



**CIRCUIT BREAKER
PANELS**

INSTALLATION INSTRUCTIONS

DC PANELS WITHOUT METERS

THANK YOU FOR PURCHASING A BEP MARINE DC CONTROL
PANEL

BEP Marine uses the highest quality materials in its range of Control Panels, from the marine grade aluminium base plates to the Airpax magnetic hydraulic circuit breakers.

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BEP MARINE

13 Tarndale Grove
Albany, Auckland N.Z.

Ph: +64 9 415 7261

Fax: +64 9 415 9327

www.bepmarine.com

Email: enquiries@bepmarine.com

CIRCUIT BREAKERS

It is very important to note that the primary function of the circuit breaker is to prevent the cabling from overloading and therefore catching fire. In the event of an electrical short, fault or overload, the circuit breaker is designed to protect the boat's electrical system not necessarily the appliance.

Different appliances require different circuit breakers with the manufacturer of the appliance certifying the load, and therefore the size of the circuit breaker required.

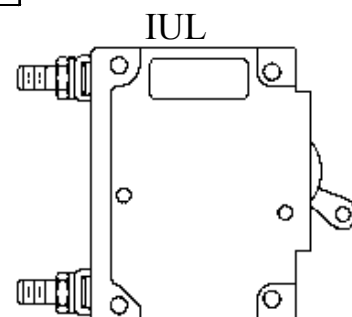
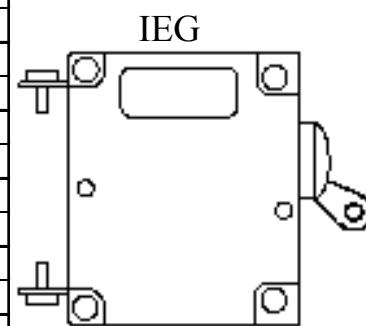
All BEP panels are supplied complete with a standard set of circuit breaker sizes and labels. Owners or electrical installers therefore need to choose the most appropriate panel for each application.

Should you require a custom made current rating or label layout these are available for an additional charge. Contact your BEP Marine representative for more details.

Note: breakers must be sized in accordance with cable size.

BEP Marine uses Airpax IEG and IUL Magnetic circuit breakers

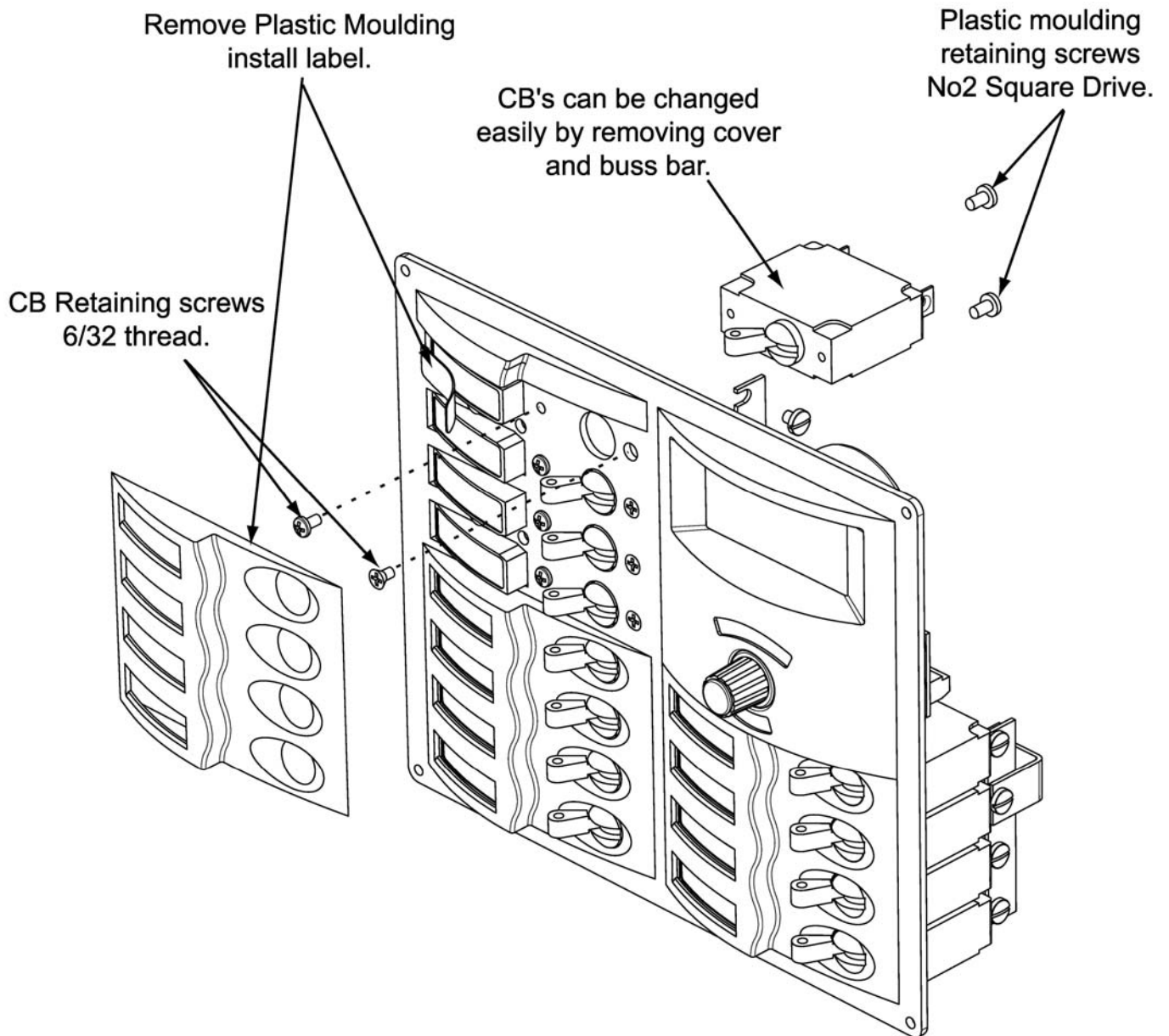
IEG SPECIFICATIONS				IUL SPECIFICATIONS					
Part #	Current Rating	# Poles			Part #	Current Rating	# Poles		
		1	2	3			1	2	3
IEG6-72-2.5	2.5 amp	x			IULK1-72-50	50 amp	x		
IEG6-72-5.00	5 amp	x			IULK1-72-75.0	75 amp	x		
IEG6-72-10.00	10 amp	x			IULK1-72-100	100 amp	x		
IEG6-72-15.00	15 amp	x			IULK11-72-60	60 amp		x	
IEG6-72-20.00	20 amp	x			IULK11-72-80	80 amp		x	
IEG6-72-25.00	25 amp	x			IULK11-72-100	100 amp		x	
IEG6-72-30.00	30 amp	x			IULK100-72-80	80 amp			x
IEG6-72-40.00	40 amp	x			IULK111-72-100	100 amp			x
IEG6-72-50.00	50 amp	x							
IEG66-72-5.00	5 amp			x					
IEG66-72-10.00	10 amp			x					
IEG66-72-15.00	15 amp			x					
IEG66-72-20.00	20 amp			x					
IEG66-72-25.00	25 amp			x					
IEG66-72-30.00	30 amp			x					
IEG66-72-40.00	40 amp			x					
IEG66-72-50.00	50 amp			x					
IEG666-72-30.00	30 amp								x
IEG666-72-50.00	50 amp								x



