BLUE SEA SYSTEMS






Innovative electrical products–Built to last

2011

Battery Management

Circuit Protection

Connectors and Insulators

Power Distribution

Metering

Accessories

BLUE SEA SYSTEMS

Blue Sea Systems was founded in 1992 based on a commitment to create innovative, high-quality marine electrical products that improve the safety, simplicity, and reliability of boating.

Our employees are active boaters who bring their boating passion to the design, development, production, and support of the products they create. By dedicating ourselves to the highest standards, we have become a leading supplier of marine electrical products for pleasure, commercial, and government agency use.

Boaters deserve reliable, long-term performance. We stand behind our products for as long as customers own them, and strive for continuous improvement of our knowledge, our products, and our service.

This catalog showcases our products, and more detailed information is always available at www.bluesea.com.

Call 800.222.7617 to reach customer service Monday through Friday, 8am to 5pm Pacific Time.

Subscribe to circuit solutions by sending an e-mail to listmaster@bluesea.com.

CORPORATE OFFICE

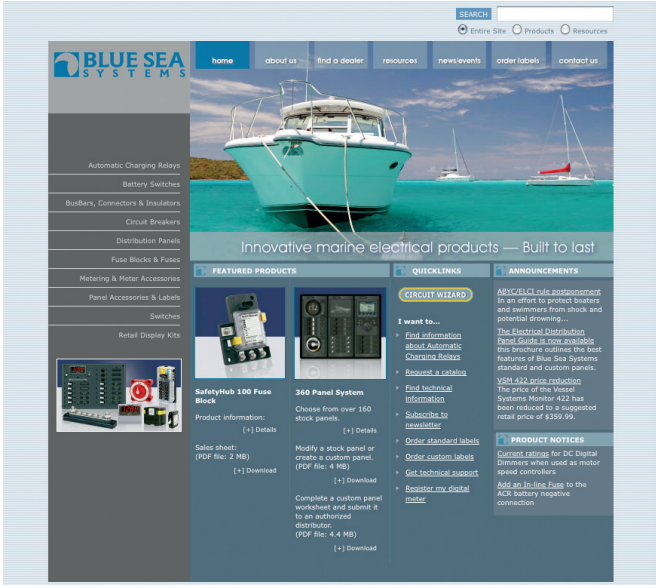
Blue Sea Systems
425 Sequoia Drive
Bellingham, WA 98226 USA
p (360) 738.8230
f (360) 734.4135
www.bluesea.com
conductor@bluesea.com

FLORIDA OFFICE

Blue Sea Systems
4500 140th Avenue N., Suite 117
Clearwater, FL 33762 USA
p (727) 531.4049
f (727) 531.4734

AFFILIATE COMPANY

TERRA POWER SYSTEMS
INNOVATION IN MOTION



www.bluesea.com

Customers can expect:

FAST, DEPENDABLE DELIVERY

Blue Sea Systems is ranked among the top 5% of marine manufacturers for rapid order shipment and high fill rates for industry customers.

COMPANY WIDE SUPPORT

Company officers, engineers, and customer support specialists all participate in answering technical support questions via phone and e-mail.

GUARANTEED PERFORMANCE

Blue Sea Systems stands behind its products for as long as you own them. Customers deserve reliable, well built products that will last in harsh environments. Find detailed warranty information at www.bluesea.com/about.

What makes Blue Sea Systems different?

QUALITY

From products engineered in house to supporting products made by leading manufacturers, Blue Sea Systems engineers perform extensive testing to ensure that products meet the demands of the marine environment. Final product assembly at our Bellingham, Washington headquarters means that engineers and production staff can interact on a daily basis to ensure the integrity of the products we build.

INNOVATION

As a privately-owned company, Blue Sea Systems is nimble, flexible, and responsive to customer needs and changes in the marine industry. The ignition protected SafetyHub product family is a recent example of the way Blue Sea Systems responds to industry needs with solutions that enhance the boating experience.

EXPERIENCE

The company is comprised of avid boaters with decades of boating experience. Engineering employees bring their expertise gained inside and outside the marine industry to the Blue Sea Systems products they design.

ISO 9001:2008 CERTIFICATION

Blue Sea Systems demonstrates a commitment to conform to International Standards and to a quality management system.

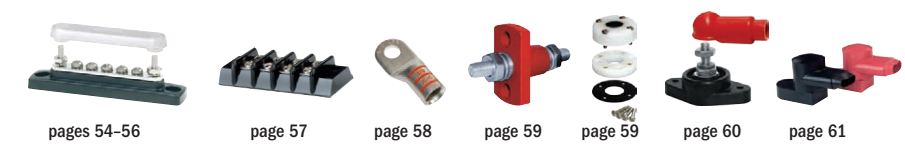
MEMBER OF:

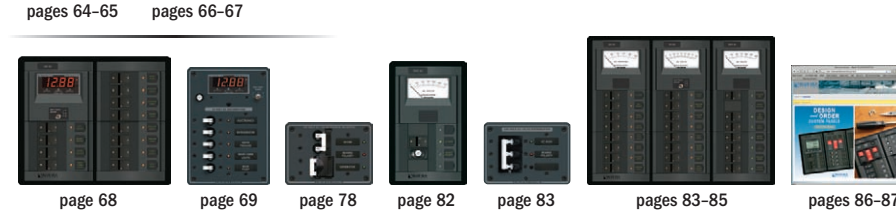
MEMBER ABYC Setting Standards for Safer Boating
NMMA
NMDA NATIONAL MARINE DISTRIBUTORS ASSOCIATION YOUR LINK TO THE SUPPLY CHAIN
NMEA

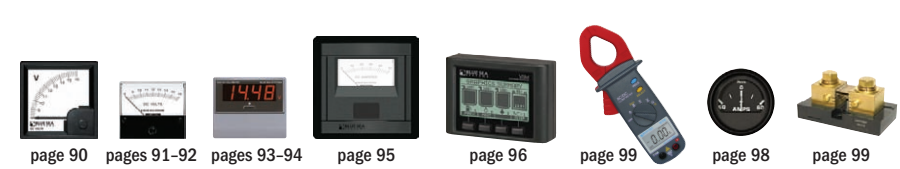
Company Test Boat

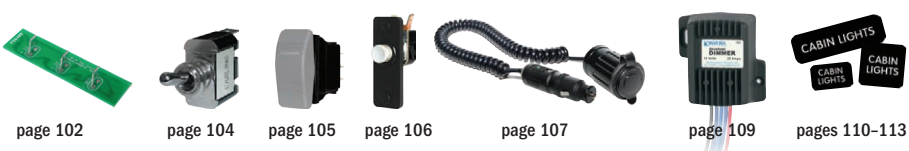
Contents

Quick Reference









Blue Sea Systems Products on Water or Land

In addition to the marine industry, Blue Sea Systems products can be found on emergency vehicles, RVs, agriculture, and off-road vehicles, as well as in other industries where rugged, dependable products are required.

Rating Symbols Shown Throughout This Catalog:

Ic · **Amperage Continuous Rating**
- Ampérage continu
- Amperaje continuo
- Amperaggio continuo

I10 · **Amperage Cranking Rating (10 Seconds)**
- Ampérage au lancement (10 secondes)
- Amperaje de potencia de rotación (10 segundos)
- Amperaggio alla rotazione del motorino di avviamento (10 secondi)

I60 · **Amperage Cranking Rating (1 Minute)**
- Ampérage au lancement (5 min.)
- Amperaje de potencia de rotación (5 min.)
- Amperaggio alla rotazione del motorino di avviamento (5 min.)

I300 · **Amperage Intermittent Rating (5 Minutes)**
- Ampérage intermittent (5 min.)
- Amperaje de potencia intermitente (5 min.)
- Amperaggio intermittente (5 min.)

Iic · **Amperage Interrupting Capacity**
- Ampérage pouvoir de coupure
- Amperaje potencia de interrupción
- Amperaggio capacità di apertura

Imxo · **Amperage Maximum Operating**
- Ampérage maximum de fonctionnement
- Amperaje máximo de funcionamiento
- Amperaggio al funzionamento a pieno carico

Ioc · **Amperage Operating Current**
- Courant de fonctionnement en ampères
- Corriente operativa de amperaje
- Amperaggio corrente operativ

Itr · **Amperage Trip Reference**
- Référence de déclenchement en ampères
- Referencia de disparo de amperaje
- Riferimento di attivazione amperaggio

Cs · **Switching Cycles**
- Périodicité de démarrage
- Ciclos de conmutación
- Cicli di commutazione

Tmxo · **Temperature Maximum Operating**
- Température maximum de fonctionnement
- Temperatura máxima en funcionamiento
- Temperatura massima di esercizio

Tmno · **Temperature Minimum Operating**
- Température minimum de fonctionnement
- Temperatura mínima en funcionamiento
- Temperatura minima di esercizio

Vmxo · **Voltage Maximum Operating**
- Tension maximum de fonctionnement
- Voltaje máximo en funcionamiento
- Tensione massima di esercizio

Vmno · **Voltage Minimum Operating**
- Tension minimum de fonctionnement
- Voltaje mínimo de funcionamiento
- Tensione minima di esercizio

Engineered Products

Designed and developed by Blue Sea Systems

7810

SD-Series Single and Double Pole Solenoid
Meets high continuous current demands
page 26

7800

SD-Series Automatic Charging Relay
300A Dual Automatic Charging Relay
page 27

1800

Vessel Systems Monitor VSM 422
4 meters in 1 for monitoring DC systems including amp-hours, AC systems, tanks, and bilge
page 96

1811

1810

VSM 422 Tank Senders
24" for gasoline and 32" for diesel, water, and waste
page 97

2020

Dual Stud BusBar
Provides compact high-ampere busing with 3/8" terminal studs
page 56

7508

DeckHand Dimmers
Provides continuous voltage control from 0 to 100% of input voltage
page 109

7725

SafetyHub 100 Fuse Block
Consolidates seven circuits
Page 50

7724

SafetyHub 150 Fuse Block
Consolidates ten circuits
page 51

7727

SafetyHub 250 Fuse Block with Remote Battery Switch
Consolidates seven circuits and provides remote and manual battery control
page 51

Supporting Products

Sourced from leading manufacturers

285-Series Circuit Breakers
Provides medium duty circuit protection when switching and protection are both required
page 34

ELCI Residual Current Circuit Breakers
Provides electrical current leakage protection
page 41

MIDI® or AMI® Fuses
Compact fuse for Main or Branch circuit protection
page 44

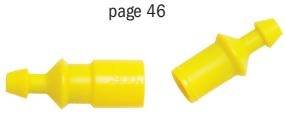
ATM® Fuse
Mini blade-type fuse
page 43

AGA®, GMA®, AGC® and MDL® Fuses
Glass fuses
page 43

Panel Mount Fuse Holder
For use with AGC® or MDL® Fuses
page 104

AGC Waterproof Fuse Holder
For use with AGC® or MDL® glass fuses
page 46

AGC Waterproof Fuse Holder
For use with AGC® or MDL® glass fuses
page 46



Crimpable Fuse Holder
For use with AGC® or MDL® glass fuses
page 46

ATO® and ATC® In-Line Fuse Holders
For use with ATO®and ATC® fuses
page 46

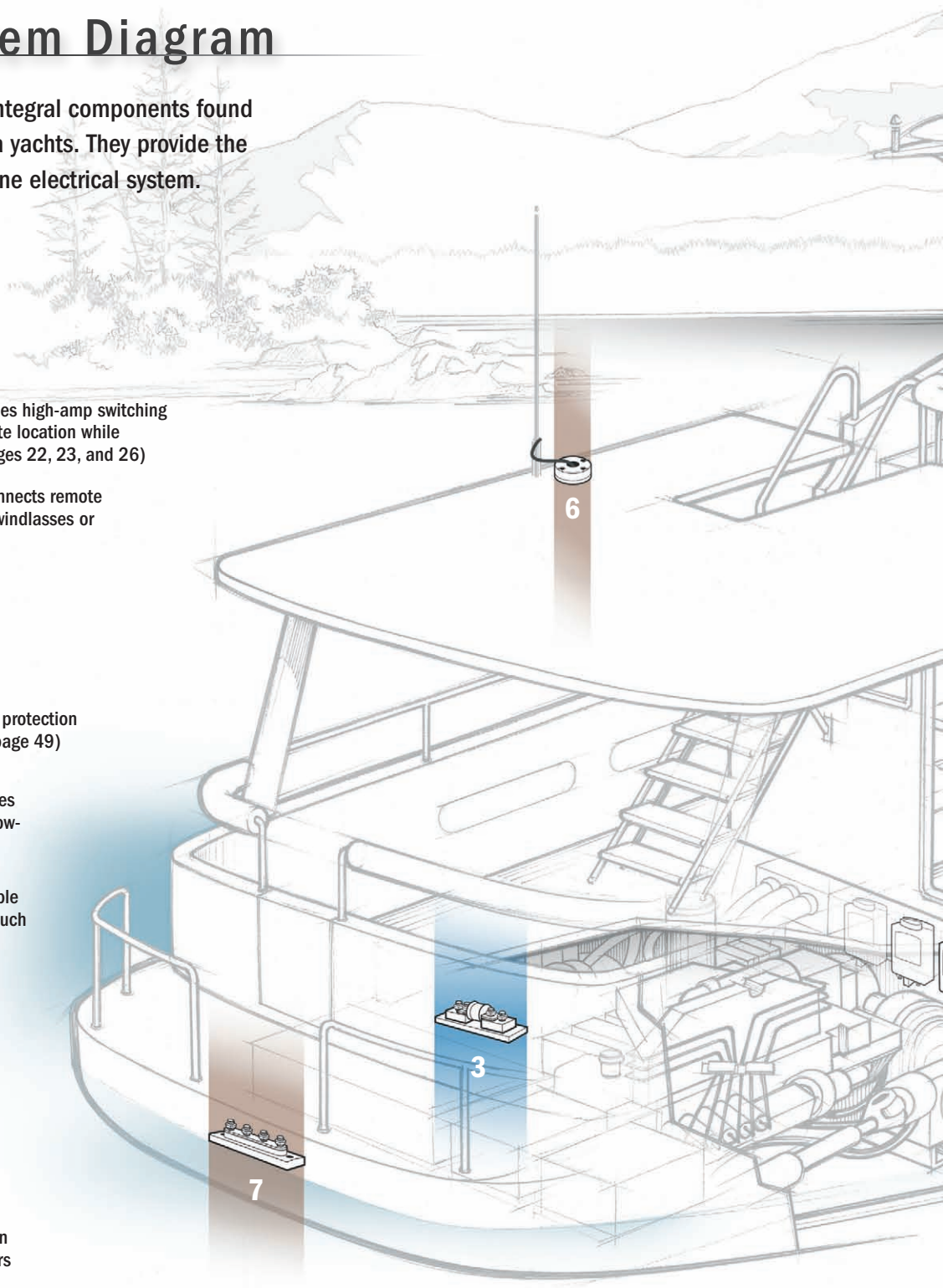
AGC® or MDL® In-Line Fuse Holder
Heavy duty fuse holder for AGC® or MDL® glass fuses
page 46

Square CableCap Insulators
For in-line dual posts
page 61

BLUE SEA SYSTEMS

Full Boat System Diagram

Blue Sea Systems products are integral components found on boats from runabouts to mega yachts. They provide the basis for a safe and reliable marine electrical system.



Battery Management 8–29

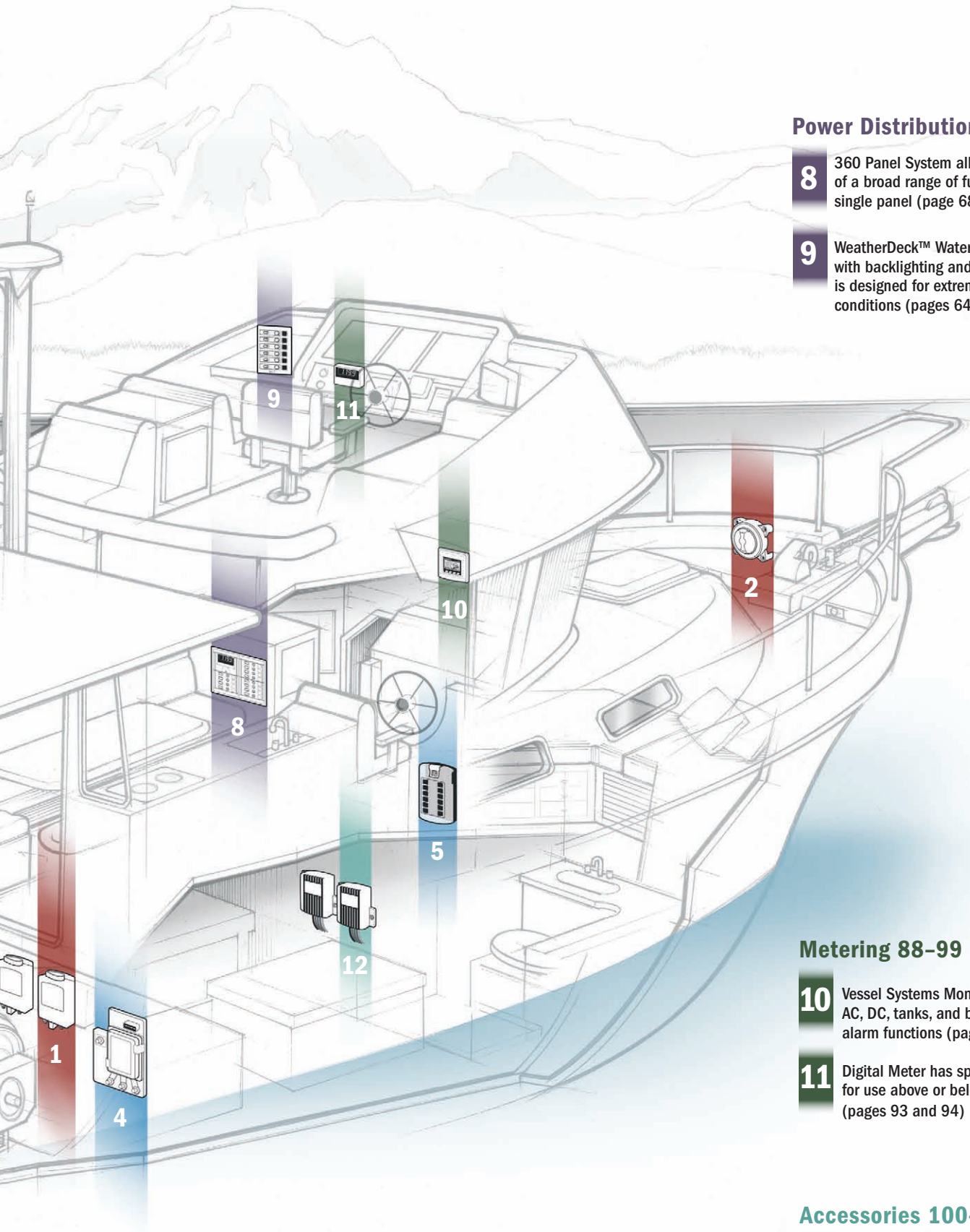
1. ML-Series battery management provides high-amp switching and charge management from a remote location while reducing long runs of heavy cable (pages 22, 23, and 26)
2. e-Series manual battery switch disconnects remote batteries for high amp loads such as windlasses or bow thrusters (page 12)

Circuit Protection 30–51

3. Class T Fuse and Fuse Block provides protection preferred by inverter manufacturers (page 49)
4. SafetyHub 100 Fuse Block consolidates seven 1A – 200A fuses for high-and low-amperage loads (page 50)
5. ST-Blade Fuse Block eliminates multiple in-line fuseholders for small devices such as electronics (page 47)

Connectors and Insulators 52–61

6. CableClam provides a waterproof pass-through for cables (page 59)
7. PowerBar is designed for consolidation of large positive or negative conductors (page 56)



Power Distribution 62–87

8 360 Panel System allows consolidation of a broad range of functions in a single panel (page 68)

9 WeatherDeck™ Waterproof Panel with backlighting and switch control is designed for extreme weather conditions (pages 64 and 65)

Metering 88–99

10 Vessel Systems Monitor VSM 422 monitors AC, DC, tanks, and bilge with adjustable alarm functions (pages 96 and 97)

11 Digital Meter has splashproof front for use above or below deck (pages 93 and 94)

Accessories 100–113

12 DeckHand Dimmer allows control of LED or incandescent cabin lighting for different times of day and offers illuminated exit (page 109)

From Components to Systems

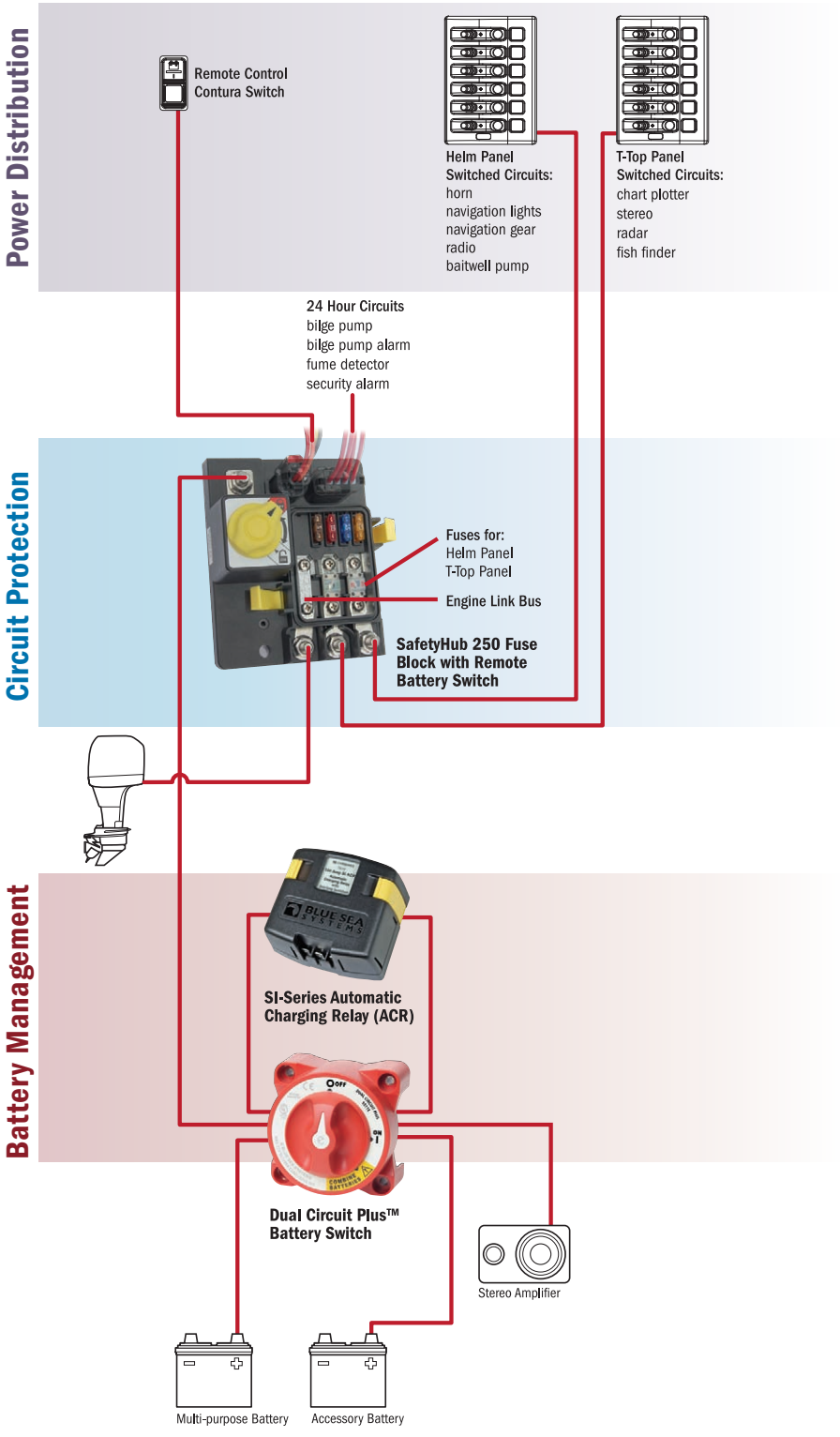
These diagrams are examples of ways to use Blue Sea Systems products to create systems that provide control of key electrical functions on a boat.

Power distribution and circuit protection is provided by a member of the SafetyHub product family. Whether a SafetyHub is used as an addition to the existing components or as the basis for a new system, it will provide the high- and low-amperage circuit protection that today's boats demand. Read more about the SafetyHubs on page 50 and 51.

Battery management is at the core of the electrical system. The Dual Circuit Plus™ Battery Switch on page 12 and Start Isolation Automatic Charging Relay on page 25 are key to the creation of an effective battery management system. They reduce complexity and add reliability to this vital area of a boat.

These pieces of a marine electrical system are more than a collection of components. Together, they create a powerful systems-based approach to marine electrical solutions.

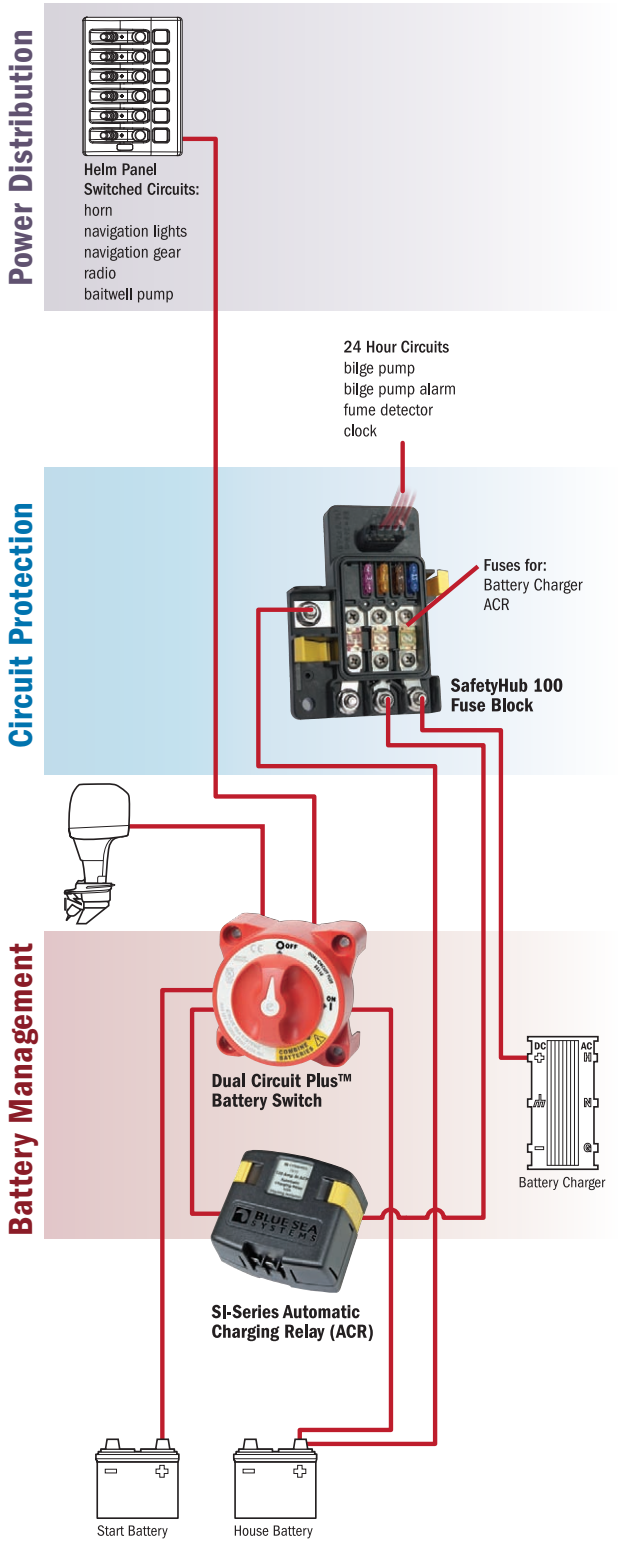
Trailered or Dry Storage Boat



NOTES:
In this system, the boat has a multi-purpose battery, and a battery dedicated solely to powering a stereo amplifier. The batteries are switched with a Dual Circuit Plus™ Battery Switch, and charge management is handled with the SI-Series ACR. From the Dual Circuit Plus™ Battery Switch, another wire is connected to a SafetyHub 250 Fuse Block with Remote Battery Switch. The SafetyHub 250 has fuses for high- and low-amperage loads as well as a link bus for the engine starting circuit. The Dual Circuit Plus™ Battery Switch also cuts off the ACR and all loads when the battery switch is turned off for storage.

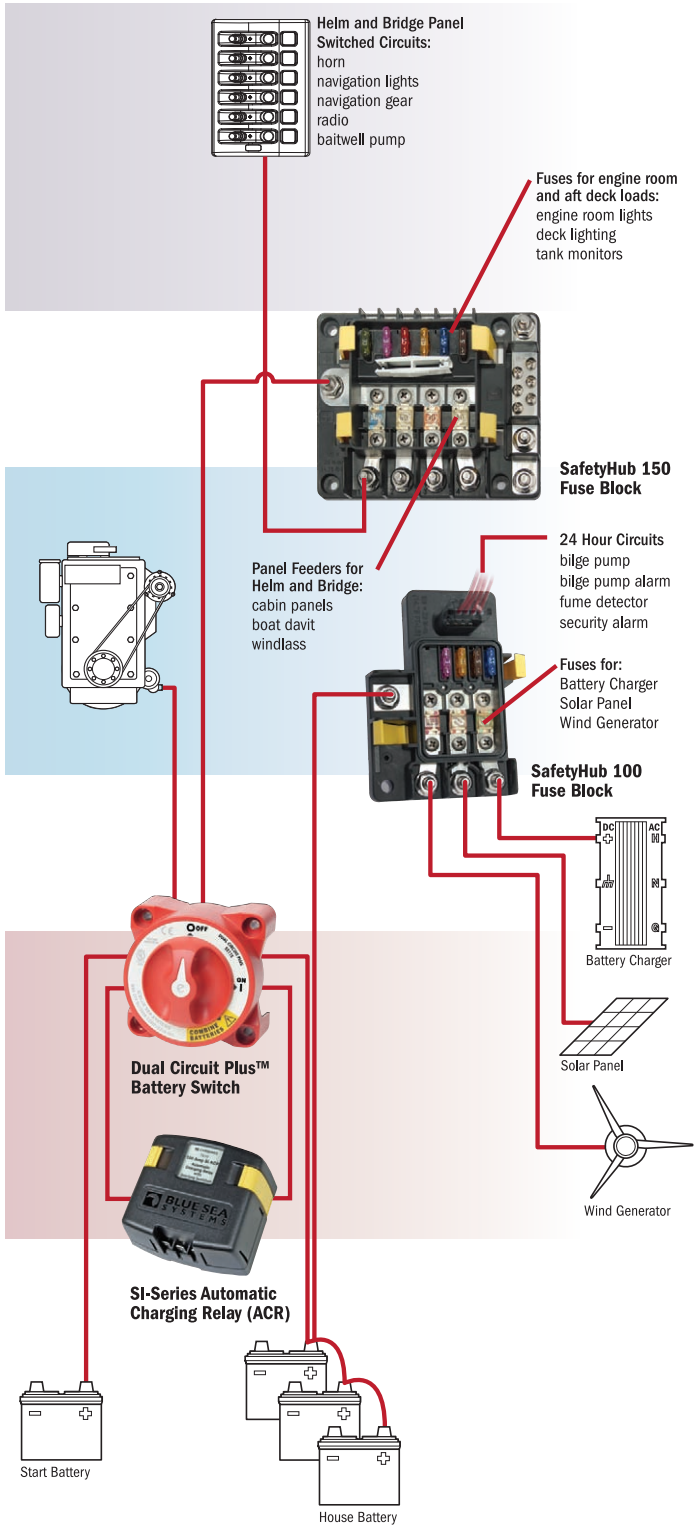
These diagrams are for reference only. Consult an ABYC certified marine electrical professional for system design.

Docked Boat with Charger



NOTES:
This system is ideal for a center console boat due to its compact components. A wire is connected from the Dual Circuit Plus™ Battery Switch to the helm panel that provides switched circuits. A wire from the House Battery is connected directly to the SafetyHub 100 Fuse Block, providing 24 hour circuits. Since the SI-Series ACR remains energized even when the battery switch is off, this system works well for boats with battery chargers.

Docked Boat with Multiple Charge Sources



NOTES:
This diagram shows a system with multiple charge sources and a requirement for both 24 hour and a large number of switched circuits. A SafetyHub 100 connects three charge sources to the house battery bank, and provides 24 hour circuits. A Dual Circuit Plus™ Battery Switch switches the starting battery and house bank simultaneously, and an SI-Series ACR automates charging.
A SafetyHub 150 is connected after the battery switch, providing switched circuits for high- and low-amperage loads.

Battery Management

Battery Management

A battery switch is required by ABYC in every boat with a battery over 800 Cold Cranking Amperes. This requirement exists so that the potentially destructive energy in the batteries can be isolated in the event of a fire. Battery management is central to safe boating.

With involvement on ABYC's Electrical Component Project Technical Committee, Blue Sea Systems is close to the source of standards for battery switches. This participation in the process means quick response when standards, and the needs of boaters, change.

Manual Battery Switches are familiar to most boaters as a large, usually red switch with a round face and prominent knob. The 4-position selector switch has long been the industry standard for managing the selection and charging of two battery banks. Blue Sea Systems has three families of manual battery switches.

- The compact m-Series is ideal for outboard motors or small inboard engines.
- The standard c-Series has a 350A continuous current rating and is a popular replacement switch.
- The heavy duty HD-Series can carry up to 600A of continuous current, making it an excellent choice for boats with large diesel engines.

m-Series
Manual Battery Switch

Remote Battery Switches add another level of safety and convenience to battery management by allowing control of the battery or batteries from a remote location. All Blue Sea Systems remote battery switches carry a minimum 500A continuous rating and allow high-amp switching under load. Models with manual control have "lock OFF" capability for servicing or emergencies.

ML-Series
Remote Battery Switch

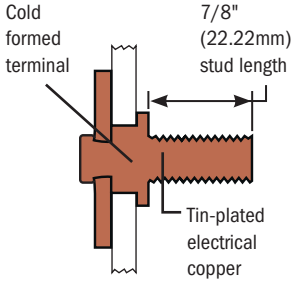
The SafetyHub 250 Fuse Block with Remote Battery Switch is the newest innovation in remote battery management. It combines a battery switch with remote and manual control with 1A – 200A ignition-protected fusing. By combining these two important functions, the SafetyHub 250 saves space and reduces wiring connections over separate components. Read more about the SafetyHub 250 and related products on page 50 and 51.

SafetyHub 250 Fuse Block with
Remote Battery Switch

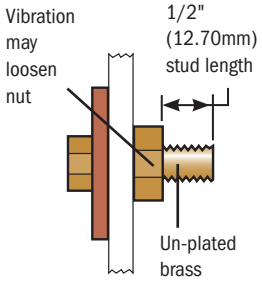
Automatic Charging Relays (ACRs) share the output of a single charge source with a second battery, whether the boat is underway or on the charger. A simple three-wire connection is all that's required for basic operation.

SI-Series
Automatic Charging Relay

BLUE SEA SYSTEMS
ONE PIECE STUD DESIGN
Can never loosen over time



COMPETITORS
TWO PIECE STUD
Can loosen and create risk of fire



SECTION INDEX

Manual Battery Switches

Purpose

Battery switches isolate the potentially destructive energy in the battery banks when the boat is not in use or during emergencies.

ABYC 11.7.1.2.1: A battery switch shall be installed in the positive conductor(s) from each battery or battery bank with a CCA rating greater than 800 Amperes.

Battery Switch Ratings

The UL standard for marine battery switches is UL 1107. This standard rates switches for 5 minute and 1 hour time periods. These ratings are not useful to the boater using a switch in the engine starting circuit where current durations may be 10-60 seconds. For this reason, Blue Sea Systems uses additional testing, consisting of a high amperage load during a cranking period of 10 seconds. An additional 60-second rating, representative of the load imposed on a battery switch in the starting circuit under very difficult starting conditions, is also given. These 10 and 60 second ratings are in addition to the testing done to UL 1107.

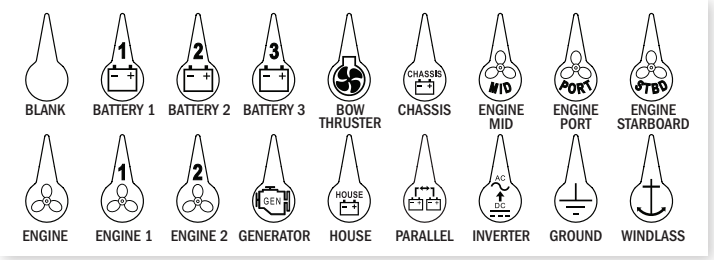
When determining the proper size battery switch, consult your engine manufacturer for the amperage requirements of your engine starting motor.

Common Features of Blue Sea Systems Manual Battery Switches

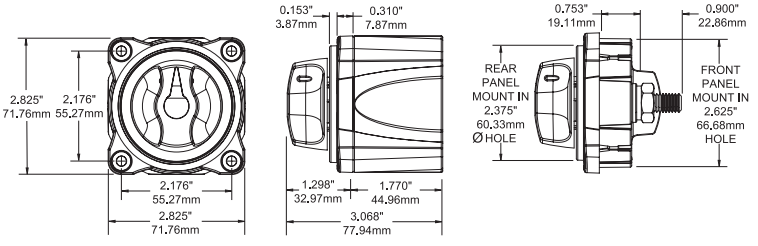
- CE marked, ISO 8846
- UL Listed - UL 1107 electric power switches
- Meets UL 1500 and SAE J1171 external ignition protection requirements
- IP66—protected against powerful water jets
- Meets American Boat and Yacht Council (ABYC) requirements

7902 ICON Circuit Identification Label Kit

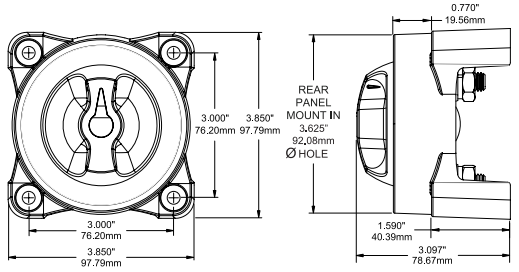
Can be used on the m-Series, e-Series, and HD-Series Battery Switches



m-Series Battery Switch Dimension Drawing



e-Series and HD-Series Battery Switch Dimension Drawing



m-Series Battery Switches

300 Ampere continuous rating for outboards and small gasoline or diesel engines

Features

- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Studs accept 3/8" (M10) ring terminals
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Blue Sea Systems one-piece terminal stud design never loosens over time
- Isolating cover with three snap-in side pieces protects rear contacts and allows wire access in any direction
- Case design allows surface, rear, or front panel mounting options
- Label with international legends—6 icon label set included for circuit identification (not included with 6005 and 6005200)
- Icon Circuit Identification Label Kit available 7902 (sold separately, page 110)
- Removable key - 6005, 6005200; removable knob - all others
- Available in black or red

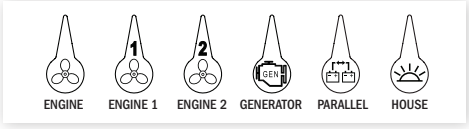
Specifications		6005, 6006 6005200 6006200	6007 6007200	6010, 6011 6010200 6011200
I10	Cranking Rating: 10 sec.	1,500A	1,500A	1,000A†
I60	Cranking Rating: 1 min.	775A	775A	650A†
I300	Intermittent Rating: 5 min.	500A	500A	450A†
Ic	Continuous Rating	300A	300A	300A†
Vmxo	Voltage Maximum Operating	48V DC	32V DC	32V DC

Regulatory

- CE marked, ISO 8846
- UL Listed - UL 1107 electric power switches
- Meets American Boat and Yacht Council (ABYC) requirements
- Meets UL 1500 and SAE J1171 external ignition protection requirements
- IP66—protected against powerful water jets

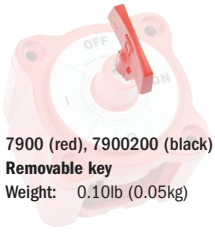
† Per circuit

For the full list of specifications, go to page 14–15



6 Icon Circuit Label Set (included)

7901 (red), 7901200 (black)
Removable Knob
Weight: 0.10lb (0.05kg)



7900 (red), 7900200 (black)
Removable key
Weight: 0.10lb (0.05kg)

9159
Paralleling Link Bus

- Used to link multiple m-Series Battery Switches together
- Two per retail package

Weight: 0.14lb (0.06kg)

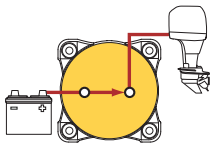
9159 linking three 6006 ON-OFF m-Series Battery Switches

Single Circuit ON-OFF

Switches a single battery to a single load group

6005 (red), 6005200 (black)

6006 (red), 6006200 (black)

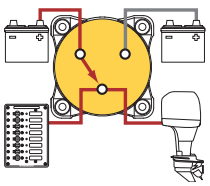


Switch set to ON

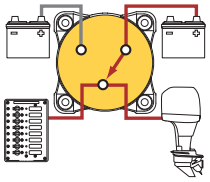
Selector 4 Position

Switches isolated battery banks to all loads or combines battery banks to all loads

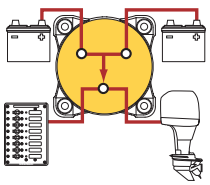
6007 (red), 6007200 (black)



Switch set to 1



Switch set to 2

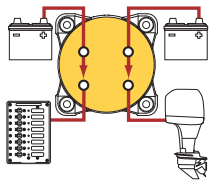


Switch set to 1+2

Dual Circuit™

Simultaneously switches two isolated battery banks

6010 (red), 6010200 (black)

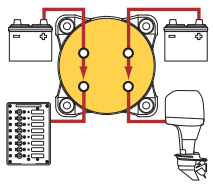


Switch set to ON

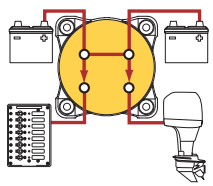
Dual Circuit Plus™

Simultaneously switches two isolated battery banks or combines battery banks to all loads
(with combine function)

6011 (red), 6011200 (black)



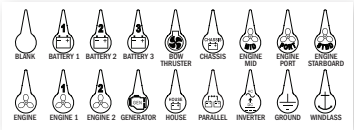
Switch set to ON



Switch set to COMBINE BATTERIES

7902
ICON Circuit Identification Label Kit

see page 110



e-Series Battery Switches

350 Ampere continuous rating for inboard gasoline or diesel engines

Features

- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Accepts up to 4/0 AWG (95mm²) battery cables
- Studs accept 3/8" (M10) ring terminals
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Blue Sea Systems one-piece terminal stud design never loosens over time
- Fits most Perko and Guest low amperage battery switch hole patterns
- Label with international legends
- Case design allows surface, rear, or front panel mounting options
- Tactile indicator conveys knob position by feel
- Icon Circuit Identification Label Kit available 7902 (sold separately, page 110)

Specifications		9003e 9004e	9001e, 9002e 11001	5510e 5511e
I10	Cranking Rating: 10 sec.	2,000A	2,000A	1,000A†
I60	Cranking Rating: 1 min.	1,000A	1,000A	750A†
I300	Intermittent Rating: 5 min.	600A	600A	525A†
Ic	Continuous Rating	350A	350A	350A†
Vmxo	Voltage Maximum Operating	48V DC	32V DC	32V DC

Regulatory

- CE marked, ISO 8846
- UL Listed - UL 1107 electric power switches
- Meets American Boat and Yacht Council (ABYC) requirements
- Meets UL 1500 and SAE J1171 external ignition protection requirements
- IP66—protected against powerful water jets

† Per circuit

For the full list of specifications, go to page 14–15

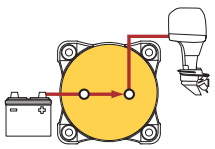
Single Circuit ON-OFF

Switches a single battery to a single load group

9003e

9004e

- Alternator field disconnect*



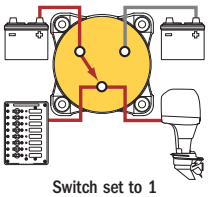
Switch set to ON

Selector 3 Position

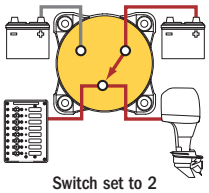
Switches isolated battery banks to all loads

11001

- Alternator field disconnect*



Switch set to 1



Switch set to 2

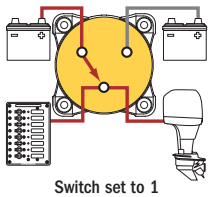
Selector 4 Position

Switches isolated battery banks to all loads or combines battery banks to all loads

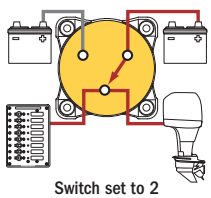
9001e

9002e

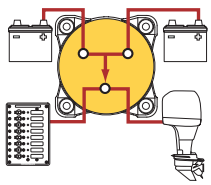
- Alternator field disconnect*



Switch set to 1



Switch set to 2

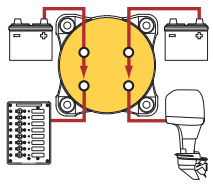


Switch set to 1+2

Dual Circuit™

Simultaneously switches two isolated battery banks

5510e

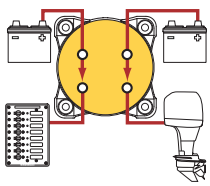


Switch set to ON

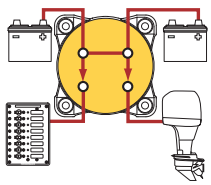
Dual Circuit Plus™

Simultaneously switches two isolated battery banks or combines battery banks to all loads (with combine function)

