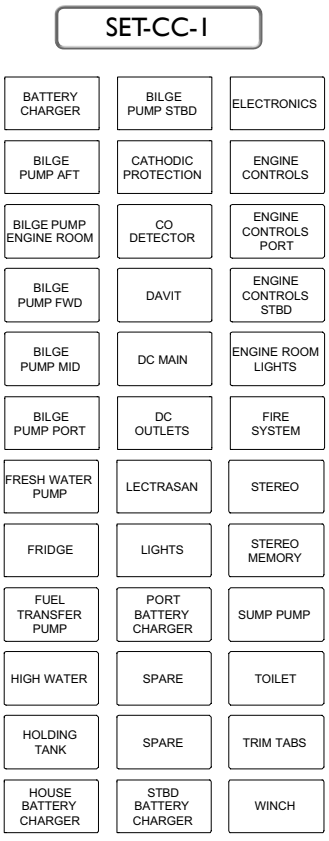


SET-CC-A labels are supplied standard with any 800 series module containing the heavy duty Busman circuit breaker.

Battery Control Center



Circuit Breaker Modules



SET-CC-1 labels are supplied standard with any 800 series module containing toggle or push reset circuit breakers.

Spray-Proof Panels Generation II (page 34)

LABEL SET SET-G2-1

ACCESSORIES
AERATOR
ANCHOR LT
BAIT TANK
BILGE PUMP
AUTO B/P MAN
BLOWER
CABIN LIGHTS
COCKPIT LTS
DC OUTLETS
DECK WASH
DN WINCH UP
ELECTRONICS
ENGROOM LTS
FLOOD LIGHTS

FW PUMP
FRIDGE
GPS
HORN
INST. LIGHTS
INSTRUMENTS
NAV LIGHTS
RADIO
SW PUMP
SPOT LIGHTS
UP PORT DN
UP STBD DN
WIPER

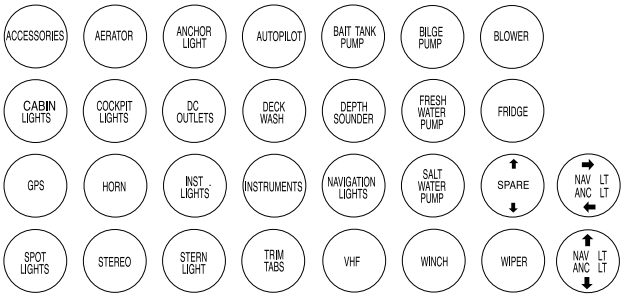
LABEL SET SET-G2-2

B/PUMP PORT
B/PUMP STBD
B/PUMP FWD
B/PUMP MID
B/PUMP AFT
B/PUMP ENG RM
COMPASS LT
DECK LTS
STEAMING LT
NAV LTS PT
NAV LTS STBD
STEP LTS
STERN LT
WIPER PT
WIPER MID

WIPER STBD
WASHERS
FREEZER
H/TANK PUMP
SUMP PUMP
LOCKER LTS
PANEL LTS
TRI LT
BOW LTS
SHOWER LT
SHOWER PUMP
SPARE
SPARE

Sprayproof Switch Panels - Micro

LBL-MIC1



LBL-MIC2

LBL-MICSYM

Contour Interior Series Monitor Panels

SET-1001

SET-1002

ABYC specs ask for 3% maximum voltage drop [VD] for navigation lights, switch board feeders, bilge blowers and electronic equipment. Other circuits ie motors and general lighting can have a maximum 10% VD.

The chart shows conductors in an ambient temperature of 30°C. Engine room temperatures are assumed at 50°C. This requires a rating decrease of 15% ampacity.

Example 1: A 10 A WG cable in a 12 V circuit has a total cable run of 40 feet from the battery to the load and back.

Table A Shows that the maximum amperage this cable can carry without exceeding a 3% voltage drop is 5 A.

If a 10% Voltage drop is acceptable, Table B shows that this rises to 25 A. Because of the relatively long cable run, the voltage drop is the limiting factor in cable sizing.

Example 2: A 12 V bilge pump draws 8 A and is situated 30' from the battery, so the total cable run is 60'.

To select a cable that will keep the voltage drop below 3%, a builder would use the 12 V columns in Table A, and look down the left hand column to 10 A (the closest reading above 8 A). The numbers to the right are AWG sizes based on total cable runs. For 60' 6 AWG is listed In this case.