LABELLING AND REPLACING CIRCUIT BREAKERS

All BEP panels come with a comprehensive set of self-adhesive labels.

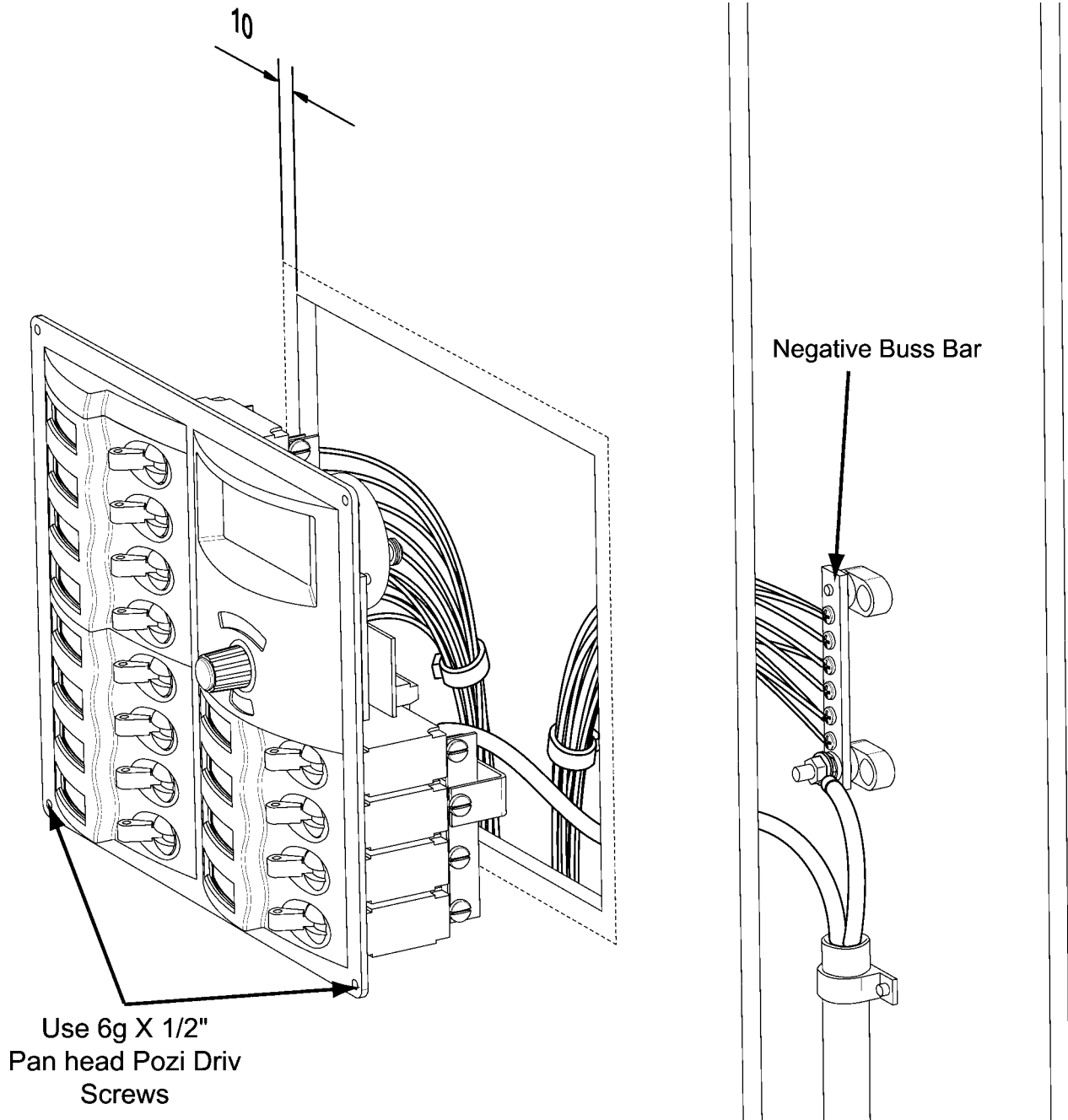
To refit/replace a label or to reposition/replace a circuit breaker the front cover of the BEP panel must be removed. This is done by removing the two square drive screws at the rear of the plastic moulding covering the panel.