5511e

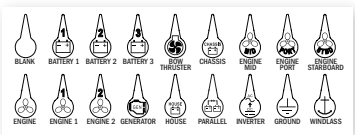


Switch set to ON



Switch set to COMBINE BATTERIES

ICON Circuit Identification Label Kit 7902 sold separately page 110



* Alternator Field Disconnect (AFD) protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

HD-Series Battery Switches

Up to 600 Ampere continuous rating for large diesel engines

Features

- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Accepts up to 4/0 AWG (95mm²) battery cables
- Studs accept 1/2" (M12) ring terminals
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Blue Sea Systems one-piece terminal stud design never loosens over time
- Fits most Perko and Guest low amperage battery switch hole patterns
- Label with international legends
- Case design allows surface, rear, or front panel mounting options
- Tactile indicator conveys knob position by feel
- Icon Circuit Identification Label Kit available 7902 (sold separately, page 110)

Specifications		3000, 3001	3002, 3003, 11003
I_{10}	Cranking Rating: 10 sec.	2,750A	2,750A
I_{60}	Cranking Rating: 1 min.	1,325A	1,150A
I_{300}	Intermittent Rating: 5 min.	900A	700A
I_c	Continuous Rating	600A	500A
V_{mxo}	Voltage Maximum Operating	32V DC	32V DC

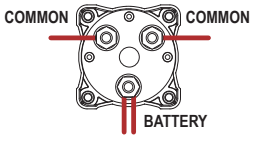
Regulatory

- CE marked, ISO 8846
- UL Listed - UL 1107 electric power switches
- Meets American Boat and Yacht Council (ABYC) requirements
- Meets UL 1500 and SAE J1171 external ignition protection requirements
- IP66—protected against powerful water jets

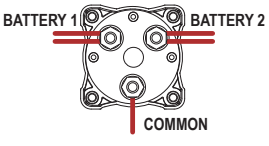
For the full list of specifications, go to page 14–15

3000–3001

Cable Quantity to Meet Ratings

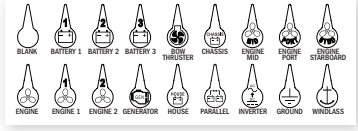


ON-OFF
3000 and 3001 Connections



SELECTOR
3002, 3002, and 11003 Connections

ICON Circuit Identification Label Kit 7902 sold separately see page 110



* Alternator Field Disconnect (AFD) protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

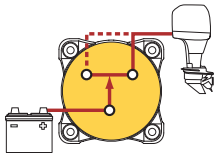
Single Circuit ON-OFF

Switches a single battery to a single load group

3000

3001

- Alternator field disconnect*



Switch set to ON

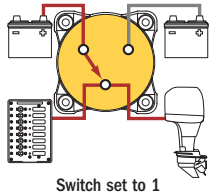
Selector 4 Position

Switches isolated battery banks to all loads or combines battery banks to all loads

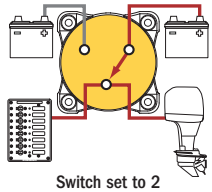
3002

3003

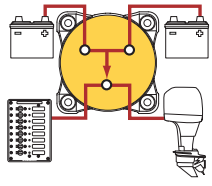
- Alternator field disconnect*



Switch set to 1



Switch set to 2



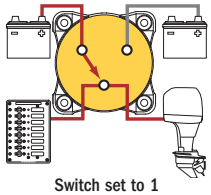
Switch set to 1+2

Selector 3 Position

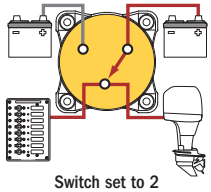
Switches isolated battery banks to all loads

11003

- Alternator field disconnect*



Switch set to 1



Switch set to 2

Manual Battery Switch Comparison

Switch Type	Single Circuit ON-OFF						Selector 3 Position	
Function	Switches a single battery to a single load group						Switches battery banks to all loads	
Switch Family	m-Series	m-Series	e-Series	e-Series	HD-Series	HD-Series	e-Series	HD-Series
PN	 6005	 6006	 9003e	 9004e	 3000	 3001	 11001	 11003
Alternator Field Disconnect*	–	–	–	Yes*	–	Yes*	Yes*	Yes*
Make Before Break Contact Design	–	–	–	–	–	–	-	-
I10 Cranking Rating (10 sec.)	1,500A	1,500A	2,000A	2,000A	2,750A	2,750A	2,000A	2,750A
I60 Cranking Rating (1 min.)	775A	775A	1,000A	1,000A	1,325A	1,325A	1,000A	1,150A
I300 Intermittent Rating (5 min.)	500A	500A	600A	600A	900A	900A	600A	700A
Ic Continuous Rating	300A	300A	350A	350A	600A	600A	350A	500A
Vmxo Voltage Maximum Operating	48V DC	48V DC	48V DC	48V DC	32V DC	32V DC	32V DC	32V DC
Terminal Stud Size	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	1/2" (M12)	1/2" (M12)	3/8"-16 (M10)	1/2" (M12)
Terminal Stud Length	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)
Maximum Terminal Stud Torque	120 in-lb (13.56 N-m)	120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)	140 in-lb (15.82 N-m)	220 in-lb (24.86 N-m)	220 in-lb (24.86 N-m)	140 in-lb (15.82 N-m)	220 in-lb (24.86 N-m)
Terminal Stud Design	One-piece	One-piece	One-piece	One-piece	One-piece	One-piece	One-piece	One-piece
Terminal Stud Material	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper
Mounting	#10 Screw	#10 Screw	1/4" (M6) Screw	1/4" (M6) Screw	1/4" (M6) Screw	1/4" (M6) Screw	1/4" (M6) Screw	1/4" (M6) Screw
Cable Size to Meet Ratings ‡	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)
Cable Clearance for 4/0 Cables	1.12" (28.4 mm)	1.12" (28.4 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)
Switch Positions	2	2	2	2	2	2	3	3
Battery Inputs	1	1	1	1	1	1	2	2
Battery Combine Function	–	–	–	–	–	–	–	–
Width	2.285" (72 mm)	2.285" (72 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)
Height	2.285" (72 mm)	2.285" (71 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)
Mounting Centers	2.176" (55 mm)	2.176" (55 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)
Weight	0.62 lb (0.28 kg)	0.65 lb (0.29 kg)	0.95 lb (0.43 kg)	0.95 lb (0.43 kg)	1.30 lb (0.59 kg)	1.30 lb (0.59 kg)	1.15 lb (0.52 kg)	1.25 lb (0.57 kg)
Ignition Protected	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171
Ingress Protected	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66

* Alternator Field Disconnect (AFD) protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

† Per circuit

‡ Reducing cable size will reduce current rating

Selector 4 Position					Dual Circuit™		Dual Circuit Plus™	
Switches isolated battery banks to all loads or combines battery banks to all loads					Simultaneously switches two isolated battery banks		Simultaneously switches two isolated battery banks or combines battery banks to all loads	
m-Series	e-Series	e-Series	HD-Series	HD-Series	m-Series	e-Series	m-Series	e-Series
 6007	 9001e	 9002e	 3002	 3003	 6010	 5510e	 6011	 5511e
–	–	Yes*	-	Yes*	-	-	-	-
Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
1,500A	2,000A	2,000A	2,750A	2,750A	1,000A†	1,000A†	1,000A†	1,000A†
775A	1,000A	1,000A	1,150A	1,150A	650A†	750A†	650A†	750A†
500A	600A	600A	700A	700A	450A†	525A†	450A†	525A†
300A	350A	350A	500A	500A	300A†	350A†	300A†	350A†
32V DC	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC
3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	1/2" (M12)	1/2" (M12)	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)
7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)
120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)	140 in-lb (15.82 N-m)	220 in-lb (24.86 N-m)	220 in-lb (24.86 N-m)	120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)	120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)
One-piece	One-piece	One-piece	One-piece	One-piece	One-piece	One-piece	One-piece	One-piece
Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper	Tin-plated copper
#10 Screw	1/4" (M6) Screw	1/4" (M6) Screw	1/4" (M6) Screw	1/4" (M6) Screw	#10 Screw	1/4" (M6) Screw	#10 Screw	1/4" (M6) Screw
4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)	4/0 AWG ‡ (95mm²)
1.12" (28.4 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.10" (27.9 mm)	1.12" (28.4 mm)	1.10" (27.9 mm)	1.12" (28.4 mm)	1.10" (27.9 mm)
4	4	4	4	4	2	2	3	3
2	2	2	2	2	2	2	2	2
Yes	Yes	Yes	Yes	Yes	–	–	Yes	Yes
2.285" (72 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	2.285" (72 mm)	3.850" (98 mm)	2.285" (72 mm)	3.850" (98 mm)
2.285" (72 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	3.850" (98 mm)	2.285" (72 mm)	3.850" (98 mm)	2.285" (72 mm)	3.850" (98 mm)
2.176" (55 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)	2.176" (55 mm)	3.00" (76 mm)	2.176" (55 mm)	3.00" (76 mm)
0.77 lb (0.35 kg)	1.15 lb (0.52 kg)	1.15 lb (0.52 kg)	1.25 lb (0.57 kg)	1.25 lb (0.57 kg)	0.80 lb (0.36 kg)	1.16 lb (0.53 kg)	0.80 lb (0.36 kg)	1.16 lb (0.53 kg)
UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171	UL 1500 SAE J1171
IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66

* Alternator Field Disconnect (AFD) protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

† Per circuit

‡ Reducing cable size will reduce current rating

Go to page 22–23 for Blue Sea Systems' selection of remote battery switches

Single Battery Bank Management Panels

ON-OFF battery switch combined with DC distribution provides control of one battery bank and multiple circuits

Component References

- ON-OFF m-Series Battery Switch 6006200 (page 11)
- A-Series Flat Rocker Circuit Breakers (page 37)
- C-Series Flat Rocker Circuit Breakers (page 39)
- Push Button Reset-Only Circuit Breakers (page 32)
- ON-OFF (SPST) Rocker Switches (page 102)
- Square Format Label Set 4218 included with all battery management panels except 1139 (page 110)

1139 (switch not included)

1140
- **Battery Switch:** m-Series, 6006200

1400
- **Backlit circuit labels**
- **8 Unswitched 24-hour circuits**
- **8 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **Battery Switch:** m-Series, 6006200

1401
- **4 ON-OFF (SPST) Rocker Switches**
- **4 Push Button Reset-Only Circuit Breakers** (BRANCH 10A)
- **Battery Switch:** m-Series, 6006200

1402
- **Backlit circuit labels**
- **3 Unswitched 24-hour circuits**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **3 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **Battery Switch:** m-Series, 6006200

1403
- **Backlit circuit labels**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **3 A-Series Flat Rocker Circuit Breakers** (BRANCH 15A)
- **Battery Switch:** m-Series, 6006200

PN	Vmxo Voltage Maximum Operating	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
1139	-	4.88 (123.83)	4.75 (120.65)	0.50 (0.23)	0.50 (0.23)
1140	48V DC	4.88 (123.83)	4.75 (120.65)	2.50 (63.50)	1.15 (0.52)
1400	24V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)
1401	12V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)
1402	12V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)
1403	12V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)

Dual Battery Bank Management Panels

ON-OFF battery switches offer independent control of two battery banks

Features

- Isolates the Engine circuit from the House circuit
- Allows independent battery control
- Allows emergency cross connect between isolated battery banks
- Protects electronics from sags and spikes caused by engine cranking

Component References

- ON–OFF m-Series Battery Switch 6006200 (page 11)
- A-Series Flat Rocker Circuit Breakers (page 37)
- C-Series Flat Rocker Circuit Breakers (page 39)
- Square Format Label Set 4218 (page 110)

1404

- **Backlit circuit labels**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **3 A-Series Flat Rocker Circuit Breakers** (BRANCH 15A)
- **2 Battery Switches:** m-Series, 6006200

1405

- **Backlit circuit labels**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **3 A-Series Flat Rocker Circuit Breakers** (BRANCH 15A)
- **2 Battery Switches:** m-Series, 6006200

1406

- **3 Battery Switches:** m-Series, 6006200

PN	Vmxo Voltage Maximum Operating	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
1404	12V DC	13.63 (346.08)	4.75 (120.65)	3.50 (88.90)	5.50 (2.50)
1405	12V DC	4.88 (123.83)	10.75 (273.05)	3.50 (88.90)	5.30 (2.40)
1406	48V DC	13.63 (346.08)	4.75 (120.65)	2.50 (63.50)	5.50 (2.50)
1407	48V DC	4.88 (123.83)	10.75 (273.05)	2.50 (63.50)	5.30 (2.40)

1407

- **3 Battery Switches:** m-Series, 6006200

Dual Battery Bank Management Panels

Dual Circuit Plus™ Battery Switch simplifies control of two battery banks

Component References

- m-Series Dual Circuit Plus™ Battery Switch 6011200 (page 11)
- A-Series Flat Rocker Circuit Breakers (page 37)
- C-Series Flat Rocker Circuit Breakers (page 39)
- Push Button Reset-Only Circuit Breakers (page 32)
- ON–OFF (SPST) Rocker Switches (page 102)
- Square Format Label Set 4218 included with all battery management panels except 1139 (page 110)

1139 (switch not included)

1408
- **Backlit circuit labels**
- **3 Unswitched 24-hour circuits**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **3 Push Button Reset-Only Circuit Breakers,** (BRANCH, 15A)
- **Battery Switch:** m-Series, 6011200

1410
- **4 ON-OFF (SPST) Rocker Switches**
- **4 Push Button Reset-Only Circuit Breakers** (BRANCH, 10A)
- **Battery Switch:** m-Series, 6011200

1141
- **Battery Switch:** m-Series, 6011200

1409
- **Backlit circuit labels**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **3 A-Series Flat Rocker Circuit Breakers** (BRANCH 15A)
- **Battery Switch:** m-Series, 6011200

1411
- **Backlit circuit labels**
- **8 Unswitched 24-hour circuits**
- **8 Push Button Reset-Only Circuit Breakers,** (BRANCH, 15A)
- **Battery Switch:** m-Series, 6011200

PN	Vmxo Voltage Maximum Operating	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
1139	-	4.88 (123.83)	4.75 (120.65)	0.50 (0.23)	0.50 (0.23)
1141	32V DC	4.88 (123.83)	4.75 (120.65)	2.50 (63.50)	1.30 (0.59)
1408	12V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)
1409	12V DC	4.88 (123.83)	7.75 (196.85)	3.25 (82.55)	3.20 (1.45)
1410	12V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)
1411	24V DC	4.88 (123.83)	7.75 (196.85)	3.50 (88.90)	3.20 (1.45)

Dual Battery Bank Management Panels

Battery switches combined with DC distribution offers a variety of control options for two battery banks

Features

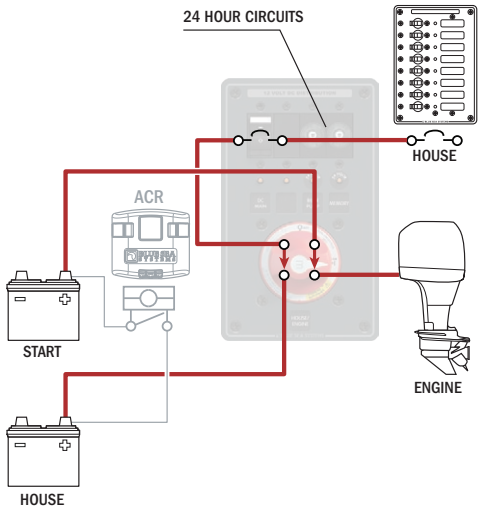
- Isolates Engine circuit from House circuit
- Allows independent battery control
- Allows emergency cross connect between isolated battery banks
- Protects electronics from sags and spikes caused by engine cranking
- The addition of an Automatic Charging Relay automates charging two battery banks (pages 25–27)

Component References

- m-Series Dual Circuit Plus™ Battery Switch 6011 (page 11)
- m-Series ON-OFF Battery Switch 6006 (page 11)
- e-Series Dual Circuit Plus™ Battery Switch 5511e (page 12)
- C-Series Flat Rocker Circuit Breakers (page 39)
- Push Button Reset-Only Circuit Breakers (page 32)
- Square Format Label Set 4218 included (pages 110)

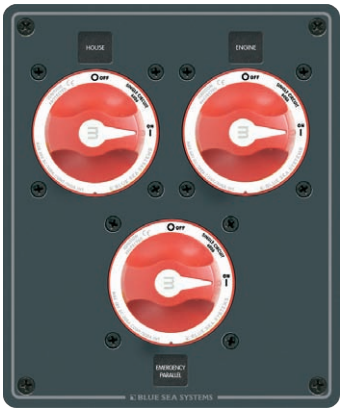
Regulatory

Meets UL 1500 and SAE J1171 external ignition protection requirements



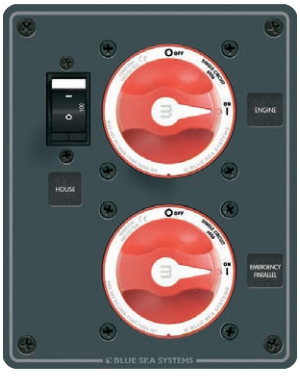
ACR is an optional connection

System diagram for 8686 and 8690



8280

- **3 Battery Switches:** m-Series, 6006



8080

- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **2 Battery Switches:** m-Series, 6006

8686

- **2 Unswitched 24-hour circuits**
- **ON indicating LEDs**
- **Spare apertures for additional Flat Rocker or Push Button Reset-Only Circuit Breakers**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **2 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **Battery Switch:** m-Series, 6011
- **24-hour Round Label Set 4140**

8690

- **8 Unswitched 24-hour circuits**
- **Spare apertures for additional Flat Rocker or Push Button Reset-Only Circuit Breakers**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (MAIN 100A)
- **2 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **Battery Switch:** e-Series, 5511e
- **24-hour Round Label Set 4140**

PN	Vmxo Voltage Maximum Operating	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
8280	48V DC	6.25 (158.75)	7.50 (190.50)	2.25 (57.15)	3.20 (1.45)
8080	32V DC	5.25 (133.35)	6.50 (165.10)	3.00 (76.20)	2.20 (1.00)
8686	24V DC	4.50 (114.30)	7.50 (190.50)	3.25 (82.55)	1.85 (0.84)
8690	24V DC	5.25 (133.35)	8.00 (203.20)	3.50 (88.90)	2.64 (1.20)

Triple Battery Bank Management Panel

Two Dual Circuit Plus™ Battery Switches simplify switching of three battery banks and combine DC functions into one compact panel

Features

- Allows independent battery discharge
- Allows emergency cross connect between isolated battery banks
- 24-hour circuits
- Backlit label positions
- ON indicating LEDs installed

Component References

- m-Series Dual Circuit Plus™ Battery Switches 6011200 (page 11)
- A-Series Flat Rocker Circuit Breakers (page 37)
- Push Button Reset-Only Circuit Breakers (page 32)
- Square Format Label Set 4218 included (page 110)

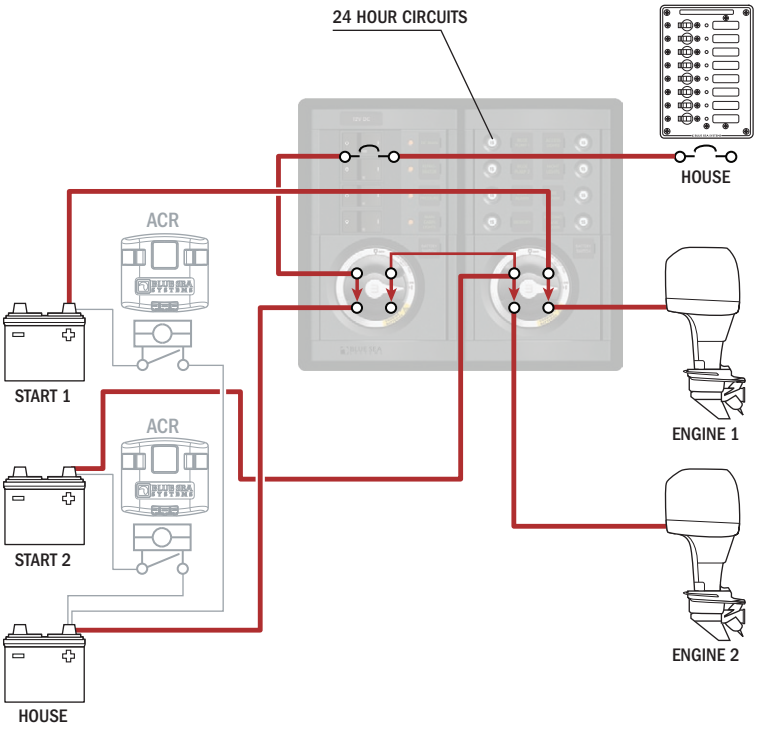
Regulatory

Meets UL 1500 and SAE J1171 external ignition protection requirements

PN	Vmxo Voltage Maximum Operating	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
1412	12V DC	9.25 (234.95)	7.75 (196.85)	3.50 (88.90)	6.12 (2.78)

1412

- **Backlit circuit labels**
- **8 Unswitched 24-hour circuits**
- **ON indicating LEDs**
- **4 A-Series Flat Rocker Circuit Breaker** (BRANCH 15A)
- **4 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **2 Battery Switches:** m-Series, 6011200



System diagram for 1412

Triple Battery Bank Management Panels

Two Dual Circuit Plus™ Battery Switches offer simplified switching combined with main and 24-hour circuit protection

Features

- Provides high ampere load protection
- Isolates the Engine circuit from the House circuit reducing the chance of fully discharging both battery banks
- Allows independent battery control
- Provides 24-hour circuit protection
- Allows emergency cross connect between isolated battery banks
- Protects electronics from sags and spikes caused by engine cranking
- The addition of two Automatic Charging Relays (ACR) automates charging three battery banks (pages 25–27)

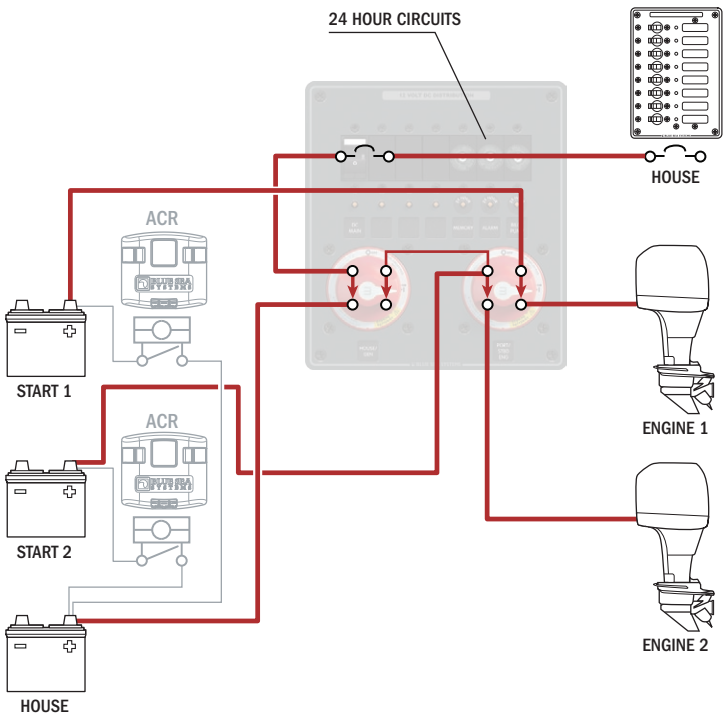
Component References

- m-Series Dual Circuit Plus™ Battery Switch 6011 (page 11)
- e-Series Dual Circuit Plus™ Battery Switch 5511e (page 12)
- C-Series Flat Rocker Circuit Breakers (page 39)
- Push Button Reset-Only Circuit Breakers (page 32)
- Square Format Label Set 4218 included (pages 110)
- 24-Hour Round Format Label Set 4140 included (page 110)

Regulatory

Meets UL 1500 and SAE J1171 external ignition protection requirements

PN	Vmxo Voltage Maximum Operating	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
8689	24V DC	7.25 (184.15)	8.00 (203.20)	3.25 (82.55)	3.46 (1.57)
8693	24V DC	10.50 (266.70)	8.00 (203.20)	3.50 (88.90)	4.42 (2.00)



System diagram for 8693 and 8689

8689

- **3 Unswitched 24-hour circuits**
- **Spare apertures for additional Flat Rocker or Push Button Reset-Only Circuit Breakers**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (BRANCH 100A)
- **3 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **2 Battery Switches:** m-Series, 6011

8693

- **4 Unswitched 24-hour circuits**
- **Spare apertures for additional Flat Rocker or Push Button Reset-Only Circuit Breakers**
- **ON indicating LEDs**
- **1 C-Series Flat Rocker Circuit Breaker** (BRANCH 100A)
- **4 Push Button Reset-Only Circuit Breakers** (BRANCH 15A)
- **2 Battery Switches:** e-Series, 5511e

L-Series Solenoid Switch

450 Ampere compact solenoid offers remote switching for applications with limited space and no requirement for manual control

9012

Features

- Hermetically sealed contacts
- Activated by an ON–OFF switch mounted anywhere
- Integrated coil control minimizes heating and amperage draw
- Mount in a dry location

Specifications

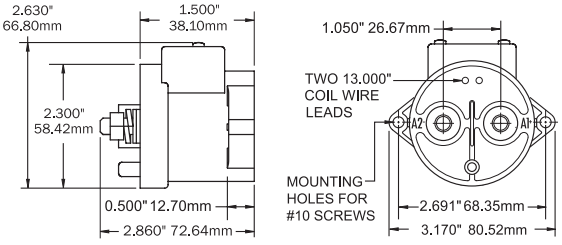
Voltage		12/24V DC
Main Power Contacts		
I_{10}	Cranking Rating: 10 sec.	See table below
I_{60}	Cranking Rating: 1 min.	See table below
I_{300}	Intermittent Rating: 5 min.	See table below
I_c	Continuous Rating:	See table below
V_{mxo}	Voltage Maximum Operating:	60V DC
C_s	Switching Cycles:	1,000,000 Cycles
Terminal Stud Size:		5/16" (M8)
Contact Form:		SPST-NO
Coil Circuit		
Input Voltage:		9–36V DC
I_{oc} (inrush, 130ms) Amperage Operating Current:		3.80A
I_{oc} (holding) Amperage Operating Current:		0.13A @ 12V DC 0.07A @ 24V DC

Regulatory

CE marked, UL Recognized–UL 508 industrial control equipment
Meets SAE J1171 external ignition protection requirements
See page 104–106 for ON-OFF Switches

Wire Size and Current Ratings

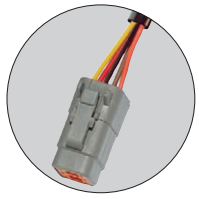
Wire Size	I_{10} Cranking 10 sec.	I_{60} Cranking 1 min.	I_{300} Intermittent 5 min.	I_c Continuous (UL 1107)
1/0	1,000A	500A	275A	250A
2/0	1,200A	550A	400A	300A
2x (2/0)	1,500A	850A	600A	450A



ML-Series Solenoid Switches

500 Ampere Bi-Stable Magnetic Latching Solenoid allows high-amp switching under load where manual control is not required

2145 Remote Control Contura Switch
Action: (ON)-OFF-(ON)



Deutsch DTM Connector
— provided on bulk units
Other connector plugs are available for high volume OEM applications.

Please contact Blue Sea Systems for details.

7703 (tinned wires)
— provided on retail units

PN	Coil Volts	Cable End	Packaged	Weight lb (kg)
7701	12V DC	Stripped Wire	Retail	1.69 (0.77)
7701100B	12V DC	Deutsch DTM	Bulk	1.69 (0.77)
7703	24V DC	Stripped Wire	Retail	1.69 (0.77)
7703100B	24V DC	Deutsch DTM	Bulk	1.69 (0.77)

Wire Color	Circuit Function
Red	+VDC, 24 Hour
Black	Ground
Yellow	LED Output
Brown	+VDC, To Close
Orange	+VDC, To Open

Features

- 500 Ampere continuous rating
- Bi-Stable Magnetic Latch (ML)—draws no current in the ON or OFF state
- LED output to remotely indicate switch state (requires optional LED, page 107)
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- 7/8" (22mm) stud length accepts multiple cable terminals
- Label recesses for circuit identification
- Silver alloy contacts provide high reliability for switching live loads
- Retail packaging includes Remote Control Contura Switch 2145 (page 27)

Specifications

I_{10}	Cranking Rating: 10 sec.	See table below
I_{60}	Cranking Rating: 1 min.	See table below
I_{300}	Intermittent Rating: 5 min.	See table below
I_c	Continuous Rating	See table below
V_{mxo}	Voltage Maximum Operating	32V DC
C_s	Switching Cycles	100,000 Cycles
I_{oc}	Amperage Operating Current	<100 mA when changing state (control circuit—momentary)
Live Current Switching		300A @ 12V DC—10,000 Cycles
Terminal Stud Size		3/8"-16 (M10)
Terminal Stud Torque		140 in-lb (15.5 N•m)
Ring Terminal Size		3/8" (M10)
Terminal Ring Diameter Clearance		1.18" (30.0 mm)

Go to page 26 for dimension drawing

Regulatory

CE marked, Meets ISO 8846 and SAE J1171 external ignition protection requirements
IP66—protected against powerful water jets

Wire Size and Current Ratings

Wire Size	I_{10} Cranking 10 sec.	I_{60} Cranking 1 min.	I_{300} Intermittent 5 min.	I_c Continuous (UL 1107)
2/0	2,000A	750A	400A	225A
4/0	2,200A	750A	400A	300A
2x (4/0)	2,500A	1,100A	700A	500A

NEW

SD-Series Solenoid Switches

600A Single Pole and 300A Double Pole Solenoids meet high continuous current demands

7810

2155
Remote Control
Contura Switch
Action: ON-ON

Features

- Bi-stable magnetic latching relay
- Uses very low current in ON state and no current in OFF state
- Auxiliary contacts (normally open and normally closed)
- Local and remote indication of relay state
- 24-hour output for keep-alive functions
- 7811 has two isolated poles and can be configured to switch positive and negative or 12 and 24 volt circuits
- Retail packaging includes Remote Control Contura Switch 2155 (page 27) and Connector Plug with Harness 7734B

Specifications Single Pole (7810)

I10	Cranking Rating: 10 sec.	2,600A
I60	Starting Current: 1 min..	1,350A
I300	Intermittent Rating: 5 min.	900A
Ic	Continuous Rating	600A
Cable Size to Meet Ratings		4/0 AWG
Cable Quantity to Meet Ratings		4/0 AWG x 2 input and output
Nominal Voltage		12V DC
Control Circuit Voltage		12V DC
Recommended Terminal Stud Torque		177 in-lb (19.9 Nm)

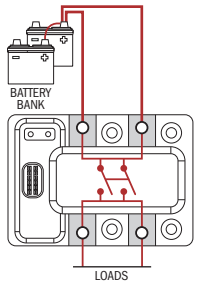
Specifications Double Pole (7811)

I10	Cranking Rating: 10 sec.	1,300A
I60	Starting Current: 1 min..	675A
I300	Intermittent Rating: 5 min.	450A
Ic	Continuous Rating	300A/pole
Cable Size to Meet Ratings		4/0 AWG
Nominal Voltage		12V DC
Control Circuit Voltage		12V DC
Recommended Terminal Stud Torque		177 in-lb (19.9 Nm)

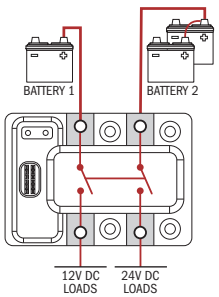
Regulatory

IP67—protected against immersion up to 1 meter for 30 minutes

PN	Description	Included in Retail Package	Poles	Weight lb (kg)
7810	Single Pole Solenoid Switch	-	Single	1.69 (0.77)
7811	Double Pole Solenoid Switch	-	Double	1.69 (0.77)
2155	Remote Control Contura Switch	Yes	-	0.25 (0.11)
7734B	Connector Plug with Harness	Yes	-	0.10 (0.05)



7810 Single Pole



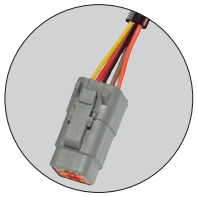
7811 Double Pole

ML-Series Remote Battery Switches

500 Ampere Bi-Stable Magnetic Latching Remote Battery Switch allows high-amp switching under load manually or from remote locations

7700 (tinned wires)
— provided on retail units

2145 Remote Control
Contura Switch
Action: (ON)-OFF-(ON)



Deutsch DTM Connector
— provided on bulk units
Other connector plugs are available for high volume OEM applications.

Please contact Blue Sea Systems for details.

PN	Coil Volts	Cable End	Packaged	Weight lb (kg)
7700	12V DC	Stripped Wire	Retail	1.75 (0.79)
7700100B	12V DC	Deutsch DTM	Bulk	1.75 (0.79)
7702	24V DC	Stripped Wire	Retail	1.75 (0.79)
7702100B	24V DC	Deutsch DTM	Bulk	1.75 (0.79)

Wire Color	Circuit Function
Red	+VDC, 24 Hour
Black	Ground
Yellow	LED Output
Brown	+VDC, To Close
Orange	+VDC, To Open

Features

- 500 Ampere continuous rating
- Manual override knob provides an added level of safety allowing control with or without power and offering LOCKED OFF capabiltiy for servicing
- Bi-Stable Magnetic Latch (ML)—draws no current in the ON or OFF state
- LED output to remotely indicate switch state (requires optional LED, page 107)
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- 7/8" (22mm) stud length accepts multiple cable terminals
- Label recesses for circuit identification
- Silver alloy contacts provide high reliability for switching live loads
- Retail packaging includes Remote Control Contura Switch 2145 (page 27)

Specifications

I10	Cranking Rating: 10 sec.	See table below
I60	Cranking Rating: 1 min.	See table below
I300	Intermittent Rating: 5 min.	See table below
Ic	Continuous Rating	See table below
Vmxo	Voltage Maximum Operating	32V DC
Cs	Switching Cycles	100,000 Cycles
Ioc	Amperage Operating Current	<100 mA when changing state (control circuit—momentary)
Live Current Switching		300A @ 12V DC—10,000 Cycles
Terminal Stud Size		3/8"-16 (M10)
Terminal Stud Torque		140 in-lb (15.5 N·m)
Ring Terminal Size		3/8" (M10)
Terminal Ring Diameter Clearance		1.18" (30.0 mm)

Go to page 26 for dimension drawing

Regulatory

CE marked, Meets ISO 8846 and SAE J1171 external ignition protection requirements

IP66—protected against powerful water jets

Wire Size and Current Ratings

Wire Size	I10 Cranking 10 sec.	I60 Cranking 1 min.	I300 Intermittent 5 min.	Ic Continuous (UL 1107)
2/0	2,000A	750A	400A	225A
4/0	2,200A	750A	400A	300A
2x (4/0)	2,500A	1,100A	700A	500A

Automatic Charging Relays Explained

In a boat with two battery banks, it is useful to be able to charge both banks while underway. Charge management devices connect two battery banks when charging, and isolate them from each other when not charging. If one battery becomes depleted, there will be a charged bank available for emergency starting.

There are two main types of charge management devices used on boats:

Automatic Charging Relays use a relay combined with a circuit that senses when a charging source is being applied to either battery. When a charge is being applied, the ACR combines the batteries. When there is no charge present, the ACR isolates the batteries.

Battery Isolators are one-way electrical check valves that allow current to flow to, but not from, the battery. Their disadvantage is that the diodes used to achieve this cause a voltage drop that consumes charging energy, creates heat, and causes batteries to be undercharged. Although alternators with external voltage sensing can correct for undercharging, voltage drop and heat remain a problem.

When choosing an ACR, consider:

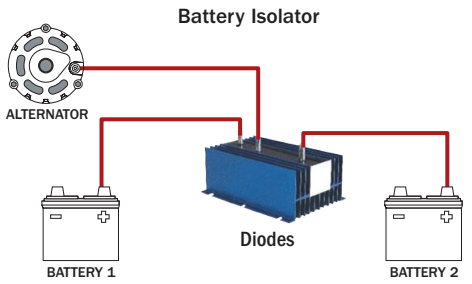
Current Management. ACRs can potentially be exposed to very high currents if the engine is cranked while the ACR has combined the batteries. This can occur when a charge source other than the alternator, such as a solar charger, has caused the ACR to close. Blue Sea Systems uses two methods to overcome this. ML- Series ACRs have high amperage contacts rated for engine starting, and the SI- Series ACR momentarily opens the relay, isolating the two batteries during starting.

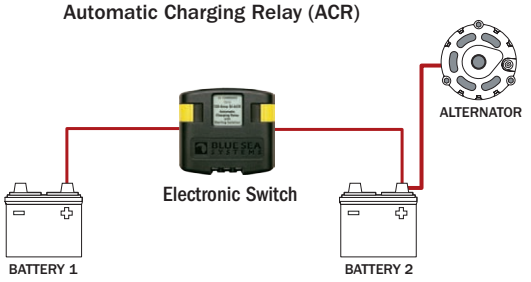
Remote Control. Blue Sea Systems ML- Series and SD-Series ACRs include a Remote Control Contura Switch so that ACR function can be controlled from a helm station or other convenient location.

Manual Override. In addition to the remote control switch, ML- Series ACRs are available with a local manual control knob to combine battery banks in an emergency.

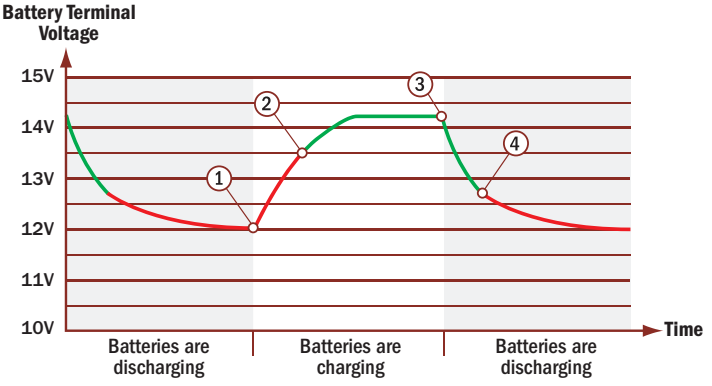
Start Isolation. All Blue Sea Systems ACRs can be configured for Start Isolation, which provides temporary isolation of house loads from the engine circuit during engine cranking. This protects sensitive electronics from voltage sags and spikes in the starting circuit.

Battery Isolator vs. Automatic Charging Relay (ACR)





Automatic Charging Relay (ACR) Operation



Legend

ACR OPEN - batteries are isolated.

ACR COMBINED - batteries are connected and are both charging.

(1) ACR relay is open and batteries are isolated. Voltage begins to rise slowly after engine starts or battery charger is turned on.

(2) When voltage rises to COMBINE voltage set on ACR
13.5V in this example,
ACR relay closes, connecting and charging both batteries.

(3) When engine stops or battery charger is turned off, voltage rapidly begins falling.

(4) When voltage falls to 6% less than COMBINE voltage
13.5V less 6% = 12.7V in this example,
ACR relay opens, isolating batteries, after 1 minute.

SI-Series Automatic Charging Relay

Automatically manages the charging of two battery banks and isolates batteries during starting to protect sensitive electronics

7610

Features

- 120 Ampere continuous rating
- Senses charging on two battery banks
- Side and bottom knockouts for power cable connections
- Clip-on cover insulates terminal connections
- LED indicates ACR status
- 1/4" × .031" male quick connect terminals for ground, optional remote LED, and starting isolation
- 7/8" (22mm) stud length to accept multiple cable terminals
- Start Isolation (SI)—temporary isolation of House loads from Engine circuit during engine cranking
- 12/24V auto ranging voltage input
- LED output remotely indicates ACR states (requires optional LED, page 107)

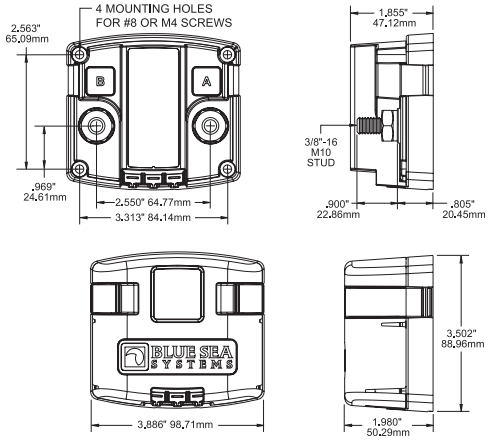
Specifications		12 Volts DC	24 Volts DC
I300	Intermittent Rating: 5 min.	210A	210 Amps
Ic	Continuous Rating	120A	120 Amps
Ioc	(Combine) Amperage Operating Current	175mA	115mA
Ioc	(Open) Amperage Operating Current	15mA	15mA
Maximum Cable Size		1/0 AWG	1/0 AWG
Terminal Stud Size		3/8"-16 (M10)	3/8"-16 (M10)
Maximum Torque		140 in-lbs	140 in-lbs
Relay Contact Position			
Combine	(30 sec.)	13.6V DC	27.2V DC
	(2 min.)	13.0V DC	26.0V DC
Open	(10 sec.)	12.35V DC	24.7V DC
	(30 sec.)	12.75V DC	25.5V DC
Open High		16.0V DC	30.0V DC

Regulatory

CE marked, ISO 8846

Meets UL 1500 and SAE J1171 external ignition protection requirements

IP67 - protected against immersion up to 1 meter for 30 minutes



Add A Battery

Simplifies switching and automates charging for a complete two battery bank solution

7650

e-Series Dual Circuit Plus™ Battery Switch (page 12)

- Simplifies battery switching
- Isolates engine and house circuits
- Switch combines battery banks for emergency starting

Regulatory

- CE marked, ISO 8846
- UL Listed - UL 1107 electric power switches
- Meets American Boat and Yacht Council (ABYC) requirements
- Meets UL 1500 and SAE J1171 external ignition protection requirements
- IP66—protected against powerful water jets

120 Amp SI-Series Automatic Charging Relay (page 25)

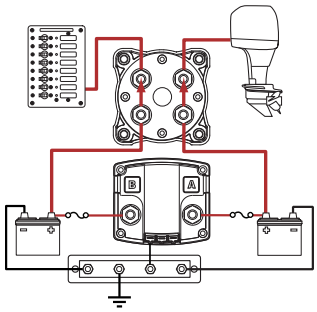
- Automatically combines battery banks during charging
- Isolates battery banks when discharging and when starting engines

Regulatory

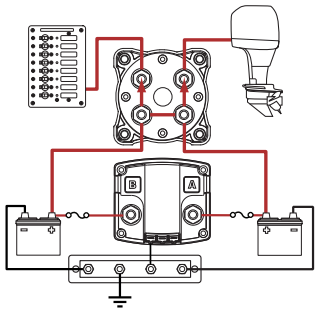
CE marked, ISO 8846

Meets UL 1500 and SAE J1171 external ignition protection requirements

IP67 - protected against immersion up to 1 meter for 30 minutes



Battery switch set to the ON position
ACR offers charge to both isolated battery banks



Battery switch set to the COMBINE BATTERIES position
Battery banks are combined for emergency starting

ML-Series Automatic Charging Relay

500 Ampere Bi-Stable Magnetic Latching Automatic Charging Relay automatically manages the charging of two large battery banks and offers optional manual override for emergency battery paralleling

Features

- 500 Ampere continuous rating
- Bi-Stable Magnetic Latch (ML) draws very low current in the ON state
- Start Isolation (SI) can be configured for temporary isolation of House loads from Engine circuit during engine cranking to protect sensitive electronics
- Engine Isolation (EI) can be configured for isolation of two engines while both are running to protect engine electronics and maximize alternator output
- Manual override knob provides an added level of safety allowing manual ON-OFF control with or without power while offering LOCKED OFF capability for servicing the electrical system
- Dual sensing senses charging on two battery banks
- Supports high-output alternators up to 500 Amps
- LED output to remotely indicate when batteries are combined, isolated, in voltage lockout, in Start or Engine Isolation (requires optional LED, page 107)
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- 7/8" (22mm) stud length accepts multiple cable terminals
- Label recesses for circuit identification
- Silver alloy contacts provide high reliability for switching live loads
- Retail packaging includes Remote Control Contura Switch 2146 (page 27)

Specifications

I10	Cranking Rating: 10 sec.	See table below
I60	Cranking Rating: 1 min.	See table below
I300	Intermittent Rating: 5 min.	See table below
Ic	Continuous Rating	See table below
Cs	Switching Cycles	100,000 Cycles
Ioc	Amperage Operating Current	<40 mA when changing state (control circuit—momentary)

Relay Contact Position

-Combine	(30 sec.)	13.5V DC @ 12V | 27.0V DC @ 24V
-Combine	(90 sec.)	13.0V DC @ 12V | 26.0V DC @ 24V
-Open	(10 sec.)	12.35V DC @ 12V | 24.7V DC @ 24V
-Open	(30 sec.)	12.75V DC @ 12V | 25.5V DC @ 24V
-Open High		16.2V DC @ 12V | 32.4V DC @ 24V
Live Current Switching		300A @ 12V DC—10,000 Cycles
Terminal Stud Size		3/8"-16 (M10)
Terminal Stud Torque		140 in-lb (15.5 N•m)
Ring Terminal Size		3/8" (M10)
Terminal Ring Diameter Clearance		1.18" (30.0 mm)

Regulatory

CE marked, Meets ISO 8846 and SAE J1171 external ignition protection requirements

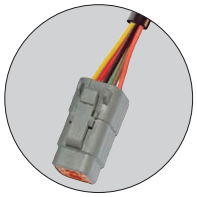
IP66—protected against powerful water jets

Wire Size and Current Ratings

Wire Size	I10 Cranking 10 sec.	I60 Cranking 1 min.	I300 Intermittent 5 min.	Ic Continuous (UL 1107)
2/0	2,000A	750A	400A	225A
4/0	2,200A	750A	400A	300A
2x (4/0)	2,500A	1,100A	700A	500A

PN	Volts	Cable End	Manual Control	Package	Weight lb (kg)
7620	12V DC	Stripped Wire	No	Retail	1.69 (0.77)
7620100B	12V DC	Deutsch DTM	No	Bulk	1.69 (0.77)
7622	12V DC	Stripped Wire	Yes	Retail	1.75 (0.79)
7622100B	12V DC	Deutsch DTM	Yes	Bulk	1.75 (0.79)
7621	24V DC	Stripped Wire	No	Retail	1.69 (0.77)
7621100B	24V DC	Deutsch DTM	No	Bulk	1.69 (0.77)
7623	24V DC	Stripped Wire	Yes	Retail	1.75 (0.79)
7623100B	24V DC	Deutsch DTM	Yes	Bulk	1.75 (0.79)

7623 (tinned wires)
— provided on retail units



Deutsch DTM Connector
— provided on bulk units

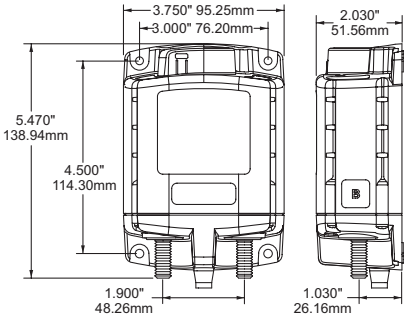
Other connector plugs are available for high volume OEM applications.