To convert meters to feet, divide meter measurement by 0.305

AWG	Sq mm	Max wire Amps for non engine room Apps. 90 Deg Insul	Max wire Amps for engine room Apps. 90 Deg Insul	Ohms/1000ft	Ohms/m
18	0.823	20	16	6.480	0.021000
16	1.310	25	21	4.000	0.013200
14	2.080	30	25	2.530	0.008290
12	3.310	40	33	1.750	0.005210
10	5.260	55	45	0.980	0.003280
8	8.360	70	57	0.620	0.002060
6	13.300	100	82	0.400	0.001300
4	21.100	135	111	0.240	0.000815
2	33.600	180	148	0.157	0.000513
1	42.400	210	172	0.127	0.000407
1/0	53.500	245	201	0.099	0.000323
2/0	67.400	285	234	0.077	0.000256
3/0	85.000	330	271	0.062	0.000203
4/0	107.000	385	316	0.049	0.000161

Table A: CONDUCTOR SIZES FOR 3 PERCENT DROP IN VOLTAGE

Total current on circuit in Amps	(Length of conductor from source of current to device and back to source - Feet)																		
	10	15	20	25	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	
5	18	16	14	12	12	10	10	10	8	8	8	6	6	6	6	6	6	6	6	12 VOLTS
10	14	12	10	10	10	8	6	6	6	6	4	4	4	4	2	2	2	2	2	
15	12	10	10	8	8	6	6	6	4	4	2	2	2	2	2	1	1	1	1	
20	10	10	8	6	6	6	4	4	2	2	2	2	1	1	1	0	0	0	2/0	
25	10	8	6	6	6	4	4	2	2	2	1	1	0	0	0	2/0	2/0	2/0	3/0	
30	10	8	6	6	4	4	2	2	1	1	0	0	0	2/0	2/0	3/0	3/0	3/0	3/0	
40	8	6	6	4	4	2	2	1	0	0	2/0	2/0	3/0	3/0	3/0	4/0	4/0	4/0	4/0	
50	6	6	4	4	2	2	1	0	2/0	2/0	3/0	3/0	4/0	4/0	4/0					
60	6	4	4	2	2	1	0	2/0	3/0	3/0	4/0	4/0	4/0							
70	6	4	2	2	1	0	2/0	3/0	3/0	4/0	4/0									
80	6	4	2	2	1	0	3/0	3/0	4/0	4/0										
90	4	2	2	1	0	2/0	3/0	4/0	4/0											
100	4	2	2	1	0	2/0	3/0	4/0												
5	18	18	18	16	16	14	12	12	12	10	10	10	10	10	8	8	8	8	8	24 VOLTS
10	18	16	14	12	12	10	10	10	8	8	8	6	6	6	6	6	6	6	6	
15	16	14	12	12	10	10	8	8	6	6	6	6	6	4	4	4	4	4	2	
20	14	12	10	10	10	8	6	6	6	6	4	4	4	4	2	2	2	2	2	
25	12	12	10	10	8	6	6	6	4	4	4	4	2	2	2	2	2	2	1	
30	12	10	10	8	8	6	6	4	4	4	2	2	2	2	2	1	1	1	1	
40	10	10	8	6	6	6	4	4	2	2	2	2	1	1	1	0	0	0	2/0	
50	10	8	6	6	6	4	4	2	2	2	1	1	0	0	0	2/0	2/0	2/0	3/0	
60	10	8	6	6	4	4	2	2	1	1	0	0	0	2/0	2/0	3/0	3/0	3/0	3/0	
70	8	6	6	4	4	2	2	1	1	0	0	2/0	2/0	3/0	3/0	3/0	3/0	4/0	4/0	
80	8	6	6	4	4	2	2	1	0	0	2/0	2/0	3/0	3/0	3/0	4/0	4/0	4/0	4/0	
90	8	6	4	4	2	2	1	0	0	2/0	2/0	3/0	3/0	4/0	4/0	4/0	4/0	4/0		
100	6	6	4	4	2	2	1	0	2/0	2/0	3/0	3/0	4/0	4/0	4/0					

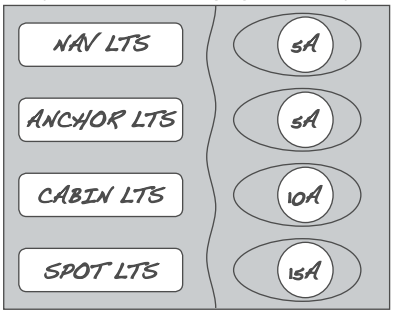
Table B: CONDUCTOR SIZES FOR 10 PERCENT DROP IN VOLTAGE