INSTALLATION (PANEL MOUNTING)

All BEP panels require a 10mm inset on all external edges.

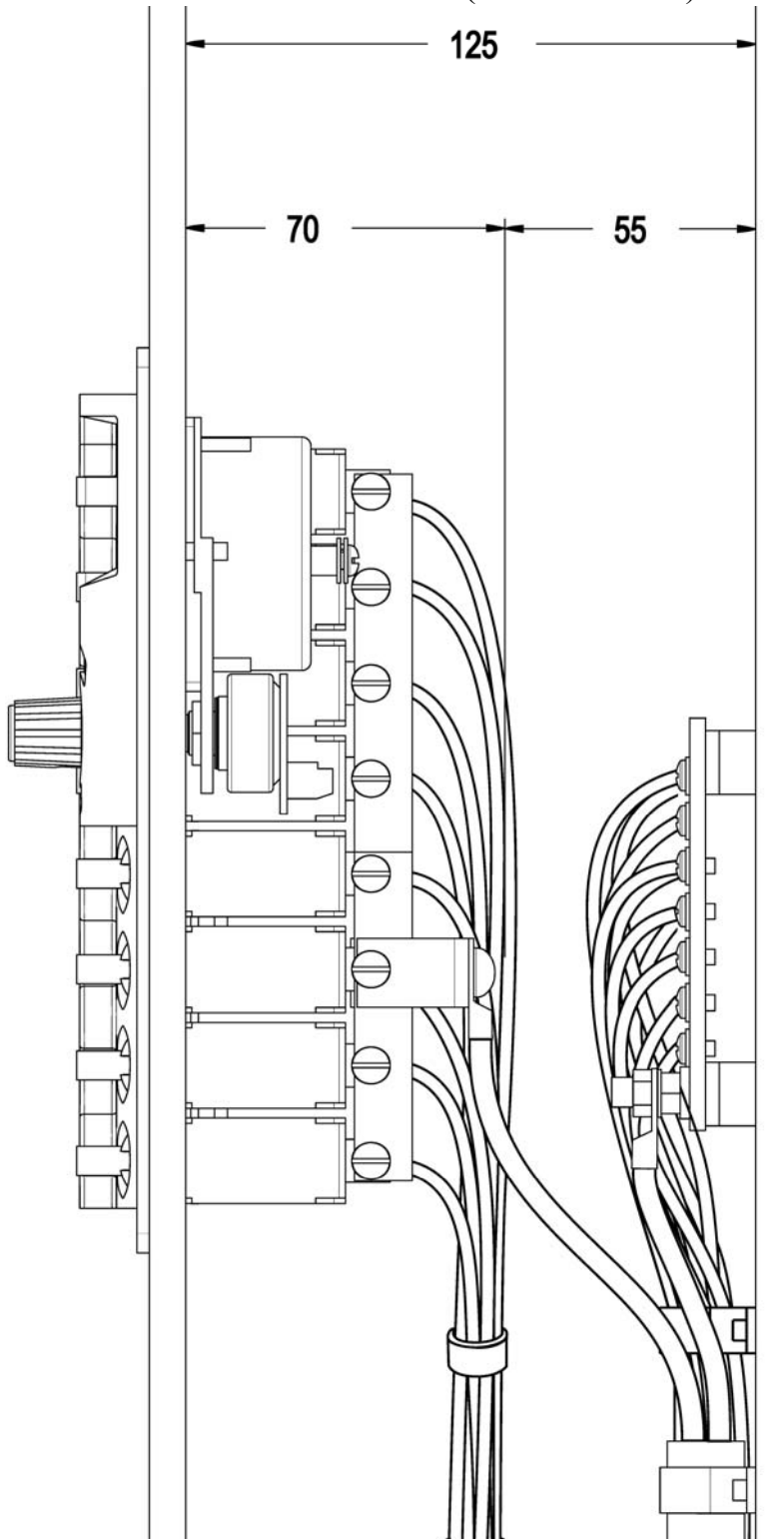
Panels are also supplied with negative bus bars to allow the tidy connection of negative cables at the back of the panel.



PANEL MOUNTING CONT'D

Be sure to allow plenty of space behind the panel for wiring connections and looms. A minimum of 55mm of extra space is strongly recommended.

For example: If the distance to the back of the panel brackets is 70mm be sure to allow at least 125mm ($70 + 55 = 125$).