Please contact Blue Sea Systems for details.

Wire Color	Circuit Function
Red	Remote
Yellow	LED Output
Brown	SI/EI #1
Green	SI/EI #2
Orange	SI/EI #3
Black	Ground

7620

2146 Remote Control Contura Switch
Action: ON-OFF-ON



9160 NEW

Link Bus

Ideal for paralleling ML-Remote Battery Switches and Automatic Charging Relays

- Tin-plated copper for maximum conductivity and corrosion resistance
- 500A continuous rating
- Sold individually

Weight: 0.2lb (0.09kg)

Two 9160 paralleling ML-Series products

NEW

SD-Series Automatic Charging Relay

300A Dual Automatic Charging Relay automates the charging of three battery banks

7800

Features

- Two bi-stable magnetic latching relays
- Uses very low current in the ON and OFF states
- Auxiliary contacts (normally open and normally closed)
- Local and remote indication of relay state
- 24-hour output for keep-alive functions
- Retail packaging includes Remote Control Contura Switch 2146 (see right) and Connector Plug with Harness 7733B

Specifications

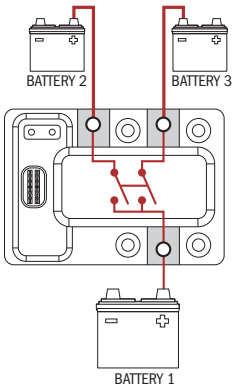
I10	Cranking Rating: 10 sec.	1,300A
I60	Starting Current: 1 min..	675A
I300	Intermittent Rating: 5 min.	450A
Ic	Continuous Rating	300A/pole
Inrush Current: 1 sec.		2000A
Cable Size to Meet Ratings		4/0 AWG
Nominal Voltage		12V DC
Control Circuit Voltage		12V DC
Recommended Terminal Stud Torque		177 in-lb (19.9 Nm)

Regulatory

IP67—protected against immersion up to 1 meter for 30 minutes

2146 Remote Control Contura Switch
Action: ON-OFF-ON

PN	Description	Included in Retail Package	Poles	Weight lb (kg)
7800	Dual Automatic Charging Relay	-	Single	1.69 (0.77)
2146	Remote Control Contura Switch	Yes	-	0.25 (0.11)
7733B	Connector Plug Molex	Yes	-	0.10 (0.05)



Remote Control Contura Switches

Provide remote switching of ML-Series, SD-Series, and SafetyHub 250

Features

- Vibration, shock, thermoshock, moisture and salt spray resistant

Specifications

Tmxo	Temperature Maximum Operating	85°C
Tmno	Temperature Minimum Operating	-40°C
Imxo	Amperage Maximum Operating	20A @ 12V DC
Imxo	Amperage Maximum Operating	15A @ 24V DC
Ioc (LED)	Amperage Operating Current	18mA
Pole/Throw		Single Pole/Double Throw
Lighting		LED rated 100,000 hours half-life
Seals		Internal and external gasket panel seal
Mounting Hole		1.45" x 0.83" (36.83mm x 21.08mm)

Regulatory

Meets UL 1500 and ISO 8846 external ignition protection requirements
IP67—protected against immersion up to 1 meter for 30 minutes

See page 105 for a full selection of Contura Switches

2155 NEW
Lockout slide reduces the risk of accidental switching
Action: ON-ON
USED WITH:
SafetyHub 250 Fuse Block
SD-Series Solenoid Switches

2145
Lockout slide reduces the risk of accidental switching
Action: (ON)-OFF-(ON)
( ) = momentary
USED WITH:
ML-Series Solenoids
ML-Series Remote Battery Switches

2146
Action: ON-OFF-ON
USED WITH:
ML-Series ACRs
SD-Series ACRs

Remote Control Switch Panels

Provides switching of up to three ML-Series Remote Battery Switches or ML-Series Automatic Charging Relays

- Backlit labels and ON indicating lenses in switches
- Square format label set 4218 (page 110)
- 1147 for use with two ML-Series Remote Battery Switches (page 23) and one ML-Series Automatic Charging Relay (page 26)
- 1148 for use with ML-Series Remote Battery Switches (page 23)

Specifications

Vmxo	Voltage Maximum Operating:	24V DC
Dimensions (WxH)		4.88 x 4.75 in (123.83 x 120.65 mm)
Depth		2.00 in (50.80 mm)
Weight		1.10 lb (0.50 kg)

1147 Switches: 2145 (2); 2146 (1)

1148 Switches: 2145 (3)

Remote Battery Management Comparison

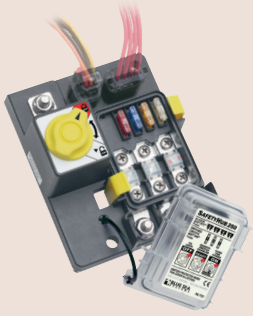
Product Type	Solenoid Switches					Remote Battery Switches	
Function	Provides high-amp switching					Provides high-amp switching with manual override	
Product	L-Series	ML-Series	ML-Series	SD-Series	SD-Series	ML-Series	ML-Series
							
PN	9012	7701*	7703*	7810	7811	7700*	7702*
I10 Cranking Rating (10 sec.)	1,500A DC	2,500A DC	2,500A DC	2,600A DC	1,300A DC	2,500A DC	2,500A DC
I60 Cranking Rating (1 min.)	850A DC	1,100A DC	1,100A DC	1,350A DC	675A DC	1,100A DC	1,100A DC
I300 Intermittent Rating (5 min.)	600A DC	700A DC	700A DC	900A DC	450A DC	700A DC	700A DC
Ic Continuous Rating	450A DC	500A DC	500A DC	600A DC	300A DC / pole	500A DC	500A DC
Nominal Voltage	12/24V DC	12V DC	24V DC	12V DC	12V DC	12V DC	24V DC
Switching Cycles	1,000,000	100,000	100,000	50,000 min.	50,000 min.	100,000	100,000
Amperage Operating Current - continuous	0.13A @ 12V DC 0.07A @ 24V DC	0mA	0mA	0mA	0mA	0mA	0mA
Amperage Operating Current - when changing state	3.8A DC	< 7.0A DC	< 7.0A DC	< 7.0A DC	< 7.0A DC	< 7.0A DC	< 7.0A DC
Terminal Stud Size	5/16" (M8)	3/8"-16 (M10)	3/8"-16 (M10)	M10	M10	3/8"-16 (M10)	3/8"-16 (M10)
Terminal Stud Length	5/8" (15.87 mm)	7/8" (22 mm)	7/8" (22 mm)	1.5" (38.1 mm)	1.5" (38.1 mm)	7/8" (22 mm)	7/8" (22 mm)
Maximum Terminal Stud Torque	80 in-lb (9.0 Nm)	140 in-lb (15.5 Nm)	140 in-lb (15.5 Nm)	177 in-lb (19.9 Nm)	177 in-lb (19.9 Nm)	140 in-lb (15.5 Nm)	140 in-lb (15.5 Nm)
Cable Size to Meet Ratings	2/0 AWG x 2	4/0 AWG x 2	4/0 AWG x 2	4/0 AWG x 2	4/0 AWG	4/0 AWG x 2	4/0 AWG x 2
Terminal Ring Diameter Clearance	not rated	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)
Mounting	#10	#10	#10	M6 or 1/4"	M6 or 1/4"	#10	#10
Control Switch Included	–	Yes	Yes	Yes	Yes	Yes	Yes
Control Circuit Connection	Tinned Wire	Tinned Wire	Tinned Wire	Molex MX 150 Connector	Molex MX 150 Connector	Tinned Wire	Tinned Wire
Manual Control	–	–	–	–	–	Yes	Yes
Width	3.17" (80.50 mm)	3.75" (95.2 mm)	3.75" (95.2 mm)	4.43" (112.5 mm)	4.43" (112.5 mm)	3.75" (95.2 mm)	3.75" (95.2 mm)
Height	2.63" (66.80 mm)	5.47" (138.9 mm)	5.47" (138.9 mm)	5.43" (138 mm)	5.43" (138 mm)	5.47" (138.9 mm)	5.47" (138.9 mm)
Depth	2.86" (72.64 mm)	2.03" (51.6 mm)	2.03" (51.6 mm)	2.47" (62.7 mm)	2.47" (62.7 mm)	2.03" (51.6 mm)	2.03" (51.6 mm)
Weight	1.00 lb (0.45 kg)	1.69 lb (0.77 kg)	1.69 lb (.77 kg)	1.69 lb (0.77 kg)	1.69 lb (0.77 kg)	1.75 lb (0.79 kg)	1.75 lb (0.79 kg)
Ignition Protected	SAE J1171	ISO 8846 SAE J1171	ISO 8846 SAE J1171	–	–	ISO 8846 SAE J1171	ISO 8846 SAE J1171
Ingress Protected	–	IP66	IP66	IP67	IP67	IP66	IP66

* Bulk units available that incorporate Deutsch DTM Connectors. Other connector plugs are available for high volume OEM applications.

SafetyHub 250

Combines remote switching with circuit protection

SafetyHub 250 Fuse Block with Remote Battery Switch



7727 (page 51)

Automatic Charging Relays

Allows charging of multiple batteries from a single charge source

	SI-Series	ML-Series	ML-Series	ML-Series	ML-Series	SD-Series Dual
						
	7610	7620*	7622*	7621*	7623*	7800
1,000A DC	N/A	2,500A DC	2,500A DC	2,500A DC	2,500A DC	1,300A DC
520A DC	N/A	1,100A DC	1,100A DC	1,100A DC	1,100A DC	675A DC
350A DC	210A DC	700A DC	700A DC	700A DC	700A DC	450A DC
240A DC	120A DC	500A DC	500A DC	500A DC	500A DC	300A DC / pole
12V DC	12/24V DC	12V DC	12V DC	24V DC	24V DC	12V DC
90,000	–	100,000	100,000	100,000	100,000	50,000 min.
< 30mA	15mA open 175mA combined	< 40mA	< 40mA	< 40mA	< 40mA	< 25mA
< 7.0A DC	–	< 7.0A DC	< 7.0A DC	< 7.0A DC	< 7.0A DC	< 7.0A DC
M8	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	3/8"-16 (M10)	M10
1.25" (31.75 mm)	1.5" (38.1 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	7/8" (22 mm)	1.5" (38.1 mm)
177 in-lb (19.9 Nm)	140 in-lb (15.5 Nm)	140 in-lb (15.5 Nm)	140 in-lb (15.5 Nm)	140 in-lb (15.5 Nm)	140 in-lb (15.5 Nm)	177 in-lb (19.9 Nm)
2/0 AWG	1/0 AWG	4/0 AWG x 2	4/0 AWG x 2	4/0 AWG x 2	4/0 AWG x 2	4/0 AWG
1.09" (27.86 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)	1.12" (28.4 mm)
M6 or 1/4"	#8 or M4	#10	#10	#10	#10	M6 or 1/4"
Yes	–	Yes	Yes	Yes	Yes	Yes
Molex MX 150 Connector	–	Tinned Wire	Tinned Wire	Tinned Wire	Tinned Wire	Molex MX 150 Connector
Yes	–	–	Yes	–	Yes	–
4.43" (112.5 mm)	3.89" (99 mm)	3.75" (95.2 mm)	3.75" (95.2 mm)	3.75" (95.2 mm)	3.75" (95.2 mm)	4.43" (112.5 mm)
5.43" (138 mm)	3.50" (89 mm)	5.47" (138.9 mm)	5.47" (138.9 mm)	5.47" (138.9 mm)	5.47" (138.9 mm)	5.43" (138 mm)
2.47" (62.7 mm)	1.98" (50.30 mm)	2.03" (51.6 mm)	2.03" (51.6 mm)	2.03" (51.6 mm)	2.03" (51.6 mm)	2.47" (62.7 mm)
2.10 lb (0.95 kg)	1.26 lb (0.57 kg)	1.69 lb (0.77 kg)	1.69 lb (0.77 kg)	1.69 lb (0.77 kg)	1.69 lb (0.77 kg)	1.69 lb (0.77 kg)
ISO 8046 SAE J1171	ISO 8846, UL1500 SAE J1171	ISO 8846 SAE J1171	ISO 8846 SAE J1171	ISO 8846 SAE J1171	ISO 8846 SAE J1171	–
–	IP67	IP66	IP66	IP66	IP66	IP67

Circuit Protection

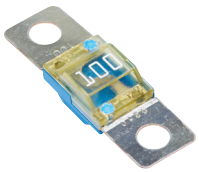
Circuit Protection

Best practices and ABYC standards dictate that every positive wire on the boat outside the engine starting circuit must have circuit protection. When excessive current flows in an electrical circuit, wire insulation can melt and possibly start a fire.

Circuit breakers and fuses protect the wires in electrical circuits. Blue Sea Systems' extensive selection of circuit breakers, fuses, fuse holders, and fuse blocks gives boaters a range of choices for main and branch circuit protection.

187 Series Thermal Circuit Breakers

Circuit breakers are ideal for situations where it is desirable to be able to reset instead of replace the device after a fault. Available circuit breakers include styles with and without switching, and for DC and AC systems. All Blue Sea Systems circuit breakers are a trip-free design. This important safety feature ensures that they cannot be held ON during a fault condition.



MIDI® or AMI® Fuses

Fuses generally cost less than circuit breakers and cover a larger amperage range, but must be replaced if they are blown. Amperage range is from .25A in the smallest glass fuse to 750A in a fuse intended to provide DC Main protection on large battery banks.

Blue Sea Systems has an extensive collection of in-line and multiple fuse holders and blocks. New products include the MIDI® and AMI® Safety Fuse Holder and the SafetyHub 150. Both of these innovative products are ignition protected and waterproof.

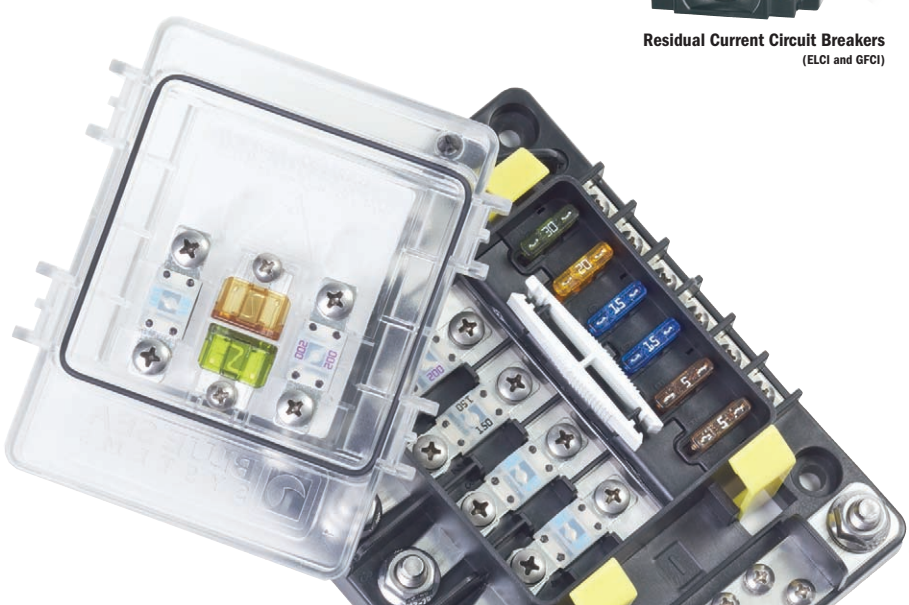
AGC® or MDL® Waterproof Fuse Holder

Blue Sea Systems has taken a leadership role in working with ABYC and circuit breaker manufacturers to develop Equipment Leakage Circuit Interrupters (ELCI). A fault with a boat's AC ground system can result in dangerous electrical current leaking from its intended path and into the water, putting nearby swimmers and those aboard the boat at risk. Blue Sea Systems is part of the solution to eliminate tragic electrically-induced drownings at marinas.

SafetyHub 150 Fuse Block

For a broad range of circuit protection solutions, choose Blue Sea Systems.

Residual Current Circuit Breakers
(ELCI and GFCI)



SECTION INDEX

Push Button Reset-Only Circuit Breakers

Provides economical circuit protection for 3 to 40 Ampere loads when switching is provided elsewhere or not required

Features

- Branch circuit breakers (also used for 24-hour circuit protection)
- Quick connect or screw terminal style
- Compact design enables high density circuit protection configurations
- Push-to-reset operation
- Trip Free design cannot be held ON during fault current condition
- Optional push button waterproof boot protects circuit breaker in wet environments

Specifications

I_{IC}	Interrupting Capacity	3,000A @ 14.7V DC
		2,500A @ 28V DC
V_{MXO}	Voltage Maximum Operating	32V DC
I_{TR}	Amperage Trip Reference	3–40 Amps
T_{MNO}	Temperature Minimum Operating	-10°C
T_{MXO}	Temperature Maximum Operating	60°C
Type		Thermal trip, manual reset
Terminals		#8 Screw Terminals or
		1/4" Male Quick Connect Terminals
Screw Terminal Torque		6 in-lb max.
Trip Time Delay		See www.bluesea.com
Mounting		3/8"-27 UNS
Weight		0.06 lb (0.03 kg)

Regulatory

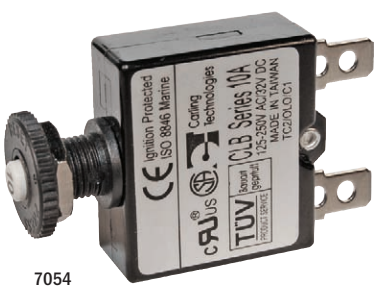
CE marked

UL Recognized—UL 1077-UL/cUL (USA and Canada), TUV certified

Meets UL 1500 and ISO 8846 external ignition protection requirements

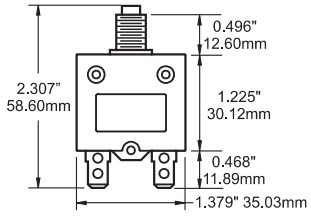
See page 118 for ABYC Interrupting Capacity Requirements.

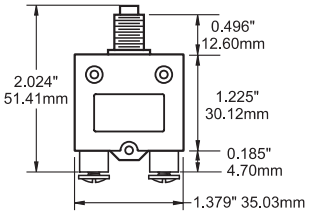
Screw Terminals PN	Quick Connect Terminals PN	I_{TR} Amps
2129	7050	3A DC
2130	7052	5A DC
2131	7053	7A DC
2132	7054	10A DC
2133	7056	15A DC
2134	7057	20A DC
2135	7058	25A DC
2136	7059	30A DC
2137	7061	40A DC

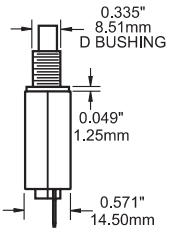


7054

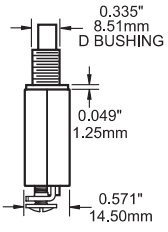
2132



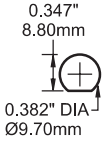




1/4" Male Quick Connect Terminals



#8 Screw Terminals



Cut Out Dimensions

Push Button Reset-Only Circuit Breaker Waterproof Boots

Protects push button circuit breakers in wet environments

Features

- Incorporated into waterproof panels (pages 65, 67)
- Protects circuit breaker in wet environments, and resists discoloration and cracking
- Replaces dress nut mounting on circuit breakers

Specifications

Weight (pkg. of 5)	0.04 lb (0.02 kg)
Thread Material	Nickel-Plated Brass
Thread	3/8"-27

Regulatory

IP67—protected against immersion up to 1 meter for 30 minutes

4135

4136

4137

Medium Duty Push Button Reset-Only Circuit Breakers

Provides medium duty circuit protection for 15 to 60 Ampere loads when switching is provided elsewhere or not required

Features

- Weatherproof
- Can be used as Main, Branch or 24-hour circuit protection
- Compact design enables high density circuit protection configurations
- Push to reset operation
- Trip Free design cannot be held ON during fault current condition
- Captive star lock washers meet requirements for anti-rotation and eliminate handling of small, easily dropped parts

Specifications

I_{ic}	Interrupting Capacity	5,000A @ 32V DC 3,000A @ 120V AC
V_{mxo}	Voltage Maximum Operating	32V DC / 120V AC
I_{tr}	Amperage Trip Reference	15–60 Amps
T_{mno}	Temperature Minimum Operating	-54°C
T_{mxo}	Temperature Maximum Operating	74°C
Type		Thermal trip, manual reset
Terminal Stud		#10-32 Stainless Steel
Terminal Stud Torque		30 in-lb max.
Trip Time Delay		See www.bluesea.com
Mounting		#10 Screws
Weight		0.15 lb (0.68 kg)

Regulatory

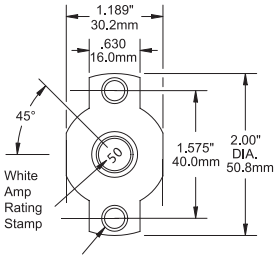
SAE J1428, SAE J553, UL 1077

Meets UL 1500 external ignition protection requirements

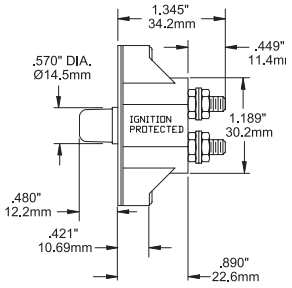
See page 118 for ABYC Interrupting Capacity Requirements.

PN	I_{tr} Amps
2138	15A DC
2139	20A DC
2140	30A DC
2141	40A DC
2142	50A DC
2143	60A DC

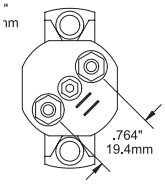
2142



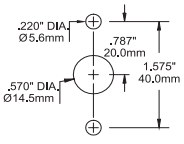
Front View



Side View



Back View



Cut Out Dimensions

Medium Duty Push Button Reset-Only Circuit Breaker Mounting Panel

Provides an easy method for mounting Medium Duty Push Button Reset-Only Circuit Breakers in the 360 Panel System

1150

(circuit breakers not included)

Dimensions (WxH): 4.88 x 4.75 in (123.83 x 120.65 mm)

Depth: 0.50 in (12.70 mm)

Weight: 0.60 lb (0.27 kg)

NEW

285-Series Circuit Breakers (Replaces 185-Series Circuit Breakers)

Provides medium duty circuit protection for 25 to 200 Ampere loads when switching and circuit protection are both required

Features

- Trip-free—cannot be held closed after trip
- Visible reset lever shows open condition
- Drop in replacement for 185-Series Circuit Breakers

Specifications

I_{ic}	Interrupting Capacity	3,000A @ 12V DC
V_{mxo}	Voltage Maximum Operating	24V DC
I_{tr}	Amperage Trip Reference	25–200 Amps (see table below)
Tmno	Temperature Minimum Operating	-40°C
Tmxo	Temperature Maximum Operating	85°C
Type		Thermally Responsive Bi-Metal Blade
Class		Type III—Switchable/Manual Reset—Trip Free
Terminal Stud		M6
Terminal Stud Torque		50 in-lb
Mounting		1/4" Screw
Weight Panel Mount		0.33 lb (0.15 kg)
Weight Surface Mount		0.38 lb (0.17 kg)

Regulatory

CE marked

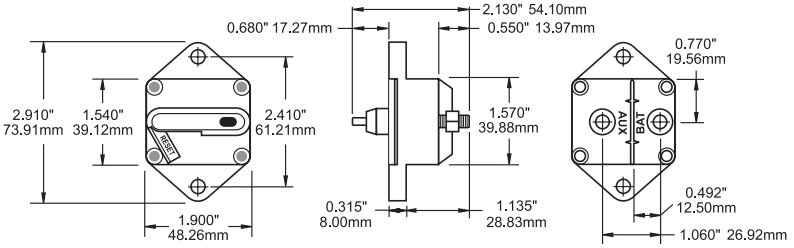
Meets SAE J1171 external ignition protection requirements

IP67—protected against immersion up to 1 meter for 30 minutes

See page 118 for ABYC Interrupting Capacity Requirements.

Panel Mount PN	Surface Mount PN	I_{tr} Amps
7080	7180	25A DC
7081	7181	30A DC
7082	7182	40A DC
7083	7183	50A DC
7084	7184	60A DC
7085	7185	70A DC
7086	7186	80A DC
7087	7187	100A DC
7088	7188	120A DC
7089	7189	150A DC
7090	7190	200A DC

7087



Panel Mount Dimensions

7187

285-Series Mounting Options

Provides mounting for 285-Series or 185-Series Panel Mount Circuit Breakers

- **Self-trimming molded rubber bezel**

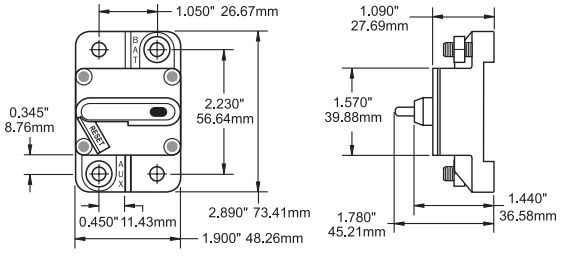
7198
Dimensions: (WxH)
3.34 x 2.44 in (84.71 x 61.90 mm)
Weight: 0.04 lb (0.02 kg)

- **Bezel mounting adapter allows circuit breaker mounting in a 2-1/8" round hole**

7098
Dimensions: (WxH)
3.34 x 2.44 in (84.71 x 61.90 mm)
Weight: 0.04 lb (0.02 kg)

- **360 panel mount**

1477
Dimensions: (WxH)
4.88 x 4.75 in (123.83 x 120.65 mm)
Weight: 0.50 lb (0.23 kg)



Surface Mount Dimensions

187-Series Circuit Breakers

Provides heavy duty circuit protection for 25 to 200 Ampere loads when switching and circuit protection are both required

Features

- Single lever operation—clearly visible
- Self-trimming case eliminates need for mounting panels or trim bezels
- Round case for easy installation with standard sized hole saw (panel mount models)
- Large clearance around terminal studs accepts up to 1/0 AWG lugs
- Recessed mounting holes for clean appearance
- Robust 5/16"-18 terminals provide high torque connections

Specifications

Iic	Interrupting Capacity	5,000A @ 12V DC 3,000A @ 24V DC 1,500A @ 42V DC
Vmxo	Voltage Maximum Operating	48V DC
Itr	Amperage Trip Reference	25–200 Amps
Tmno	Temperature Minimum Operating	-40°C
Tmxo	Temperature Maximum Operating	85°C
Type		Thermally Responsive Bi-Metal Blade
Class		Type III—Switchable/Manual Reset—Trip Free
Terminal Stud		5/16"-18
Terminal Stud Torque		75 in-lb max.
Trip Time Delay		See www.bluesea.com
Mounting Hole		Accepts #10 (M5) Screw
Weight Panel Mount		0.50 lb (0.23 kg)
Weight Surface Mount		0.58 lb (0.26 kg)

Regulatory

CE marked

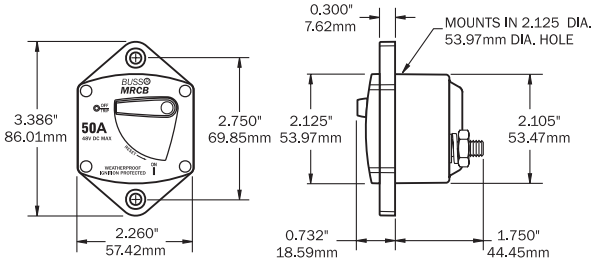
Meets SAE J1171 external ignition protection requirements

IP66—protected against powerful water jets

See page 118 for ABYC Interrupting Capacity Requirements.

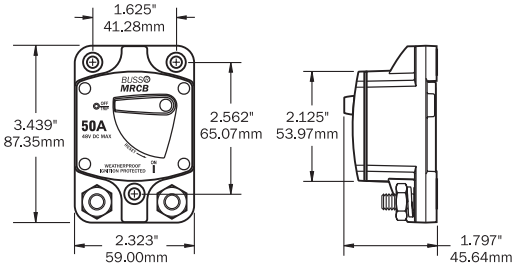
Panel Mount PN	Surface Mount PN	Itr Amps
7035	7135	25A DC
7036	7136	30A DC
7038	7138	40A DC
7039	7139	50A DC
7040	7140	60A DC
7041	7141	70A DC
7042	7142	80A DC
7043	7143	90A DC
7044	7144	100A DC
7046	7146	120A DC
7048	7148	150A DC
NEW 7049	7149	200A DC

7044



Panel Mount Dimensions

7140



Surface Mount Dimensions

A-Series Toggle Circuit Breakers AC/DC

Combines switching and circuit protection into a single device

7202

7200

7233

Features

- The industry standard circuit breaker for Blue Sea Systems electrical panels
- Single pole is frequently used for AC or DC Branch circuit protection
- Double pole is frequently used for 120 Volt AC Main circuit protection
- Trip Free– cannot be held closed after trip

Specifications

Iic	Interrupting Capacity	See Interrupting Capacity table below
Vmxo	Voltage Maximum Operating	65V DC / 250V AC
Itr	Amperage Trip Reference	10–50 Amps
Tmno	Temperature Minimum Operating	-40°C
Tmxo	Temperature Maximum Operating	85°C
Cs	Switching Cycles	10,000@rated amps and volts
Type		Magnetic Hydraulic–Trip free
Terminal Screw		#10-32 Stainless Steel
Terminal Screw Torque		14–15 in-lb Recommended
Trip Time Delay		See www.bluesea.com
Mounting Screw		#6-32 Stainless Steel
Mounting Screw Torque		6–8 in-lb Recommended
Weight Single Pole		0.17 lb (0.08 kg)
Weight Double Pole		0.30 lb (0.14 kg)

Regulatory

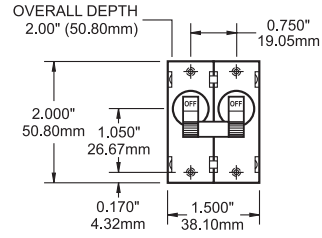
CE marked, TUV certified, CSA certified
UL 1077 recognized

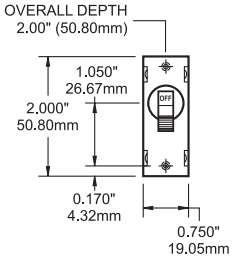
Interrupting Capacity (see ABYC Requirements page 118)

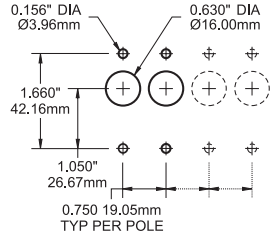
			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles	Vmxo Volts	Itr Amps	Iic Interrupt	Iic Interrupt
1 Pole	65V DC	5–50A	7,500A	-
	120V AC	5–50A	3,000A	-
	250V AC	5–50A	3,000A	1,500A
2 Pole	65V DC	10–50A	7,500A	-
	120V AC	10–50A	3,000A	-
	120/240V AC	10–50A	3,000A	-
	250V AC	10–50A	3,000A	1,500A

PN	Color	Poles	Itr DC Amps	Itr AC Amps
7200	Black	1	5A DC	5A AC
7201	Red	1	5A DC	5A AC
7202	White	1	5A DC	5A AC
7347	Black	1	8A DC	8A AC
7299	White	1	8A DC	8A AC
7204	Black	1	10A DC	10A AC
7205	Red	1	10A DC	10A AC
7206	White	1	10A DC	10A AC
7208	Black	1	15A DC	15A AC
7209	Red	1	15A DC	15A AC
7210	White	1	15A DC	15A AC
7212	Black	1	20A DC	20A AC
7213	Red	1	20A DC	20A AC
7214	White	1	20A DC	20A AC
7216	Black	1	25A DC	25A AC
7217	Red	1	25A DC	25A AC
7218	White	1	25A DC	25A AC
7220	Black	1	30A DC	30A AC
7221	Red	1	30A DC	30A AC
7222	White	1	30A DC	30A AC
7224	Black	1	40A DC	40A AC
7225	Red	1	40A DC	40A AC
7226	White	1	40A DC	40A AC
7228	Black	1	50A DC	50A AC
7229	Red	1	50A DC	50A AC
7230	White	1	50A DC	50A AC

PN	Color	Poles	Itr DC Amps	Itr AC Amps
7232	Black	2	10A DC	10A AC
7233	White	2	10A DC	10A AC
7234	Black	2	15A DC	15A AC
7235	White	2	15A DC	15A AC
7348	Black	2	16A DC	16A AC
7294	White	2	16A DC	16A AC
7236	Black	2	20A DC	20A AC
7260	White	2	20A DC	20A AC
7237	Black	2	30A DC	30A AC
7238	White	2	30A DC	30A AC
7349	Black	2	32A DC	32A AC
7295	White	2	32A DC	32A AC
7239	Black	2	40A DC	40A AC
7240	White	2	40A DC	40A AC
7241	Black	2	50A DC	50A AC
7242	White	2	50A DC	50A AC





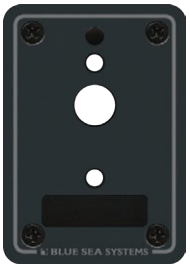


Cut out Dimensions

A-Series Toggle Circuit Breaker Mounting Panels

Simplifies mounting A-Series Toggle Circuit Breakers

- Accepts Blue Sea Systems Large Format Labels (page 110)
- Accepts Blue Sea Systems LEDs (page 107)



8072
Dimensions
(WxH): 2.63 x 3.75 in (66.80 x 95.25 mm)
Weight: .08 lb (.04 kg)

8173
Dimensions
(WxH): 2.63 x 3.75 in (66.80 x 95.25 mm)
Weight: .08 lb (.04 kg)

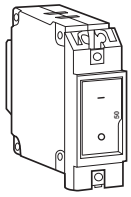
A-Series Rocker Circuit Breakers

AC/DC

Combines switching and circuit protection into a single device

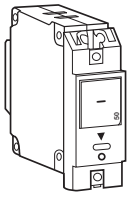
7403
Flat Rocker

- Standard circuit breaker used on the 360 Panel System (1200 Series)
- Flat actuator resists accidental switching by being flush in the ON position



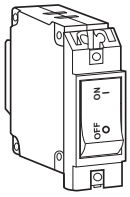
7425
Restricted OFF Rocker

- Actuator shows white in the OFF position
- Restricted OFF actuator can only be switched to OFF by insertion of small screwdriver into slot



7574
Raised Rocker

- Standard circuit breaker for AC Source Select panels in the 360 Panel System
- Raised rocker actuator resists accidental switching by being flush in the ON position



Features

- White actuator indicates OFF position
- Slingle pole is available in Flat Rocker and Restricted Off styles
- Single pole is frequently used for AC or DC Branch circuit protection
- Double pole is available in Flat Rocker and Raised Rocker styles
- Double pole is frequently used for 120 Volt AC Main circuit protection
- Raised Rocker actuator style is used for AC source selection on the 360 Panel System
- International ON and OFF symbols support vertical or horizontal mounting

Specifications

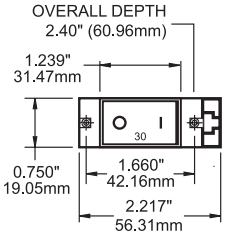
Iic	Interrupting Capacity	See Interrupting Capacity table below
Vmxo	Voltage Maximum Operating	32V DC / 250V AC
Itr	Amperage Trip Reference	5–50 Amps
Tmno	Temperature Minimum Operating	-40°C
Tmxo	Temperature Maximum Operating	85°C
Cs	Switching Cycles	10,000 @ rated amps and volts
Type		Magnetic Hydraulic–Trip free
Terminal Screw		#10-32 Stainless Steel
Terminal Screw Torque		14–15 in-lb Recommended (load terminal is 30° angled)
Trip Time Delay		See www.bluesea.com
Mounting Screw		#6-32 Stainless Steel
Mounting Screw Torque		6–8 in-lb Recommended
Weight Single Pole		0.16 lb (0.07 kg)
Weight Double Pole		0.38 lb (0.17 kg)

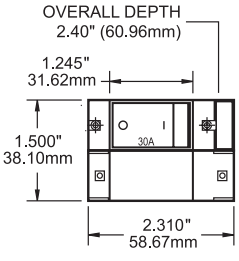
Regulatory

CE marked, TUV certified, CSA certified
UL 1077 recognized

Interrupting Capacity Table (see ABYC Requirements page 118)

			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles	Vmxo Volts	Itr Amps	Iic Interrupt	Iic Interrupt
1 Pole	32V DC	5–50A	5,000A	-
	125V AC	5–50A	3,000A	-
	250V AC	5–50A	1,500A	1,500A
2 Pole	32V DC	10–50A	5,000A	-
	240V AC	10–50A	3,000A	-
	240V AC	10–50A	3,000A	1,500A



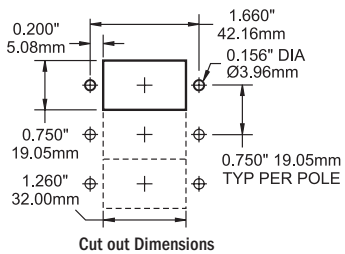


Single Pole Circuit Breakers

PN	Actuator Styles	Poles	Itr DC Amps	Itr AC Amps
7400	Flat Rocker	1	5A DC	5A AC
7425	Restricted Off	1	5A DC	5A AC
7401	Flat Rocker	1	8A DC	8A AC
7426	Restricted Off	1	8A DC	8A AC
7402	Flat Rocker	1	10A DC	10A AC
7427	Restricted Off	1	10A DC	10A AC
7403	Flat Rocker	1	15A DC	15A AC
7428	Restricted Off	1	15A DC	15A AC
7404	Flat Rocker	1	20A DC	20A AC
7429	Restricted Off	1	20A DC	20A AC
7405	Flat Rocker	1	25A DC	25A AC
7430	Restricted Off	1	25A DC	25A AC
7406	Flat Rocker	1	30A DC	30A AC
7431	Restricted Off	1	30A DC	30A AC
7407	Flat Rocker	1	40A DC	40A AC
7432	Restricted Off	1	40A DC	40A AC
7408	Flat Rocker	1	50A DC	50A AC
7433	Restricted Off	1	50A DC	50A AC

Double Pole Circuit Breakers

PN	Actuator Styles	Poles	Itr DC Amps	Itr AC Amps
7570	Raised Rocker	2	10A DC	10A AC
7410	Flat Rocker	2	10A DC	10A AC
7571	Raised Rocker	2	15A DC	15A AC
7411	Flat Rocker	2	15A DC	15A AC
7572	Raised Rocker	2	16A DC	16A AC
7412	Flat Rocker	2	16A DC	16A AC
7573	Raised Rocker	2	20A DC	20A AC
7413	Flat Rocker	2	20A DC	20A AC
7574	Raised Rocker	2	30A DC	30A AC
7414	Flat Rocker	2	30A DC	30A AC
7575	Raised Rocker	2	32A DC	32A AC
7415	Flat Rocker	2	32A DC	32A AC
7576	Raised Rocker	2	40A DC	40A AC
7416	Flat Rocker	2	40A DC	40A AC
7577	Raised Rocker	2	50A DC	50A AC
7417	Flat Rocker	2	50A DC	50A AC



Cut out Dimensions

C-Series Toggle Circuit Breakers

Combines switching and circuit protection into a single device

DC Features

- Large frame provides stud termination for 5–300 Ampere loads
- Provides overcurrent protection for inverters, bow thrusters, and windlasses
- Offers high interrupt capacity—suitable for Main circuit protection
- Trip Free– cannot be held closed after trip

AC Features

- Frequently used for 120/240 Volt AC circuit protection
- Double pole can be used as 120 Volt AC main circuit breaker to switch hot and neutral or two hots in 240 Volt AC branch applications
- Triple pole can be used as 240 Volt AC main circuit breaker to switch both lines (hots) and neutral
- Double and triple pole circuit breakers will trip all poles if any one pole trips

DC and AC Specifications

Iic	Interrupting Capacity	See Interrupt Capacity table below
Vmxo	Voltage Maximum Operating	See Interrupt Capacity table below
Itr	Amperage Trip Reference	See table to right
Tmno	Temperature Minimum Operating	-40°C
Tmxo	Temperature Maximum Operating	85°C
Cs	Switching Cycles	10,000 @ rated amperage and voltage
Type		Magnetic Hydraulic–Trip free
Terminal Stud		1/4"-20 Tin-Plated Brass
Terminal Stud Torque		35 in-lb max.
Trip Time Delay		See www.bluesea.com
Mounting Screw		#6-32 Stainless Steel
Mounting Screw Torque		6–8 in-lb Recommended

Regulatory

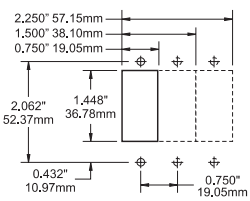
7250I ONLY—meets SAE J1171, UL 1500, and ISO 8846 external ignition protection requirements

PN	Color	Poles†	Itr DC Amps	Itr AC Amps	Weight lb (kg)
7350	White	1*	5A DC	5A AC	0.28 (0.13)
7351	White	1*	10A DC	10A AC	0.28 (0.13)
7352	White	1*	15A DC	15A AC	0.28 (0.13)
7353	White	1*	20A DC	20A AC	0.28 (0.13)
7354	White	1*	25A DC	25A AC	0.28 (0.13)
7355	White	1*	30A DC	30A AC	0.28 (0.13)
7244	White	1*	50A DC	50A AC	0.36 (0.17)
7246	White	1*	60A DC	60A AC	0.36 (0.17)
7248	White	1*	80A DC	80A AC	0.36 (0.17)
7250	White	1*	100A DC	100A AC	0.36 (0.17)
7250I	Red	1*	100A DC	100A AC	0.36 (0.17)
7365	White	2	-	30A AC	0.60 (0.27)
7251	White	2	-	50A AC	0.60 (0.27)
7254	White	2	-	60A AC	0.60 (0.27)
7256	White	2	-	80A AC	0.60 (0.27)
7258	White	2	-	100A AC	0.60 (0.27)
7267	White	2†	150A DC	-	0.64 (0.31)
7268	White	2†	175A DC	-	0.64 (0.31)
7269	White	2†	200A DC	-	0.64 (0.31)
7287	White	3	-	50A AC	0.90 (0.41)
7288	White	3	-	60A AC	0.90 (0.41)
7289	White	3	-	80A AC	0.90 (0.41)
7290	White	3	-	100A AC	0.90 (0.41)
7270	White	3†	250A DC	-	0.93 (0.46)
7271	White	3†	300A DC	-	0.93 (0.46)

NOTE: Double and triple-pole circuit breakers for AC and DC are not interchangeable

* Single pole circuit breakers are AC/DC rated

† Paralleled poles have 5/16" stud on bus

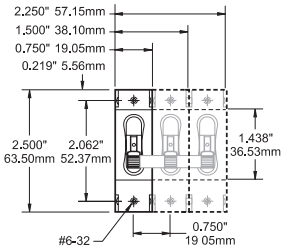


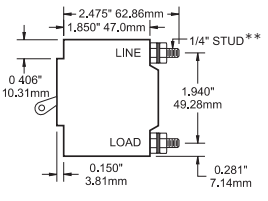
Cutout Dimensions

Interrupting Capacity (see ABYC Requirements page 118)

			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles*	Vmxo Volts	Itr Amps	Iic Interrupt	Iic Interrupt
1 Pole*	80V DC	5–100A	10,000A	-
	125V AC	5–100A	5,000A	-
	250V AC	5–100A	5,000A	5,000A
1 Pole* PN 7250I	48V DC	100A	5,000A	-
	125V AC	100A	1,500A	-
2 and 3 Pole	65V DC	150–300A	5,000A‡	-
	125/250V AC	30–100A	5,000A	5,000A
	250V AC	30–100A	5,000A	5,000A

‡ No agency approvals

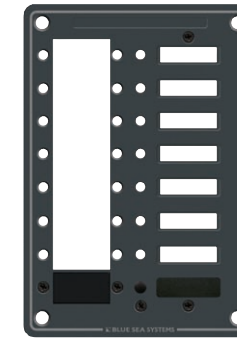




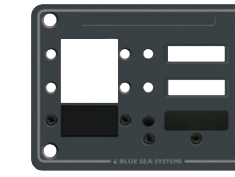
C-Series Toggle Circuit Breaker Mounting Panels

Simplifies mounting C-Series Toggle Circuit Breakers

- Accepts Blue Sea Systems Large Format Labels and ON indicating LEDs
- Panel plugs can be inserted to fill blank positions
- Panel Plug Kit 8089 included—circuit breaker mounting screws, panel plug, LED plug and blank label



8087, 8 Positions
Dimensions
(WxH): 5.25 x 7.50 in (133.35 x 190.50 mm)
Weight: 0.40 lb (0.18 kg)



8088, 3 Positions
Dimensions: (WxH) 5.25 x 3.75 in (133.35 x 95.25 mm)
Weight: 0.24 lb (0.11 kg)