Total current on circuit in Amps	(Length of conductor from source of current to device and back to source - Feet)																		
	10	15	20	25	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	
5	18	18	18	18	18	16	16	14	14	14	12	12	12	12	12	10	10	10	10	12 VOLTS
10	18	18	16	16	14	14	12	12	10	10	10	10	8	8	8	8	8	8	6	
15	18	16	14	14	12	12	10	10	8	8	8	8	8	6	6	6	6	6	6	
20	16	14	14	12	12	10	10	8	8	8	6	6	6	6	6	6	4	4	4	
25	16	14	12	12	10	10	8	8	6	6	6	6	6	4	4	4	4	4	2	
30	14	12	12	10	10	8	8	6	6	6	6	4	4	4	4	2	2	2	2	
40	14	12	10	10	8	8	6	6	6	4	4	4	2	2	2	2	2	2	2	
50	12	10	10	8	8	6	6	4	4	4	2	2	2	2	2	1	1	1	1	
60	12	10	8	8	6	6	4	4	2	2	2	2	2	1	1	1	0	0	0	
70	10	8	8	6	6	6	4	2	2	2	2	1	1	0	0	0	2/0	2/0		
80	10	8	8	6	6	4	4	2	2	2	1	1	0	0	0	2/0	2/0	2/0	2/0	
90	10	8	6	6	6	4	2	2	2	1	1	0	0	0	2/0	2/0	2/0	3/0	3/0	
100	10	8	6	6	4	4	2	2	1	1	0	0	0	2/0	2/0	2/0	2/0	3/0	3/0	
5	18	18	18	18	18	18	18	18	16	16	16	16	14	14	14	14	14	14	12	24 VOLTS
10	18	18	18	18	18	16	16	14	14	14	12	12	12	12	12	10	10	10	10	
15	18	18	18	16	16	14	14	12	12	12	10	10	10	10	10	8	8	8	8	
20	18	18	16	16	14	14	12	12	10	10	10	10	8	8	8	8	8	8	6	
25	18	16	16	14	14	12	12	10	10	10	8	8	8	8	8	6	6	6	6	
30	18	16	14	14	12	12	10	10	8	8	8	8	8	6	6	6	6	6	6	
40	16	14	14	12	12	10	10	8	8	8	6	6	6	6	6	6	4	4	4	
50	16	14	12	12	10	10	8	8	6	6	6	6	6	4	4	4	4	4	2	
60	14	12	12	10	10	8	8	6	6	6	6	4	4	4	4	2	2	2	2	
70	14	12	10	10	8	8	6	6	6	6	4	4	4	2	2	2	2	2	2	
80	14	12	10	10	8	8	6	6	6	4	4	4	2	2	2	2	2	2	2	
90	12	10	10	8	8	6	6	6	4	4	4	2	2	2	2	2	2	1		
100	12	10	10	8	8	6	6	4	4	4	2	2	2	2	2	1	1	1		

Custom Panel Layouts

Although the panels shown in this catalog are our standard range, there are a number of changes that can be made to fit the needs of custom and production boatbuilders. For example, a panel can be made up with eight circuit breakers, four systems in operation lights plus a meter, or a panel can consist of a mixture of analog and digital meters if required.

(See label index pages 64-65)



Voltage:	AC	DC	12V	24V	110V	230V
Backlighting:	12V		24V			
Meters:	Yes		Blank			
Digital:	600-ACM		600-DCM		600-TLM-N	
	600-VM3		600-TG		600-SOM	
Meter Position:	1	2	3	4		

Anlg Volts DC:	8-16	16-32		
Meter Position:	1	2	3	4
~~Anlg Amps DC:~~	~~0-50~~	~~0-100~~	~~0-150~~	
Meter Position:	1	2	3	4
Anlg Volts AC:	0-150	0-300		
Meter Position:	1	2	3	4
Anlg Amps AC:	0-60	0-100AAC		
Meter Position:	1	2	3	4

If the panel involves a total custom layout, as described above, a specific part number will be applied to that panel and quoted accordingly.

If the design is unable to be achieved we will notify the customer.

Alternatively a customer may request a standard panel with circuit breakers laid out to their requirements with labels factory fitted. This involves a personalized layout charge with the following part numbers applying, eg:

901V is ordered as **NPF**-901V.

902A-12V-12V is ordered as **NPF**-902A-12V-12V

When ordering personalized panels see pages 64-65 for our label selection. We can also do specific label sets, priced per-job.