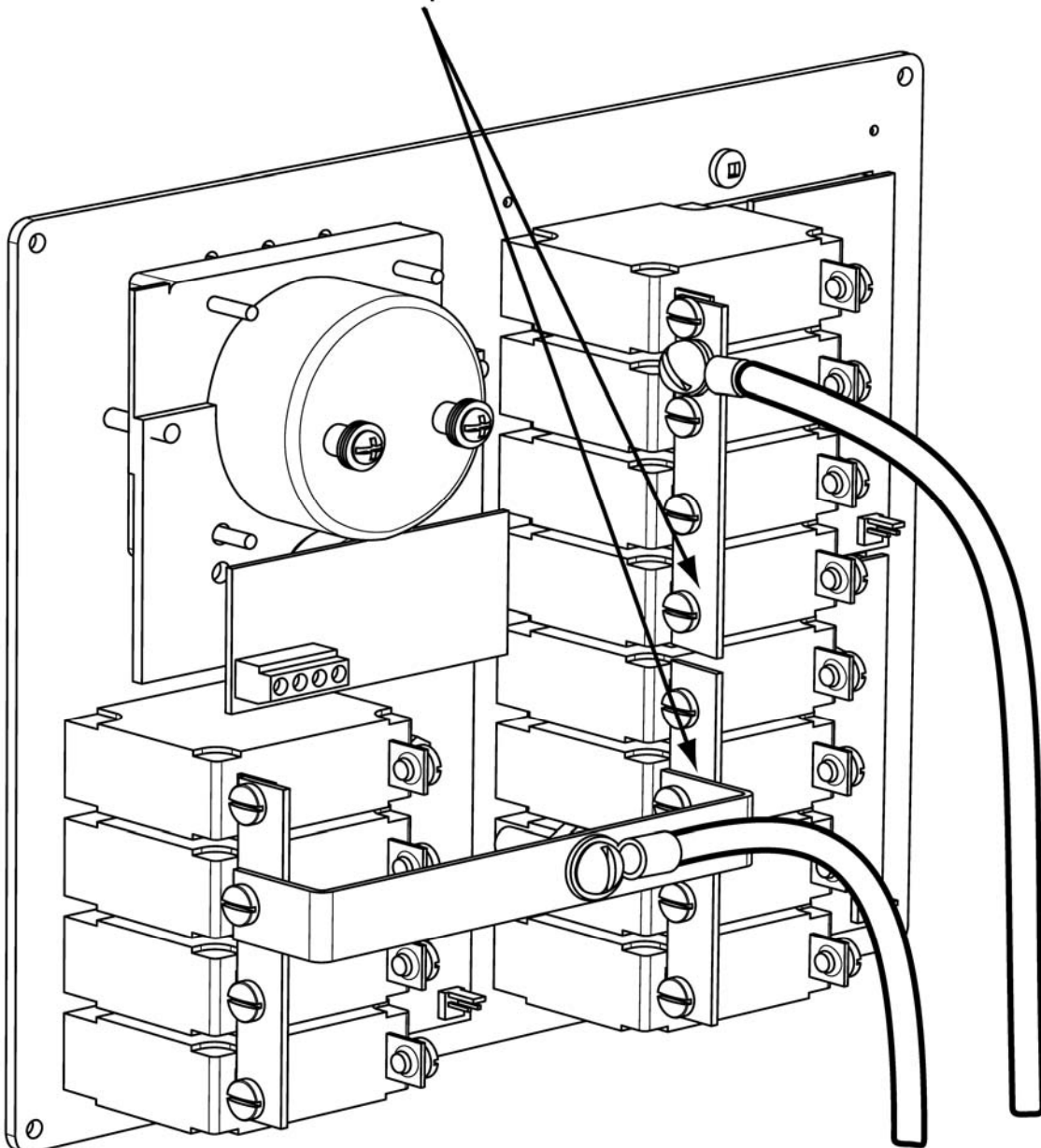


DC BUS BARS

At various times it may be necessary to bring either a 24-volt supply or a mixture of 12-volt, 24-volt and 24-hour supplies to parts of the panel back.

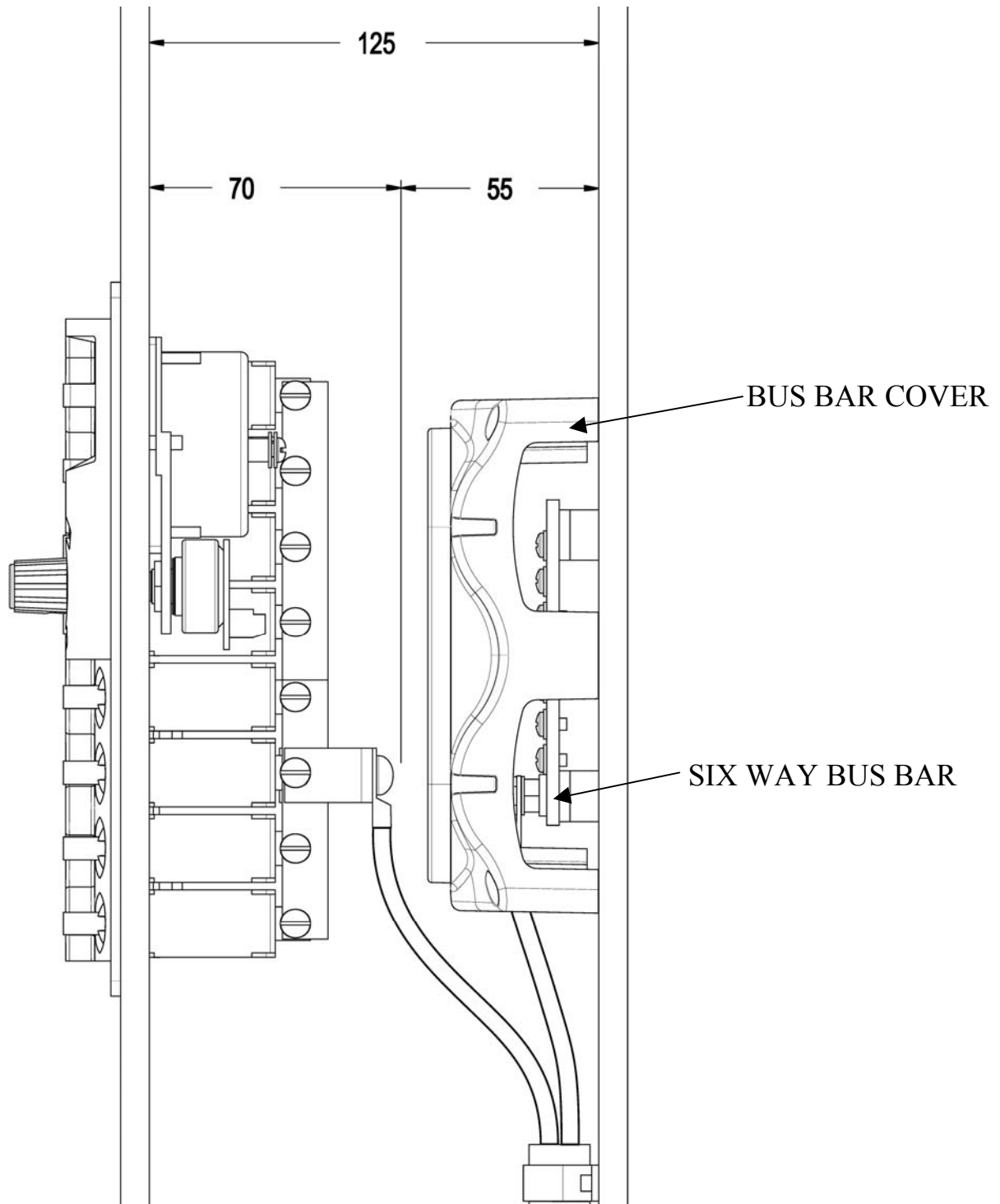
To accommodate this, BEP uses a copper bus connection bar along the inputs of the circuit breakers. The different voltages can therefore be simply separated by cutting the bar to separate the different supplies on the panel back.