8089 (not shown) Panel Plug Kit

C-Series Rocker Circuit Breakers

Combines switching and circuit protection into a single device

DC Features

- White actuator indicates OFF position
- Large frame provides stud termination for 5–300 Ampere loads
- Flat rocker actuator is flush in the ON position, reducing the risk of accidental switching
- Provides overcurrent protection for inverters, bow thrusters, and windlasses
- Trip Free—cannot be held closed after trip

Specifications

Iic	Interrupting Capacity	See Interrupt Capacity table below
Vmxo	Voltage Maximum Operating	See Interrupt Capacity table below
Itr	Amperage Trip Reference	5–300 Amps
Tmno	Temperature Minimum Operating	-40°C
Tmxo	Temperature Maximum Operating	85°C
Cs	Switching Cycles	10,000 @ rated amperage and voltage
Type	Magnetic Hydraulic—Trip free	
Terminal Stud		1/4"-20 Tin-Plated Brass
Terminal Stud Torque		35 in-lb max.
Trip Time Delay		See www.bluesea.com
Mounting Screw		#6-32 Stainless Steel
Mounting Screw Torque		6–8 in-lb Recommended

Regulatory

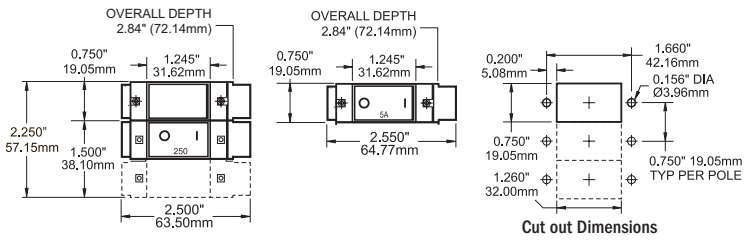
SINGLE-POLE CIRCUIT BREAKERS ONLY– CE marked, meet SAE J1171, UL 1500 and ISO 8846 external ignition protection requirements, CSA certified, and UL 1077 recognized

AC CIRCUIT BREAKERS ONLY—TUV certified, CSA certified, and UL 1077 recognized

AC AND AC/DC CIRCUIT BREAKERS ONLY–CE marked

Interrupting Capacity Table (see ABYC Requirements page 118)

			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles	Vmxo Volts	Itr Amps	Iic Interrupt	Iic Interrupt
1 Pole	32V DC	5–100A	5,000A	-
	120V AC	5–100A	3,000A	-
	240V AC	5–50A	3,500A	-
2 and 3 Pole	48V DC	150–300A	5,000A	-
	48V DC	150–200A	-	5,000A
	120/240V AC	30–100A	5,000A	-
	240V AC	30–100A	-	5,000A



Cut out Dimensions

* Single pole circuit breakers are AC/DC rated
† Paralleled poles have 5/16" stud on bus
‡ No agency approvals

AC Features

- Frequently used for 120/240 Volt AC circuit protection
- Double pole can be used as 120 Volt AC main circuit breaker to switch hot and neutral or two hots in 240 Volt AC branch applications
- Triple pole can be used as 240 Volt AC main circuit breaker to switch both lines (hots) and neutral
- Double and triple pole circuit breakers will trip all poles if any one pole trips

PN	Rocker Actuator	Poles	Itr DC Amps	Itr AC Amps	Weight lb (kg)
7540	Flat	1*	5A DC	5A AC	0.28 (0.13)
7541	Flat	1*	10A DC	10A AC	0.28 (0.13)
7542	Flat	1*	15A DC	15A AC	0.28 (0.13)
7543	Flat	1*	20A DC	20A AC	0.28 (0.13)
7544	Flat	1*	25A DC	25A AC	0.28 (0.13)
7545	Flat	1*	30A DC	30A AC	0.28 (0.13)
7546	Flat	1*	50A DC	50A AC	0.28 (0.13)
7547	Flat	1*	60A DC	60A AC	0.36 (0.17)
7548	Flat	1*	80A DC	80A AC	0.36 (0.17)
7549	Flat	1*	100A DC	100A AC	0.36 (0.17)
7560	Flat	2	-	30A AC	0.51 (0.23)
7580	Raised	2	-	30A AC	0.51 (0.23)
7561	Flat	2	-	50A AC	0.51 (0.23)
7581	Raised	2	-	50A AC	0.51 (0.23)
7562	Flat	2	-	60A AC	0.51 (0.23)
7582	Raised	2	-	60A AC	0.51 (0.23)
7563	Flat	2	-	80A AC	0.51 (0.23)
7583	Raised	2	-	80A AC	0.51 (0.23)
7564	Flat	2	-	100A AC	0.51 (0.23)
7584	Raised	2	-	100A AC	0.51 (0.23)
7475	Flat	2†	150A DC	-	0.64 (0.31)
7551	Flat	2†	175A DC	-	0.64 (0.31)
7476	Flat	2†	200A DC	-	0.64 (0.31)
7565	Flat	3	-	50A AC	0.78 (0.35)
7585	Raised	3	-	50A AC	0.78 (0.35)
7566	Flat	3	-	60A AC	0.78 (0.35)
7586	Raised	3	-	60A AC	0.78 (0.35)
7567	Flat	3	-	80A AC	0.78 (0.35)
7587	Raised	3	-	80A AC	0.78 (0.35)
7568	Flat	3	-	100A AC	0.78 (0.35)
7588	Raised	3	-	100A AC	0.78 (0.35)
7477	Flat	3†	250A DC	-	0.93 (0.46)
7554	Flat	3†	300A DC	-	0.93 (0.46)

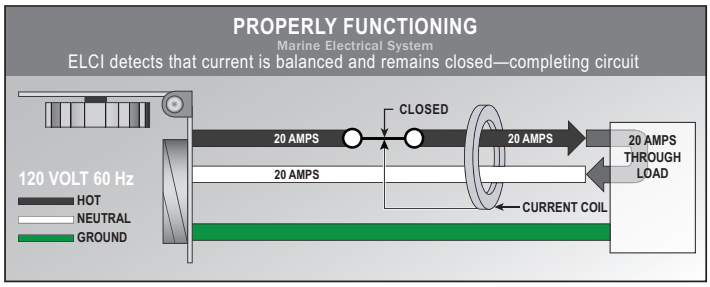
NOTE: Double and triple-pole circuit breakers for AC and DC are not interchangeable

Residual Current Circuit Breakers (GFCI and ELCI)

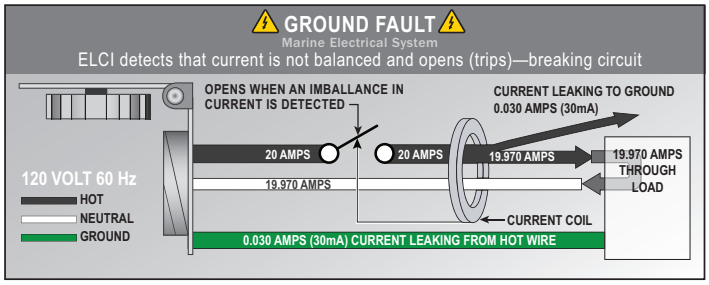
AC Ground Faults, the Boater, and ABYC—Understanding Equipment Leakage Circuit Interrupters (ELCIs) and Ground Fault Circuit Interrupters (GFCIs) to make your boat safer.

There are two potential failures in a boat's electrical system that can put people on or around the boat at risk of lethal electric shock.

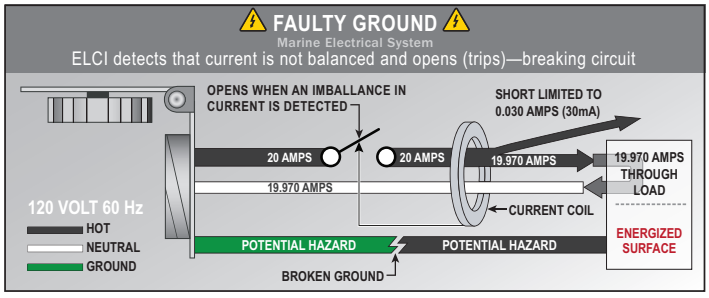
In a properly functioning marine electrical system, the same amount of AC current flows in the hot and neutral wires.



However, if electricity "leaks" from this intended path in these two wires to ground, this condition is called a ground fault. A good example of this is an insulation failure in the wiring of an appliance.



In addition, a faulty ground can occur when the grounding path is broken through a loose connection or broken wire. For instance, a shore power cord ground wire may fail due to constant motion and stress.



Faulty grounds can be undetectable; a simple continuity test will not necessarily reveal a problem. When these two conditions occur at the same time, the results may be tragic. The combination of a ground fault and a faulty ground can result in metal parts in the boat and under water becoming energized. If an electric drill with faulty internal wiring or a worn cord falls into the bilge, the water in the bilge will become energized, putting the worker and those nearby at risk.

In addition to the hazard to people on the vessel, there is a larger danger to swimmers near the boat. While people on board are likely to receive a shock from touching energized metal parts, nearby swimmers could receive a paralyzing dose of electricity and drown due to involuntary loss of muscle control.

A Coast Guard sponsored study showed numerous instances of electrical leakage causing drowning or potential drowning even though the shock did not directly cause electrocution.

Given the seriousness of the problem, ABYC requirements now include specific measures for avoiding this danger.

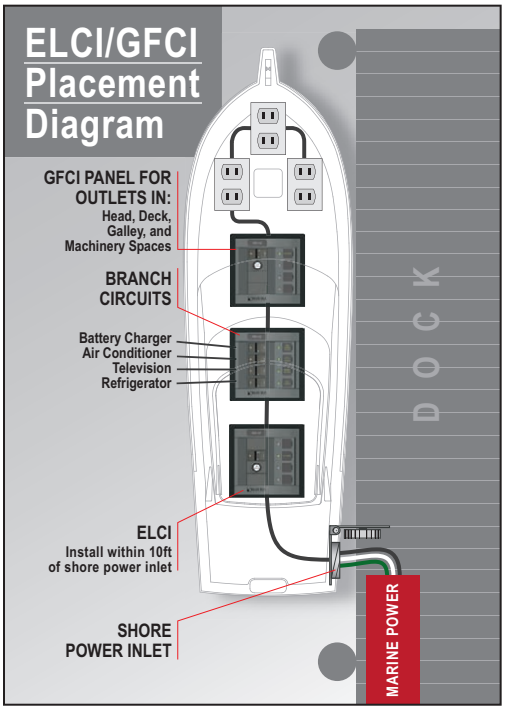
ABYC E-13.3.5 states:
If installed in a head, galley, machinery space, or on a weather deck, the receptacle shall be protected by a Type A (nominal 5 milliamperes) Ground Fault Circuit Interrupter (GFCI).

ABYC E-11.11.1 states:
An Equipment Leakage Circuit Interrupter (ELCI) shall be installed with or in addition to the main shore power disconnect circuit breaker(s) or at the additional overcurrent protection as required by E-11.10.2.8.3 whichever is closer to the shore power connection.

ELCIs, and the more familiar GFCIs (Ground Fault Circuit Interrupter), are part of a larger family of devices that measure current flow in the hot and neutral wires and immediately switch the electricity off if an imbalance of current flow is detected. ELCIs and GFCIs that are also RCBOs (Residual Current Circuit Breaker) provide overcurrent tripping protection characteristic of a normal circuit breaker.

GFCIs are used as branch circuit ground fault protection at the 5mA threshold in potentially wet environments. GFCIs protect against flaws in devices plugged into them, but offer no protection from the danger of a failing hard-wired appliance, such as a water heater or cooktop.

In contrast, an ELCI provides additional whole-boat protection. Installed as required within 10' of the shore power inlet, an ELCI provides 30mA ground fault protection for the entire AC shore power system beyond the ELCI. ABYC regulations still require the use of GFCIs in environments described above.



Although ABYC regulations apply only to new boat construction, ELCIs can mitigate dangers and liabilities that exist for any boat owner with a shore power connection. Retrofitting an ELCI to an existing AC system can be a worthwhile "safeguard" against risk. Since an ELCI/RCBO can serve as the main shore power circuit breaker, it can replace a standard circuit breaker in this application. Alternatively, an ELCI/RCBO can be added between the shore power inlet and the existing main shore power circuit breaker.

Safety ground system failures on boats are safety and liability disasters waiting to happen. ELCI protection on each shore power line, combined with protection afforded by GFCIs, will reduce risk to those on the boat, the dock, and in the water surrounding the boat.

Residual Current Circuit Breakers GFCI and ELCI

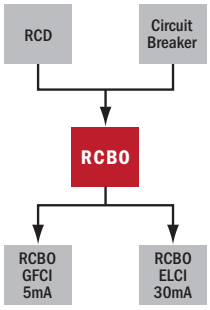
Residual Current Devices (RCDs) respond to leakage of electrical current outside of the intended circuit path. When the RCD function is combined with overload and short circuit protection, the device is often referred to as an RCBO. In the USA, a device that trips on leakages of nominally 5mA and meets certain standards is called a Ground Fault Circuit Interrupter (GFCI). A device meeting the same standards but with a trip level of 30mA is called an Equipment Leakage Circuit Interrupter (ELCI). The devices below provide GFCI or ELCI functions and circuit protection in panel mounted breakers.

Features

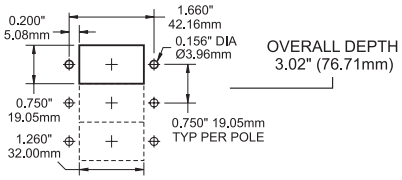
- Trips on short circuit, overload, or leakage to ground
- Panel mount
- 3106—Mounts in traditional flat metal panel with A-Series breakers
- 3107—Mounts in traditional flat metal panel with C-Series breakers

Regulatory

3100 GFCI—UL 489, UL 943 Class A, and CSA certified
3102 ELCI—UL 1077, UL 943 Class B, and CSA certified



PN	Description	Nominal Voltage	Actuator	Poles	Itr AC Amperage		Leakage Trip Amps	Weight lb (kg)
					MAIN	BRANCH		
3100	GFCI	120V	Flat Rocker	1	-	15A	5mA	0.38 (0.17)
3102	ELCI	120V	Flat Rocker	2	30A	-	30mA	0.45 (0.20)
3103	ELCI	120V	Flat Rocker	2	50A	-	30mA	0.85 (0.38)
3104	ELCI	120/240V	Flat Rocker	3	50A	-	30mA	0.85 (0.38)
3106	ELCI	120V	Toggle	2	30A	-	30mA	0.85 (0.38)
3107	ELCI	120V	Toggle	2	50A	-	30mA	0.85 (0.38)



3100 and 3102 Cutout Dimensions

3100
GFCI

3102
ELCI

NEW 3106
ELCI

NEW 3103
ELCI

NEW 3104
ELCI

NEW 3107
ELCI

Residual Current Circuit Breaker (RCBO) Panel

Reduces the risk of fire and shock hazards caused by defects in boat appliances and circuit wiring

Features

- Backlit label positions and ON indicating LED
- For use with DIN rail RCBOs

1173 (circuit breaker not included)
Dimensions (WxH) 4.88 x 4.75 in (123.83 x 120.65 mm)
Weight: 0.70 lb (0.32 kg)

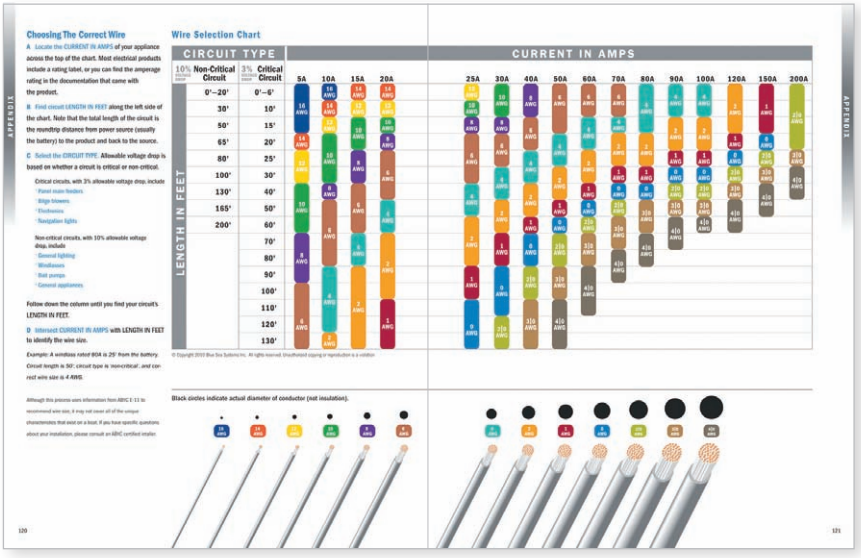
Fuse and Fuse Block Color Coding

New to the 2011 catalog is the fuse color coding packaging system. This system matches up fuses with the corresponding holder or block for easier component selection. Look for color rectangles on the packaging of each fuse holder or block, then match up the color with the fuse packaging to find the correct fuse type.

Some fuse blocks, such as the SafetyHub 100, require two different fuse types. Both color areas are shown on the SafetyHub packaging.

The color rectangles shown below represent the fuse types available through Blue Sea Systems, and correspond with color rectangles on fuse block packaging:

SafetyHub 100 Fuse Block package shows blue (ATO® or ATC®) and black (MIDI® or AMI®) rectangles to represent fuse types required



To use this Wire Selection Chart as a reference, go to pages 120-121

NEW

GMA® and AGA® Fuses

GMA® Fuse | AGA® Fuse

Fast-acting glass fuses

Features

- Compact Size
- Visible indication of blown condition
- Commonly used for 12/24V DC circuit protection associated with electronics
- GMA® fuses 1A to 3A also rated for 250V AC, 1A to 10A rated for 125V AC
- AGA® fuses rated for DC up to 32V
- GMA® Three per retail package
- AGA® Five per retail package


GMA® Fuse


AGA® Fuse

Specifications

Iic	Interrupting Capacity	See www.bluesea.com
Vmxo	Voltage Maximum Operating	See table below
Itr	Amperage Trip Reference	See table below
Blow Time Delay		See www.bluesea.com
GMA® Dimensions		5 mm (0.196") x 20 mm (0.79")
AGA® Dimensions		0.25" (6.35 mm) x 0.625" (15.87 mm)

PN	Fuse Type	Itr Amps	Vmxo Volts	Weight lb (kg)
5280	GMA®	1A	250V AC	0.1 (0.04)
5281	GMA®	2A	250V AC	0.1 (0.04)
5282	GMA®	3A	250V AC	0.1 (0.04)
5283	GMA®	5A	125V AC	0.1 (0.04)
5284	GMA®	7A	125V AC	0.1 (0.04)
5285	GMA®	10A	125V AC	0.1 (0.04)
5275	AGA®	20A	32V DC	0.1 (0.04)

NEW

AGC® and MDL® Fuses

AGC® Fuse | MDL® Fuse

Fast-acting glass fuse ideal for small electronic devices

Features

- For use with Blue Sea Systems ST-Glass fuse blocks and AGC® or MDL® fuse holders
- AGC® and MDL® fuses are typically used in DC systems up to 32V DC
- AGC® fuses to 10A are rated for use in AC at 125V AC and to a maximum 250V AC
- MDL® fuses to 7.5A are rated for use in AC at 125V AC and to a maximum 250VAC
- Visible indication of blown condition
- AGC® Five per retail package
- MDL® Two per retail package


AGC® Fuse


MDL® Fuse

Specifications

Itr	Amperage Trip Reference	See table below
Blow Time Delay		See www.bluesea.com
Dimensions		0.25" (6.30 mm) x 1.25" (32.00 mm)

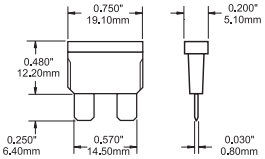
PN	Fuse Type	Itr Amps	Weight lb (kg)
5201	AGC®	.25A	0.1 (0.04)
5202	AGC®	.5A	0.1 (0.04)
5204	AGC®	1A	0.1 (0.04)
5205	AGC®	1.5A	0.1 (0.04)
5206	AGC®	2A	0.1 (0.04)
5207	AGC®	2.5A	0.1 (0.04)
5208	AGC®	3A	0.1 (0.04)
5209	AGC®	4A	0.1 (0.04)
5210	AGC®	5A	0.1 (0.04)
5211	AGC®	6A	0.1 (0.04)
5212	AGC®	7A	0.1 (0.04)
5213	AGC®	7.5A	0.1 (0.04)
5215	AGC®	10A	0.1 (0.04)
5217	AGC®	15A	0.1 (0.04)
5218	AGC®	20A	0.1 (0.04)
5219	AGC®	25A	0.1 (0.04)
5220	AGC®	30A	0.1 (0.04)

PN	Fuse Type	Itr Amps	Weight lb (kg)
5226	MDL®	3A	0.1 (0.04)
5227	MDL®	5A	0.1 (0.04)
5228	MDL®	6.25A	0.1 (0.04)
5229	MDL®	7.5A	0.1 (0.04)
5230	MDL®	10A	0.1 (0.04)
5231	MDL®	15A	0.1 (0.04)
5232	MDL®	20A	0.1 (0.04)
5233	MDL®	25A	0.1 (0.04)
5234	MDL®	30A	0.1 (0.04)

ATO® or ATC® Fuses

ATO® or ATC® Fuse

Delivers fast-acting protection for electronics and other small loads



Features

- Tin-plated connector blades for corrosion resistance
- Visible indication of blown condition
- Two per retail package

Specifications

Iic	Interrupting Capacity	1,000A
Vmxo	Voltage Maximum Operating	32V DC
Itr	Amperage Trip Reference	See table below
Blow Time Delay		See www.bluesea.com
Weight per package		0.03 lb (0.01kg)

See page 47 for ST Blade Fuse Blocks
See page 64 for WeatherDeck™ Waterproof Fuse Panels

PN	Itr Amps
5235	1A
5236	2A
5237	3A
5238	4A
5239	5A
5240	7.5A
5241	10A
5242	15A
5243	20A
5244	25A
5245	30A

NEW

ATM® Fuses

ATM® Fuse

Mini blade-type fuse

Features

- Color-coded for easy amperage identification
- Two per retail package

Specifications

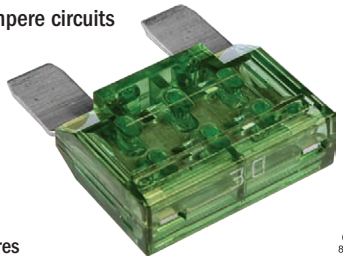
Iic	Interrupting Capacity	1000A
Vmxo	Voltage Maximum Operating	32V DC
Itr	Amperage Trip Reference	See table below
Blow Time Delay		Fast

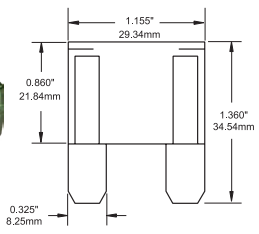
PN	Itr Amps	Weight lb (kg)
5270	5A	0.1 (0.04)
5271	10A	0.1 (0.04)
5272	15A	0.1 (0.04)
5273	20A	0.1 (0.04)
5274	30A	0.1 (0.04)

MAXI™ Fuses

MAXI™ Fuse

Provides economical circuit protection for 30 to 80 Ampere circuits





Features

- Silver-plated connector blades for corrosion resistance
- Visible indication of blown condition
- One per retail package

Specifications

Iic	Interrupting Capacity	1,000A
Vmxo	Voltage Maximum Operating	32V DC
Itr	Amperage Trip Reference	See table below
Blow Time Delay		See www.bluesea.com
Weight per package		0.04 lb (0.02 kg)

PN	DC Itr
5138	30A
5139	40A
5140	50A
5141	60A
5142	70A
5143	80A

MEGA® or AMG® Fuses

MEGA® or AMG® Fuse

Use with MEGA® or AMG® Fuse Blocks to create an economical system for 100 to 300 Ampere circuit protection

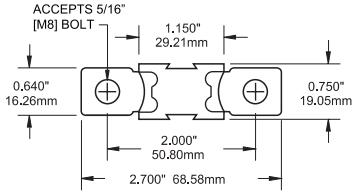
Features

- One per retail package

Specifications

I_{IC}	Interrupting Capacity	2,000A
V_{MXO}	Voltage Maximum Operating	32V DC
I_{TR}	Amperage Trip Reference	See table below
Trip Time Delay		See www.bluesea.com

PN	I_{TR} Amps	Weight lb (kg)
5101	100A	0.06 (0.03)
5102	125A	0.06 (0.03)
5103	150A	0.06 (0.03)
5104	175A	0.06 (0.03)
5105	200A	0.06 (0.03)
5106	225A	0.06 (0.03)
5107	250A	0.06 (0.03)
5108	300A	0.06 (0.03)

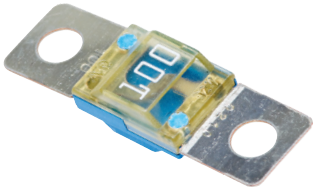


NEW

MIDI® or AMI® Fuses

MIDI® or AMI® Fuse

Compact fuse for main or branch circuit protection



Features

- Clear window offers visible indication of blown condition
- Color-coded for easy amperage identification
- Two per retail package

Specifications

I_{IC}	Interrupting Capacity	5,000A
V_{MXO}	Voltage Maximum Operating	32V DC
I_{TR}	Amperage Trip Reference	See table below
Weight per package		0.1lb (0.04kg)

PN	I_{TR} Amps	Weight lb (kg)
5250	30A	0.1 (0.04)
5251	40A	0.1 (0.04)
5252	50A	0.1 (0.04)
5253	60A	0.1 (0.04)
5254	70A	0.1 (0.04)
5255	80A	0.1 (0.04)
5256	100A	0.1 (0.04)
5257	125A	0.1 (0.04)
5258	150A	0.1 (0.04)
5259	175A	0.1 (0.04)
5260	200A	0.1 (0.04)

Terminal Fuses

(MRBF—Marine Rated Battery Fuse)

MRBF® TERMINAL Fuse

Space-saving ignition protected fuse for 30 to 300 Ampere loads. Must use with Terminal Fuse Block (page 48)

Features

- High Interrupt Rating satisfies ABYC requirements for DC Main circuit protection on large battery banks
- Clear window—visual indication of blown condition
- Color coded for each amperage
- One per retail package

Specifications

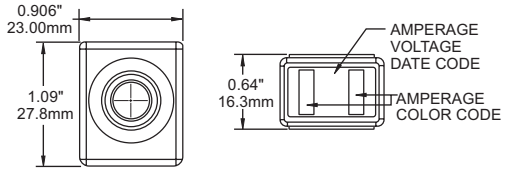
I_{IC}	Interrupting Capacity	10,000A @ 14V DC 5,000A @ 32V DC 2,000A @ 58V DC
V_{MXO}	Voltage Maximum Operating	58V DC
I_{TR}	Amperage Trip Reference	See table below
Fuse Hole Opening		M8 (5⁄16")
Trip Time Delay		See www.bluesea.com

Regulatory

Meets SAE J1171 external ignition protection requirements

IP66—protected against powerful water jets

ABYC E-11.12.1.1.1. *Each ungrounded conductor connected to a battery charger, alternator, or other charging source, shall be provided with over current protection within a distance of seven inches (175mm) of the point of connection to the DC electrical system or to the battery.*



PN	I_{TR} Amps	Color	Weight lb (kg)
5175	30A	LT Green	0.06 (0.03)
5176	40A	LT Blue	0.06 (0.03)
5177	50A	Red	0.06 (0.03)
5178	60A	Gold	0.06 (0.03)
5180	75A	Brown	0.06 (0.03)
5181	80A	Lime	0.06 (0.03)
5182	90A	Purple	0.06 (0.03)
5183	100A	Yellow	0.06 (0.03)
5184	125A	Green	0.06 (0.03)
5185	150A	Orange	0.06 (0.03)
5186	175A	White	0.06 (0.03)
5187	200A	Blue	0.06 (0.03)
5188	225A	Tan	0.06 (0.03)
5189	250A	Pink	0.06 (0.03)
5190	300A	Gray	0.06 (0.03)

Class T Fuses

Use with Class T Fuse Blocks for circuit protection of devices including inverters

Features

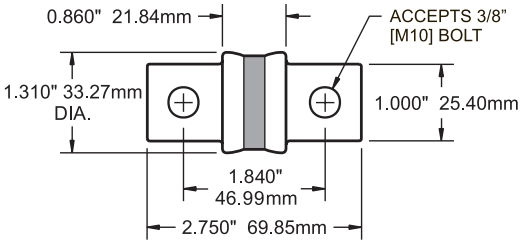
- 20,000 Ampere Interrupt Rating
- Extremely fast short-circuit response
- Recommended by most inverter manufacturers
- One per retail package

Specifications

I_{IC}	Interrupting Capacity	20,000 Amps
V_{MXO}	Voltage Maximum Operating	160 Volts DC
I_{TR}	Amperage Trip Reference	See table below
Trip Time Delay		See www.bluesea.com

Regulatory

UL listed to standard 248-15
DC tested to UL standard 198L



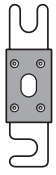
PN	I_{TR} Amps	Weight lb (kg)
5117	225A	0.30 (0.14)
5118	250A	0.30 (0.14)
5119	300A	0.30 (0.14)
5120	350A	0.30 (0.14)
5121	400A	0.30 (0.14)

ANL Fuses vs. Class T Fuses

What is the difference between an ANL and a Class T fuse?
These two fuses are the most common high amperage fuses used in marine applications and there are significant differences between the two:

ANL Fuse Advantages:

- Lower cost than Class T fuses
- Available in a wider amperage range than Class T Fuses
- Single mounting hole dimension allows all ANL Fuses to be used with the same fuse block
- Fusible link window gives visual indication of fuse being blown
- Ignition protected—safe for installation aboard gasoline powered boats

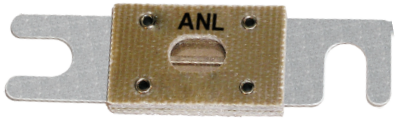


Class T Fuse Advantages:

- The only UL 248-15 listed fuse commonly available in the marine industry
- Very fast response to short circuits protects high amperage electronic equipment such as inverters
- 20,000 Amp Interrupting Capacity

ANL Fuses

Use with ANL Fuse Blocks for many applications with 35–750 Ampere loads



Features

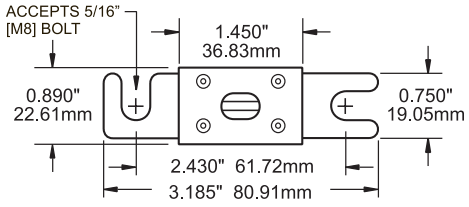
- 6,000 Ampere Interrupt Rating satisfies ABYC requirements for main DC circuit protection on large battery banks
- Silver-plated connector blades for corrosion resistance
- Visible indication of blown fuse condition
- One per retail package

Specifications

I_{IC}	Interrupting Capacity	6,000 Amps
V_{MXO}	Voltage Maximum Operating	32 Volts DC
I_{TR}	Amperage Trip Reference	See table below
Trip Time Delay		See www.bluesea.com

Regulatory

Meets ISO 8846 and SAE J1171 external ignition protection requirements (35–500 Amps only)



PN	I_{TR} Amps	Weight lb (kg)
5164	35A	0.05 (0.02)
5165	40A	0.05 (0.02)
5122	50A	0.05 (0.02)
5123	60A	0.05 (0.02)
5124	80A	0.05 (0.02)
5125	100A	0.05 (0.02)
5126	130A	0.05 (0.02)
5127	150A	0.06 (0.03)
5128	175A	0.06 (0.03)
5129	200A	0.06 (0.03)
5130	225A	0.06 (0.03)
5131	250A	0.07 (0.04)
5132	275A	0.07 (0.04)
5133	300A	0.07 (0.04)
5134	325A	0.07 (0.04)
5135	350A	0.07 (0.04)
5136	400A	0.08 (0.04)
5137	500A	0.08 (0.04)
5161	600A	0.08 (0.04)
5162	675A	0.08 (0.04)
5163	750A	0.08 (0.04)

NEW

AGC® or MDL® In-Line Fuse Holders

5060

Crimpable In-Line Fuse Holder

5060

For use with AGC® or MDL® glass fuses

- Accepts 12-18 AWG wire
- 30A Maximum fuse amperage
- Fuse sold separately

Weight: 0.1lb (0.04kg)

5061

Waterproof In-Line Fuse Holders

5061

For use with AGC® or MDL® glass fuses

- Accepts 12-18 AWG wire
- 30A Maximum fuse amperage
- Fuse sold separately

Weight: 0.1 lb (0.04 kg)

5062

5062

For use with AGC® or MDL® glass fuses

- Accepts 12-18 AWG wire
- 20A Maximum fuse amperage
- Fuse sold separately

Weight: 0.1 lb (0.04 kg)

5063

Heavy Duty In-Line Fuse Holder

5063

For use with AGC® or MDL® glass fuses

- Accepts 12-18 AWG wire
- 30A Maximum fuse amperage
- Fuse sold separately

Weight: 0.1 lb (0.04 kg)

NEW

ATO® or ATC® In-Line Fuse Holders

5064

In-Line Fuse Holder

5064

For use with ATO® or ATC® fuses

- Accepts 12 AWG wire
- 30A Maximum fuse amperage
- Fuse sold separately

Weight: 0.1 lb (0.04 kg)

5065

Waterproof In-Line Fuse Holders

5065

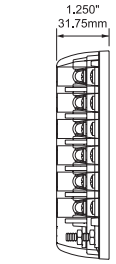
For use with ATO®or ATC® fuses

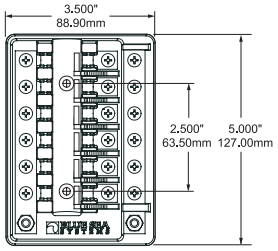
- Accepts 12 AWG wire
- 30A Maximum fuse amperage
- Fuse sold separately

Weight: 0.2 lb (0.09 kg

ST Glass Fuse Blocks (Screw Terminal)

Innovative design allows for labeling, spare fuse storage and easy fuse removal





5015

Circuits: 6 with negative bus

Tin-plated copper negative bus: #10-32 stud

Weight: 0.55 lb (0.25 kg)

5018

Circuits: 6

Weight: 0.48 lb (0.22 kg)

Features

- Can be used for 24-hour circuits
- Clear insulating cover with label recesses accepts Large Format Labels (page 110)
- Cover provides storage for spare fuses
- Cover satisfies ABYC/USCG insulation requirements
- Tin-plated phosphor bronze fuse clips are encapsulated and cannot be sprung
- Integrated fuse ejector lever
- Fuses sold separately (page 43)

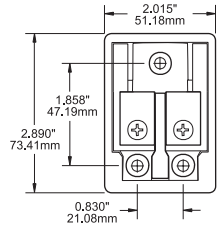
Specifications

V_{mxo}	Voltage Maximum Operating	32V DC
I_{mxo}	Amperage Maximum Operating	30A (per circuit)
I_{mxo}	Amperage Maximum Operating	100A (per block)
Fuse Type		AGC® or MDL® Fuses
Screw Terminal		#8-32 with Captive Star Lock washer
Mounting		#8 Screw (M4)

MAXI™ Fuse Block

Screw termination accepts a variety of wire sizes from 18 to 4 AWG

5006



Features

- Snap-on terminal cover insulates all conductive parts, satisfying ABYC/USCG requirements
- Accepts wire sizes 18–4 AWG from sides or bottom
- Terminal screws compress fuse blades within blocks for low resistance connections
- Fuses sold separately (page 43)

Specifications

V_{mxo}	Voltage Maximum Operating	32V DC
I_{mxo}	Amperage Maximum Operating	80A
Fuse Type		MAXI™ Fuses
MAXI™ Fuses available		30–80 Amps
Weight per package		0.25 lb (0.11 kg)
Mounting		#10 Screws

ST Blade Fuse Blocks (Screw Terminal)

ATO® or ATC® Fuse

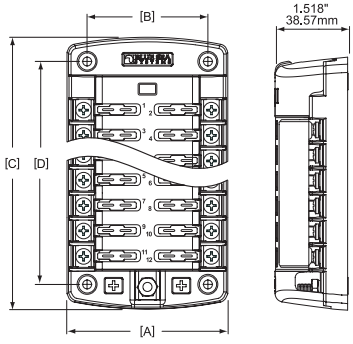
Compact ATO®/ATC® fuse block consolidates branch circuits and eliminates the tangle of inline fuses for electronics and other appliances

Features

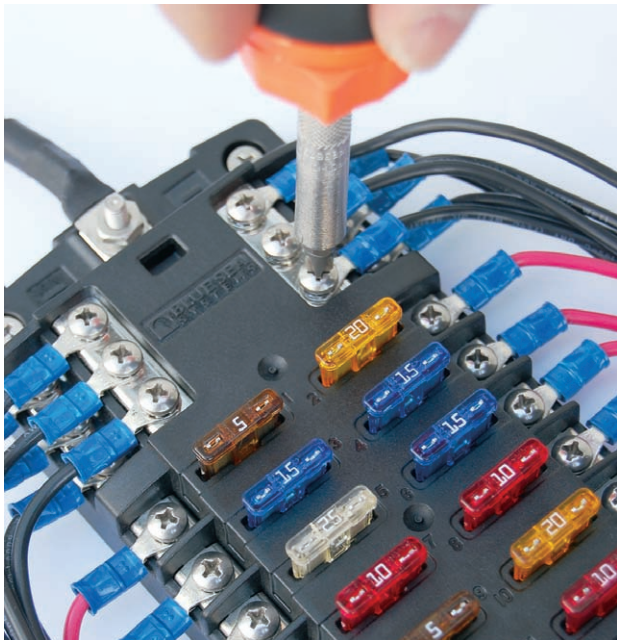
- Can be used for 24-hour circuits
- Clear insulating cover with label recesses accepts Small Format Labels (page 110)
- Cover satisfies ABYC/USCG insulation requirements
- Cover provides storage for two spare fuses
- Accepts ring terminals
- Easy to open, push button latch provides easy access to fuses
- Tin-plated copper buses and fuse clips
- Positive distribution bus with #10–32 stud
- Fuse Blocks with covers include 20 write-on circuit labels
- Fuses sold separately (page 43)

Specifications

Vmxo	Voltage Maximum Operating	32V DC
Imxo	Amperage Maximum Operating	30A (per circuit)
Imxo	Amperage Maximum Operating	100A (per block)
Fuse Type		ATO® or ATC® Fuses
Screw Terminal		#8-32 Screws with Captive Star Lock washer
Mounting		#8 Screw (M4)



PN	[A] Width in (mm)	[B] Mounting Centers in (mm)	[C] Height in (mm)	[D] Mounting Centers in (mm)
5028/5033	3.32 (84.20)	2.50 (63.50)	3.65 (92.76)	2.64 (67.03)
5025/5030	3.32 (84.20)	2.50 (63.50)	4.89 (124.31)	3.88 (95.58)
5029/5034	3.32 (84.20)	2.50 (63.50)	5.23 (132.84)	4.22 (107.11)
5026/5031	3.32 (84.20)	2.50 (63.50)	6.47 (164.39)	5.46 (138.66)



5028
Cover: Yes
Circuits: 6
Weight: 0.42 lb (0.19 kg)

5025
Cover: Yes
Circuits: 6
Negative Bus: #10-32 stud
Weight: 0.55 lb (0.25 kg)

5029
Cover: Yes
Circuits: 12
Weight: 0.68 lb (0.31 kg)

5026
Cover: Yes
Circuits: 12
Negative Bus: #10-32 stud
Weight: 0.75 lb (0.34 kg)

5033
Cover: No
Circuits: 6
Weight: 0.42 lb (0.19 kg)

5030
Cover: No
Circuits: 6
Negative Bus: #10-32 stud
Weight: 0.47 lb (0.21 kg)

5034
Cover: No
Circuits: 12
Weight: 0.59 lb (0.27 kg)

5031
Cover: No
Circuits: 12
Negative Bus: #10-32 stud
Weight: 0.65 lb (0.29 kg)

Terminal Fuse Blocks
(MRBF—Marine Rated Battery Fuse)

MRBF® TERMINAL Fuse

Easily and economically satisfies ABYC 7" circuit protection rule by mounting on a 3/8" battery post, battery switch or bus bar

2151
Terminal Stud: 2
Mounting Hole: 3/8"
Weight: 0.29 lb (7.37 kg)

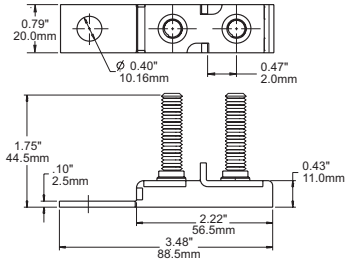
5191
Terminal Stud: 1
Mounting Hole: 3/8"
Weight: 0.16 lb (0.07 kg)

Features

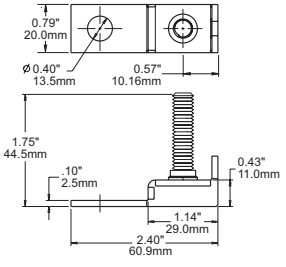
- Isolated stud design uses standard M8 hardware and permits stacking of terminals
- Compact, high-amp fuse—appropriate for DC Main, inverter, windlass, and bow thruster circuit protection
- Provides high current protection in tight space constraints
- Weatherproof—suitable for small open-cockpit boats and other harsh environments
- Insulating cap prevents accidental shorts
- Accepts 5/16" or 3/8" ring terminals
- Fuses sold separately (page 44)

Specifications

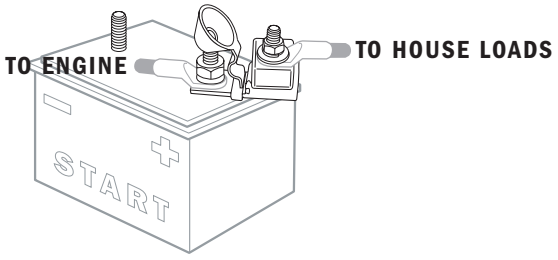
V_{MXO}	Voltage Maximum Operating	58V DC
I_{MXO}	Amperage Maximum Operating	300A
	Maximum Torque	75 in-lbs
	Terminal Stud Size	M8 (5/16")
	Fuse Type	Terminal MRBF Fuses (page 44)
	Terminal Fuses Available	30–300 Amps



2151



5191



NEW

MIDI® or AMI® Safety Fuse Block

MIDI® or AMI® Fuse

For use with MIDI® or AMI® fuses

7720
Weight: 0.4 lb (0.18 kg)

Features

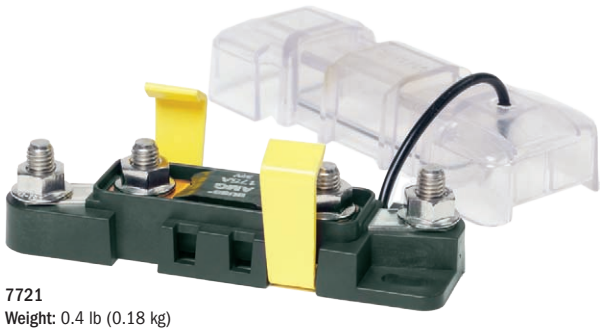
- Ignition protected for installation aboard gasoline or diesel powered boats
- Sealed cover protects fuses from the harsh marine environment
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- 200A maximum with 2/0 cable
- Fuse sold separately (page 44)

NEW

MEGA® or AMG® Safety Fuse Block

MEGA® or AMG® Fuse

For use with MEGA® or AMG® fuses



7721
Weight: 0.4 lb (0.18 kg)

Features

- Ignition protected for installation aboard gasoline or diesel powered boats
- Sealed cover protects fuses from the harsh marine environment
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- 300A maximum with 2/0 cable
- Fuse sold separately (page 44)

ANL Fuse Blocks

Accepts a wide range of ANL fuse amperages for a versatile fusing system

5503
Weight: 1.45 lb (0.66 kg)

5005
Weight: 0.35 lb (0.16 kg)

5004 (not shown)
Same as 5005 but without cover
Weight: 0.18 lb (0.08 kg)

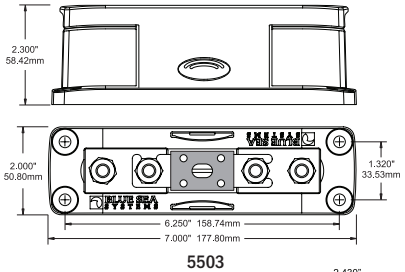
NOTE:
5503 replaces 5003
Current design reduces cost, maintains performance and improves insulating cover

Features

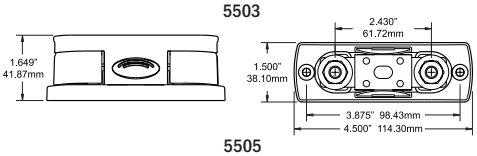
- Accepts 5/16" (M8) ring terminals
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- Insert molded studs ensure secure fuse mounting
- Stainless steel studs provide resistance to corrosion and high torque for excellent electrical contact
- UL 94-V0 base resists high heat
- Swing out design allows replacement of the fuse without removing fasteners
- Fuse sold separately (page 45)

Specifications

	5503	5004/5005
Vmxo Voltage Maximum Operating	32V DC	32V DC
Imxo Amperage Maximum Operating	750A	300A
Maximum Torque	107 in-lb (12.09 N-m)	110 in-lb (12.40 N-m)
Terminal Stud Size	5/16"-18 (M8)	5/16"-18 (M8)
Mounting holes	Accept 1/4 " Screw	Accept #10 (M5) Screw
Cable Size	Up to 4/0 AWG	Up to 2/0 AWG
Fuse Mounting Blocks	Tin-Plated Copper	Tin-Plated Copper
ANL Fuses Available	35–750 Amps	35–300 Amps



5503



5505

Class T Fuse Block

Allows use of Class T fuses for high speed circuit protection of electronic equipment and inverters

5502

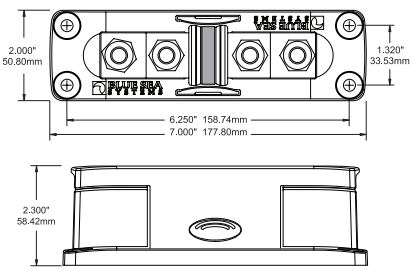
Features

- Accepts 3⁄8" (M10) ring terminals
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- Insert molded studs ensure secure fuse mounting
- Stainless steel studs provide resistance to corrosion and high torque for excellent electrical contact
- UL 94-V0 base resists high heat
- Fuse sold separately (page 45)

Specifications

Vmxo Voltage Maximum Operating	160V DC
Imxo Amperage Maximum Operating	400A
Maximum Torque	190 in-lb (21.47 N-m)
Terminal Stud Size	3/8"-16 (M10)
Mounting holes	Accept 1/4 " Screws
Cable Size	Up to 4/0 AWG
Fuse Mounting Blocks	Tin-Plated Copper
Class T Fuses available	225–400 Amps
Weight	1.55 lb (0.70 kg)

NOTE:
5502 replaces 5002
Current design reduces cost, maintains performance and improves insulating cover



5502

SafetyHub Fuse Blocks

The SafetyHub product family is made up of ignition-protected fuse blocks capable of consolidating and protecting multiple 1A to 200A circuits. They are ignition protected for use on gasoline powered boats, and their reduced wiring connections make them easy to install. The SafetyHubs can be used for main or branch circuit protection.