Remove Buss bar, Cut and
re-fit to provide separate
feeds to panel.



DC BUS BARS CONT'D

Please note: If negative bus bars are not safely enclosed, it is advisable to use a BBC-1 or BBC-2 cover to ensure that any stray objects cannot fall onto the electrical system. (This is also advised by ABYC).



NEGATIVE BUS BARS AVAILABLE FROM BEP

Part No: BB-6W	(6 way)
Part No: BB-12W	(12 way)
Part No: BB-24W-2S	(24 way)

BACK LIGHTING

All BEP AC and DC panels come with 12 volt DC back lighting. On 24-volt systems, a dropping resistor will be required for the back lighting

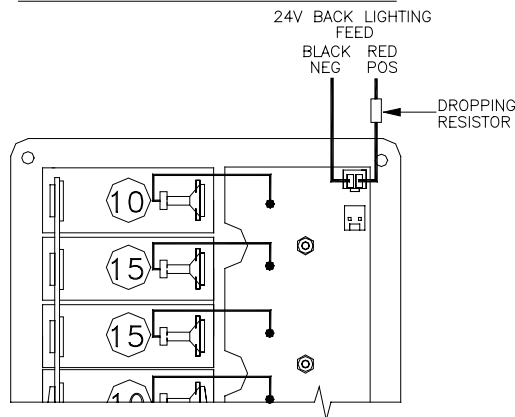
Note: The Red Systems On indicators will work on both 12 and 24 volts so therefore do not require a dropping resistor.

DROPPING RESISTORS FOR CHANGING BACK LIGHTING ON 12V PANELS TO 24V

Panel size	Resistor size
4 way	1K8Ω
8 way	1KΩ
12 way	680Ω
16 way	470Ω
20 way	390Ω
24 way	330Ω
28 way	270Ω
32 way	220Ω
36 way	200Ω

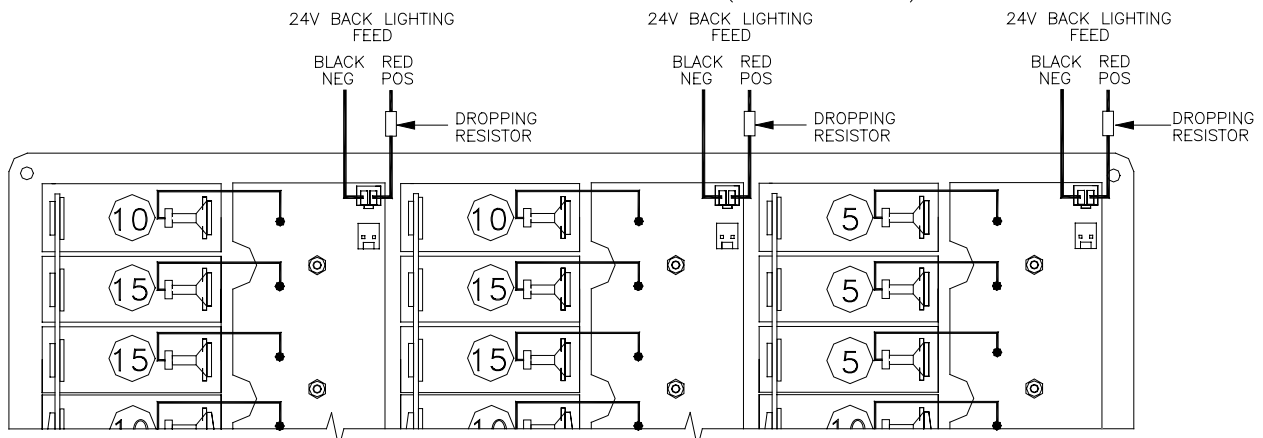
Note: Use ½ watt resistors, select as close to the above sizes as possible.