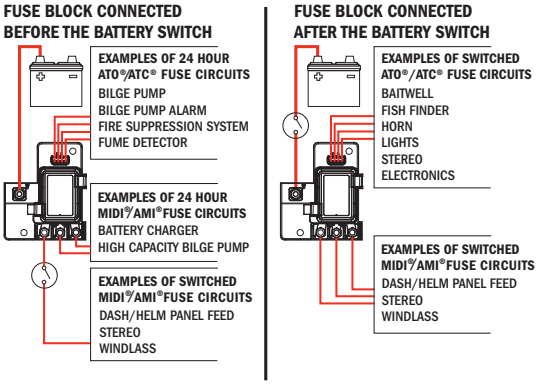
In addition, the SafetyHub 250 incorporates a battery switch with remote and manual control. This feature provides a local switch for emergency shutdown or servicing and allows convenient battery control from a remote location.

The SafetyHub 100 and 250 feature integrated connecting plugs. These plugs eliminate the tangle of wires to the low-amperage and remote control circuits and ensure that the connections are secure. The SafetyHub 150 features an integrated negative bus. By utilizing ATO®or ATC® and MIDI®or AMI® fuses, the SafetyHubs are able to consolidate multiple fuses into a compact space.

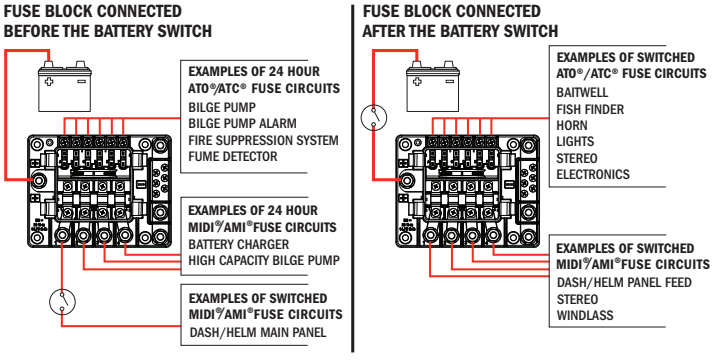
SafetyHubs are highly suited for vessels ranging from ski boats to offshore fishing boats. Whether they are used by boatbuilders to decrease cost and weight in new boats, or by installers to upgrade an existing electrical system, they provide a safe and reliable approach to circuit protection.

SafetyHub 100, 150, and 250 Application Diagrams

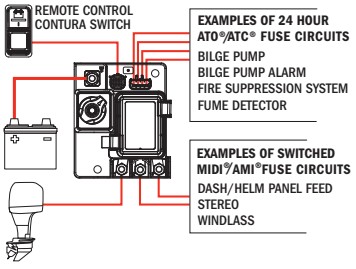
SafetyHub 100 Fuse Block



SafetyHub 150 Fuse Block



SafetyHub 250 Fuse Block with Remote Battery Switch



NEW

SafetyHub 100 Fuse Block

ATO® or ATC® Fuse | MIDI® or AMI® Fuse

The SafetyHub 100 combines an ignition protected fuse block and integrated connecting plugs. It is safe for use on gasoline powered boats, reduces wiring connections, and consolidates up to seven fused circuits.

7725

Features

- Three 30A–200A MIDI® or AMI® Fuses Fuses for high-amp circuits including panel feeds, windlasses, and stereo amplifiers
- Four 1A–30A ATO®or ATC® Fuses for circuits including bilge pumps, electronics and lights
- Sealed cover protects fuses from the harsh marine environment
- Integrated connector plug eliminates loose wires and provides a secure, waterproof connection
- NYPATCH® coated MIDI® or AMI® Fuse screws resist loosening over time
- Fuses sold separately (pages 43 and 44)

Specifications

Imxo	Amperage Maximum Operating (per block)	300A
Operating Voltage		12V DC
Minimum Cable Size to Meet Ratings		4/0 AWG (120 mm)
Recommended Ring Terminal		M8 (5/16")

MIDI® or AMI® Fuse Block

Imxo	Amperage Maximum Operating (per circuit)	250A
Fuse Amperages Available		30–200A
Minimum Cable Size to Meet Ratings		2/0 AWG (70 mm)

ATO® or ATC® Fuse Block

Imxo	Amperage Maximum Operating (per block)	50A
Imxo	Amperage Maximum Operating (per circuit)	30A
Fuse Amperages Available		1–30A

Regulatory

CE marked

Meets ISO 8846 ignition protection, and SAE J1171 external ignition protection requirements

IP66–protected against powerful water jets

PN	Description	Included in Retail Package	Weight lb (kg)
7725	SafetyHub 100 Fuse Block	Yes	1.1 (0.5)
7731B	Connector Plug with 12" Harness FCi 2.8mm	Yes	0.13 (0.06)

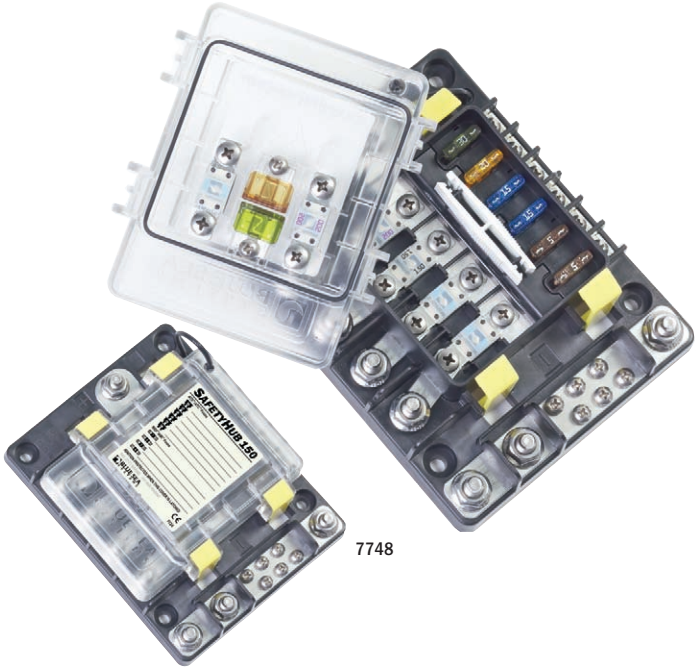
Specifications subject to change. See bluesea.com for current information.

NEW

SafetyHub 150 Fuse Block

ATO® or ATC® Fuse | MIDI® or AMI® Fuse

The SafetyHub 150 is an ignition protected fuse block with screw termination. It is safe for use on gasoline powered boats, reduces wiring connections, and consolidates up to ten fused circuits. It can be used for primary or secondary DC power distribution.



7748

Features

- Four 30A–200A MIDI® or AMI® Fuses for high-amp circuits including panel feeds, windlasses, and stereo amplifiers
- Six 1A–30A ATO® or ATC® Fuses for low amp circuits including bilge pumps, electronic and lights
- Sealed cover protects fuses from the harsh marine environment
- Negative bus provides common location for negative collection
- Circuit identification label with write-on capability
- Fuse puller easily removes ATO® or ATC® fuses
- Cover provides storage space for two spare ATO® or ATC® and two spare MIDI® or AMI® fuses and mounting screws
- NYPATCH® coated MIDI® or AMI® fuse screws resist loosening over time
- Fuses sold separately (pages 43 and 44)

Specifications

I_{mxo}	Amperage Maximum Operating (per block)	350A
V_{mxo}	Operating Voltage	12V DC
Minimum Cable Size to Meet Ratings		4/0 AWG (120 mm)
Recommended Ring Terminal		M8 (5/16")
Stud Size		M8 x 1.25
Stud Torque		15lb-ft
Weight		1.90 lb (0.86 kg)

MIDI® or AMI® Fuse Block

I_{mxo}	Amperage Maximum Operating (per circuit)	250A
Fuse Amperages Available		30–200A
Minimum Cable Size to Meet Ratings		2/0 AWG (70 mm)
Screw Size		M5 x .8 x 10
Screw Torque		27lb-in

ATO® or ATC® Fuse Block

I_{mxo}	Amperage Maximum Operating (per block)	50A
I_{mxo}	Amperage Maximum Operating (per circuit)	30A
Fuse Amperages Available		1–30A

Regulatory

CE marked

Meets ISO 8846 ignition protection, and SAE J1171 external ignition protection requirements

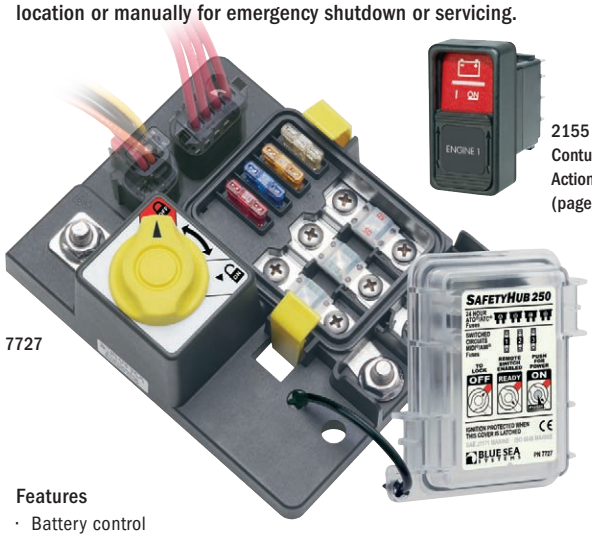
IP66—protected against powerful water jets

NEW

SafetyHub 250 Fuse Block with Remote Battery Switch

ATO® or ATC® Fuse | MIDI® or AMI® Fuse

The SafetyHub 250 combines an ignition protected fuse block with a remote battery switch and integrated connecting plugs. It is safe for use on gasoline powered boats, reduces wiring connections, and consolidates up to seven fused circuits. The SafetyHub 250 allows battery control from a remote location or manually for emergency shutdown or servicing.



7727

2155 Remote Control Contura Switch Action: ON-ON (page 27)

Features

- Battery control from a remote location
- Increases safety and convenience
- Manual control knob switches high-amp circuits for emergency battery disconnect or servicing
- Up to three switched 30A–200A MIDI® or AMI® Fuses for high-amp circuits including panel feeds, windlasses, and stereo amplifiers
- Four 24-hour 1A–20A ATO® or ATC® Fuses for circuits including bilge pumps, alarms, and clock memory
- Integrated connector plugs eliminate loose wires and provide a secure connection
- Must be mounted in a dry location
- NYPATCH® coated MIDI® or AMI® fuse screws resist loosening over time
- Fuses sold separately (pages 43 and 44)

Specifications

I_{mxo}	Amperage Maximum Operating (per block)	240A
V_{mxo}	Operating Voltage	12V DC
Minimum Cable Size to Meet Ratings		2/0 AWG (70 mm)
Recommended Ring Terminal		M8 (5/16")

Internal Battery Switch

I_c	Continuous Amperage Rating	240A
I_{10}	Cranking Rating: 10 sec.	1000A

MIDI® or AMI® Fuse Block

I_{mxo}	Amperage Maximum Operating (per circuit)	200A
Fuse Amperages Available		30–200A
Minimum Cable Size to Meet Ratings		2/0 AWG (70 mm)

ATO® or ATC® Fuse Block

I_{mxo}	Amperage Maximum Operating (per block)	50A
I_{mxo}	Amperage Maximum Operating (per circuit)	20A
Fuse Amperages Available		1–20A

Regulatory

CE marked

Meets ISO 8846 ignition protection, and SAE J1171 external ignition protection requirements

PN	Description	Included in Retail Package	Weight lb (kg)
7727	SafetyHub 250 Fuse Block with Remote Battery Switch	Yes	2.1 (1.0)
2155	Remote Control Switch	Yes	0.25 (0.11)
7731B	Connector Plug with 12" Harness FCi 2.8mm	Yes	0.13 (0.06)
7730B	Connector Plug with 12" Harness Molex MX -150	Yes	0.10 (0.05)
7732B	Engine Link Bus	Yes	0.05 (0.02)

Connectors and Insulators

Connectors and Insulators

As the “nuts and bolts” of a marine electrical system, connectors perform important functions on board. By keeping current flowing efficiently, Blue Sea Systems connectors reduce heat and raise efficiency in a boat’s electrical system.

Dual Bus Common BusBars

BusBars and other connectors, such as PowerPosts, distribute positive wires or collect negative returns. BusBars range in capacity from 100A to 600A, with a variety of terminal stud configurations. The DualBus Plus combines positive and negative buses on one block, and has a clear, snap-on cover to meet ABYC and USCG insulation requirements.

Terminal Blocks

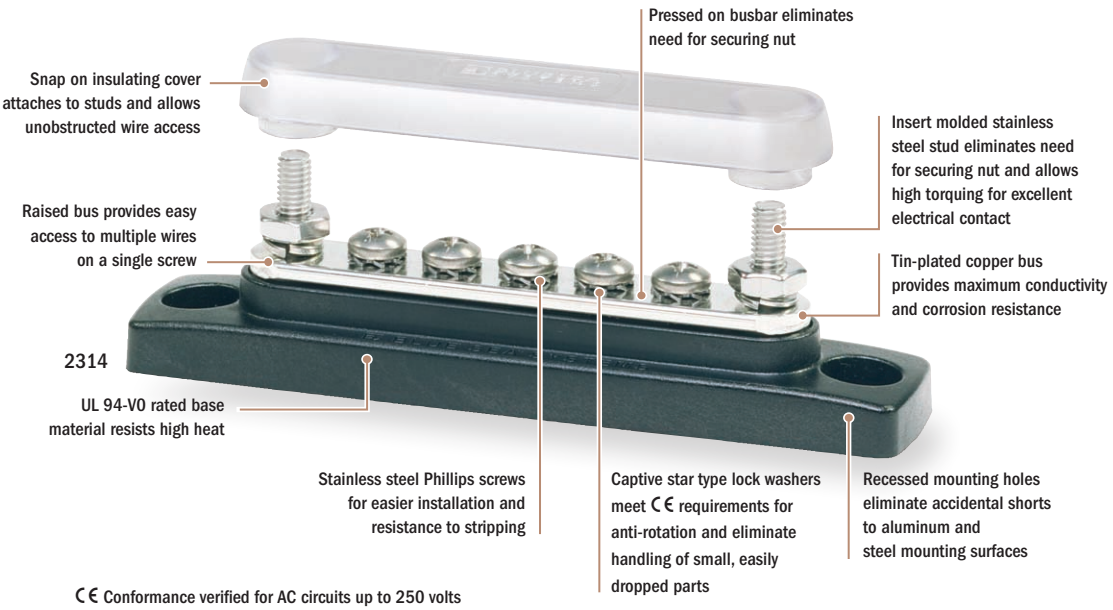
Terminal blocks are another type of connector. They allow termination of wires from a multi-conductor cable in one location. Individual wires can then be split off to various loads. Frequently used for wires to lights and signals, they serve to create neater, safer wiring. Available jumpers allow combination of independent circuits.

All these parts are designed with the engineering attention to detail the industry expects from Blue Sea Systems. Insert molded studs, tin-plated copper buses, and stainless steel screws, are just three features that make Blue Sea Systems products stand out.

PowerPost Cable Connector

SECTION INDEX

THE INDUSTRY STANDARD FOR ELECTRICAL BUSBARS



CE Conformance verified for AC circuits up to 250 volts

MiniBus 100 Ampere Common BusBars

Provides convenient busing for limited space applications

Specifications

I_C	Continuous Rating	100 Amperes AC/DC
V_{MXO}	Voltage Maximum Operating	300 Volts AC/48 Volts DC
Mounting Holes		Accepts #10 (M5) Screws*
Bus Material		Tin-Plated Copper CDA 110/UNS11000

Regulatory

CE certified

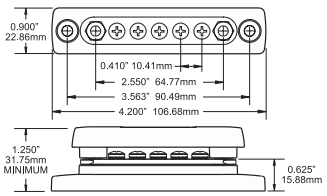
2713

2304

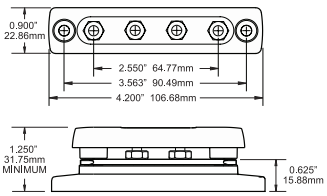
2305

2306

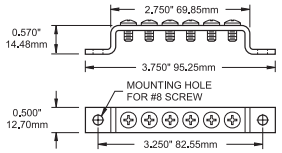
PN	Cover	Terminal Screw	Terminal Stud	Weight lb (kg)
2304	-	5 × #8-32	2 × #10-32	0.15 (0.07)
2314	Yes	5 × #8-32	2 × #10-32	0.17 (0.08)
2305	-	-	4 × #10-32	0.15 (0.07)
2315	Yes	-	4 × #10-32	0.17 (0.08)
2306	-	6 × #8-32	-	0.10 (0.05)
2713	Cover For MiniBus 2304 and 2305			0.05 (0.02)



2304 and 2314



2305 and 2315



2306

*2306 Mounting holes accept # 8 screws

DualBus 100 Ampere Common BusBars

Combines negative and positive buses on one block

Specifications

I_C	Continuous Rating	100 Amperes AC/DC
V_{MXO}	Voltage Maximum Operating	300 Volts AC/48 Volts DC
Mounting Holes		Accept #10 (M5) Screws
Bus Material		Tin-Plated Copper CDA 110/UNS11000

Regulatory

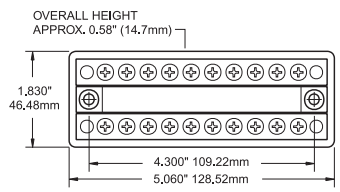
CE Certified

2709
Cover for DualBus 2701
Weight: 0.05 lb (0.02 kg)

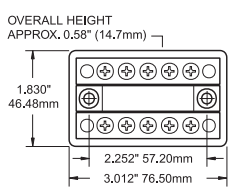
2701
Screw Terminal: 5 x #8-32
Weight: 0.20 lb (0.09 kg)

2710
Cover for DualBus 2702
Weight: 0.05 lb (0.02 kg)

PN 2702
Screw Terminal: 10 x #8-32
Weight: 0.30 lb (0.14 kg)



2702



2701

DualBus Plus 150 Ampere Common BusBars

2722

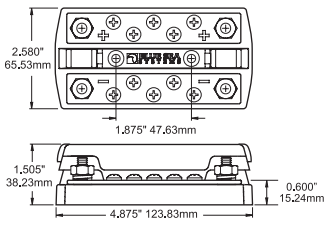
Secure, clear polycarbonate cover snaps on easily to meet USCG and ABYC insulation requirements

- Combines negative and positive buses on one block
- Cover release button

Specifications

I_C	Continuous Rating	130 Amperes AC/150 Amperes DC
V_{MXO}	Voltage Maximum Operating	300 Volts AC/48 Volts DC
Mounting Holes		Accept #10 (M5) Screws
Bus Material		Tin-Plated Copper CDA 110/UNS11000

PN	Terminal Screw	Terminal Stud	Weight lb (kg)
2722	5 × #10-32	1/4"-20 Stud	0.66 (0.30)
2723	5 × #10-32	5/16" Stud	0.61 (0.28)



2722 and 2723

150 Ampere Common BusBars

Insert molded stainless steel stud eliminates need for securing nut and allows high torquing for excellent electrical contact

- The industry standard busbar for positive distribution
- The industry standard busbar for the collection of negative or AC ground circuits

Specifications

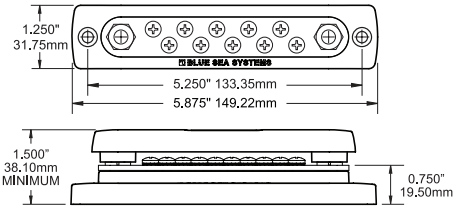
Ic	Continuous Rating	130 Amperes AC/150 Amperes DC
Vmxo	Voltage Maximum Operating	300 Volts AC/48 Volts DC
Mounting Holes		Accepts #10 (M5) Screws
Bus Material		Tin-Plated Copper CDA 110/UNS11000

Regulatory

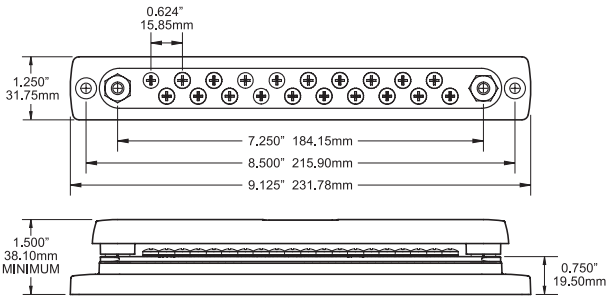
CE certified

PN	Cover	Terminal Screw	Terminal Stud	Weight lb (kg)
2301	-	10 × #8-32	2 × 1/4"-20	0.34 (0.15)
2300	Yes	10 × #8-32	2 × 1/4"-20	0.37 (0.16)
2302	-	20 × #8-32	2 × 1/4"-20	0.53 (0.24)
2312	Yes	20 × #8-32	2 × 1/4"-20	0.58 (0.26)
2303	-	-	4 × 1/4"-20	0.35 (0.16)
2307	Yes	-	4 × 1/4"-20	0.38 (0.17)
2715	Cover For BusBar 2301 and 2303			0.07 (0.03)
2716	Cover For BusBar 2302			0.13 (0.06)

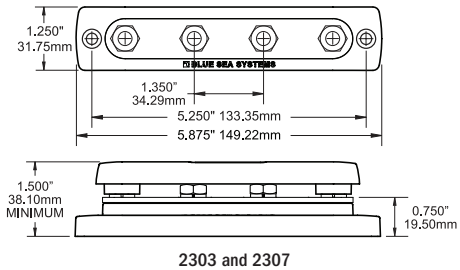
Note:
2715 replaces 2706
2716 replaces 2707



2300 and 2301



2302 and 2312



2303 and 2307

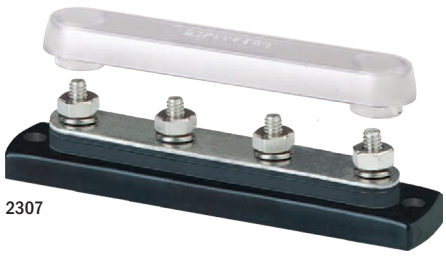
2301

2300

2302

2312

2303



2307

2715

2716

MaxiBus 250 Ampere Common BusBars

Designed for heavy duty positive or negative busing

2105
Terminal Studs: 2 x 5/16"-18
Terminal Screws: 12 x #10-32
Weight: 0.80 lb (0.36 kg)

2106
Terminal Studs: 2 x 5/16"-18
Weight: 0.90 lb (0.41 kg)

2711
Cover for 2105 and 2106
Weight: 0.06 lb (0.03 kg)

Specifications

Ic	Continuous Rating	250 Amps AC/250 Amps DC
Vmxo	Voltage Maximum Operating	300 Volts AC/48 Volts DC
Mounting Holes		Accepts #10 (M5) Screws
Bus Material		Tin-Plated Copper CDA 110/UNS11000

Regulatory
CE certified

PowerBar Common BusBar

Provides compact high-ampere busing with 3/8" terminal studs

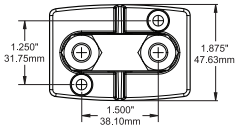
2019
Includes insulators
Terminal Studs: 2 x 3/8"-16
Weight: 0.36 lb (0.16 kg)

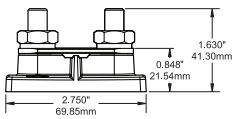
2020
Terminal Studs: 2 x 3/8"-16
Weight: 0.36 lb (0.16 kg)

Specifications

Ic	Continuous Rating	Amperage rating is determined by wire amperage capacity connected to the PowerBar up to 600 Amps
Vmxo	Voltage Maximum Operating	48 Volts DC
Mounting Holes		Accepts #10 (M5) Screws
Bus Material		Tin-Plated Copper CDA 110/UNS11000

Regulatory
CE certified





PowerBar 600 Ampere Common BusBars

Highest ampere rated busbar with 3/8" terminal studs

2104
Terminal Studs: 4 x 3/8"-16
Terminal Screws: 4 x #8-32
Weight: 1.75 lb (0.79 kg)

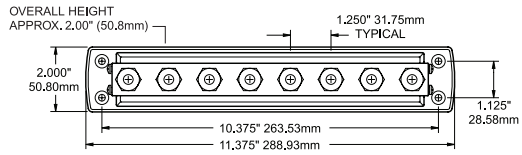
2107
Terminal Studs: 8 x 3/8"-16
Weight: 2.75 lb (1.25 kg)

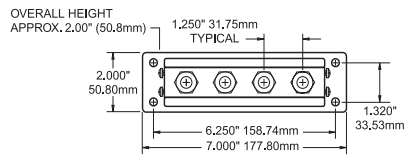
2708
Cover for 2104
Weight: 0.25 lb (0.11 kg)

Specifications

Ic	Continuous Rating	545 Amps AC/600 Amps DC
Vmxo	Voltage Maximum Operating	300 Volts AC/48 Volts DC
Mounting Holes		2104—Accepts 1/4" Screws 2107—Accepts #10 (M5) Screws
Bus Material		Tin-Plated Copper CDA 110/UNS11000

Regulatory
CE certified





PN	Terminal Studs	Terminal Screws	Weight lb (kg)
2104	4 × 3/8" -16	4 x #8-32	1.75 (0.79)
2107	8 × 3/8" -16	4 x #8-32	2.75 (1.25)
2708	Cover For 2104		0.25 (0.11)

20/30/65 Ampere Terminal Blocks

Employs fully insulated independent terminal blocks for applications where circuits must be isolated

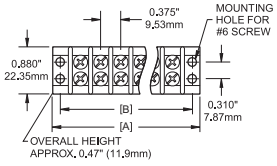
- Closed back design completely insulates power from the mounting surface
- Each screw pair is one isolated circuit
- Terminal Block Jumpers allow creation of common circuits (9216, 9217, and 9218—see right)

Specifications

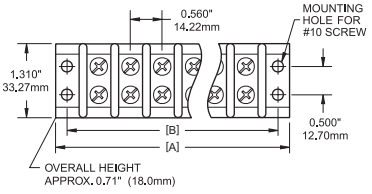
Ic	Continuous Rating	See table below
Vmxo	Voltage Maximum Operating	See table below
Bus Material		Nickel-Plated Brass
Mounting Holes		See drawings below

Regulatory

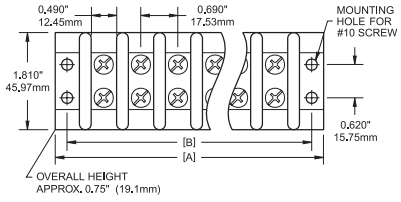
CE Certified



Drawing 1 (2402–2410)



Drawing 2 (2502–2512)

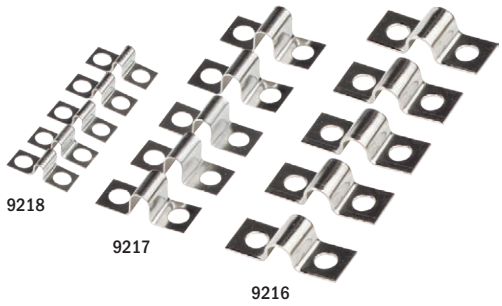


Drawing 3 (2602–2610)

PN	Circuits	AC/DC Ic	AC/DC Vmxo	Terminal Screw	Drawing Number	[A] Length in (mm)	[B] Mounting Centers in (mm)	Weight lb (kg)
2402	2	20	300	#6	1	1.41 (35.81)	1.13 (28.70)	0.05 (0.02)
2404	4	20	300	#6	1	2.16 (54.86)	1.88 (47.75)	0.06 (0.03)
2406	6	20	300	#6	1	2.91 (73.91)	2.63 (66.80)	0.08 (0.04)
2408	8	20	300	#6	1	3.66 (92.96)	3.38 (85.85)	0.10 (0.05)
2410	10	20	300	#6	1	4.41 (112.01)	4.13 (104.90)	0.11 (0.05)
2502	2	30	600	#8	2	2.10 (53.34)	1.69 (42.93)	0.11 (0.05)
2504	4	30	600	#8	2	3.22 (87.79)	2.81 (71.37)	0.15 (0.07)
2506	6	30	600	#8	2	4.34 (110.24)	3.93 (99.82)	0.21 (0.10)
2508	8	30	600	#8	2	5.46 (138.68)	5.05 (128.27)	0.27 (0.12)
2510	10	30	600	#8	2	6.58 (167.13)	6.17 (156.72)	0.33 (0.15)
2512	12	30	600	#8	2	7.70 (195.58)	7.29 (185.17)	0.35 (0.16)
2602	2	65	600	#10	3	2.50 (63.49)	2.06 (52.32)	0.15 (0.07)
2604	4	65	600	#10	3	3.88 (98.55)	3.44 (87.38)	0.25 (0.11)
2606	6	65	600	#10	3	5.26 (133.61)	4.82 (122.43)	0.34 (0.16)
2608	8	65	600	#10	3	6.64 (168.67)	6.20 (157.48)	0.43 (0.20)
2610	10	65	600	#10	3	8.02 (203.73)	7.58 (192.53)	0.52 (0.24)

Terminal Block Jumpers

Combines independent circuits on a terminal block



- Jumpers allow creation of common circuits on independent connectors
- 9218—Fits 20 Ampere terminal blocks (2400 Series—see left)
- 9217—Fits 30 Ampere terminal blocks (2500 Series—see left)
- 9216—Fits 65 Ampere terminal blocks (2600 Series—see left)

Specifications

Bus Material	Nickel-Plated Brass
Continuous Amperage	Equivalent to matching block

PN	Description	Weight lb (kg)
9218	Terminal Block Jumpers for 2400 Series	0.03 (0.01)
9217	Terminal Block Jumpers for 2500 Series	0.04 (0.02)
9216	Terminal Block Jumpers for 2600 Series	0.05 (0.03)

Seamless Copper Lugs and Splices

Designed for the demanding environments of the heavy truck, industrial, and marine applications. The tin-plated copper lugs and splices are significantly heavier than those currently found in the marine industry. Products are offered in Heavy Duty for small projects and Professional Duty for OEMs, yards, and marine professionals.

Features:

- Flared Wire Barrel—for easy cable insertion
- Seamless Pad and Barrel—to provide ultimate performance in strength and conductivity
- Tin Plated Pure Copper—for maximum conductivity and corrosion resistance
- Lugs have closed end—to keep the cable clean, dry, and corrosion free

Regulatory

UL 486 listed/CSA certified

Seamless Copper Splices

Heavy Duty Splice
requires a single crimp

PN Heavy Duty (2 PK)	PN Heavy Duty (10 PK)	Cable Size AWG
2320	2330	8
2321	2331	6
2322	2332	4
2323	2333	2
2324	2334	1
2325	2335	1 / 0
2326	2336	2 / 0
2327	2337	4 / 0

Crimp Tool

Professional cable crimp tool calibrated for use with Blue Sea Systems Heavy and Professional Duty seamless copper lugs and Heavy Duty splices. Cable size range 6 AWG to 4/0 AWG.

2338B
Length: 25.00 in (635.00 kg)
Weight: 5.90 lb (2.68 kg)

Seamless Copper Lugs

Heavy Duty Lug
requires a single crimp

Professional Duty Lug
requires a double crimp

PN Heavy Duty (2 PK)	PN Heavy Duty (10 PK)	PN Professional (10 PK)	Cable Size AWG	Terminal Size
2210	2244	-	8	#10
2211	2245	-	8	1/4
2212	2246	-	8	5/16
2213	2247	-	8	3/8
2214	2248	-	8	1/2
2215	2249	-	6	#10
2216	2250	-	6	1/4
2217	2251	-	6	5/16
2218	2252	-	6	3/8
2219	2253	-	6	1/2
2220	2254	-	4	#10
2221	2255	-	4	1/4
2222	2256	-	4	5/16
2223	2257	-	4	3/8
2224	2258	-	4	1/2
2225	2259	-	2	1/4
2226	2260	-	2	5/16
2227	2261	-	2	3/8
2228	2262	-	2	1/2
2229	2263	2282	1-2	1/4
2230	2264	2283	1-2	5/16
2231	2265	2284	1-2	3/8
2232	2266	2285	1-2	1/2
2233	2267	-	1/0	1/4
2234	2268	2287	1/0	5/16
2235	2269	2288	1/0	3/8
2236	2270	2289	1/0	1/2
2237	2271	-	2/0	1/4
2238	2272	2291	2/0	5/16
2239	2273	2292	2/0	3/8
2240	2274	2293	2/0	1/2
2241	2275	2294	4/0	5/16
2242	2276	2295	4/0	3/8
2243	2277	2296	4/0	1/2

Terminal Feed Through Connectors

Eliminates chafe and provides strain relief when passing high current through hulls, decks and bulkheads

- Protects large cables that are subject to chafing when passed through holes
- The large terminals have a mounting face that can be gasketed or bedded to provide a water tight installation

Specifications

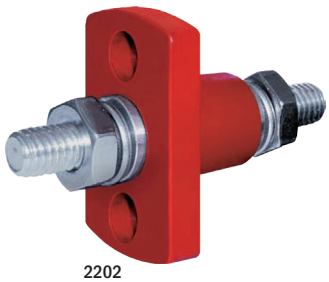
V_{mxo}	Voltage Maximum Operating	48 Volts DC
I_{mxo}	Amperage Maximum Operating	See table below
Stud Material		Tin-Plated Copper Alloy
Mounting Holes		Accepts #10 (M5) Screws

Regulatory

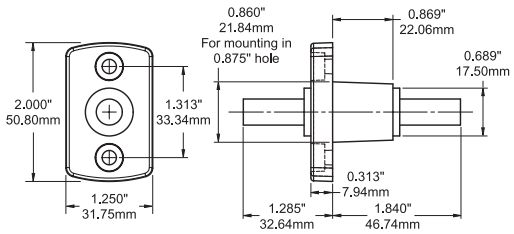
Rated IP66—protected against powerful water jets

PN	Description	I_{mxo}	Color	Weight lb (kg)
2201	5/16"-18 Stud	250	Black	0.30 (0.14)
2202	5/16"-18 Stud	250	Red	0.30 (0.14)
2203	3/8"-16 Stud	250	Black	0.30 (0.14)
2204	3/8"-16 Stud	250	Red	0.30 (0.14)

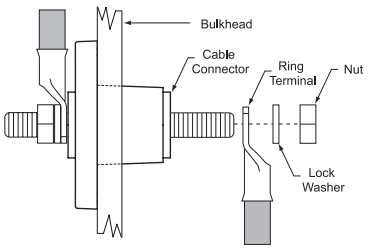
2201



2202



2201–2204

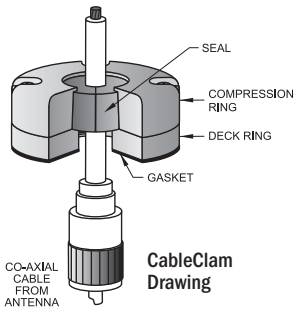


Mounting Diagram

CableClams

Provides a waterproof pass-through for antenna cables without requiring removal of the factory installed connector

1001



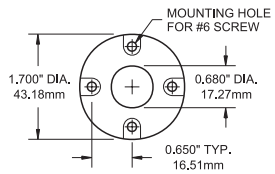
CableClam Drawing

- Perfect for antenna installation
- Save the expense of removing and replacing connectors
- Avoid poor connections from removing factory connectors
- Use 1001 for GPS antenna cables, 1002 for VHF antenna cables, 1003 for Radar antenna cables

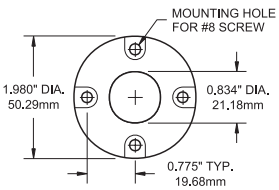
Specifications

Ring Material	UV-Stabilized Thermoplastic
Seal Material	UV-Stabilized Buna-N Rubber
Screws	Stainless Steel

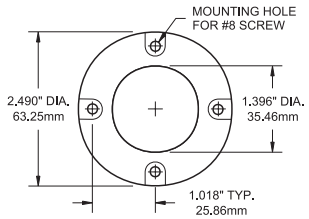
PN	Connector Opening in (mm)	Weight lb (kg)
1001	0.68 (17.27)	0.15 (0.07)
1002	0.83 (20.95)	0.20 (0.09)
1003	1.39 (35.18)	0.30 (0.14)



1001



1002

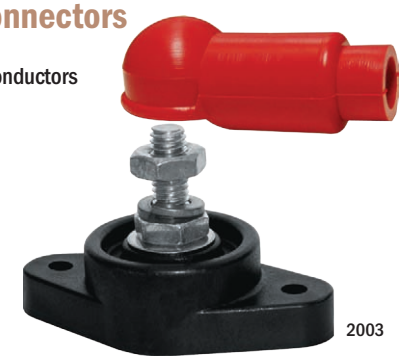


1003

PowerPost Cable Connectors

Insulated single stainless steel stud terminates multiple large conductors

2010



2003

· Connects high amperage cables securely
· Includes insulator

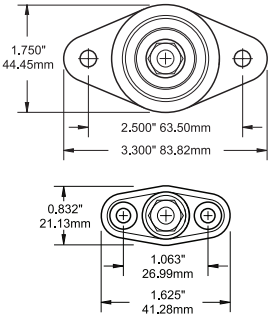
Specifications

Ic	Continuous Rating:	Not rated—amperage flows between terminals stacked on post and is determined by wire and terminals used.
Vmxo	Voltage Maximum Operating:	48 Volts DC
Mounting Holes		Accepts #8 Screws (2010/2011) Accepts 1/4" Screws (2001/2002/2003)

Regulatory

CE Certified

PN	Terminal Stud	Weight lb (kg)
2010	#10-32 × 5/8"	0.06 (0.03)
2011	1/4" × 3/4"	0.10 (0.05)
2001	1/4" × 1-1/16"	0.20 (0.09)
2002	5/16" × 7/8"	0.25 (0.11)
2003	3/8" × 7/8"	0.27 (0.12)

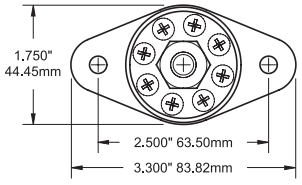


2010 and 2011

PowerPost Plus Cable Connectors

Enables connection of multiple smaller wires in spaces where a traditional bus bar may not fit

2103



· 150 Ampere bus allows small wire connections at high amperage cable connections
· Includes insulator

Specifications

Ic	Continuous Rating:	150 Amps AC/DC
Vmxo	Voltage Maximum Operating:	48 Volts DC
Mounting Holes		Accepts 1/4" Screws
Bus Material		Tin-Plated Copper

Regulatory

CE Certified

PN	Terminal Stud	Terminal Screws	Weight lb (kg)
2101	1/4" × 1"	8 × #8-32	0.29 (0.13)
2102	5/16" × 3/4"	8 × #8-32	0.30 (0.14)
2103	3/8" × 3/4"	8 × #8-32	0.34 (0.15)

Dual PowerPost Cable Connectors

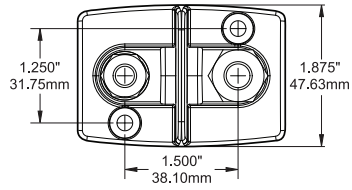
Provides a termination point for extending the length of outboard harnesses or other conductors

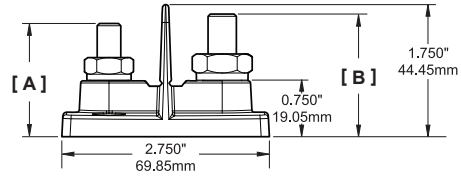
2017

· 2016/2017 are designed for connecting high amp conductors
· 2018 is designed for outboard engine installation when factory cables need to be extended
· Includes insulators

Specifications

Ic	Continuous Rating:	Not rated—amperage flows between terminals stacked on post and is determined by wire and terminals used.
Vmxo	Voltage Maximum Operating:	48 Volts DC
Mounting Holes		Accepts #10 (M5) Screws



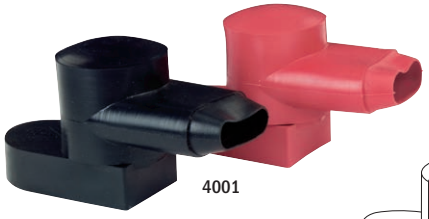


PN	Description	Stud Height A in (mm)	Stud Height B in (mm)	Weight lb (kg)
2016	2 × 5/16" Studs with Insulators	1.50 (38.1)	1.50 (38.1)	0.27 (0.12)
2017	2 × 3/8" Studs with Insulators	1.63 (41.3)	1.63 (41.3)	0.27 (0.12)
2018	1 × 5/16" Stud, 1 × 3/8" Stud with Insulators	1.50 (38.1)	1.63 (41.3)	0.27 (0.12)

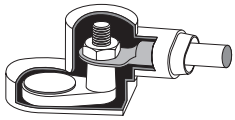
Rotating CableCap Insulators

Insulates battery terminals which have integral wing nut posts

- Top rotates 360 degrees to allow cable entry from any angle



4001

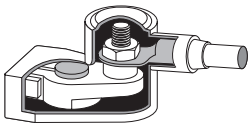


PN	Cable Size (AWG)	Color	Package	Weight lb (kg)
4001	All	Red/Black	Pair/Retail	0.25 (0.11)
9030B	All	Black	Bulk/Not for retail	0.10 (0.05)
9031B	All	Red	Bulk/Not for retail	0.10 (0.05)

Standard CableCap Insulators

Insulates battery terminals which have added adapter terminals

4005

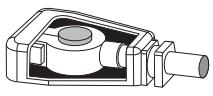


PN	Cable Size (AWG)	Color	Package	Weight lb (kg)
4005	4, 2, 1	Red/Black	Pair/Retail	0.22 (0.10)
4006	1/0, 2/0	Red/Black	Pair/Retail	0.22 (0.10)
9038B	4, 2, 1	Black	Bulk/Not for retail	0.07 (0.03)
9039B	4, 2, 1	Red	Bulk/Not for retail	0.07 (0.03)
9040B	1/0, 2/0	Black	Bulk/Not for retail	0.07 (0.03)
9041B	1/0, 2/0	Red	Bulk/Not for retail	0.07 (0.03)

Automotive CableCap Insulators

Insulates battery terminals which have standard automotive posts

4016



PN	Cable Size (AWG)	Color	Package	Weight lb (kg)
4016	4, 2, 1	Red/Black	Pair/Retail	0.18 (0.08)
4017	1/0, 2/0	Red/Black	Pair/Retail	0.18 (0.08)
9176B	1/0, 2/0	Red	Bulk/Not for retail	0.07 (0.03)
9177B	1/0, 2/0	Black	Bulk/Not for retail	0.07 (0.03)

Square CableCap Insulators

Insulates battery terminals which have in-line dual posts

NEW

4018

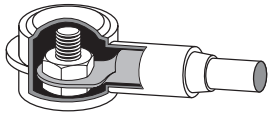
PN	Cable Size	Color	Package	Weight lb (kg)
4018	1/0	Red/Black	Pair/Retail	0.19 lb (0.08 kg)
4019B	1/0	Red	Bulk/Not for retail	0.06 lb (0.03 kg)
4020B	1/0	Black	Bulk/Not for retail	0.06 lb (0.03 kg)

Stud CableCap Insulators

Insulates single stud on alternators, starters, windlasses and high amperage termination points

4008

4009



PN	Cable Size (AWG)	Color	Package	Weight lb (kg)
4008	18–10	Red	Retail/3	0.05 (0.02)
4009	18–10	Black	Retail/3	0.05 (0.02)
4010	8–4	Red	Retail/2	0.05 (0.02)
4011	8–4	Black	Retail/2	0.05 (0.02)
4012	2–2/0	Red	Retail/1	0.07 (0.03)w
4013	2–2/0	Black	Retail/1	0.07 (0.03)
4014	3/0–4/0	Red	Retail/1	0.07 (0.03)
4015	3/0–4/0	Black	Retail/1	0.07 (0.03)

Power Distribution

Advanced Power Distribution

At the heart of a boat's electrical system is the power distribution panel. Current flows into the panel from the source of power, and is distributed from the panel to various loads throughout the boat. Most panels provide switching as well as circuit protection.

Blue Sea Systems manufactures panels for all sizes of boats, from the smallest runabout to the largest off shore cruising yacht, with four panel types available.

ABOVE DECK PANELS

The WeatherDeck™ Waterproof Panels' contemporary appearance and rugged construction exceed the demands of wet locations. They feature backlit labels, built-in toggle guard, concealed mounting screws, and four mounting orientations.

Panel front is rated IP67 -protected against immersion up to 1 meter for 30 minutes

Contura Switch Waterproof Panels represent time-honored design and easy serviceability. Fully loaded with 15A circuit breakers or fuses, these panels will complement any cockpit, bridge or cabin.

Panel front is rated IP66 -protected against powerful water jets

BELOW DECK PANELS

Traditional Metal Panels are equally suited as replacement or new panels and they match existing panels on many boats. Fully pre-wired and shipped with LEDs in all positions, they are ready to install right out of the box.

Traditional Metal Panels are equally suited for use as extensions to existing panels or as replacements for existing panels

The 360 Panel System is the next generation of below-deck panel design. It uses an open frame modular architecture to mount a broad selection of panel components for full customization. This allows multiple functions to be combined in a single panel for unmatched flexibility.

The 360 Panel System uses modular architecture to mount a broad selection of panel modules, allowing multiple functions to be combined in a single panel.

Use the Blue Sea Systems Panel Wizard to design a fully custom 360 Panel. Blue Sea Systems builds custom panels at the Bellingham, Washington manufacturing plant in a fraction of the time required by a typical custom panel shop. Custom panels generally ship within five days of order receipt. Blue Sea Systems panels offer the advanced power distribution required by today's boatowner.

Go to panelwizard.bluesea.com to design a fully custom 360 Panel

SECTION INDEX

ABOVE DECK PANELS

BELOW DECK PANELS

WeatherDeck™ Waterproof Panels

Hunt Yachts Surfhunter 25 Center Console

The WeatherDeck™ Panels are Blue Sea Systems' most waterproof panels and their contemporary appearance adds style to any boat.
Available in both fuse and circuit breaker models, the WeatherDeck™ Panels can be mounted in four orientations for maximum versatility.

circuit positions:

model	positions
circuit breaker	4, 6, 8
fuse	2, 4, 6, 8

voltage rating:

model	rating
circuit breaker	12V or 24V DC
fuse	12V DC

total panel rating: 45A

ON indication:
fuse model tri-colored backlit labels
circuit breaker model green backlit labels

labels: square format

Panel front is rated IP67
Protected against immersion up to 1 meter for 30 minutes

DESIGNED FOR EXTREME WEATHER CONDITIONS

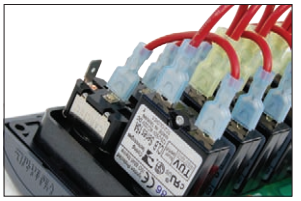
Hunt Yachts Surfhunter 25 Center Console

Circuit Breaker Model

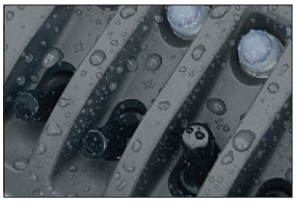
Fuse Model

Integrated switch guards reduce the risk of accidental switching

Backlit labels aid circuit identification in low light conditions



Tin-plated wire and connectors resist corrosion



UV-stabilized waterproof boots resist discoloration and cracking

WeatherDeck™ Waterproof Panels

Employs contemporary design for open-cockpit and flybridge applications

Features

- FUSE MODELS ONLY: bi-colored LEDs illuminate circuit labels to quickly identify OFF (Red), ON (Green), or Blown (No color) circuits
- CIRCUIT BREAKER MODELS ONLY: green LEDs illuminate circuit labels to quickly identify ON circuits
- Integrated switch guards reduce the risk of accidental switching
- Independent label backlighting allows switching and dimming
- Backlighting is compatible with DeckHand Dimmers (page 109)
- Panels can be mounted in four different orientations
- Panel front rated IP67 when properly mounted with watertight mounting gasket
- UV stabilized weather-resistant faceplate snaps on and off providing access to components and concealing mounting screws
- Square Format Label Set 4215 included (page 110)

Component References

- ON–OFF Toggle Switch (page 104)
- Push Button, Thermal Trip, Manual Reset-Only (page 32)
- ATO®–ATC® Blade-Type Fuses (page 43)
- Rugged UV stabilized waterproof boots (page 32)

Circuit Breaker Model Specifications

V_{mxo}	Voltage Maximum Operating	12 Volts DC - fuse models
		24 Volts DC - circuit breaker models
I_{mxo}	Amperage Maximum Operating	15 Amps @ 12 Volts DC (per circuit)
		9 Amps @ 24 Volts DC (per circuit)
I_{oc} (Backlight)	Amperage Operating Current	10mA/Illuminated Circuit
Panel Cumulative Rating		45 Amps
Switch Rating		15 Amps Maximum
Backlighting Voltage		12 Volts DC Nominal
Backlighting Amperage Draw		10mA/Illuminated Circuit
Circuit Breaker Rating		15 Amps

Fuse Model Specifications

V_{mxo}	Voltage Maximum Operating	12 Volts DC
I_{mxo}	Amperage Maximum Operating	15 Amps @ 12 Volts DC (per circuit)
I_{oc} (Backlight)	Amperage Operating Current	10mA/Illuminated Circuit
Panel Cumulative Rating		2 Position—30 Amps
		4 Position—60 Amps
		6 Position—90 Amps
		8 Position—100 Amps
Switch Rating		15 Amps Maximum
Backlighting Voltage		12 Volts DC Nominal
Fuses Available		1–40 Amps

Regulatory

IP67—protected against immersion up to 1 meter for 30 minutes

Circuit Breaker Models

4374

4378

4376

Fuse Models

4304

4302

4306

4308

PN	Circuit Protection	Width in (mm)	Height in (mm)	Depth in (mm)	Width Mounting Centers in (mm)	Height Mounting Centers in (mm)	Weight lb (kg)
4374	Circuit Breakers	4.25 (107.95)	4.30 (109.22)	3.50 (88.90)	3.69 (93.73)	3.74 (95.00)	0.97 (0.44)
4376	Circuit Breakers	4.25 (107.95)	6.00 (152.40)	3.50 (88.90)	3.69 (93.73)	5.44 (138.18)	1.36 (0.62)
4378	Circuit Breakers	4.25 (107.95)	7.70 (195.58)	3.50 (88.90)	3.69 (93.73)	7.14 (181.36)	1.83 (0.83)
4302	Fuses	3.88 (98.55)	2.60 (66.04)	2.50 (63.50)	3.31 (84.07)	2.04 (51.82)	0.52 (0.24)
4304	Fuses	3.88 (98.55)	4.30 (109.22)	2.50 (63.50)	3.31 (84.07)	3.74 (95.00)	0.90 (0.41)
4306	Fuses	3.88 (98.55)	6.00 (152.40)	2.50 (63.50)	3.31 (84.07)	5.44 (138.18)	1.15 (0.52)
4308	Fuses	3.88 (98.55)	7.70 (195.58)	2.50 (63.50)	3.31 (84.07)	7.14 (181.36)	1.55 (0.70)

Contura Switch Waterproof Panels

Ranger R29

RUGGED DESIGN FOR WET ENVIRONMENTS

Ranger R29 — *photo courtesy of Ranger Tugs*

Using industry standard Contura switches, the Blue Sea Systems Contura Switch Waterproof Panels are designed to perform above deck, as well as complement any interior. Fuse models are available in a classic grey finish, and circuit breaker models are available in white or black.

circuit positions:

model	positions
circuit breaker	3, 4, 6, 8
fuse	1, 3, 4, 6, 8

voltage rating: 12 or 24V DC

total panel rating: 45A

ON indication: LED in switch

labels:

model	format
circuit breaker	small
fuse	large or small

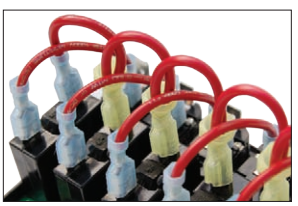
Panel front is rated IP66*
Protected against powerful water jets

Circuit Breaker Model

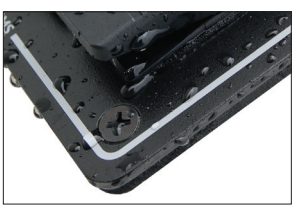
Carling Contura switches match common helm station switches

Integrated LEDs provide immediate indication of ON or OFF

Fuse Model



Tin-plated wire and connectors resist corrosion



Aluminum panel is chemically treated front and back and painted to resist corrosion

* circuit breaker model only

Contura Switch Water Resistant Panels

Designed for open-cockpit and flybridge applications using switches to complement existing controls commonly used on many boats

Features

- Designed for 12 or 24 Volt systems
- Watertight mounting gasket
- ON indicating LEDs embedded in all switches
- Includes Small Format Label Set 8217 or 8214* (page 110)

NOTE: Labels are not backlit

Component References

- ON-OFF Contura switches† (page 105)
- Push Button Reset-Only Circuit Breakers (page 32)
- Water Resistant Fuse Holders (page 104)

Specifications

Vmxo	Voltage Maximum Operating	24 Volts DC
Ioc (Switch LED)	Amperage Operating Current	18 Milliamperes each
Switch Rating		20 Amps @ 12 Volts DC
		15 Amps @ 24 Volts DC
Circuit Breaker Rating		15 Amps
Fuse Holder Rating		20 Amps maximum (15A fuses included)
Panel Cumulative Rating		45 Amps

Regulatory

Meets UL 1500 and ISO 8846 ignition protection requirements

IP66–protected against powerful water jets (circuit breaker models only)

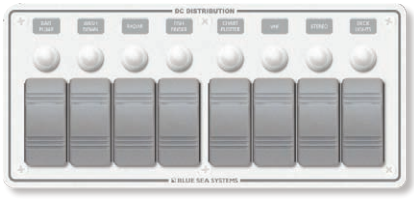
8374

8372

8373

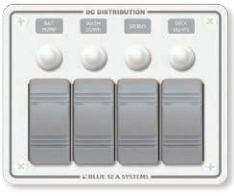
8371

8274



8271

8273



8272

8262

8054*

8261

8053*

8263† / Bilge Pump Control Panel

PN	Push Button Circuit Breakers	AGC/MDL Fuse Holders	Width in (mm)	Height in (mm)	Depth in (mm)	Weight lb (kg)
8274	3	-	4.50 (114.30)	3.75 (95.25)	3.25 (82.55)	0.75 (0.34)
8272	4	-	5.25 (133.35)	4.25 (107.95)	3.25 (82.55)	0.90 (0.41)
8273	6	-	4.50 (114.30)	7.50 (190.50)	3.25 (82.55)	1.35 (0.61)
8271	8	-	9.37 (238.00)	4.25 (107.95)	3.25 (82.55)	1.75 (0.79)
8374	3	-	4.50 (114.30)	3.75 (95.25)	3.25 (82.55)	0.75 (0.34)
8372	4	-	5.25 (133.35)	4.25 (107.95)	3.25 (82.55)	0.90 (0.41)
8373	6	-	4.50 (114.30)	7.50 (190.50)	3.25 (82.55)	1.35 (0.61)
8371	8	-	9.37 (238.00)	4.25 (107.95)	3.25 (82.55)	1.75 (0.79)
8054*	-	3	5.25 (133.35)	3.75 (95.25)	3.00 (76.20)	0.70 (0.32)
8053*	-	6	5.25 (133.35)	7.50 (190.50)	3.00 (76.20)	1.20 (0.54)
8262	-	4	5.25 (133.35)	3.75 (95.25)	3.00 (76.20)	0.75 (0.34)
8261	-	8	9.37 (238.00)	3.75 (95.25)	3.00 (76.20)	1.40 (0.64)
8263†	-	1	2.25 (57.15)	3.75 (95.25)	3.00 (76.20)	0.25 (0.11)

* 8054 and 8053 include Large Format Label Set 8030 (pages 110) | † 8263 Bilge Pump Control Panel–(ON)-OFF-ON Contura Switch (page 105)

360 Panel System

Sabre 40 Sedan

The 360 Panel System uses an open frame to mount a broad selection of modules that allows multiple functions to be combined in a single panel. This innovative design allows a wide choice of panel features, can accommodate future changes and permits rapid assembly and shipping time. With options ranging from battery management to source selection, the 360 Panel System offers unmatched design flexibility.

360 PANEL SYSTEM

INNOVATIVE DESIGN MEETS UNRIVALED QUALITY

Sabre 40 Sedan — *photo courtesy of Sabre Yachts*

Flat rocker circuit breakers

Black toggle A-Series circuit breakers

circuit positions:
- **stock panels** up to 32
- **custom panels** up to 80

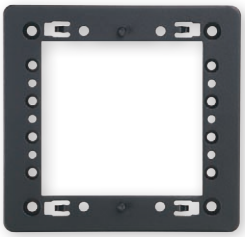
voltage rating:

DC	12V, 24V
AC	120V, 240V, 230V

total panel rating:
up to 100A per bus

ON indication: LED

labels: square format



Open frame allows future replacement or upgrade of panel modules

Push Button Reset Only circuit breakers
provide high-density, low cost circuit protection

Circuit status LEDs and backlit labels aid low-light readability

Specifications subject to change. See bluesea.com for current information.

Traditional Metal Panels

Nordic Tug 39

The Traditional Metal Panels are equally suited for use as extensions to existing panels or as full replacements. All panels are pre-wired and include LEDs in all positions. Choose from over 100 stock panels ranging from simple circuit breaker models to complex multi-source AC configurations.

STYLED TO MATCH EXISTING PANELS

Nordic Tug 54 *photo courtesy of Nordic Tugs*

Industry standard white toggle A-Series circuit breakers

Circuit status LEDs and backlit labels aid low-light readability

circuit positions: up to 35

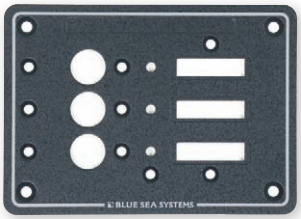
voltage rating:

DC	12V, 24V
AC	120V, 240V, 230V

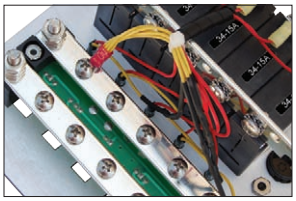
total panel rating: up to 100A per bus

ON indication: LED

labels: large format



Marine grade aluminum frame securely holds fixed panel components and is chemically treated to resist corrosion



Tin-plated copper bus bars provide high conductivity and corrosion resistance

DC Branch Circuit Breaker Panels

DC Branch panels distribute current from a high-amperage input to multiple circuits which carry lower amperages through smaller wires.

- DC Branch panels with Main circuit breakers incorporate a large frame C-Series circuit breaker to allow for high torque connections.
- DC Branch panels include several types of lower-amperage circuit breakers.

2 to 6 Positions






	1493	1491	1492	1490	8025	1216 / 1116*
Style	360 Panel System	360 Panel System	360 Panel System	360 Panel System	Traditional Metal	360 Panel System
Total Positions	**Main + 1 Position**	**Main + 2 Positions**	**Main + 2 Positions**	**Main + 3 Positions**	**3 Positions**	**4 Positions**
# Installed Circuit Breakers	1 - C-Series, 300A	1 - C-Series, 150A	1 - C-Series, 200A	1 - C-Series, 100A	3 - A-Series, 15A	4 - A-Series, 15A
# Installed Rocker Switches	–	–	–	–	–	–
Nominal Voltage	12 DC	12V DC	12V DC	12V DC	12/24V DC	12V DC
Maximum Amperage	300A	150A	200A	100A	100A	100A
Meter	–	–	–	–	–	–
Width x Height in (mm)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)
Depth in (mm)	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)	2.50 (63.50)	3.00 (76.20)
Weight lb (kg)	1.8 (0.82)	1.5 (0.68)	1.5 (0.68)	1.2 (0.59)	1.15 (0.52)	1.35 (0.61)

8 Positions






	1450	1156 / 1457†	1154 / 1456†	1200 / 1100*	1225 / 1125*	8023
Style	360 Panel System	360 Panel System	360 Panel System	360 Panel System	360 Panel System	Traditional Metal
Total Positions	**8 Positions**	**8 Positions**	**8 Positions**	**8 Positions**	**8 Positions**	**8 Positions**
# Installed Circuit Breakers	8 - Push Button, 15A	8 - Push Button, 10A	8 - Push Button, 10A	8 - A-Series, 15A	8 - A-Series, 15A	5 - A-Series, 15A
# Installed Rocker Switches	–	8 - ON-OFF, SPST	8 - ON-OFF, SPST	–	–	–
Nominal Voltage	12/24V DC	12V DC	12V DC	12V DC	12V DC	12/24V DC
Maximum Amperage	100A	100A	100A	100A	100A	100A
Meter	–	–	–	–	–	–
Width x Height in (mm)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 7.75 (196.85)	9.25 (234.95) x 4.75 (120.65)	4.88 (123.83) x 7.75 (196.85)	9.25 (234.95) x 4.75 (120.65)	5.25 (133.35) x 7.50 (190.50)
Depth in (mm)	3.50 (88.90)	3.50 (88.90)	3.50 (88.90)	3.00 (76.20)	3.00 (76.20)	2.50 (63.50)
Weight lb (kg)	1.21 (0.57)	1.75 (.80)	2.95 (1.34)	2.6 (1.18)	3.84 (1.75)	1.95 (0.89)

10 to 13 Positions






	8082	8402	1152 / 1460†	1165 / 1461†	1159 / 1464†	1223 / 1123*
Style	Traditional Metal	Traditional Metal	360 Panel System	360 Panel System	360 Panel System	360 Panel System
Total Positions	**10 Positions**	**10 Positions**	**12 Positions**	**12 Positions**	**12 Positions**	**12 Positions**
# Installed Circuit Breakers	7 - A-Series, 15A	7 - A-Series, 15A	12 - Push Button, 10A	12 - Push Button, 10A	12 - Push Button, 10A	12 - A-Series, 15A
# Installed Rocker Switches	–	–	12 - ON-OFF, SPST	12 - ON-OFF, SPST	12 - ON-OFF, SPST	–
Nominal Voltage	12V DC	12/24V DC	12V DC	12V DC	12V DC	12V DC
Maximum Amperage	50A	100A	100A	100A	100A	100A
Meter	8–16V DC, 0–50A DC	Digital Multimeter	–	–	8–16V DC	–
Width in (mm)	5.25 (133.35)	5.25 (133.35)	13.63 (346.08)	4.88 (123.83)	9.25 (234.95)	4.88 (123.83)
Height in (mm)	11.25 (285.75)	11.25 (285.75)	4.75 (120.65)	10.75 (273.05)	7.75 (196.85)	10.75 (273.05)
Depth in (mm)	2.50 (63.50)	4.00 (101.6)	3.50 (88.90)	3.50 (88.90)	3.50 (88.90)	3.00 (76.20)
Weight lb (kg)	3.35 (1.52)	4.21 (1.91)	4.42 (2.01)	3.6 (1.64)	4.37 (1.99)	4.85 (2.20)

 Specifications subject to change. See bluesea.com for current information.

* Black toggle style panels (not shown) † Panels without backlit labels (not shown)

2 to 6 Positions






1151 | 1455†	1158 | 1458†	1155 | 1459†	8081	8401	8096
360 Panel System	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal	Traditional Metal
4 Positions	**4 Positions**	**4 Positions**	**5 Positions**	**5 Positions**	**6 Positions**
4 - Push Button, 10A	4 - Push Button, 10A	4 - Push Button, 10A	5 - A-Series, 15A	5 - A-Series, 15A	6 - A-Series, 15A
4 - ON-OFF, SPST	4 - ON-OFF, SPST	4 - ON-OFF, SPST	–	–	–
12V DC	12V DC	12V DC	12V DC	12/24V DC	12/24V DC
100A	100A	100A	100A	100A	100A
–	8–16V DC	8–16V DC	8–16V DC, 0–50A DC	Digital Multimeter	–
4.88 (123.83) x 4.75 (120.65)	9.25 (234.95) x 4.75 (120.65)	4.88 (123.83) x 7.75 (196.85)	5.25 (133.35) x 7.50 (190.50)	5.25 (133.35) x 7.50 (190.50)	10.50 (266.70) x 3.75 (95.25)
3.50 (88.90)	3.50 (88.90)	3.50 (88.90)	2.50 (63.50)	4.00 (101.6)	2.50 (63.50)
1.07 (0.49)	2.67 (1.21)	1.4 (.64)	2.25 (1.02)	3.45 (1.57)	2.25 (1.02)

8 Positions





8385	1153 | 1462†	1164 | 1463†	1227 | 1127*	1224 | 1124*
Traditional Metal	360 Panel System	360 Panel System	360 Panel System	360 Panel System
8 Positions	**8 Positions**	**8 Positions**	**8 Positions**	**8 Positions**
6 - A-Series, 15A	8 - Push Button, 10A	8 - Push Button, 10A	8 - A-Series, 15A	8 - A-Series, 15A
–	8 - ON-OFF, SPST	8 - ON-OFF, SPST	–	–
12/24V DC	12V DC	12V DC	12V DC	12V DC
100A	100A	100A	100A	50A
	8–16V DC	8–16V DC	Digital Multimeter	8–16V DC, 0–50A DC
10.50 (266.70) x 4.50 (114.30)	13.63 (346.08) x 4.75 (120.65)	4.88 (123.83) x 10.75 (273.05)	4.88 (123.83) x 7.75 (196.85)	9.25 (234.95) x 7.75 (196.85)
2.50 (63.50)	3.50 (88.90)	3.50 (88.90)	3.00 (76.20)	3.00 (76.20)
2.70 (1.23)	3.65 (1.66)	3.72 (1.69)	5.76 (2.62)	4.56 (2.07)

10 to 13 Positions





1217 | 1117*	8375	8376	8068	8403
360 Panel System	Traditional Metal	Traditional Metal	Traditional Metal	Traditional Metal
12 Positions	**12 Positions**	**13 Positions**	**13 Positions**	**13 Positions**
12 - A-Series, 15A	10 - A-Series, 15A	10 - A-Series, 15A	10 - A-Series, 15A	10 - A-Series, 15A
–	–	–	–	–
12V DC	12/24V DC	12/24V DC	12V DC	12/24V DC
100A	100A	100A	50A	100A
Digital Multimeter	–	–	8–16V DC, 0–50A DC	Digital Multimeter
9.25 (234.95)	14.75 (374.65)	5.25 (133.35)	10.50 (266.70)	10.50 (266.70)
7.75 (196.85)	4.50 (114.30)	11.25 (285.75)	7.50 (190.50)	7.50 (190.50)
4.00 (101.60)	2.50 (63.50)	2.50 (63.50)	3.00 (76.20)	4.00 (101.6)
5.99 (2.72)	5.84 (2.65)	3.1 (1.41)	4.20 (1.91)	5.15 (2.34)

* Black toggle style panels (not shown) † Panels without backlit labels (not shown)

DC Branch Circuit Breaker Panels (continued)

16 to 18 Positions





	1452	1451	1163 / 1465†	1222 / 1122*	8377
Style	360 Panel System	360 Panel System	360 Panel System	360 Panel System	Traditional Metal
Total Positions	**16 Positions**	**16 Positions**	**16 Positions**	**16 Positions**	**16 Positions**
# Installed Circuit Breakers	16 - Push Button, 10A	16 - Push Button, 10A	16 - Push Button, 10A	16 - A-Series, 15A	10 - A-Series, 15A
# Installed Rocker Switches	–	–	ON-OFF, SPST (16)	–	–
Nominal Voltage	12/24V DC	12/24V DC	12V DC	12V DC	12/24V DC
Maximum Amperage	100A	100A	100A	100A	100A
Meter	–	–	–	–	–
Width in (mm)	4.88 (123.83)	9.25 (234.95)	9.25 (234.95)	9.25 (234.95)	10.50 (266.70)
Height in (mm)	7.75 (196.85)	4.75 (120.65)	7.75 (196.85)	7.75 (196.85)	7.50 (190.50)
Depth in (mm)	3.50 (88.90)	3.50 (88.90)	3.50 (88.90)	3.00 (76.20)	2.50 (63.50)
Weight	2.20 (1.10)	3.5 (1.59)	4.57 (2.08)	6.27 (2.85)	3.68 (1.67)

20 to 24 Positions




	1121	1162 / 1470†	1166 / 1471†	1221
Style	360 Panel System	360 Panel System	360 Panel System	360 Panel System
Total Positions	**20 Positions**	**20 Positions**	**20 Positions**	**Main + 19 Positions**
# Installed Circuit Breakers	15 - A-Series, Toggle	20 - Push Button, 10A (20)	20 - Push Button, 10A	1 - C-Series, 100A / 19 - A-Series, 15A
# Installed Rocker Switches	–	ON-OFF, SPST (20)	ON-OFF, SPST (20)	–
Nominal Voltage	12V DC	12V DC	12V DC	12V DC
Maximum Amperage	100A	100A	100A	100A
Meter	Digital Multimeter	8–16V DC	8–16V DC	Digital Multimeter
Width in (mm)	13.63 (346.08)	13.63 (346.08)	9.25 (234.95)	13.63 (346.08)
Height in (mm)	7.75 (196.85)	7.75 (196.85)	10.75 (273.05)	7.75 (196.85)
Depth in (mm)	4.00 (101.60)	3.50 (88.90)	3.50 (88.90)	4.00 (101.60)
Weight lb (kg)	8.4 (3.82)	5.82 (2.65)	5.52 (2.51)	8.8 (4.0)

24 to 35 Positions




	1157 / 1468†	1161 / 1469†	1220 / 1120*	8264
Style	360 Panel System	360 Panel System	360 Panel System	Traditional Metal
Total Positions	**24 Positions**	**24 Positions**	**24 Positions**	**24 Positions**
# Installed Circuit Breakers	24 - Push Button, 10A	24 - Push Button, 10A	24 - A-Series, 15A	15 - A-Series, 15A
# Installed Rocker Switches	24 - ON-OFF, SPST	24 - ON-OFF, SPST	–	–
Nominal Voltage	12V DC	12V DC	12V DC	12V DC
Maximum Amperage	100A	100A	100A	100A
Meter	–	–	–	–
Width in (mm)	13.63 (346.08)	9.25 (234.95)	13.63 (346.08)	14.75 (374.65)
Height in (mm)	7.75 (196.85)	10.75 (273.05)	7.75 (196.85)	7.50 (190.50)
Depth in (mm)	3.50 (88.90)	3.50 (88.90)	3.00 (76.20)	2.50 (63.50)
Weight lb (kg)	6.10 (2.77)	6.15 (2.80)	9.58 (4.35)	7.45 (3.39)

* Black toggle style panels (not shown) † Panels without backlit labels (not shown)

16 to 18 Positions

1160	1466†
360 Panel System	
16 Positions	
16 - Push Button, 10A	
16 - ON-OFF, SPST	
12V DC	
100A	
8–16V DC, 0–50A DC	
13.63 (346.08)	
7.75 (196.85)	
3.50 (88.90)	
5.39 (2.45)	

1167	1467†
360 Panel System	
16 Positions	
16 - Push Button, 10A	
16 - ON-OFF, SPST	
12V DC	
100A	
8–16V DC, 0–50A DC	
9.25 (234.95)	
10.75 (273.05)	
3.50 (88.90)	
5.68 (2.58)	

1201	1101*
360 Panel System	
16 Positions	
16 - A-Series, 15A	
–	
12V DC	
100A	
8–16V DC, 0–50A DC	
13.63 (346.08)	
7.75 (196.85)	
3.00 (76.20)	
6.58 (2.99)	

8378
Traditional Metal
18 Positions
15 - A-Series, 15A
–
12V DC
100A
8–16V DC, 0–100A DC
14.75 (374.65)
7.50 (190.50)
2.50 (63.50)
7.80 (3.55)

20 to 24 Positions

8379
Traditional Metal
Main + 20 Positions
1 - C-Series, 100A / 14 - A-Series, 15A
–
12V DC/24V DC
100A
Digital Multimeter
14.75 (374.65)
7.50 (190.50)
4.00 (101.6)
8.40 (3.82)

8380
Traditional Metal
Main + 22 Positions
1 - C-Series, 100A / 16 - A-Series, 15A
–
12V DC
100A
8–16V DC, 0–50A DC
10.50 (266.70)
11.25 (285.75)
3.00 (76.20)
8.25 (3.75)

1453
360 Panel System
24 Positions
24 - Push Button, 10A
–
12/24V DC
100A
–
13.63 (346.08)
4.75 (120.65)
3.50 (88.90)
4.86 (2.21)

1454
360 Panel System
24 Positions
24 - Push Button, 10A
–
12/24V DC
100A
–
4.88 (123.83)
10.75 (273.05)
3.50 (88.90)
4.1 (1.86)

24 to 35 Positions

1126
360 Panel System
32 Positions
32 - A-Series, 15A
–
12V DC
100A
Digital Multimeter
13.63 (346.08)
10.75 (273.05)
4.00 (101.60)
13.4 (6.09)

1226
360 Panel System
Main + 31 Positions
1 - C-Series, 100A / 31 - A-Series, 15A
–
12V DC
100A
Digital Multimeter
13.63 (346.08)
10.75 (273.05)
4.00 (101.60)
14.26 (6.48)

8381
Traditional Metal
Main + 32 Positions
1 - C-Series, 100A / 23 - A-Series, 15A
–
12V DC
100A
8–16V DC, 0–100A DC
14.75 (374.65)
11.25 (285.75)
3.00 (76.20)
8.60 (3.91)

8382
Traditional Metal
Main + 34 Positions
1 - C-Series, 100A / 26 - A-Series, 15A
–
12/24V DC
100A
Digital Multimeter
14.75 (374.65)
11.25 (285.75)
4.00 (101.6)
10.80 (4.91)

* Black toggle style panels (not shown) † Panels without backlit labels (not shown)

AC Branch Circuit Breaker Panels

The AC Branch power system distributes high amperage current from a single cable into lower amperages in multiple wires, and provides circuit protection and switching. It begins at the AC Main circuit, and ends at the AC load or outlet.

AC Branch panels include:

- ON-indicating LEDs in all circuit positions
- A-Series circuit breakers
- Circuit identification label set and voltage identification label
- Maximum amperage 100A per bus

3 to 13 Positions






	8058	8158*	1210	1211*	1110	1111*	8097	8197*	1228	1229*	1128	1129*
Style	Traditional Metal		360 Panel System		360 Panel System		Traditional Metal		360 Panel System		360 Panel System	
Total Positions	**3 Positions**		**4 Positions**		**4 Positions**		**6 Positions**		**8 Positions**		**8 Positions**	
# Installed A-Series Circuit Breakers	3 Branch, 15A	3 Branch, 8A	4 Branch, 15A	4 Branch, 8A	4 Branch, 15A	4 Branch, 8A	6 - Branch, 15A	6 - Branch, 8A	8 Branch, 15A	8 Branch, 8A	8 Branch, 15A	8 Branch, 8A
Nominal Voltage	120V	230V	120V AC	230V	120V	230V	120V	230V	120V	230V	120V	230V
Maximum Amperage	100A/bus		100A/bus		100A/bus		100A/bus		100A/bus		100A/bus	
Actuator Style	White Toggle		Flat Rocker		Black Toggle		White Toggle		Flat Rocker		Black Toggle	
Meter	-		-		-		-		-		-	
Width in (mm)	5.25 (133.35)		4.88 (123.83)		4.88 (123.83)		10.50 (266.70)		4.88 (123.83)		4.88 (123.83)	
Height in (mm)	3.75 (95.25)		4.75 (120.65)		4.75 (120.65)		3.75 (95.25)		7.75 (196.85)		7.75 (196.85)	
Depth in (mm)	2.50 (63.50)		3.00 (76.20)		3.00 (76.20)		2.50 (63.50)		3.00 (76.20)		3.00 (76.20)	
Weight lb (kg)	1.2 (0.55)		1.57 (0.71)		1.5 (0.68)		2.22 (1.01)		2.68 (1.22)		2.52 (1.15)	

13 to 36 Positions



	8479	8579*	8461	8561*	8265	8165*
Style	Traditional Metal		Traditional Metal		Traditional Metal	
Positions	**13 Positions**		**16 Positions**		**24 Positions**	
# Installed A-Series Circuit Breakers	10 - Branch, 15A	10 - Branch, 8A	10 - Branch, 15A	10 - Branch, 8A	15 - Branch, 15A	15 - Branch, 8A
Nominal Voltage	120V	230V	120V	230V	120V	230V
Maximum Amperage	100A/bus		100A/bus		100A/bus	
Meter	0-150V AC	0-250V AC	-		-	
Actuator Style	White Toggle		White Toggle		White Toggle	
Width in (mm)	10.50 (266.70)		10.50 (266.70)		14.75 (374.64)	
Height in (mm)	7.50 (190.50)		7.50 (190.50)		7.50 (190.50)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)	
Weight lb (kg)	4.05 (1.84)		3.74 (1.7)		5.12 (2.33)	

Specifications subject to change. See bluesea.com for current information.

*230 Volt (typical of Europe)

3 to 13 Positions





	8059	8159*	8411	8511*	8478	8578*	8460	8560*	8480	8580*
	Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal	
	8 Positions		**8 Positions**		**10 Positions**		**12 Positions**		**13 Positions**	
	5 Branch, 15A	5 Branch, 8A	6 Branch, 15A	6 Branch, 8A	7 Branch, 15A	7 Branch, 8A	10 - Branch, 15A	10 - Branch, 8A	10 - Branch, 15A	10 - Branch, 8A
	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V
	100A/bus		100A/bus		100A/bus		100A/bus		100A/bus	
	White Toggle		White Toggle		White Toggle		White Toggle		White Toggle	
	-		-		0-150V AC	0-250V AC	-		-	
	5.25 (133.35)		10.50 (266.70)		5.25 (133.35)		14.75 (374.64)		5.25 (133.35)	
	7.50 (190.50)		4.50 (114.30)		11.25 (285.75)		4.50 (114.30)		11.25 (285.75)	
	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)		2.50 (63.50)		2.50 (63.50)	
	2.0 (0.91)		1.9 (0.86)		3.0 (1.36)		3.15 (1.43)		2.82 (1.28)	

13 to 36 Positions

	8484	8584*
	Traditional Metal	
	36 Positions	
	27 - Branch, 15A	27 - Branch, 8A
	120V	230V
	100A/bus	
	Digital Multimeter	
	White Toggle	
	14.75 (374.64)	
	11.25 (285.75)	
	4.00 (101.60)	
	10.0 (4.55)	

Nordic Tug 39

*230 Volt (typical of Europe)

AC Main Circuit Breaker Panels

The AC Main power system provides a path for delivering power from the ship's source of AC power to the AC branch distribution system. It begins at the AC power source (shore power, genset, or inverter), and ends at the AC branch circuit. Sources of AC power always have an AC Main circuit breaker near the power source.

AC Main panels include green ON and red REVERSE POLARITY indicating LEDs, A-Series circuit breakers, a circuit identification label set, and voltage identification labels.

· Maximum panel amperage 50A

Up to Main + 4 Positions






	8077	8177*	8079	8179*	8029	8129*	1214	1215*	1114	1115*	1206	1207*
Style	Traditional Metal		Traditional Metal		Traditional Metal		360 Panel System		360 Panel System		360 Panel System	
Total Positions	**Main Only**		**Main Only**		**Main + 1 positions**		**Main + 2 positions**		**Main + 2 positions**		**Main + 2 positions**	
# Installed A-Series Circuit Breakers	Main, 30A	Main, 16A	Main, 50A	Main, 32A	Main, 30A	Main, 16A	Main, 30A 2 - Branch, 15A	Main, 16A 2 - Branch, 8A	Main, 30A 2 - Branch, 15A	Main, 16A 2 - Branch, 8A	Main, 30A 2 - Branch, 15A	Main, 16A 2 - Branch, 8A
Nominal Voltage	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V
Actuator Style	White Toggle		White Toggle		White Toggle		Flat Rocker		Black Toggle		Flat Rocker	
Meter	-		-		-		-		-		0-150V	0-250V
Width x Height in (mm)	2.63 (66.80) x 3.75 (95.25)		2.63 (66.80) x 3.75 (95.25)		5.25 (133.35) x 3.75 (95.25)		4.88 (123.83) x 4.75 (120.65)		4.88 (123.83) x 4.75 (120.65)		4.88 (123.83) x 7.75 (196.85)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	
Weight lb (kg)	0.51 (0.23)		0.51 (0.23)		1.05 (0.48)		1.58 (0.72)		1.5 (0.68)		2.19 (1.0)	

Main + 6 to 11 Positions




	8412	8512*	1230	1233*	1130	1133*	1202	1203*
Style	Traditional Metal		360 Panel System		360 Panel System		360 Panel System	
Total Positions	**Main + 6 positions**		**Main + 6 positions**		**Main + 6 positions**		**Main + 6 positions**	
# Installed A-Series Circuit Breakers	Main, 30A 4 - Branch, 15A	Main, 16A 4 - Branch, 8A	Main, 30A 6 - Branch, 15A	Main, 16A 6 - Branch, 8A	Main, 30A 6 - Branch, 15A	Main, 16A 6 - Branch, 8A	Main, 30A 6 - Branch, 15A	Main, 16A 6 - Branch, 8A
Nominal Voltage	120V	230V	120V	230V	120V	230V	120V	230V
Actuator Style	White Toggle		Flat Rocker		Black Toggle		Flat Rocker	
Meter	-		-		-		-	
Width x Height in (mm)	10.50 (266.70) x 4.50 (114.30)		9.25 (234.95) x 4.75 (120.65)		9.25 (234.95) x 4.75 (120.65)		4.88 (123.83) x 7.75 (196.85)	
Depth in (mm)	2.50 (63.50)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	
Weight lb (kg)	1.9 (0.86)		3.89 (1.77)		3.71 (1.69)		2.7 (1.23)	

Main + 11 to 31 Positions



	8407	8507*	8464	8564*	8471	8571*
Style	Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	**Main + 11 positions**		**Main + 14 positions**		**Main + 16 positions**	
# Installed A-Series Circuit Breakers	Main, 30A 8 - Branch, 15A	Main, 16A 8 - Branch, 8A	Main, 30A 8 - Branch, 15A	Main, 16A 8 - Branch, 8A	Main, 30A 13 - Branch, 15A	Main, 16A 13 - Branch, 8A
Nominal Voltage	120V	230V	120V	230V	120V	230V
Actuator Style	White Toggle		White Toggle		White Toggle	
Meter	Digital Multimeter		-		0-150V, 0-50A	0-250V, 0-50A
Width x Height in (mm)	10.50 (266.70) x 7.50 (190.50)		10.50 (266.70) x 7.50 (190.50)		14.75 (374.65) x 7.50 (190.50)	
Depth in (mm)	4.00 (101.60)		2.50 (63.50)		3.00 (76.20)	
Weight lb (kg)	4.78 (2.17)		3.74 (1.70)		5.96 (2.71)	

Specifications subject to change. See bluesea.com for current information.

*230 Volt (typical of Europe)

Up to Main + 4 Positions

1106	1107*	8043	8143*	8409	8509*	8405	8505*	8099	8199*	8027	8127*
360 Panel System		Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal	
Main + 2 positions		**Main + 3 positions**		**Main + 3 positions**		**Main + 3 positions**		**Main + 4 positions**		**Main + 6 positions**	
Main, 30A 2 - Branch, 15A	Main, 16A 2 - Branch, 8A	Main, 30A 3 - Branch, 15A	Main, 16A 3 - Branch, 8A	Main, 30A 3 - Branch, 15A	Main, 16A 3 - Branch, 8A	Main, 30A 3 - Branch, 15A	Main, 16A 3 - Branch, 8A	Main, 30A 4 - Branch, 15A	Main, 16A 4 - Branch, 8A	Main, 30A 3 - Branch, 15A	Main, 16A 3 - Branch, 8A
120V	230V	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V
Black Toggle		White Toggle		White Toggle		White Toggle		White Toggle		White Toggle	
0-150V	0-250V	0-150V	0-250V	0-150V, 0-50A	0-250V, 0-50A	Digital Multimeter		-		-	
4.88 (123.83) x 7.75 (196.85)		5.25 (133.35) x 7.50 (190.50)		5.25 (133.35) x 7.50 (190.50)		5.25 (133.35) x 7.50 (190.50)		10.50 (266.70) x 3.75 (95.25)		5.25 (133.35) x 7.50 (190.50)	
3.00 (76.20)		2.50 (63.50)		3.00 (76.20)		4.00 (101.60)		2.50 (63.50)		2.50 (63.50)	
2.11 (0.96)		2.0 (0.91)		2.2 (1.0)		2.94 (1.34)		2.22 (1.01)		1.87 (0.85)	

Main + 6 to 11 Positions

1102	1103*	8074	8174*	8488	8588*	8406	8506*	8485	8585*	8076	8176*
360 Panel System		Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal	
Main + 6 positions		**Main + 8 positions**		**Main + 8 positions**		**Main + 8 positions**		**Main + 11 positions**		**Main + 11 positions**	
Main, 30A 6 - Branch, 15A	Main, 16A 6 - Branch, 8A	Main, 30A 5 - Branch, 15A	Main, 16A 5 - Branch, 8A	Main, 30A 5 - Branch, 15A	Main, 16A 5 - Branch, 8A	Main, 30A 5 - Branch, 15A	Main, 16A 5 - Branch, 8A	Main, 30A 8 - Branch, 15A	Main, 16A 8 - Branch, 8A	Main, 30A 8 - Branch, 15A	Main, 16A 8 - Branch, 8A
120V	230V	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V
Black Toggle		White Toggle		White Toggle		White Toggle		White Toggle		White Toggle	
-		0-150V, 0-50A	0-250V, 0-50A	0-150V	0-250V	Digital Multimeter		-		0-150V, 0-50A	0-250V, 0-50A
4.88 (123.83) x 7.75 (196.85)		5.25 (133.35) x 11.25 (285.75)		5.25 (133.35) x 11.25 (285.75)		5.25 (133.35) x 11.25 (285.75)		5.25 (133.35) x 11.25 (285.75)		10.50 (266.70) x 7.50 (190.50)	
3.00 (76.20)		3.00 (76.20)		2.50 (63.50)		4.00 (101.60)		2.50 (63.50)		3.00 (76.20)	
2.54 (1.15)		3.28 (1.49)		3.0 (1.36)		3.18 (1.45)		2.81 (1.28)		4.24 (1.93)	

Main + 11 to 31 Positions

8465	8565*	8486	8586*
Traditional Metal		Traditional Metal	
Main + 22 positions		**Main + 31 positions**	
Main, 30A 13 - Branch, 15A	Main, 16A 13 - Branch, 8A	Main, 30A 22 - Branch, 15A	Main, 16A 22 - Branch, 8A
120V	230V	120V	230V
White Toggle		White Toggle	
-		0-150V, 0-50A	0-150V, 0-50A
14.75 (374.65) x 7.50 (190.50)		14.75 (374.65) x 11.25 (285.75)	
2.50 (63.50)		3.00 (76.20)	
5.25 (2.39)		8.94 (4.06)	

*230 Volt (typical of Europe)

AC Source Selection Circuit Breaker Panels

AC Source Selection panels allow the boater to select between two or three AC sources to supply power to the AC Branch distribution system. These panels include lockout slides to ensure that no two sources of AC power are connected to the circuit simultaneously.

AC Source Selection panels include ON and Red REVERSE POLARITY indicating LEDs, A-Series circuit breakers, Circuit breaker lockout slide(s) a source identification label set, and a voltage identification label

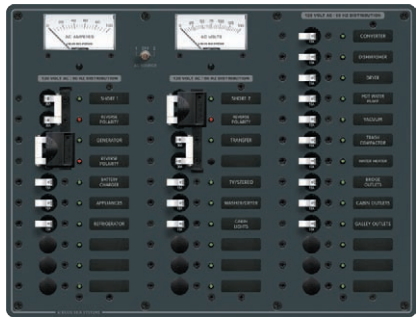





	1208	1209*	1108	1109*	1231	1232*	1131	1132*	8032	8132*	8061	8161*
Style	360 Panel System		360 Panel System		360 Panel System		360 Panel System		Traditional Metal		Traditional Metal	
Total Positions	**2 Sources**		**2 Sources**		**2 Sources**		**2 Sources**		**2 Sources**		**2 Sources**	
# Installed A-Series Circuit Breakers	2 - Main, 30A	2 - Main, 16A	2 - Main, 30A	2 - Main, 16A	2 - Main, 50A	2 - Main, 32A	2 - Main, 50A	2 - Main, 32A	2 - Main, 30A	2 - Main, 16A	2 - Main, 50A	2 - Main, 32A
Nominal Voltage	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V	120V	230V
Actuator Style	Flat Rocker		Black Toggle		Flat Rocker		Black Toggle		White Toggle		White Toggle	
Meter	-		-		-		-		-		-	
Width x Height in (mm)	4.88 (123.83) x 4.75 (120.65)		4.88 (123.83) x 4.75 (120.65)		4.88 (123.83) x 4.75 (120.65)		4.88 (123.83) x 4.75 (120.65)		5.25 (133.35) x 3.00 (76.20)		5.25 (133.35) x 3.00 (76.20)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	
Weight lb (kg)	1.71 (.78)		1.63 (.74)		1.71 (.78)		1.63 (.74)		1.35 (.61)		1.35 (.61)	




	8489	8589*	8462	8562*	8466	8566*	8468	8568*
Style	Traditional Metal		Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	**2 Sources + 6 positions**		**2 Sources + 9 positions**		**2 Sources + 9 positions**		**2 Sources + 12 positions**	
# Installed A-Series Circuit Breakers	2 - Main, 30A 3 - Branch, 15A	2 - Main, 16A 3 - Branch, 8A	2 - Main, 30A 6 - Branch, 15A	2 - Main, 16A 6 - Branch, 8A	2 - Main, 30A 6 - Branch, 15A	2 - Main, 16A 6 - Branch, 8A	2 - Main, 30A 8 - Branch, 15A	2 - Main, 16A 8 - Branch, 8A
Nominal Voltage	120V	230V	120V	230V	120V	230V	120V	230V
Actuator Style	White Toggle		White Toggle		White Toggle		White Toggle	
Meter	0-150V	0-250V	0-150V	0-250V	-		-	
Width x Height in (mm)	5.25 (133.35) x 4.50 (114.30)		10.50 (266.70) x 7.50 (190.50)		5.25 (133.35) x 11.25 (285.75)		10.50 (266.70) x 7.50 (190.50)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	
Weight lb (kg)	3.00 (1.36)		3.8 (1.73)		2.81 (1.28)		3.75 (1.70)	




	8494	8594*	8496	8596*
Style	Traditional Metal		Traditional Metal	
Total Positions	**3 Sources + 25 positions**		**3 Sources + 28 positions**	
# Installed A-Series Circuit Breakers	Main, 30A (3) Main, 50A (1) Branch, 15A (16)	Main, 16A (3) Main, 32A (1) Branch, 8A (16)	Main, 30A (3) Main, 50A (1) Branch, 15A (19)	Main, 16A (3) Main, 32A (1) Branch, 8A (19)
Nominal Voltage	120V	230V	120V	230V
Actuator Style	White Toggle		White Toggle	
Meter	0-150V, 0-50A	0-250V, 0-50A	Digital Multimeter	
Width x Height in (mm)	14.75 (374.65) x 11.25 (285.75)		14.75 (374.65) x 11.25 (285.75)	
Depth in (mm)	3.00 (76.20)		4.00 (101.60)	
Weight lb (kg)	9.0 (4.09)		10.10 (4.59)	

Specifications subject to change. See bluesea.com for current information.