REAR VIEW OF STANDARD PANEL



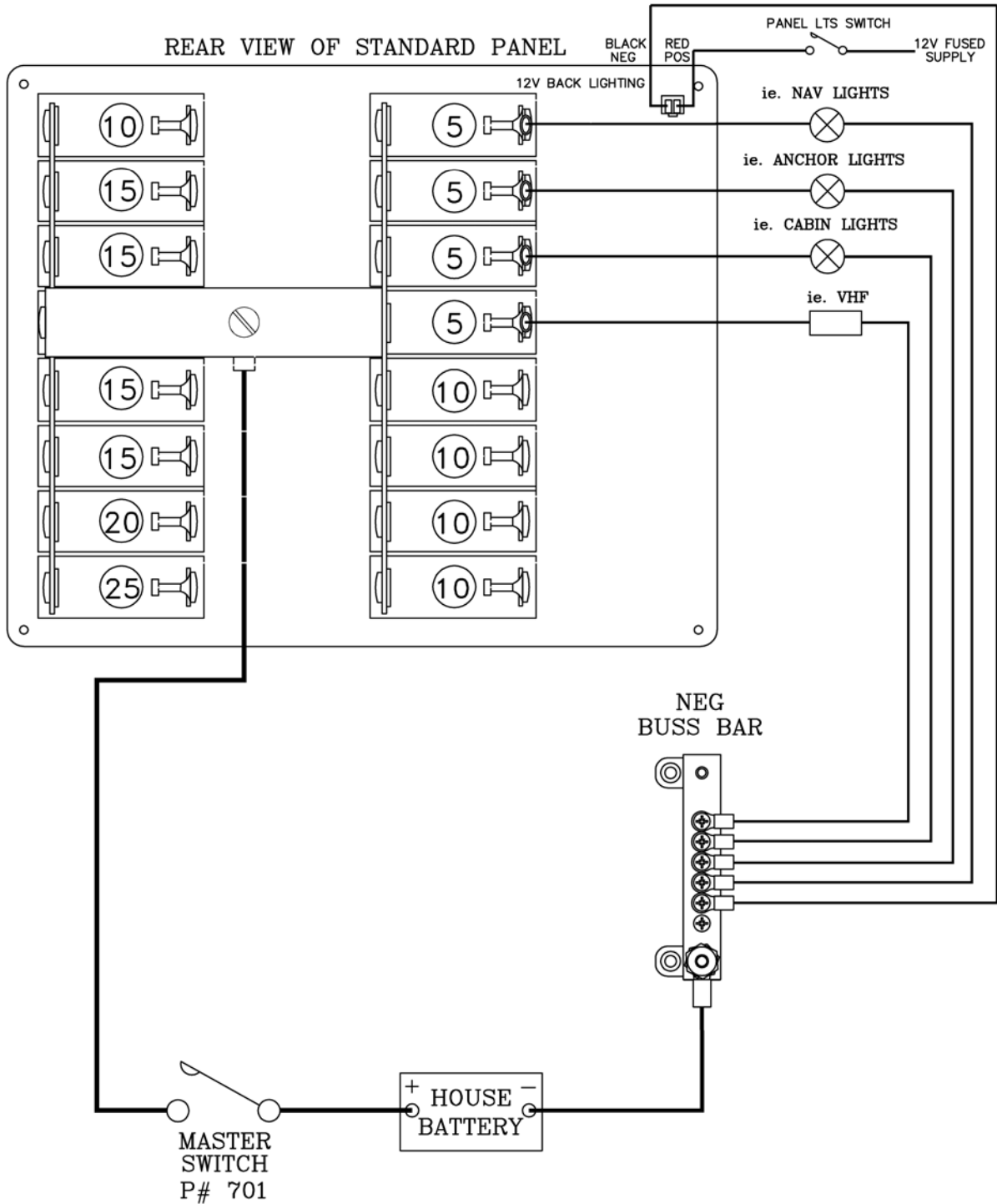
REAR VIEW OF STANDARD PANEL (LARGER THAN 36 WAY)

* FOR PANELS LARGER THAN 36 WAY USE INDIVIDUAL DROPPING RESISTORS FOR EACH BANK OF BACKLIGHTING. (AS SHOWN BELOW)



PANEL WIRING DIAGRAM

Note: The circuit below is an example only, its purpose is to show the connection method.



LABEL SETS

SET 1	SET 2	SET 3	SET 4	SET 6
ACCESSORIES	BAIT TANK PUMP	AFT DECK LIGHT	1,2,3,4,5	ACCESSORIES
AUTO PILOT	BILGE PUMP AFT	BILGE AUTO MAN	6,7,8,9,10	AC MAINS
BILGE PUMPS	BILGE PUMP FORWARD	BOW LIGHTS	BILGE ALARM	ANCHOR WINCH
CABIN LIGHTS	BILGE PUMP MID	DOCKING LIGHTS	DAVIT WINCH	AUTOMATIC
CABIN LIGHTS	BILGE PUMP PORT	EMERGENCY PARALLEL	ENGINE ALT	AUTOPILOT
COCKPIT LIGHTS	BILGE PUMP STBD	ENGINE ALARM	FIRE SYSTEMS	AUXILIARY
COMPASS LIGHT	BLOWER	ENGINE BLOWERS	FISH FINDER	BILGE AUTO-MANUAL
DC OUTLETS	BOARDING LIGHT	EXTRACTION FAN	FISHING LIGHT	BILGE LIGHTS
DEPTH SOUNDER	CABIN LIGHTS AFT	FLOODLIGHTS	HOUSE ALT	BOOM FURL
FREEZER	CABIN LIGHTS MID	FORE DECK LIGHT	INTERCOM	BRIDGE LIGHTS
FRESHWATER PUMP	CABIN LIGHTS PORT	HOLDING TANK PUMP	LOAD	BURGLAR ALARM
GPS	CABIN LIGHTS STBD	HOUSE BATTERIES	LOCKER LIGHT	CB RADIO
INSTRUMENTS	DECK WASH PUMP	LAZARETTE LIGHT	TANK ROOM LIGHTS	CELL PHONE
LPG CONTROL	ELECTRIC TOILET	PORT	MID WIPER	COMPUTER
MAST LIGHT	ENGINE ROOM LIGHTS	RADIO BATTERY	MIZZEN SPAR LIGHT	DC MAINS
NAVIGATION LIGHTS	FRIDGE	TOILET LT	PLOTTER	FUEL TRANSFER
RIDING LIGHT	HORN	SEARCH LIGHT	PORT WIPER	CABIN FAN
SALTWATER PUMP	NAV LTS PORT	SPARE	PREHEAT	HATCH CONTROLS
SHOWER DRAIN PUMP	NAV LTS STBD	GALLEY LT	SOLE LIGHT	HYDRAULICS
SPARE	PANEL LIGHTS	STARBOARD	HEATER FAN	LOUD HAILER
SPREADER LIGHT	RADAR	START BATTERIES	SPARE	MACERATOR
SPOTLIGHT	SALOON LIGHTS	STEP LIGHT	SPARE	MANUAL
STEAMING LIGHT	SSB	STROBE LIGHT	STARBOARD WIPER	NIGHT LIGHTS
STEREO	START	WEATHER FAX	START	PELMET LIGHTS
TRIM TABS	STERN LIGHTS	WINDOW WASHER	STOP	SOLAR PANEL
VHF	STOP	WINDEX LIGHT	SUB MAIN	GALLEY FAN
WINCH	SUM LOG	12V OUTLETS	SUMP PUMP	SPARE
WIPER	TRI LIGHT	24V OUTLETS	TOWING LIGHT	TV ANTENNAE

SET 7	SET 8	SET 9	SET 11	SET 12
AFT PEAK LIGHT	ANCHOR LIGHT	BOILER/HEATER	BAR-B-QUE	24V-12V REDUCER
ANCHOR LIGHT	BARAGRAPH POWER	BOW THRUSTER	BLOCK HEATER P/I	AERATOR
BILGE ALARM	CABIN FANS	DC/DC CONVERTER	BLOCK HEATER P/O	AIR CON PUMP
DECK FLOOD LTS FWD	CABIN FANS FWD	DECK LIGHTS FWD	BLOCK HEATER S/I	BALLAST AFT
DECK FLOOD LTS AFT	CABIN FANS AFT	DECK LIGHTS AFT	BLOCK HEATER S/O	BALLAST CONTROL
DECK LIGHTS PORT	COURTESY LTS	DECK LIGHTS UPPER	CUPBOARD HEATERS	BALLAST FWD
DECK LIGHTS STBD	COURTESY LTS FWD	DECK LIGHTS MID	ENTERTAINMENT CENTRE	BATTERY CHARGER 12V
DECK LIGHTS FORWARD	COURTESY LTS MID	DEFROSTER	CARBURATOR	BATTERY CHARGER 24V
DECK LIGHTS AFT	COURTESY LTS AFT	GALLEY LIGHTS	GENERATOR 1	BLACK TANK AFT
FISHING LIGHTS	DIESEL HEATER	GREY WATER PUMP	GENERATOR 2	BLACK TANK FWD
FISHING LT WHITE	FIRE SYSTEMS	GUEST STATE LIGHTS	HEATER	BLACK WATER PUMP
FISHING LT RED	FUEL PUMP	HEAD PUMP 1	INVERTER 1	BOOM LT
FISHING LT GREEN	HAILER	HEAD PUMP 2	INVERTER 2	BRIDGE LIGHTS
FISH ROOM LIGHTS	LECTRASAN	MASTER STATE LIGHTS	LAZER PLOTTER	BRIDGE SUPPLY
FISH ROOM PUMP	LECTRASAN FWD	NAV LIGHTS	LIGHTING INVERTER	FIRE ALARM
FOCSLE LIGHT	LECTRASAN STBD	OIL PUMP	REFRIGERATOR	FLOW ALARM
MAST FLOOD LTS FWD	PORT ENGINE CONTROLS	PILOT HOUSE LIGHTS	RANGE SUB PANEL	LUFF LT
MAST FLOOD LTS AFT	PORT IGNITION	SALOON LIGHTS	SHOREPOWER 1	MODEM
NET RECORDER	SAT COM	SEARCH LIGHTS	SHOREPOWER 2	NAV AREA FAN
NOT UNDER COMMAND	SHOWER LIGHT	SPARE	SPARE	OUTLETS AFT
NOT UNDER COMMAND	SPARE	SPARE	SPARE	OUTLETS FWD
NUC LIGHTS	SPARE	SPARE	SPARE	OUTLETS MID
PLOTTER	SPARE	TRIM TAB CONTROL	SPARE	PARALLEL
PORT FLOOD LIGHTS	STABILIZER	VHF UPPER	SPARE	PORT ENG
SHOWER LIGHT	STBD ENGINE CONTROLS	VHF LOWER	TELEPHONE SYSTEM	<STOP START> GENSET
STBD FLOOD LIGHTS	STBD IGNITION	V-BERTH LIGHTS	TV/VIDEO	STARB. ENG
TOILET LIGHT	TOILET LIGHT	WASH DOWN PUMP	WATER CIRC PUMP	STEP LIGHTS
WINCH FLOOD LIGHTS	WASTE TREATMENT	WINDLASS	ZONE VALVES	STROBE