*230 Volt (typical of Europe)

8498	8598*
Traditional Metal	
3 Sources	
2 - Main, 30A 1 - Main, 50A	2 - Main, 16A 1 - Main, 32A
120V	230V
White Toggle	
-	
4.88 (123.83) x 7.75 (196.85)	
3.00 (76.20)	
2.20 (1.0)	

8499	8599*
Traditional Metal	
2 Sources + 4 positions	
2 - Main, 30A 2 - Branch, 15A	2 - Main, 16A 2 - Branch, 8A
120V	230V
White Toggle	
-	
10.50 (266.70) x 4.50 (114.30)	
3.00 (76.20)	
1.9 (.86)	

8467	8567*
Traditional Metal	
2 Sources + 4 positions	
2 - Main, 30A 2 - Branch, 15A	2 - Main, 16A 2 - Branch, 8A
120V	230V
White Toggle	
-	
5.25 (133.35) x 7.50 (190.50)	
3.00 (76.20)	
2.15 (.98)	

8459	8559*
Traditional Metal	
2 Sources + 8 positions	
2 - Main, 30A 6 - Branch, 15A	2 - Main, 16A 6 - Branch, 8A
120V	230V
White Toggle	
-	
14.75 (374.65) x 4.50 (114.30)	
3.00 (76.20)	
4.15 (1.89)	

8473	8573*
Traditional Metal	
2 Sources + 14 positions	
2 - Main, 30A 11 - Branch, 15A	2 - Main, 16A 11 - Branch, 8A
120V	230V
White Toggle	
0-150V, 0-50V	0-250V, 0-50A
14.75 (374.65) x 7.50 (190.50)	
3.00 (76.20)	
6.0 2.72)	

8475	8575*
Traditional Metal	
2 Sources + 17 positions	
2 - Main, 30A 11 - Branch, 15A	2 - Main, 16A 11 - Branch, 8A
120V	230V
White Toggle	
Digital Multimeter	
14.75 (374.65) x 7.50 (190.50)	
4.00 (101.60)	
6.3 (2.86)	

8458
Traditional Metal
3 Sources + 18 positions
3 - Main, 30A / 1 - Main, 50A 12 - Branch, 15A
120V
White Toggle
0-150V, 0-50A
10.50 (266.70) x 13.75 (349.25)
3.00 (76.20)
9.1 (4.14)

*230 Volt (typical of Europe)

AC Source Selection Rotary Switch Panels

Heavy duty industrial rated switches provide a compact and intuitive solution for safely managing AC sources when circuit protection is provided elsewhere

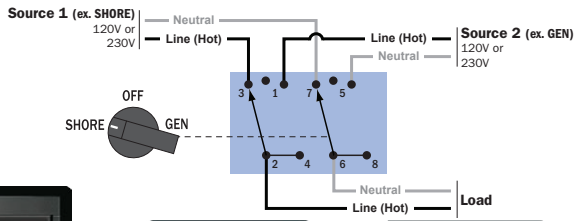
Panels include ON and Red REVERSE POLARITY indicating LEDs

Regulatory CE marked, UL listed

30 Ampere 2 Positions + OFF, 2 Pole

Rotary Switch

- Switches 2 sources
- Allows connecting one of two different AC sources to one circuit





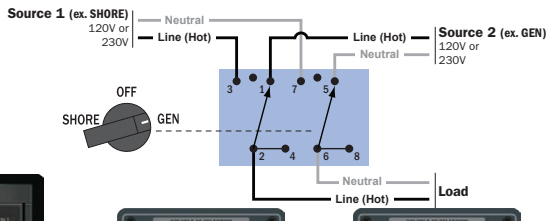


	9009	1481	1484*	8367	8359*
Style	Rotary Switch	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Voltage Maximum Operating	600V AC	120V AC	230V AC	120V AC	230V AC
Maximum Wire Size (AWG)	10	10	10	10	10
Minimum Wire Size (AWG)	14	14	14	14	14
Width x Height in (mm)	1.89 (48.00) x 1.89 (48.00)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	1.91 (48.51)	1.91 (48.51)	1.91 (48.51)	1.91 (48.51)	1.91 (48.51)
Weight lb (kg)	.70 (.32)	1.15 (.52)	1.20 (0.54)	.65 (.30)	.65 (.30)

65 Ampere 2 Positions + OFF, 2 Pole

Rotary Switch

- Switches 2 sources
- Allows connecting one of two different AC sources to one circuit





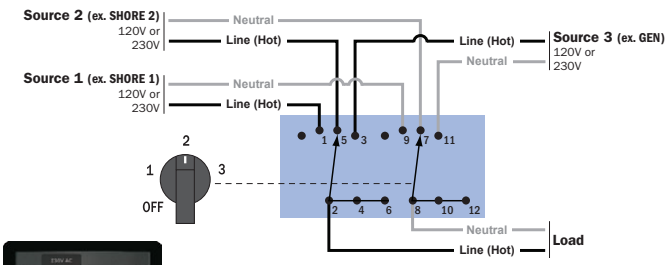


	9011	1483	1486*	8365	8357*
Style	Rotary Switch	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Voltage Maximum Operating	600V AC	120V AC	230V AC	120V AC	230V AC
Maximum Wire Size (AWG)	6	6	6	6	6
Minimum Wire Size (AWG)	12	12	12	12	12
Width x Height in (mm)	2.52 (64.00) x 2.52 (64.00)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)
Weight lb (kg)	1.25 (.57)	1.64 (.75)	1.64 (.75)	1.25 (.52)	1.25 (.57)

30 Ampere 3 Positions + OFF, 2 Pole

Rotary Switch

- Switches 3 sources
- Allows connecting one of three different AC sources to one circuit







	9010	1482	1485*	8366	8358*
Style	Rotary Switch	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Voltage Maximum Operating	600V AC	120V AC	230V AC	120V AC	230V AC
Maximum Wire Size (AWG)	10	10	10	10	10
Minimum Wire Size (AWG)	14	14	14	14	14
Width x Height in (mm)	1.89 (48.00) x 1.89 (48.00)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)
Weight lb (kg)	.70 (.32)	1.25 (0.57)	1.25 (0.57)	.70 (.32)	.70 (.32)

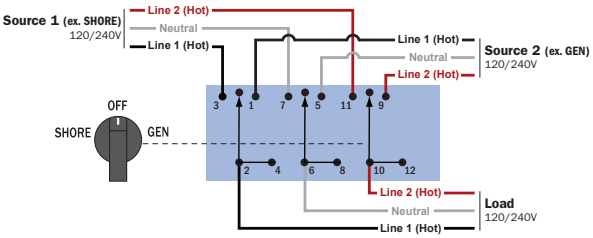
Specifications subject to change. See bluesea.com for current information.

*230 Volt (typical of Europe)

65 Ampere 2 Positions + OFF, 2 Pole

Rotary Switch

- Switches 2—120/240 Volt AC sources
- Switches both lines (hots) and neutral
- Allows connecting one of two different AC sources to one circuit



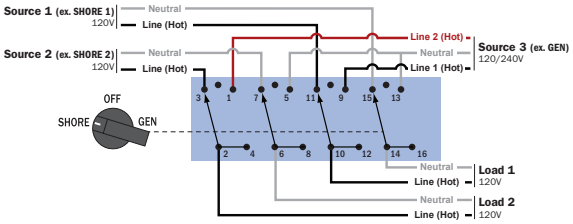


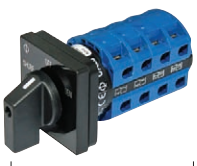
	9019	1487	8363
Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Maximum Operating	600V AC	240V AC	240V AC
Maximum Wire Size (AWG)	6	6	6
Minimum Wire Size (AWG)	12	12	12
Width x Height in (mm)	2.52 (64.00) x 2.52 (64.00)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	3.65 (92.71)	3.65 (92.71)	3.65 (92.71)
Weight lb (kg)	1.41 (.64)	3.10 (1.41)	1.41 (.64)

30 Ampere 2 Positions + OFF, 4 Pole

Rotary Switch

- Switches between 2—120 Volt AC shore power sources and 1—240 Volt AC source to 2—120 Volt AC load groups
- Switches both lines (hots) and neutral
- Allows connecting one of three different AC sources to one circuit



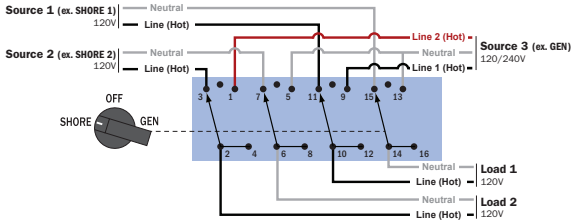


	6337	1489	8386
Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Maximum Operating	600V AC	240V AC	240V AC
Maximum Wire Size (AWG)	10	10	10
Minimum Wire Size (AWG)	14	14	14
Width x Height in (mm)	1.89 (48.00) x 1.89 (48.00)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	2.98 (75.69)	2.98 (75.69)	2.98 (75.69)
Weight lb (kg)	.76 (.35)	1.20 (0.54)	.76 (.35)

65 Ampere 2 Positions + OFF, 4 Pole

Rotary Switch

- Switches between 2—120 Volt AC shore power sources and 1—240 Volt AC source to 2—120 Volt AC load groups
- Switches both lines (hots) and neutral
- Allows connecting one of three different AC sources to one circuit



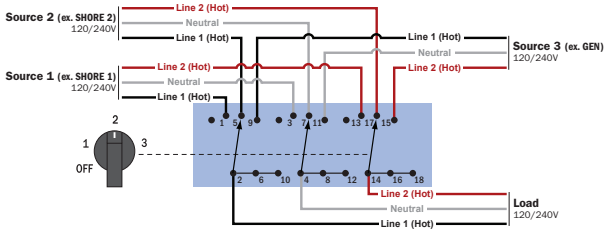


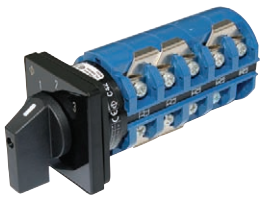
	9093	1480	8369
Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Maximum Operating	600V AC	240V AC	240V AC
Maximum Wire Size (AWG)	6	6	6
Minimum Wire Size (AWG)	12	12	12
Width x Height in (mm)	2.52 (64.00) x 2.52 (64.00)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	4.50 (114.30)	4.50 (114.30)	4.50 (114.30)
Weight lb (kg)	1.41 (.64)	3.50 (1.59)	1.41 (.64)

65 Ampere 3 Positions + OFF, 3 Pole

Rotary Switch

- Switches 3—120/240 Volt AC sources
- Switches both lines (hot) and neutral
- Allows connecting one of three different AC sources to one circuit





	9077	1488	8361
Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Maximum Operating	600V AC	240V AC	240V AC
Maximum Wire Size (AWG)	6	6	6
Minimum Wire Size (AWG)	12	12	12
Width x Height in (mm)	2.52 (64.0) x 2.52 (64.0)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	5.50 (139.70)	5.50 (139.70)	5.50 (139.70)
Weight lb (kg)	2.0 (.91)	2.65 (1.20)	2.0 (.91)

Residual Current Circuit Breaker Panels (GFCI and ELCI)

Reduces the risk of fire and shock hazards caused by defects in boat appliances and circuit wiring

Features

- Provides Main circuit protection with branch circuits

Component References

- Residual Current Circuit Breakers (GFCI-3100) (page 41)
- Residual Current Circuit Breakers (ELCI-3102) (page 41)
- A-Series Toggle (page 36)
- A-Series Flat Rocker (page 37)
- C-Series Flat Rocker (page 39)

Go to page 41 for Blue Sea Systems' complete selection of Residual Current Circuit Breakers






	1500	1502	NEW 8100	NEW 1190	NEW 8101	NEW 1191
Style	360 Panel System	360 Panel System	Traditional Metal	360 Panel System	Traditional Metal	360 Panel System
Total Positions	**GFCI + 2**	**ELCI + 1 Position**	**ELCI**	**ELCI + 1 positions**	**ELCI + 5 positions**	**ELCI + 1 positions**
# Installed Residual Current Circuit Breaker	1 - GFCI, 15A	1 - ELCI, 30A	1 - ELCI, 30A	1 - ELCI, 30A	1 - ELCI, 30A	1 - ELCI, 30A
Amperage Trip Reference	15A AC GFCI	30A AC ELCI	30A AC ELCI	30A AC ELCI	30A AC ELCI	30A AC ELCI
Leakage Trip Amperage	5 mA	30 mA	30 mA	30 mA	30 mA	30 mA
Maximum Voltage	120V AC	120V AC	120V AC	120V AC	120V AC	120V AC
Actuator Style	Flat Rocker	Flat Rocker	White Toggle	Flat Rocker	White Toggle	Flat Rocker
Meter	-	-	-	-	-	0-150V AC
Width x Height in (mm)	5.25 (133.35) x 3.75 (95.25)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 7.50 (190.50)	4.88 (123.83) x 7.75 (196.85)
Depth in (mm)	3.00 (76.20)	3.00 (76.20)	3.50 (88.90)	3.99 (101.4)	3.50 (88.90)	3.99 (101.4)
Weight lb (kg)	.93 (.42)	1.10 (.50)	1.65 (.75)	1.10 (1.0)	2.47 (1.12)	2.40 (1.1)




	NEW 8102	NEW 1193	NEW 1192	NEW 1194 AC/DC	
Style	Traditional Metal	360 Panel System	360 Panel System	360 Panel System	
Total Positions	**ELCI + 2 positions**	**ELCI + 5 positions**	**ELCI + 5 positions**	**ELCI + 5 positions**	**15 positions**
# Installed Residual Current Circuit Breaker	1 - ELCI, 30A	1 - ELCI, 30A	1 - ELCI, 30A	1 - ELCI, 30A AC/5 - Branch, 15A AC Main, 100A DC/15 - Branch, 15A DC	
Amperage Trip Reference	30A AC ELCI	30A AC ELCI	30A AC ELCI	30A AC ELCI	
Leakage Trip Amperage	30 mA	30 mA	30 mA	30 mA	
Maximum Voltage	120V AC	120V AC	120V AC	120V AC/12V DC	
Actuator Style	White Toggle	Flat Rocker	Flat Rocker	Flat Rocker	
Meter	0-150V AC	-	-	0-150A AC / 8-16V DC, 0-100A DC	
Width x Height in (mm)	5.25 (133.35) x 3.75 (95.25)	9.25 (234.95) x 4.75 (120.65)	4.88 (123.83) x 7.75 (196.85)	13.63 (346.08) x 10.75 (273.05)	
Depth in (mm)	3.50 (88.9)	3.99 (101.4)	3.99 (101.4)	3.99 (101.4)	
Weight lb (kg)	3.07 (1.4)	4.36 (2.0)	3.3 (1.5)	12.27 (5.6)	

240 Volt AC (60Hz) Circuit Breaker Panels

Provides both source selection and circuit protection for boats with 240 Volt AC systems

Features

- Provides spare rocker apertures which may be used for single-pole 120 Volt AC or double-pole 240 Volt AC Branch circuits
- Source Selection Panels include lockout slides to prevent connecting two AC sources simultaneously
- Square Format Label Set 4206 included (page 110)

Component References

- C-Series Raised Rocker Circuit Breakers—triple-pole (page 39)
- C-Series Flat Rocker Circuit Breakers—triple-pole (page 39)
- C-Series Toggle (page 38)






	7372	1168	1169	1170	1171	1172
Style	Traditional Metal	360 Panel System	360 Panel System	360 Panel System	360 Panel System	360 Panel System
Total Positions	**Main Only**	**Main + 1 Position**	**Main + 7 positions**	**Main + 7 positions**	**2 Sources + 2 positions**	**2 Sources + 2 positions**
# Installed C-Series Circuit Breakers	1 - Main, 50A	1 - Main, 50A	1 - Main, 50A	1 - Main, 50A	2 - Main, 50A	2 - Main, 50A
Poles	3	3	3	3	3	3
Nominal Voltage	120/240V AC	120/240V AC	120/240V AC	120/240V AC	120/240V AC	120/240V AC
Maximum Voltage	240V AC	240V AC	240V AC	240V AC	240V AC	240V AC
Actuator Style	White Toggle	Flat Rocker	Flat Rocker	Flat Rocker	Raised Rocker	Raised Rocker
Meter	-	-	0-250V AC	Digital Multimeter	0-250V AC	Digital Multimeter
Width x Height in (mm)	5.25 (133.35) x 3.75 (95.25)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 13.75 (349.25)	4.88 (123.83) x 13.75 (349.25)	4.88 (123.83) x 13.75 (349.25)	4.88 (123.83) x 13.75 (349.25)
Depth in (mm)	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)	4.00 (101.60)	3.00 (76.20)	4.00 (101.60)
Weight lb (kg)	1.38 (.63)	1.8 (.82)	4.9 (2.22)	5.35 (2.43)	7.2 (3.27)	7.65 (3.48)

AC/DC Combination Circuit Breaker Panels

Combines all AC and DC switching, circuit protection, source selection and monitoring into a single panel

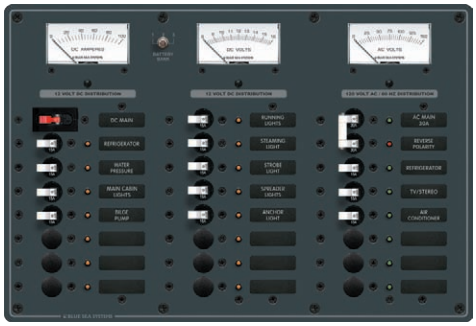
Features

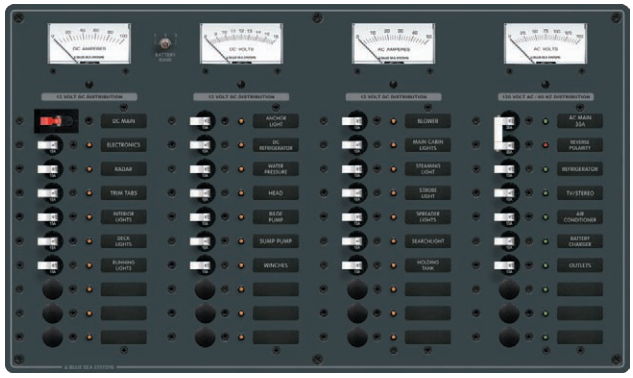
- ON indicating LEDs installed in all circuit positions
- Backlit label positions
- Includes toggle switch to monitor voltage on up to three battery banks
- Circuit identification label sets included


	1204	1205*	1104	1105*
Style	360 Panel System		360 Panel System	
Total AC Positions	**Main + 6 positions**		**Main + 6 positions**	
Total DC Positions	**Main + 15 positions**		**16 positions**	
# Installed AC Circuit Breakers	Main, 30A/6 - Branch, 15A	Main, 16A/6 - Branch, 8A	Main, 30A/6 - Branch, 15A	Main, 16A/6 - Branch, 8A
# Installed DC Circuit Breakers	Main, 100A/15 - Branch, 15A	Main, 100A/15 - Branch, 15A	16 - Branch, 15A	16 - Branch, 8A
AC/DC Voltage	120V AC/12V DC	230V AC/12V DC	120V AC/12V DC	230V AC/12V DC
Actuator Style	Flat Rocker		Black Toggle	
AC Meters	0-150V AC	0-250V AC	0-150V AC	0-250V AC
DC Meters	8-16V DC, 0-100A DC		8-16V DC, 0-100A DC	
Width x Height in (mm)	13.63 (346.08) x 10.75 (273.05)		13.63 (346.08) x 10.75 (273.05)	
Depth in (mm)	4.00 (101.60)		4.00 (101.60)	
Weight lb (kg)	11.67 (5.30)		11.19 (5.09)	

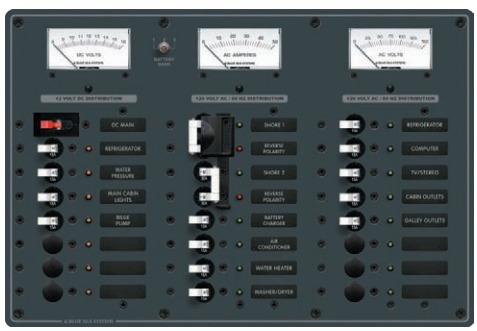
*230 Volt (typical of Europe)

AC/DC Combination Circuit Breaker Panels (continued)





	8084	8184*	8095	8195*
Style	Traditional Metal		Traditional Metal	
Total AC Positions	**Main + 6 positions**		**Main + 8 positions**	
Total DC Positions	**Main + 15 positions**		**Main + 29 positions**	
# Installed AC Circuit Breakers	Main, 30A/3 - Branch, 15A	Main, 16A/3 - Branch, 8A	Main, 30A/5 - Branch, 15A	Main, 16A/5 - Branch, 8A
# Installed DC Circuit Breakers	Main, 100A/9 - Branch, 15A	Main, 100A/9 - Branch, 15A	Main, 100A/20 - Branch, 15A	Main, 100A/20 - Branch, 15A
AC/DC Voltage	120V AC/12V DC	230V AC/12V DC	120V AC/12V DC	230V AC/12V DC
Actuator Style	White Toggle		White Toggle	
AC Meters	0-150V AC	0-250V AC	0-150V AC, 0-50A AC	0-250V AC, 0-50A AC
DC Meters	8-16V DC, 0-100A DC		8-16V DC, 0-100A DC	
Width x Height in (mm)	14.75 (374.65) x 10.00 (254.00)		19.50 (495.30) x 11.50 (292.10)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)	
Weight lb (kg)	8.75 (3.90)		12.45 (5.66)	



	8085	8185*	1212	1213*
Style	Traditional Metal		360 Panel System	
Total AC Positions	**2 Sources + 12 positions**		**3 Sources + 8 positions**	
Total DC Positions	**Main + 7 positions**		**Main + 15 positions**	
# Installed AC Circuit Breakers	2 - Main, 30A/9 - Branch, 15A	2 - Main, 16A/9 - Branch, 8A	2 - Main, 30A/2 - Main, 50A/8 - Branch, 15A	2 - Main, 16A/2 - Main, 32A/8 - Branch, 8A
# Installed DC Circuit Breakers	Main, 100A/4 - Branch, 15A		Main, 100A/15 - Branch, 15A	
AC/DC Voltage	120V AC/12V DC	230V AC/12V DC	120V AC/12V DC	230V AC/12V DC
Actuator Style	White Toggle		Flat Rocker	
AC Meters	0-150V AC, 0-50A AC	0-250V AC, 0-50A AC	0-150V AC, 0-50A AC	0-250V AC, 0-50A AC
DC Meters	8-16V DC		8-16V DC, 0-100A DC	
Width x Height in (mm)	14.75 (374.65) x 10.00 (254.00)		18.00 (457.20) x 10.75 (273.05)	
Depth in (mm)	3.00 (76.20)		4.00 (101.60)	
Weight lb (kg)	9.00 (4.09)		17.8 (8.09)	

 Specifications subject to change. See bluesea.com for current information.

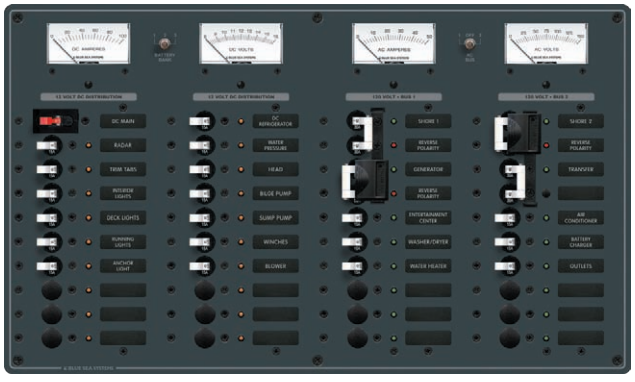
*230 Volt (typical of Europe)

1218	1219
360 Panel System	
Main + 6 positions	
Main + 19 positions	
Main, 30A/6 - Branch, 15A	Main, 16A/6 - Branch, 8A
Main, 100A/19 - Branch, 15A	Main, 100A/19 - Branch, 15A
120V AC/12V DC	230V AC/12V DC
Flat Rocker	
AC Digital Multimeter	
DC Digital Multimeter	
13.63 (346.08) x 10.75 (273.05)	
4.00 (101.60)	
12.8 (5.82)	

1118	1119*
360 Panel System	
Main + 6 positions	
20 positions	
Main, 30A/6 - Branch, 15A	Main, 16A/6 - Branch, 8A
20 - Branch, 15A	20 - Branch, 15A
120V AC/12V DC/24	230V AC/12V DC
Black Toggle	
AC Digital Multimeter	
DC Digital Multimeter	
13.63 (346.08) x 10.75 (273.05)	
4.00 (101.60)	
12.5 (5.68)	

8408	8508*
Traditional Metal	
Main + 6 positions	
Main + 18 positions	
Main, 30A/3 - Branch, 15A	Main, 16A/3 - Branch, 8A
Main, 100A/12 - Branch, 15A	Main, 100A/12 - Branch, 15A
120V AC/12V DC/24	230V AC/12V DC
White Toggle	
AC Digital Multimeter	
DC Digital Multimeter	
14.75 (374.65) x 10.00 (254.00)	
4.00 (101.60)	
9.3 (4.23)	

1112	1113*
360 Panel System	
3 Sources + 8 positions	
16 positions	
2 - Main, 30A/2 - Main, 50A/8 - Branch, 15A	2 - Main, 16A/2 - Main, 32A/8 - Branch, 8A
16 - Branch, 15A	
120V AC/12V DC	230V AC/12V DC
Black Toggle	
0-150V AC, 0-50A AC	0-250V AC, 0-50A AC
8-16V DC, 0-100A DC	
18.00 (457.20) x 10.75 (273.05)	
4.00 (101.60)	
12.16 (7.8)	



8086	8186*
Traditional Metal	
3 Sources + 12 positions	
Main + 19 positions	
3 - Main, 30A/1 - Main, 50A/6 - Branch, 15A	3 - Main, 16A/1 - Main, 32A/6 - Branch, 8A
Main, 100A/13 - Branch, 15A	
120V AC/12V DC/24	230V AC/12V DC
White Toggle	
0-150V AC, 0-50A AC	0-250V AC, 0-50A AC
8-16V DC, 0-100A DC	
19.50 (495.30) x 11.50 (292.10)	
3.00 (76.20)	
12.45 (5.66)	

*230 Volt (typical of Europe)

Configure and order your customized panel in three easy steps

360 PANEL SYSTEM

CUSTOM PANEL FLEXIBILITY IN DAYS, NOT WEEKS

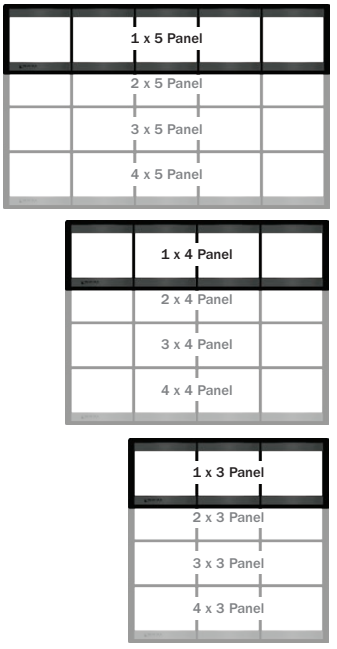
Blue Sea Systems knows that an "off the shelf" panel may not meet the needs of every boater. A custom panel can be created for a unique application in a fraction of the time required by a custom panel shop. From a single module to a panel with 80 circuit breakers, all panel types can be built. Custom 360 Panels are built in the Blue Sea Systems Bellingham, Washington manufacturing plant and are shipped within five days of order receipt.

Design a custom panel using the Custom 360 Panel Worksheet or the Panel Wizard. Both are available at www.bluesea.com.


Hunt Yachts Harrier 29

Step 1 –Select a panel frame from the icons and the Panel Frame Dimensions Table below.

Panel Frames



Rows	Columns	Panel Height in (mm)	Panel Width in (mm)	Cut out Height in (mm)	Cut out Width in (mm)
1	1	4.75 (120.65)	4.88 (123.83)	3.31 (84.07)	4.38 (111.13)
1	2	4.75 (120.65)	9.25 (234.95)	3.31 (84.07)	8.75 (222.25)
1	3	4.75 (120.65)	13.63 (346.08)	3.31 (84.07)	13.13 (333.38)
1	4	4.75 (120.65)	18.00 (457.20)	3.31 (84.07)	17.50 (444.50)
1	5	4.75 (120.65)	22.38 (568.33)	3.31 (84.07)	21.88 (555.63)
2	1	7.75 (196.85)	4.88 (123.83)	6.31 (160.27)	4.38 (111.13)
2	2	7.75 (196.85)	9.25 (234.95)	6.31 (160.27)	8.75 (222.25)
2	3	7.75 (196.85)	13.63 (346.08)	6.31 (160.27)	13.13 (333.38)
2	4	7.75 (196.85)	18.00 (457.20)	6.31 (160.27)	17.50 (444.50)
2	5	7.75 (196.85)	22.38 (568.33)	6.31 (160.27)	21.88 (555.63)
3	1	10.75 (273.05)	4.88 (123.83)	9.31 (236.47)	4.38 (111.13)
3	2	10.75 (273.05)	9.25 (234.95)	9.31 (236.47)	8.75 (222.25)
3	3	10.75 (273.05)	13.63 (346.08)	9.31 (236.47)	13.13 (333.38)
3	4	10.75 (273.05)	18.00 (457.20)	9.31 (236.47)	17.50 (444.50)
3	5	10.75 (273.05)	22.38 (568.33)	9.31 (236.47)	21.88 (555.63)
4	1	13.75 (349.25)	4.88 (123.83)	12.31 (312.67)	4.38 (111.13)
4	2	13.75 (349.25)	9.25 (234.95)	12.31 (312.67)	8.75 (222.25)
4	3	13.75 (349.25)	13.63 (346.08)	12.31 (312.67)	13.13 (333.38)
4	4	13.75 (349.25)	18.00 (457.20)	12.31 (312.67)	17.50 (444.50)
4	5	13.75 (349.25)	22.38 (568.33)	12.31 (312.67)	21.88 (555.63)
5	2	16.75 (425.45)	9.25 (234.95)	15.31 (388.87)	8.75 (222.25)

 Specifications subject to change. See bluesea.com for current information.

Step 2–Select the panel function from the list of modules below.

Vessel Systems Monitor VSM 422


Push Button Circuit Breakers

DIN Meter

m-Series Battery Switch

Standard Analog Meter

Medium Duty Push Button Reset-Only Circuit Breakers

Digital Meter

285-Series Circuit Breakers


Push Button Circuit Breakers with Rocker Switches


Residual Current Circuit Breaker

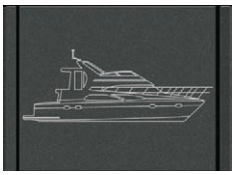
2 Inch Gauge


12 Volt DC Sockets

Rotary Switch Source Selection

Battery Management

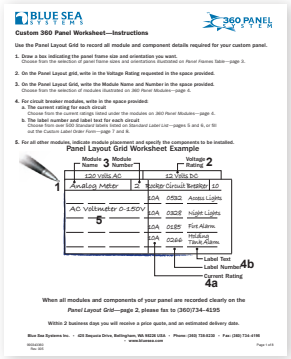

Flat Rocker Circuit Breakers


Pad Printed Blank Module

Step 3

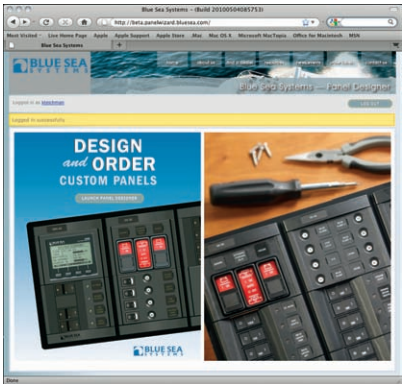
Option 1: Fill out a custom panel worksheet

Download and print a worksheet from the www.bluesea.com homepage
Fax the completed form to 360.734.4195



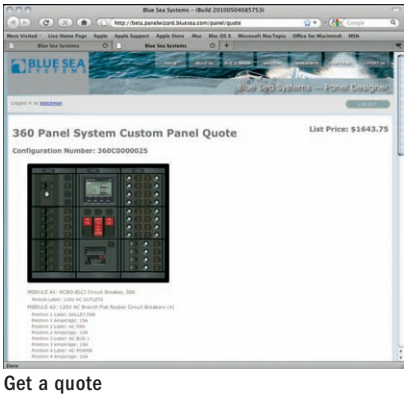
Option 2: Use the Panel Wizard

Log onto panelwizard.bluesea.com
The online tool allows for complete panel design and order submission

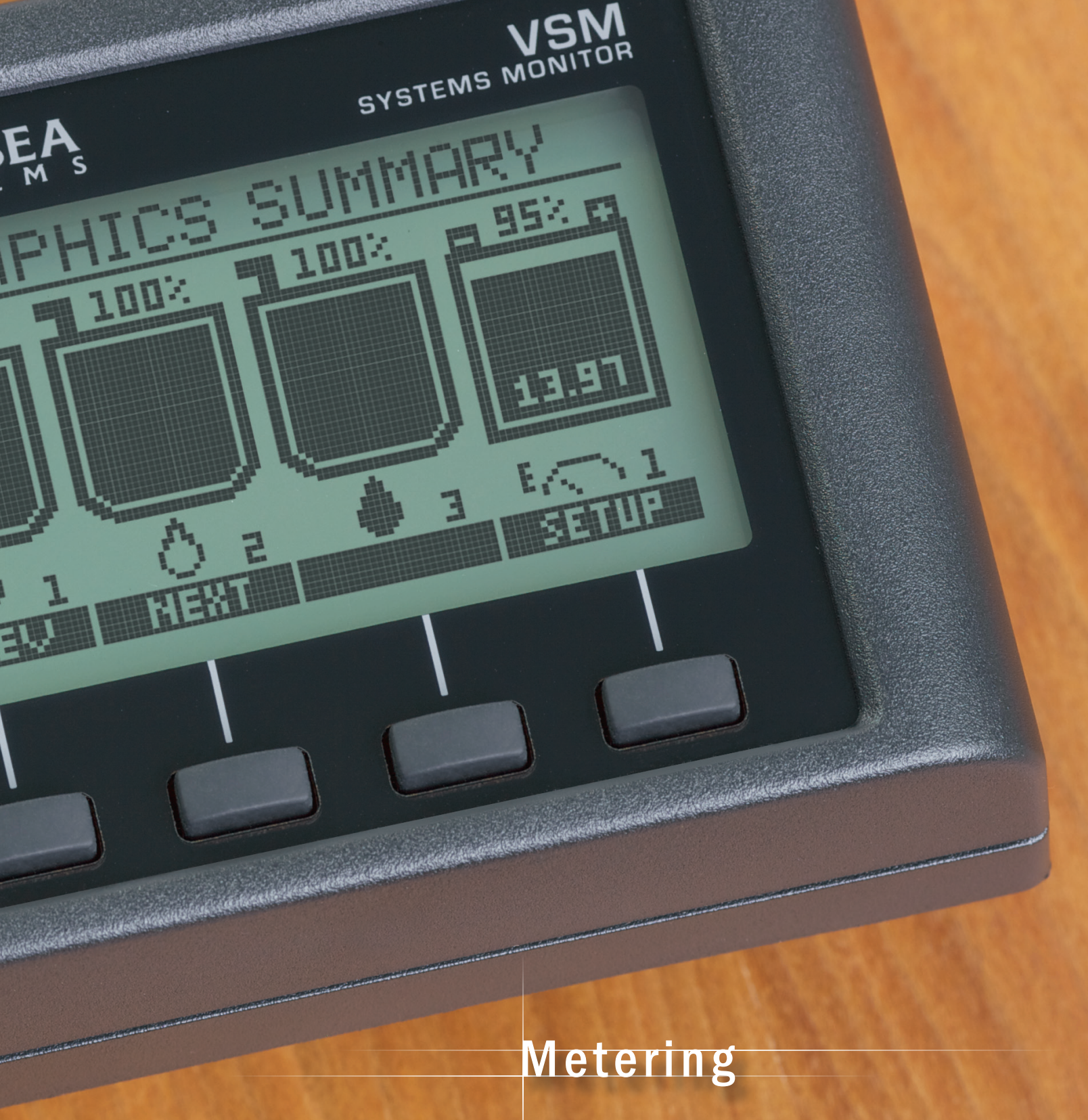


panelwizard.bluesea.com

Design a panel



Get a quote


VSM
SYSTEMS MONITOR
SEA
M S
PHICS SUMMARY
100%
100%
95%
13.97
1
2
3
1
NEXT
SETUP

Metering

Solution-Oriented Metering

Keeping track of onboard systems is critical to safety and peace of mind. Running low on fuel or not knowing about a failing battery can lead to dangerous situations. Blue Sea Systems produces analog meters, digital meters, a portable multimeter, and a new vessel monitoring system to keep your boating experience safe and enjoyable.

Analog meters are relatively inexpensive, readily available, and come in three styles. Micro meters are ideal for limited space applications. DIN meters represent European style.
All Blue Sea Systems analog meters have backlit faces so they are easy to read in low-light conditions.

Standard Analog Meters

Digital meters have higher resolutions than analog meters, and have large, bright characters. Blue Sea Systems digital meters have splash-proof cases, feature three brightness levels, and can be easily panel or surface mounted.

Digital Meters

The Mini Clamp Multimeter is a portable diagnostic tool.
Its compact size means it fits easily into tool kits, ready to help troubleshoot electrical problems.

Mini Clamp Multimeter

The Vessel Systems Monitor VSM 422 represents the best in comprehensive, cost-effective monitoring. It is four meters in one, monitoring DC systems, AC systems, up to three tanks, and bilge. Its ability to perform complicated battery state of charge and amp-hours remaining calculations means no more guesswork about battery status. At a substantial cost savings over four separatemonitors, it is an outstanding value.

Vessel Systems Monitor VSM 422

Whether the need is for a simple voltmeter or a complex monitoring system, look to Blue Sea Systems for a solution.

SECTION INDEX

DC DIN Meters

Easy to read European style analog DC meters

Common Features

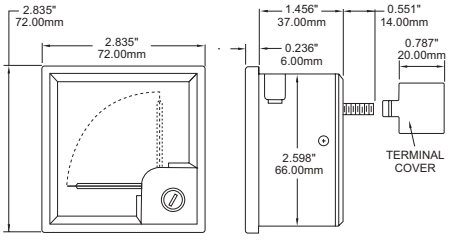
- Standard European 72mm design
- White matte dial with black printed scale and knife-edge pointer
- Backlit meter face (separate 12 or 24V DC backlight connections)
- Terminal cover included to prevent accidental short circuit
- Includes appropriate external DC shunt (page 99), when required

Specifications

Ioc (Meter)	Amperage Operating Current 1 mA at full scale
Ioc (Backlight)	Amperage Operating Current 16 mA@12V DC 20 mA@24V DC

1050
Voltmeter 8–16V
Connection: 2 wire to DC positive (+) and negative (-)
Weight: 0.33 lb (0.15 kg)

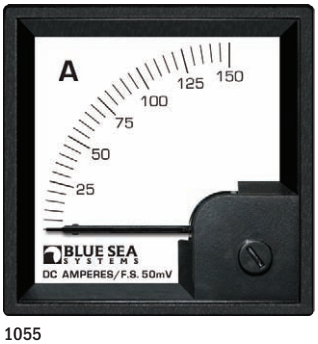
1051
Voltmeter 18–32V
Connection: 2 wire to DC positive (+) and negative (-)
Weight: 0.33 lb (0.15 kg)



1052
Ammeter 0–25A
Shunt type: Internal
Connection: 2 wire - no other power required
Weight: 0.13 lb (0.15 kg)

1053
Ammeter 0–50A
Shunt type: External—50 mV at full scale
Connection: 2 wire from shunt - no other power required
Weight: 0.53 lb (0.24 kg)

PN 1054
Ammeter 0–100A
Shunt type: External—50 mV at full scale
Connection: 2 wire from shunt - no other power required
Weight: 0.53 kg (0.24 lb)



1055
Ammeter 0–150A
Shunt type: External—50 mV at full scale
Connection: 2 wire from shunt - no other power required
Weight: 0.53 lb (0.24 kg)

AC DIN Meters

Easy to read European style analog AC meters

Common Features

- Standard European 72mm design
- White matte dial with black printed scale and knife-edge pointer
- Backlit meter face (separate 12 or 24V DC backlight connections)
- Terminal cover included to prevent accidental short circuit
- Includes appropriate external AC Current Transformer (page 99), when required

Specifications

Ioc (Meter)	Amperage Operating Current 50 mA AC at full scale (Ammeter only)
Ioc (Backlight)	Amperage Operating Current 16 mA@12V DC 20 mA@24V DC

1056
Voltmeter 0–150V
Connection: 2 wire to AC hot and neutral
Weight: 0.33 lb (0.15 kg)

1057
Voltmeter 0–250V
Connection: 2 wire to AC hot and neutral
Weight: 0.33 lb (0.15 kg)

1058
Ammeter 0–50A
Connection: 2 wire from coil slipped over wire to be measured
Weight: 0.43 lb (0.19 kg)

DC Analog Meters

Standard and Micro size meters with backlighting for low light conditions

- Includes appropriate external DC shunt (page 99), when required
- Backlit meter face (separate 12 or 24V DC backlight connections)

Specifications

Ioc (Meter)	Amperage Operating Current 1 mA at full scale
Ioc (Backlight)	Amperage Operating Current 16 mA@12V DC 20 mA@24V DC

Voltmeters

Connection: 2 wire to DC positive (+) and negative (-)

8003
Function: 8–16V DC
Meter Face Size: 2-3/4"
Weight: 0.25 lb (0.11 kg)

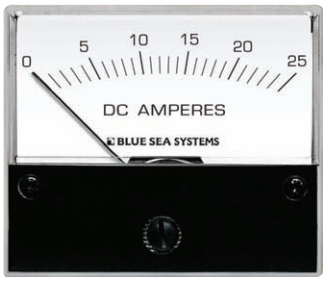
8240
Function: 18–32V DC
Meter Face Size: 2-3/4"
Weight: 0.25 lb (0.11 kg)

Micro Voltmeters

Connection: 2 wire to DC positive(+) and negative (-)

8028
Function: 8-16V DC
Meter Face Size: 2"
Weight: 0.19 lb (0.09 kg)

8243
Function: 18-32V DC
Meter Face Size: 2"
Weight: 0.19 lb (0.09 kg)



Ammeters

Connection: 2 wire - no other power required

8005
Function: 0-25A DC
Shunt Type: Internal
Meter Face Size: 2-3/4"
Weight: 0.60 lb (0.27 kg)

Connection: 2 wire from shunt - no other power required

8022
Function: 0-50A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.60 lb (0.27 kg)

8016
Function: 0-75A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.60 lb (0.27 kg)

8017
Function: 0-100A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.60 lb (0.27 kg)

8018
Function: 0-150A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.60 lb (0.27 kg)

8019
Function: 0-200A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.60 lb (0.27 kg)

Micro Ammeters

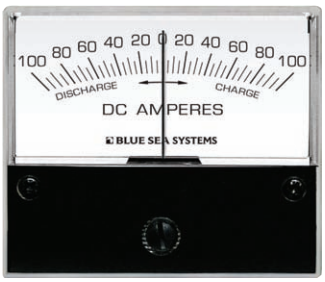
Connection: 2 wire - no other power required

8038
Function: 0-15V DC
Shunt Type: Internal
Meter Face Size: 2"
Weight: 0.20 lb (0.09 kg)

Connection: 2 wire from shunt - no other power required

8041
Function: 0-50V DC
Shunt Type: External - 50 mV at meter full scale
Meter Face Size: 2"
Weight: 0.40 lb (0.18 kg)

8050
Connection: 2 wire from shunt - no other power required
Function: 0-100V DC
Shunt Type: External - 50 mV at meter full scale
Meter Face Size: 2"
Weight: 0.40 lb (0.18 kg)



Zero Center Ammeters

Connection: 2 wire from shunt - no other power required

8252*
Function: 50-0-50A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.58 lb (0.26 kg)

8253*
Function: 100-0-100A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2-3/4"
Weight: 0.58 lb (0.26 kg)

Zero Center Micro Ammeter

8254
Function: 50-0-50A DC
Shunt Type: External—50 mV at meter full scale
Meter Face Size: 2"
Weight: 0.40 lb (0.18 kg)

* Meters read both discharge and charge current

AC Analog Meters

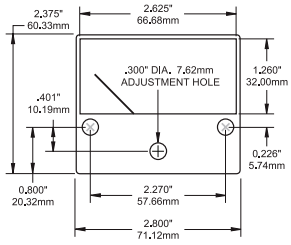
Standard and Micro size meters with backlighting for low light conditions

- Includes appropriate external AC Current Transformer (page 99), when required
- Backlit meter face (separate 12V or 24V DC backlight connections)