SET 13N	SET 14N	SET 15N	SET 17N
AFT BILGE ALARM	210KHz TX	ARCH LIGHTS	AFT HEAD
BILGE LIGHT	33KHz TX	BILGE PUMP CLUTCH	AFT BILGE PUMP AUTO/MAN
CABIN LIGHTS FWD	AFT HOLD LT	CABIN HEATER	ALARM MUTE
ENTERTAINMENT	ANCHOR LT	CHART LT	DEPTH/SPEED
FWD BILGE ALARM	BILGE ALARM TEST	COMPASS	ENGINE ALARM
GAS DETECTOR	BILGE AUTO.	DAY HEAD PUMP	ELECTRONICS
LIGHTS	BILGE MAN.	DEMISTER	FWD BILGE PUMP AUTO/MAN
MID BILGE ALARM	COCKPIT FREEZER	ENGINE CLUTCH PUMP	FANS
PORT AFT BILGE ALARM	ELECTRONICS	FREEZER CLUTCH	FWD HEAD
PORT AFT BILGE AUTO	ENGINE CONTROLS	FWD STATEROOM LIGHTS	GALLEY FRIDGE
PORT AFT BILGE MANUAL	ENGINE ROOM BILGE PUMP	GREYWATER PUMP 1	GAUGES
PORT FWD BILGE ALARM	FIRE PUMP	GREYWATER PUMP 2	GALLEY/HEAD VENT
PORT FWD BILGE AUTO	FLUXGATE COMPASS	GUEST CABIN STEREO	GAS STOVE
PORT FWD BILGE MANUAL	FLYBRIDGE FREEZER	INMARSAT	HEAD PUMP
PORT MID BILGE ALARM	FUEL GAUGE	INSTRUMENTS FLYBRIDGE	LEVEL INDICATOR
PORT MID BILGE AUTO	FWD HOLD LT	INSTRUMENTS PILOTHOUSE	LIGHTS
PORT MID BILGE MANUAL	GANTRY LTS	INSTRUMENT LIGHTS	MID BILGE PUMP AUTO/MAN
SHOWER LIGHT	MASTHEAD LT	MASTER HEAD LIGHTS	NAV & INST LIGHTS
SPARE	PILOT LT RED	NAV AREA LIGHTS	OIL PRESSURE
STBD AFT BILGE ALARM	PILOT LT WHITE	OVERHEAD LIGHTS	PT ENGINE
STBD AFT BILGE AUTO	PORT FUEL FILTER	READING LIGHTS	PT ENGINE START/STOP
STBD AFT BILGE MANUAL	RUDDER INDICATOR	SALOON O.H. LIGHTS	STBD ENGINE START/STOP
STBD FWD BILGE ALARM	STBD FUEL FILTER	SECURITY SYSTEM	SUM LOG
STBD FWD BILGE AUTO	STEERING	UNDERFLOOR LIGHTS	SYNCHRONIZER
STBD FWD BILGE MANUAL	TUNA TUBES	12V OUTLET FLYBRIDGE	STBD ENGINE
STBD MID BILGE ALARM	TOWING LT AMBER	VHF FLYBRIDGE	WATER TEMP
STBD MID BILGE AUTO	TOWING LT WHITE	VHF PILOTHOUSE	WINDSHIELD
STBD MID BILGE MANUAL	VHF RADIO	EXIT LIGHTS	24 HOUR CIRCUITS

SET 19N
12V BATTERY CHARGER
24V BATTERY CHARGER
24 HR BILGE PUMP
BILGE PUMP PORT AFT
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
SPA
STBD AIR CON
STBD ENGINE
STOREROOM LIGHTS
TV

OTHER PRODUCTS MANUFACTURED BY BEP MARINE

- AC CONTROL PANELS
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- BUS BARS
- GAS DETECTORS AND CONTROLS
- HALOGEN BULB SAVERS
- PULSE AND HOLD MODULES
- SPRAY PROOF PANELS
- SYSTEM OPERATION PANELS
- TANK LEVEL MONITORS
- TIMER MODULES
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INTERNATIONAL DISTRIBUTORS

Argentina

Herby Marina
AvCostanera Norte v Pte
Castillo – Edificio
Costanera Uno – 1425
Buenos Aires
ARGENTINA
Phone + 5411 4312 4545
Fax + 5411 4312 5258
Email herbymarina@herbymarina.com.ar

Australia

Bob Littler Agencies
PO Box 217
Cannon Hill
Queensland 4170
AUSTRALIA
Phone + 61 7 3890 1115
Fax + 61 7 3890 1119
Email sales@bla.com.au

Brazil

Marinema Comercio E Distribuica
Estrada do Joa 382
CEP 22611-020
Rio de Janeiro
BRAZIL
Phone +55 21 483 9712
Fax: +55 21 495 6823
Email rmedu@attglobal.net

Greece

Sakiotis Mega Electronics
47 Vouliagmenis Ave
Glyfada, Athens
GR-166 75
GREECE
Phone + 30 10 964 5460
Fax + 30 10 962 7347
Email info@Sakiotis.gr

France

Kent Marine Equipment
Siège 3, rue de la Dutée
B.P.207
44815 Saint – Herblain
FRANCE
Phone +33 2 4092 1584
Fax +33 2 4092 1316
Email contact@kent-marine.com

Holland

Barco Marine Equipment
J.VLD Heydenstraat 3
3281 NE Numansdorp
HOLLAND
THE NETHERLANDS
Phone + 31 1 8665 5010
Fax + 31 1 8665 5040

North America

Bischoff Marine Electric Inc
412 Huddleston Rd
PO Box 3470
Peachtree City GA.30269
U.S.A.
Phone +1 770 486 6770
Fax +1 770 468 6676
Email bischoffmarine@earthlink.net

Singapore, Indonesia & Malaysia

Best Marine Electrical
61 Kaki Bukit Ave 1 #03-17
Shun Li Industrial park
Singapore 417943
Phone +65 674 10317
FAX +65 674 40317
Email bestmarine@hotmail.com

South Africa

Southpact C.C.
11 Loader Street
De Waterkant
Cape Town 8001
SOUTH AFRICA
Phone +27 21 419 7797
Fax +27 21 419 7797
Email southpact@worldonline.co.za

Thailand

Octopus Electrical Services
20/15 Thepkasattri Road
Maung
Phuket
Thailand
Phone +66 76 273 379
Fax +66 76 273 379
Email octopi@loxinfo.co.th

United Kingdom

EC Smith & Sons
Units H & J Kingsway Estate
Luton
Beds LU1 1LP
ENGLAND
Phone +44 15 8272 9721
Fax +44 15 8272 3460
Email ecs_marine@compuserve.com

Email barco@globalxs.nl



BEP MARINE

13 Tarndale Grove
Albany, Auckland N.Z.

Ph: +64 9 415 7261

Fax: +64 9 415 9327

www.bepmarine.com

Email: enquiries@bepmarine.com