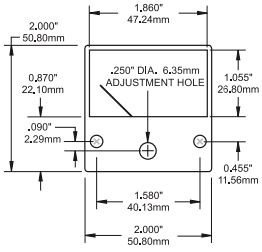
Specifications

Ioc (Meter)	Amperage Operating Current 50 mA AC at full scale (Ammeter only)
Ioc (Backlight)	Amperage Operating Current 16 mA@12V DC 20 mA@24V DC

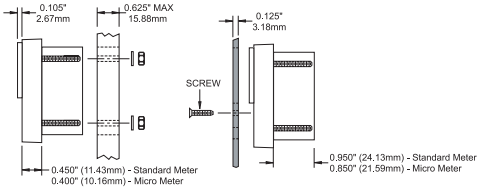
9630
Ammeter 0–50V AC
Connection: 2 wire from coil slipped over wire to be measured
Meter Face Size: 2-3/4"
Weight: 0.30 lb (0.14 kg)



Standard Meter

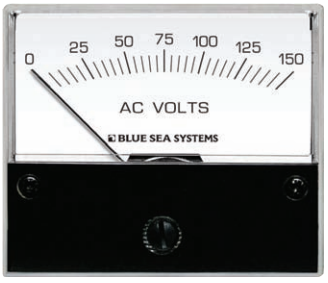


Micro Meter



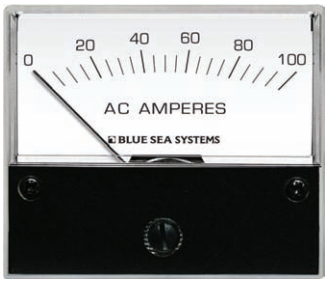
Surface Mount **Panel Mount**

8246
Micro Ammeter 0–50V AC
Connection: 2 wire from coil slipped over wire to be measured
Meter Face Size: 2"
Weight: 0.26 lb (0.12 kg)

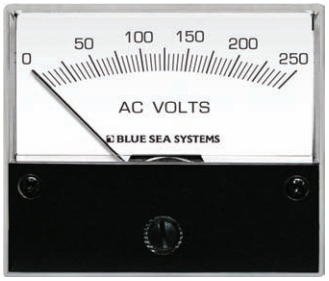


9353
Voltmeter 0–150V AC
Connection: 2 wire to AC hot and neutral
Meter Face Size: 2-3/4"
Weight: 0.25 lb (0.11 kg)

8244
Micro Voltmeter 0–150V AC
Connection: 2 wire to AC hot and neutral
Meter Face Size: 2"
Weight: 0.19 lb (0.09 kg)



8258
Ammeter 0–100V AC
Connection: 2 wire from coil slipped over wire to be measured
Meter Face Size: 2-3/4"
Weight: 0.32 lb (0.15 kg)



9354
Voltmeter 0–250V AC
Connection: 2 wire to AC hot and neutral
Meter Face Size: 2-3/4"
Weight: 0.26 lb (0.12 kg)

8245
Micro Voltmeter 0–250V AC
Connection: 2 wire to AC hot and neutral
Meter Face Size: 2"
Weight: 0.26 lb (0.12 kg)

DC Analog Voltmeter Panels

Enables voltage monitoring on up to 3 battery banks with one analog meter

- Includes standard 8003 DC Analog Voltmeter
- Displays voltage from 8–16 Volts DC
- 3 position switch for multiple battery banks

8015
Traditional Metal
Width: 5.25 in (133.35 mm)
Height: 3.75 in (95.25 mm)
Weight: 0.49 lb (0.22 kg)

1473
360 Panel System
Width: 4.88 in (123.83 mm)
Height: 4.75 in (120.65 mm)
Weight: 1.30 lb (0.59 kg)

DC Digital Meters

Allows easy monitoring of key DC functions

- Large, bright LED characters
- Three levels of brightness
- Splash-proof case
- Easy to surface mount in a 2 inch round hole

General Specifications:

Display Character Size		9/16"
Input Voltage		7-60V DC*
Maximum Power Consumption		1.00W**
Standby Power		0.15W
Dimensions	Height	2.431 in (61.75 mm)
	Width	2.896 in (73.56 mm)
	Depth	3.400 in (86.36 mm)

8235
DC Voltmeter

Voltage Measurement:

Range	0-60V DC
Resolution	0.01V DC
Accuracy (% of Reading)	± 0.5%***

Sleep Mode: Manual
Weight: 0.45 lb (0.20 kg)

8236
DC Ammeter

Current Measurement:

Shunt	500A-50mV
Range	± 500A DC
Resolution (-100 to -500)	1A DC
Resolution (-99.9 to +500)	0.1A DC
Accuracy (% of Reading)	± 0.5%***

Sleep Mode: Manual
Audio/Visual Alarms: High and low voltage
Included Shunt: 500A Shunt 8255 (page 99)
Weight: 1.11 lb (0.50 kg)

8251
DC Voltmeter with Alarm

Voltage Measurement:

Range	0-60V DC
Resolution	0.01V DC
Accuracy (% of Reading)	± 0.5%***

Sleep Mode: Programmable
Audio/Visual Alarms: High and low voltage
Weight: 0.45 lb (0.20 kg)

8248
DC Multimeter with Alarm

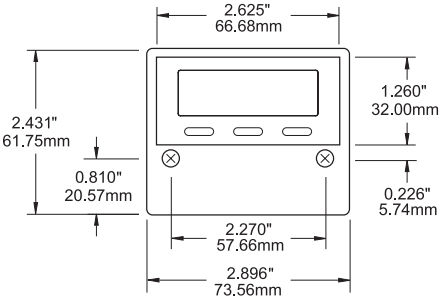
Voltage Measurement:

Range	0-60V DC
Resolution	0.01V DC
Accuracy (% of Reading)	± 0.5%***

Current Measurement:

Shunt	500A/50mV
Range	± 500A DC
Resolution (-100 to -500)	1A DC
Resolution (-99.9 to +500)	0.1A DC
Accuracy (% of Reading)	± 0.5%***

Sleep Mode: Programmable
Audio/Visual Alarms: High and low voltage
Weight: 1.12 lb (0.51 kg)



* Applicable for measuring 12, 24, 32, 36, and 42 Volt DC systems if meter is powered by 8-32V supply
** Variable with voltage, display intensity, segments illuminated, and sleep mode
***± 1 least digit of resolution

DC Digital Voltmeter Panels

Enables voltage monitoring on up to 3 battery banks with one digital meter

- Includes 8235 DC Digital Voltmeter
- 4 digit LED display—Displays voltage from 0–60 Volts DC
- 3 position switch for multiple battery banks

8051
Traditional Metal
Width: 5.25 in (133.35 mm)
Height: 3.75 in (95.25 mm)
Weight: 0.64 lb (0.29 kg)

1474
360 Panel System
Width: 4.88 in (123.83 mm)
Height: 4.75 in (120.65 mm)
Weight: 1.30 lb (0.59 kg)

AC Digital Meters

Allows easy monitoring of key AC functions

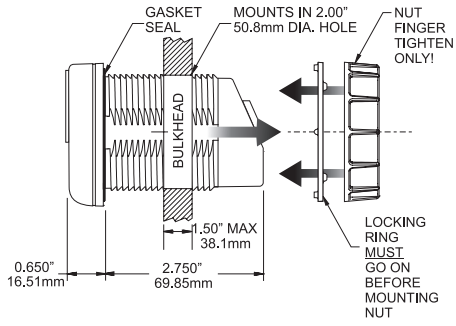
- Large, bright LED characters
- Three levels of brightness
- Splash-proof case
- Easy to surface mount in a 2" round hole

General Specifications:

Display Character Size		9/16"
Input Voltage		80-249V AC*
Maximum Power Consumption		1.00W**
Standby Power		0.15W
Dimensions	Height	2.431 in (61.75 mm)
	Width	2.896 in (73.56 mm)
	Depth	3.400 in (86.36 mm)

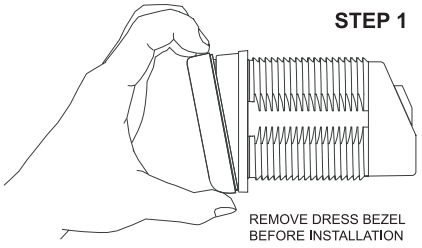
Digital Meter Front Panel Mount

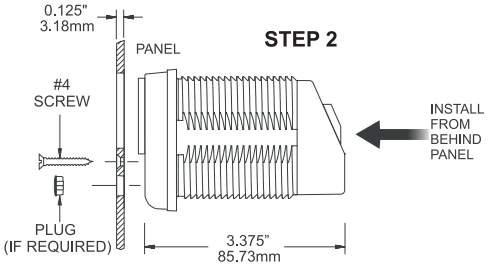
Surface mounting features a finger nut and locking ring for quick and easy installation into a 2.00" (52.00mm) diameter hole.



Digital Meter Rear Panel Mount

To panel mount simply remove the bezel and mount in any Blue Sea Systems full sized meter cut out





8247
AC Multimeter with Alarm

Voltage Measurement:	
Range	80-249V AC*
Resolution	0.1V AC
Accuracy (% of Reading)	
90-249V AC (RMS)	± 1.0%***
70-90V AC (RMS)	± 5.0%***
Current Measurement:	
Current Transformer	150A-50mA
Range 1 (Resolution 0.01A)	0.00-9.99A AC (RMS)
Range 2 (Resolution 0.1A)	10.0-150.0A AC (RMS)
Accuracy (% of Reading)	± 1.0%***
Frequency Measurement:	
Range	40-90Hz
Resolution	0.1Hz
Accuracy (% of Reading)	± 0.1%***
Calibrated with sine wave input	
Power Measurement:	
Range 1 (Resolution 10W)	0-9990W
Range 2 (Resolution 0.1kW)	10-45kW
Accuracy (% of Reading)	±5%***
Sleep Mode:	Programmable
Audio/Visual Alarms:	High and low voltage
Included Current Transformer:	8256 (page 99)
Weight:	0.78 lb (0.35 kg)

8239
AC Frequency Meter

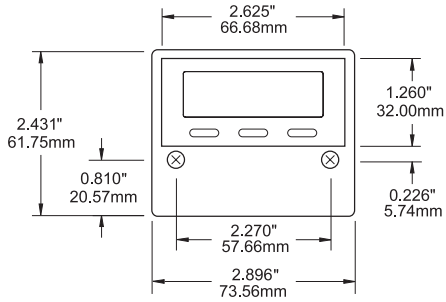
Frequency Measurement:	
Range	40-90Hz
Resolution	0.1Hz
Accuracy (% of Reading)	± 0.1%***
calibrated with sine wave input	
Sleep Mode:	Manual
Weight:	0.72 lb (0.35 kg)

8237
AC Voltmeter

Voltage Measurement:	
Range	80-249V AC*
Resolution	0.1V AC
Accuracy (% of Reading)	
90-249V AC (RMS)	± 1.0%***
70-90V AC (RMS)	± 5.0%***
Sleep Mode:	Manual
Weight:	0.72 lb (0.35 kg)

8238
AC Ammeter

Current Measurement:	
Current Transformer	150A-50mA
Range 1 (Resolution 0.01A)	0.00-9.99A AC (RMS)
Range 2 (Resolution 0.1A)	10.0-150.0A AC (RMS)
Accuracy (% of Reading)	± 1.0%***
Sleep Mode:	Manual
Weight:	0.78 lb (0.35 kg)



* For 120 & 240 Volt AC single phase systems
** Variable with voltage, display intensity, segments illuminated, and sleep mode
*** ± 1 least digit of resolution

120/240V AC Digital Meter Panel

For monitoring 120/240V AC Systems

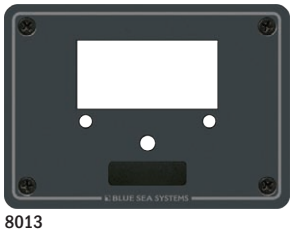
- Use with AC Digital Multimeter 8247 for monitoring 120/240V AC Systems
- Monitor Line 1 or Line 2 to Neutral and Line 1 to Line 2 voltages
- Includes two additional Current Transformers 8256 (page 99) and mounting screws

8410
Description: 120/240V AC Digital Meter Panel
Width: 5.25 in (133.35 mm)
Height: 3.75 in (95.25 mm)
Weight: 0.85 lb (0.39 kg)

Analog and Digital Meter Mounting Panels

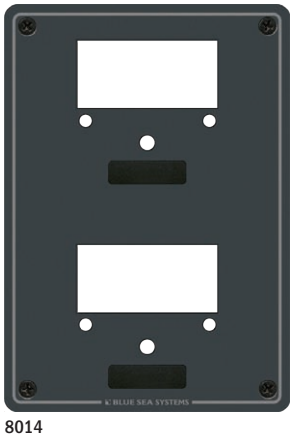
Provides an easy method of mounting meters

- Panel mounts standard 2-3/4" Analog or Digital Meters (pages 91–94)
- Includes mounting screws and center adjustment hole plug



8013
Accepts (1) 2-3/4" Analog or Digital Meter
Width: 5.25 in (133.35 mm)
Height: 3.75 in (95.25 mm)
Weight: 0.25 lb (0.11 kg)

1475 (meter not included)
Accepts (1) 2-3/4" Analog or Digital Meter
Width: 4.88 in (123.83 mm)
Height: 4.75 in (120.65 mm)
Weight: 0.60 lb (15.24 kg)



8014
Accepts (2) 2-3/4" Analog or Digital Meters
Width: 5.25 in (133.35 mm)
Height: 7.50 in (190.50 mm)
Weight: 0.25 lb (0.11 kg)

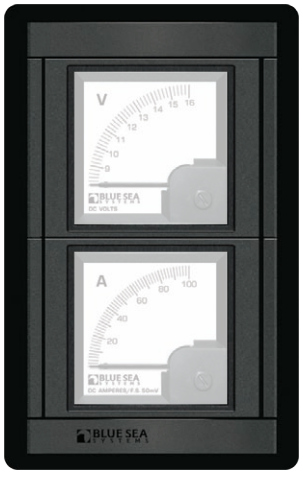
1476 (meters not included)
Accepts (2) 2-3/4" Analog or Digital Meters
Width: 4.88 in (123.83 mm)
Height: 7.75 in (196.85 mm)
Weight: 1.05 lb (0.48 kg)

DIN Meter Mounting Panels

Provides an easy method of mounting DIN meters

For a full selection of meters see page 90

1516 (meter not included)
Accepts Analog DIN Meter
Width: 4.88 in (123.83 mm)
Height: 4.75 in (120.65 mm)
Weight: 0.50 lb (0.23 kg)



1517 (meters not included)
Accepts 2 Analog DIN Meters
Width: 4.88 in (123.83 mm)
Height: 7.75 in (196.85 mm)
Weight: 0.80 lb (0.36 kg)

NEW

Vessel Systems Monitor VSM 422

The Vessel Systems Monitor VSM 422 is a comprehensive monitor for four boat systems in one compact package. By monitoring DC (including battery state of charge), AC, tanks, and bilge, the VSM 422 alerts boaters to problems before they become emergencies.

The ability to monitor state of charge is critical to safe boating. By using a complex calculation of voltage, amperage, and amp-hours remaining, the VSM 422 is able to provide accurate and timely information about state of charge to help boaters avoid a dead battery at sea – a leading cause of a boat needing towing assistance. The VSM 422 also monitors temperature on the primary battery with the included Battery Temperature Sensor.

AC monitoring includes voltage, amperage, watts, and frequency. Tank monitoring for up to three tanks includes alarm functions for high and low levels, and bilge monitoring includes pump active, cycle count, and duration.

With its user-friendly interface, intuitive display modes, and versatile case design, the Vessel Systems Monitor VSM 422 is an excellent replacement for four separate systems monitors.

Retail Packaging Includes:
head unit, surface mount bezel, surface mount gasket, DC Current Shunt 8255, AC Current Transformer 8256, Battery Temperature Sensor 1820, connectors and mounting screws

DC Specifications

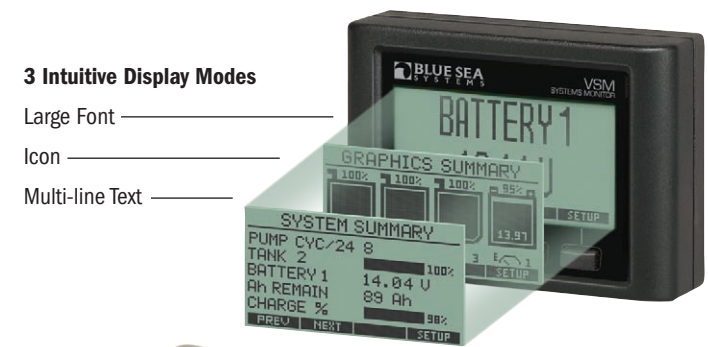
Nominal System Voltage	12 or 24V
Operating Voltage	8.5–33.0V
Minimum Current Draw	35mA @ 12V, backlight off
	18.8mA @ 24V, backlight off
Voltage Accuracy	+/- 0.5%
Current Range	0-500A
Current Accuracy	+/- 1.0%

AC Specifications

Nominal System Voltage	120V @ 60Hz, North America
	230V @ 50Hz, Typical of Europe
Operating Voltage	0-300V
Voltage Accuracy (RMS)	+/- 0.5%
Current Range	0-150A
Current Accuracy (RMS)	+/- 2.0%
Frequency	40-90Hz

Regulatory
CE Marked for E60945 electromagnetic interference
Unit face is IP67–protected against immersion up to 1 meter for 30 minutes
VSM 422 Surface Mount Gasket creates a waterproof seal on unit face

Tank Senders Supported:
10 - 180 VDO–Typical of Europe
240 - 33 Teleflex–North America
Blue Sea Systems Ultrasonic Tank Senders (sold separately)
· for diesel, water, or waste 1810 (32" tank depth)
· for gasoline 1811 (24" tank depth)

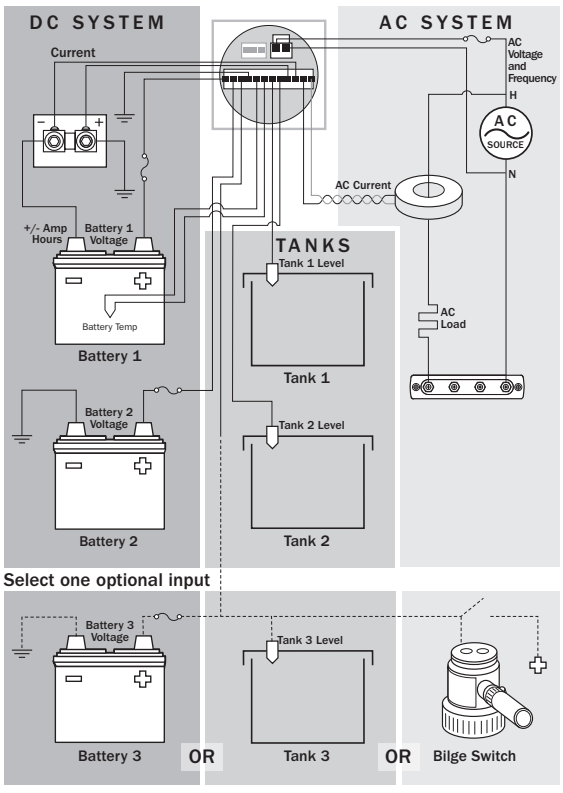


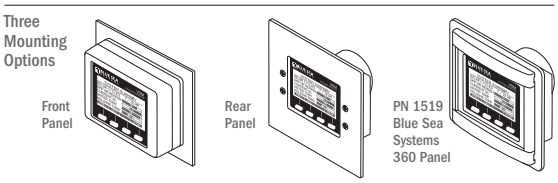
1800
retail packaged in box

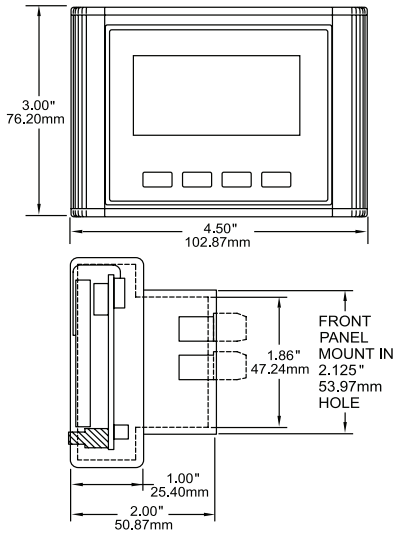
1801
retail packaged in clam

Specifications subject to change. See bluesea.com for current information.

VESSEL SYSTEMS MONITOR







NEW

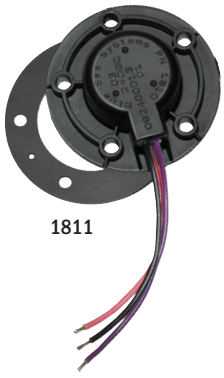
VSM 422 Ultrasonic Tank Senders

24" Gasoline tank sender for exclusive use with VSM 422

- For tanks up to 24" deep
- Anti-slosh algorithms for accurate readings
- Ignition protected

Specifications

Vmxo Voltage Maximum Operating	32V DC
Voltage Nominal	12/24V
Weight:	0.25 lb (0.11 kg)



1811

32" Diesel/Water/Waste tank sender for exclusive use with VSM 422

- For tanks up to 32" deep
- Anti-slosh algorithms for accurate readings
- Ignition protected

Specifications

Vmxo	32V DC
Voltage Nominal	12/24V
Weight:	0.25 lb (0.11 kg)

1810

NEW

VSM 422 Panel Mounting Options

1519 (meter not included)
360 Blank Panel

1325 (meter not included)
360 Mounting Kit Module

NEW

VSM Battery Temperature Sensor

Battery temperature sensor for exclusive use with VSM 422

- Measures temperature on primary battery

Specifications

Vmxo Voltage Maximum Operating	32V DC
Voltage Nominal	12/24V
Weight:	0.05 lb (0.23 kg)

1820

2 Inch Round Gauges

Provides monitoring of key functions required for boat operation

NOT AVAILABLE IN RETAIL PACKAGING

- Watertight, fog resistant, and anti-scratch glass face
- Edge-lit
- Will fit panels up to 0.8" thickness

Specifications

Vmxo	Voltage Maximum Operating	See table below
Tmxo	Temperature Maximum Operating	158°F (70°C)
Tmno	Temperature Minimum Operating	-4°F (-20°C)
Ioc	Amperage Operating Current (with edgelight)	180mA
Ioc	Amperage Operating Current (without edgelight)	<100mA
Gauge diameter		2.00" (50.80mm)
Mounting hole diameter		2.06" (52.40mm)
Back clamp nuts torque		5–7 in-lb

Regulatory

CE Marked

1026B (gauge is not edge-lit)

1027B

1028B

1022B

1023B

1029B

1030B

1024B

PN	Function	Vmxo	Required Sender	Depth in (mm)	Weight lb (kg)
1020B	Fuel Level E–1/2–F	16V DC	-	1.75 (44.45)	0.33 (0.15)
1021B	Potable Water Level E–1/2–F	16V DC	-	1.75 (44.45)	0.33 (0.15)
1022B	Engine Temp 100–250°F	16V DC	1042B	1.75 (44.45)	0.33 (0.15)
1023B	Oil Pressure 0–80 PSI/Bar	16V DC	1043B	1.75 (44.45)	0.33 (0.15)
1024B	Water Pressure 0–30 PSI/kPa	16V DC	-	2.10 (53.54)	0.69 (0.31)
1025B	Voltmeter 10–16 Volts	16V DC	-	1.75 (44.45)	0.33 (0.15)
1026B*	Hour Meter–10,000 hrs	32V DC	-	2.40 (60.96)	0.37 (0.17)
1027B	Battery Condition Indicator	16V DC	-	3.00 (76.20)	0.37 (0.17)
1028B	DC Ammeter 60–0–60 Amps	16V DC	Internal shunt	1.75 (44.45)	0.33 (0.15)
1029B	Clock–Quartz Analog	16V DC	-	2.70 (68.58)	0.37 (0.17)
1030B	Tank Level	16V DC	-	1.75 (44.45)	0.33 (0.15)

Gauge Panels

For mounting 2 Inch Round Gauges

Features

- Tank gauges include ON–OFF–ON (SPST) Rocker Switch to monitor two tanks (page 102)

1510
Width: 4.88 in (123.83 mm)
Height: 4.75 in (120.65 mm)
Depth: 0.50 in (12.70 mm)
Weight: 0.50 lb (0.23 kg)

1511
Potable Water Level E–1/2–F
Included Gauge: 1021B
Vmxo Voltage Maximum Operating: 16V DC
Width: 4.88 in (123.83 mm)
Height: 4.75 in (120.65 mm)
Depth: 1.75 in (44.45 mm)
Weight: 0.75 lb (0.34 kg)

1512
Fuel Level E–1/2–F
Included Gauge: 1020B
Vmxo Voltage Maximum Operating: 16V DC
Dimensions: Same as 1511

1513 (not shown)
Tank Level E–1/2–F
Included Gauge: 1030B
Dimensions: Same as 1511

1514
Voltmeter 10-16 Volts
Included Gauge: 1025B
Vmxo Voltage Maximum Operating: 16V DC
Dimensions: Same as 1511

Small Format Label Sets (8214 and 8217 page 110)

Mini Clamp Multimeter

Compact and feature-rich AC/DC Multimeter eases diagnosis of marine electrical problems

- Clamp allows measurement of AC and DC current in wires without disturbing the circuits or contacting live terminals
- Compact size allows comfortable one hand operation, portability, and access to confined areas
- Auto range simplifies operation by automatically selecting the range that best fits the data
- Additional functions include: Data Hold, Overload Display, and Auto Power-Off
- True RMS AC measurement is accurate for normal sine wave and modified sine wave inverter output

Specifications

AC Amperes (Current):	0.01–400 Amps
AC Voltage:	0.001–600 Volts
DC Amperes (Current):	0.01–400 Amps
DC Voltage:	0.001–600 Volts
Resistance/Continuity Alarm:	0.1–40MΩ
Measurement Resolution:	4300 counts

Regulatory

- CE Marked
- CAT III, 600 Volts

8110
Mini Clamp Multimeter
Weight lb (kg): 0.47 (0.21)
(Includes test leads and carrying case)

DC Shunts

For use with DC Ammeters (page 91)

- For continuous operation, it is recommended that shunts not be run at more than two-thirds (66%) the rated current under normal conditions

Specifications

Shunt Type: Resistive
Full Scale: 50 mV

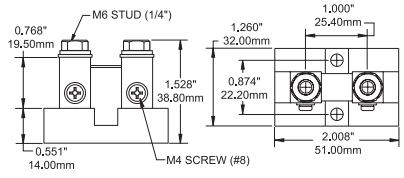
I_{MXO}	Amperage Maximum Operating	66% of Rated Current
I_{300}	Amperage Intermittent Rating (5 min.)	100%—Full scale rating
I_3	Amperage Intermittent Rating (3 sec.)	300%—Full scale rating

9228

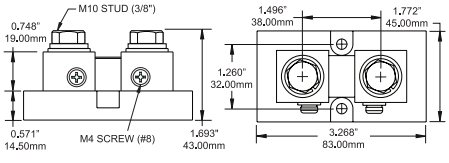
9233

8255

PN	For Use With	Ratio	Weight lb (kg)
9228	Analog Ammeter	50A DC/50mV DC	0.20 (0.09)
9229	Analog Ammeter	75A DC/50mV DC	0.20 (0.09)
9230	Analog Ammeter	100A DC/50mV DC	0.20 (0.09)
9231	Analog Ammeter	150A DC/50mV DC	0.20 (0.09)
9233	Analog Ammeter	200A DC/50mV DC	0.71 (0.32)
8255	Digital Ammeter	500A DC/50mV DC	0.71 (0.32)



9228 – 9231



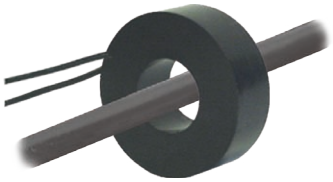
9233 and 8255

AC Current Transformers

For use with AC Ammeters (pages 90, 92, 94)

Specifications

Dimensions: 0.60 in (15.24 mm) Inside Diameter
1.38 in (35.05 mm) Outside Diameter



8073 (shown)
Analog Ammeter Transformer
Ratio: 50A AC/50mA AC
Weight: 0.10 lb (0.05 kg)

8257
Analog Ammeter Transformer
Ratio: 100A AC/50mA AC
Weight: 0.20 lb (0.09 kg)

8256
Digital Ammeter Transformer
Ratio: 150A AC/50mA AC
Weight: 0.20 lb (0.09 kg)

PN	For Use With	Ratio	Weight lb (kg)
8073	Analog Ammeter	50A AC/50mA AC	0.10 (0.05)
8257	Analog Ammeter	100A AC/50mA AC	0.20 (0.09)
8256	Digital Ammeter	150A AC/50mA AC	0.20 (0.09)

Accessories

Complementary Accessories

Blue Sea Systems has accessories available for above and below deck, as well as custom panel labels in any language.

Above deck accessories include toggle and Contura switches for Blue Sea Systems panels. Both types of switches are available in several pole/throw combinations.

Below deck accessories include innovative modular back covers for AC 360 Panels. ABYC standards mandate isolation of AC and DC components on combination panels. Stackable, screw-down covers protect AC components from coming into contact with tools, personnel, and DC wiring. DeckHand dimmers control interior LED or incandescent lighting and offer adjustable illuminated exit.

Blue Sea Systems panel labels include labels with standard and custom text for all panel formats, with foreign language and special characters available. Custom labels ship rapidly due to an in-house printing facility, and over 500 standard labels are ready to ship. All labels are made using a two-layer high quality polycarbonate material with a waterproof adhesive, and are backprinted for scratch resistance.

360 Panel Insulating Rear Cover

Standard Panel Labels

Custom Panel Labels

DeckHand Dimmers

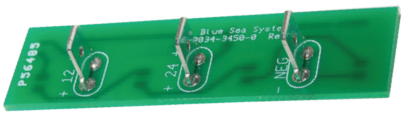
SECTION INDEX

ABOVE DECK ACCESSORIES

BELOW DECK ACCESSORIES

360 Panel Label Backlight System

Enables backlighting for the Push Button Reset-Only Circuit Breaker and Rocker Switch 360 Panels



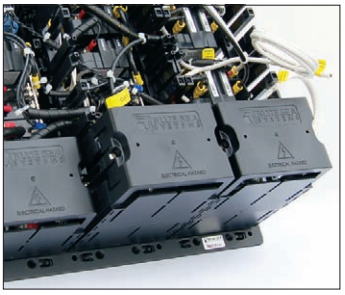
4121

Vmxo **Voltage Maximum Operating** 24 Volts DC
Weight 0.07 lb (0.03 kg)

360 Panel Insulating Rear Covers

Provides electrical insulation for exposed panel backs

1331



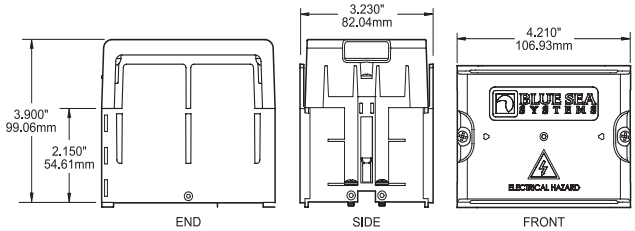
Features

- Isolation of panel AC components and circuits from DC system elements
- Meets ABYC safety requirements for panels with combined AC and DC loads
- Modular design consists of five interlocking pieces—SIDES, TOP, and ENDS
- Interlocking companion pieces can be stacked to accommodate large components
- Cover breakouts allow wire access in any direction

Specifications

Material UL94-V0 (Flame Retardant) Polycarbonate
Hardware 2 qty. #6 Phillips-drive machine screws 4 qty. #8-32 x 0.5" Phillips-drive machine screws with lock washers

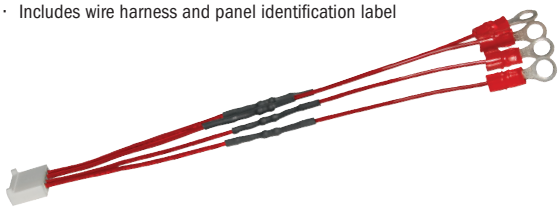
PN	Description	Weight lb (kg)
1331	1 module	0.56 (0.25)
1341	2 module	0.79 (0.36)
1342	3 module	0.90 (0.41)
1343	4 module	1.10 (0.50)



360 Panel 12 to 24 Volt Conversion Kit

Converts indicator LEDs from 12 Volt systems to 24 Volt systems

- Requires one kit per 12 Volt DC circuit breaker module
- Includes wire harness and panel identification label



4113
Weight 0.05 lb (0.02 kg)

360 Panel Rocker Switches

Provides switching options for applications requiring specific pole and throw configurations

Specifications

Single Pole

Imxo **Amperage Maximum Operating** See table below
Terminal Type Quick Connect Tab
Terminal Size 0.187" (4.80 mm)

Double Pole

Imxo **Amperage Maximum Operating** See table below
Terminal Type 6.00" (152.00 mm) Wire Leads

PN	Pole-Throw	Illustration Below	Action ( ) = Momentary	Imxo Amperage Maximum Operating			
				12 Volts DC	24 Volts DC	125 Volts AC	250 Volts AC
7480	SPST	1	ON–OFF	10 Amps	10 Amps	10 Amps	10 Amps
7481	SPST	1	(ON)–OFF	10 Amps	10 Amps	12 Amps	6 Amps
7482	SPDT	2	ON–OFF–ON	10 Amps	8 Amps	8 Amps	8 Amps
7483	SPDT	2	ON–OFF–(ON)	10 Amps	8 Amps	8 Amps	8 Amps
7484	SPDT	2	(ON)–OFF–(ON)	10 Amps	8 Amps	8 Amps	8 Amps
7485	SPDT	4	(ON)–OFF–(ON)	10 Amps	8 Amps	8 Amps	8 Amps
7490	DPST	1	ON–OFF	5 Amps	5 Amps	8 Amps	4 Amps
7491	DPDT	3	ON–ON	5 Amps	5 Amps	8 Amps	4 Amps
7493	DPDT	3	ON–(ON)	5 Amps	5 Amps	8 Amps	4 Amps
7492	DPDT	2	ON–OFF–ON	5 Amps	5 Amps	8 Amps	4 Amps
7494	DPDT	2	ON–OFF–(ON)	5 Amps	5 Amps	8 Amps	4 Amps
7495	DPDT	2	(ON)–OFF–(ON)	5 Amps	5 Amps	8 Amps	4 Amps


1


3


2


4

360 Panel Plugs

Fills empty Flat Rocker apertures on the 360 Panel System for future use

4116
Fills Flat Rocker circuit breaker aperture
Weight 0.03 lb (0.01 kg)

4117
Fills Rocker Switch aperture
Weight 0.03 lb (0.01 kg)

360 Panel Adapters

Provides a method of mounting alternative switch and circuit breakers in the flat rocker aperture

4111
Adapts Push Button Reset-Only Circuit Breaker (page 32)
Weight 0.03 lb (0.01 kg)

4112
Adapts A-Series Toggle Circuit Breaker (page 36) and Panel Switch (page 106)
Weight 0.03 lb (0.01 kg)

4119
Adapts Rocker Switch (page 102)
Weight 0.03 lb (0.01 kg)

360 Panel 12 Volt DC Socket

Integrates 12 Volt DC Sockets with 360 Panel System

Component Reference

· 12 Volt DC Sockets (page 107)

Specifications

Vmxo **Voltage Maximum Operating** 15 Volts DC
Imxo **Amperage Maximum Operating** 15 Amps

1472
Dimensions: (WxH) 4.88 x 4.75 in (123.83 x 120.65 mm)
Depth 1.50 in (38.10 mm)
Weight 0.70 lb (0.32 kg)

360 Panel Blank

Provides a 360 Panel System platform for mounting equipment, switching, and monitoring functions

· Suitable for mounting accessories and for pad printing

1518
Dimensions: (WxH) 4.88 x 4.75 (123.83 x 120.65)
Depth 0.50 in (12.7 mm)
Weight 0.70 lb (0.32 kg)

Examples of user-customized Blank 360 Panels

Phone Jack

Push Button Starter

Pad Printed

WeatherDeck™ Toggle Switches (Single Pole)

Available in a variety of switch and pole configurations to meet specific circuit requirements

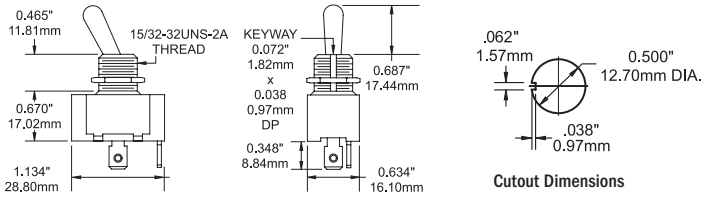
4150

- Specifically manufactured for use in WeatherDeck™ Waterproof Panels (page 65)
- Nickel-plated brass and phenolic non-corrosive construction

Specifications

Imxo	**Amperage Maximum Operating**	10A @ 250V AC
		15A @ 125V AC
		15A @ 12V DC
	Terminal Size	0.25 in (6.35 mm)
	Terminal Type	Quick Connect Tab

PN	Pole/Throw	Action ( ) = Momentary	Weight lb (kg)
4150	SPST	OFF–ON	0.10 (0.05)
4151	SPST	OFF–(ON)	0.10 (0.05)
4152	SPDT	ON–OFF–ON	0.10 (0.05)
4153	SPDT	(ON)–OFF–ON	0.10 (0.05)
4154	SPDT	(ON)–OFF–(ON)	0.10 (0.05)



Cutout Dimensions

WeatherDeck™ Toggle Switch (Double Pole)

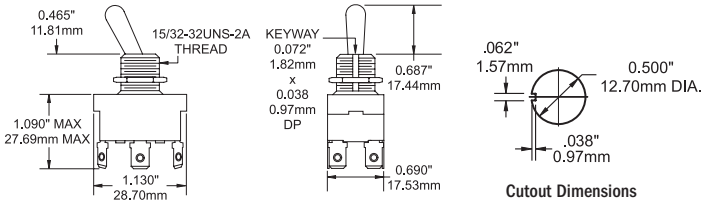
Often used for combining navigation lights and anchor lights with shared switch

4155
Pole/Throw DPDT
Action ON-OFF-ON
Weight 0.10 lb (0.05 kg)

- For use in WeatherDeck™ Waterproof Panels (page 65)
- Nickel-plated brass and phenolic non-corrosive construction

Specifications

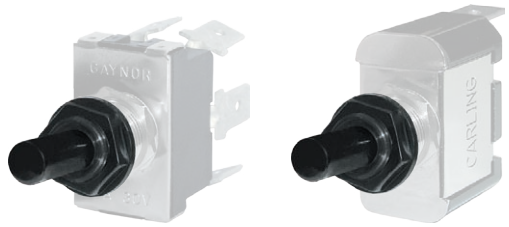
Vmxo	**Voltage Maximum Operating:**	30 Volts DC
Imxo	**Amperage Maximum Operating:**	5 Amps
	Terminal Size:	0.25 in (6.35 mm)
	Terminal Type:	Quick Connect Tab



Cutout Dimensions

WeatherDeck™ Toggle Switch Boot

Replaces boots found on all WeatherDeck™ panels



4138

- For mounting on WeatherDeck™ Waterproof Panel Switches
- UV resistant material resists discoloration and cracking
- Rated IP67—protected against immersion up to 1 meter for 30 minutes

Specifications

Case Material	UV Resistant Silicone Rubber
Thread Material	Nickel Plated Brass
Thread	15/32"-32UNS-2A
Weight	0.04 lb (0.02 kg)

Water Resistant Fuse Holder

Replaces fuse holder found on Contura Waterproof Fuse Panels

5021

- Easy to open
- Rated IP66 on front—protected against powerful water jets

Specifications

Vmxo	**Voltage Maximum Operating**	32 Volts DC
Imxo	**Amperage Maximum Operating**	20 Amps
	Mounting Hole	0.50 in (12.70 mm)

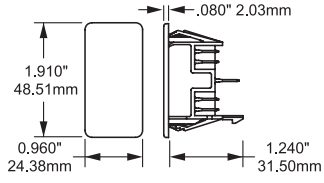
PN	Description	Weight lb (kg)
5021	Fuse Holder	0.04 (0.02)
5022	Replacement Cap	0.01 (0.005)

Contura Switch Mounting Panel Plug

Covers Contura Switch mounting hole for future switch installation

- For use with Contura Switch Mounting Panels (see right)

8278
Weight 0.06 lb (0.03 kg)



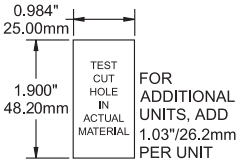
Contura Switch Mounting Panels

Modular design permits easy assembly in groups of varying sizes and numbers

- Mounting panels available in 1, 3, and 6 fixed position models
- Designed for mounting in 6 different panel thicknesses:
  0.06 in (1.57 mm) 0.09 in (2.36 mm) 0.13 in (3.17 mm)
  0.19 in (4.75 mm) 0.25 in (6.35 mm) 0.38 in (9.52 mm)

8267 8266 8268

PN	Description	Width in (mm)	Height in (mm)
8267	End Mounting Panel	1.19 (30.23)	2.30 (58.42)
8266	Center Mounting Panel	1.03 (26.16)	2.30 (58.42)
8268	1 Position Mounting Panel	1.34 (34.04)	2.30 (58.42)
8259	3 Position Mounting Panel	3.40 (86.36)	2.30 (58.42)
8260	6 Position Mounting Panel	6.49 (164.85)	2.30 (58.42)



Cutout Dimensions

Contura Switch Actuators

Directly replaces actuators found on all Blue Sea Systems Contura Waterproof Panels

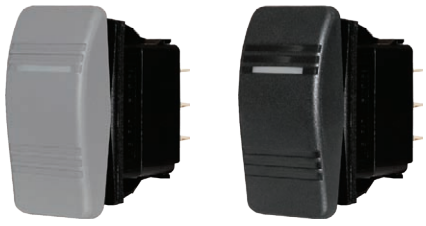
- Mounts on any Blue Sea Systems Water Resistant Contura Switch

8297 8294 8293

PN Gray	PN Black	Number of Lenses	Embedded LEDs	Weight lb (kg)
8299	8296	-	-	0.03 (0.01)
8297	8294	1	1	0.03 (0.01)
8298	8295	2	2	0.03 (0.01)
8293	Actuator Removal Tool			0.04 (0.02)

Water Resistant Contura Switches

Specifically manufactured for use in Blue Sea Systems Contura Waterproof Panels. Use of standard Contura Switches will not maintain the waterproof ingress protection rating of Blue Sea Systems panels.



8230 8282

- Vibration, shock, thermoshock, moisture and salt spray resistant

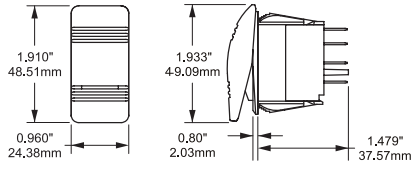
Specifications

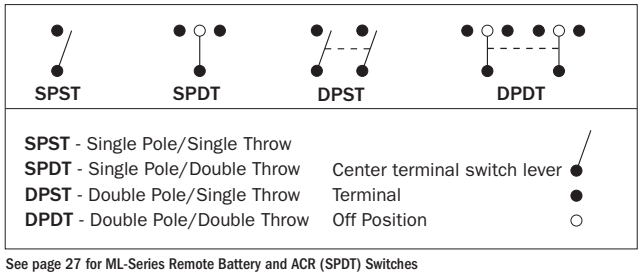
Imxo	**Amperage Maximum Operating**	20A @ 12V DC 15A @ 24V DC
Ioc (LED)	**Amperage Operating Current**	18 Milliamperes
	Lighted	LED rated 100,000 hours 1/2 life
	Seals	Internal and external gasket panel seal
	Temperature Rating	-40°C to 85°C
	Mounting Hole	1.45 in x 0.83 in (36.83 mm x 21.08 mm)

Regulatory

Meets UL 1500 and ISO 8846 external ignition protection requirements

PN Gray	PN Black	Pole/Throw	Action ( )=momentary	Embedded LEDs	Weight lb (kg)
8230	8282	SPST	OFF-ON	1	0.09 (0.04)
8231	8292	SPST	OFF-(ON)	0	0.09 (0.04)
8232	8283	SPDT	ON-OFF-ON	2	0.09 (0.04)
8233	8284	SPDT	(ON)-OFF-ON	1	0.09 (0.04)
8234	8285	SPDT	(ON)-OFF-(ON)	0	0.09 (0.04)
8218	8287	DPST	OFF-ON	1	0.09 (0.04)
8219	8288	DPST	OFF-(ON)	0	0.09 (0.04)
8220	8286	DPDT	ON-OFF-ON	2	0.09 (0.04)
8221	8289	DPDT	(ON)-OFF-ON	1	0.09 (0.04)
8222	8290	DPDT	(ON)-OFF-(ON)	0	0.09 (0.04)
8275	-	DPDT	ON-ON	2	0.25 (0.11)





See page 27 for ML-Series Remote Battery and ACR (SPDT) Switches
See page 67 for Contura Waterproof Panels

Panel Switches

Mounts in an A-Series toggle circuit breaker aperture to provide multiple throw and switch configurations when circuit protection is provided elsewhere

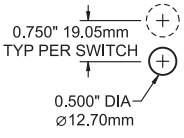
8200

8204

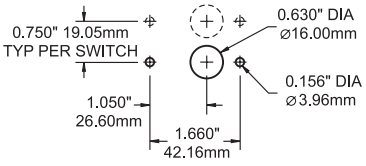
- Ideal for generator starters, bilge pumps, horns, wipers, engine controls and other applications that require switching action other than ON–OFF or different pole configuration separate from circuit protection
- Panel switches mount in Blue Sea Systems A-Series Toggle Circuit Breaker Panels
- For use with A-Series Toggle Circuit Breaker Mounting Panel (page 36)
- Supplied with mounting adapter for standard 5/8" circuit breaker mounting hole
- Nickel-plated brass and phenolic non-corrosive construction

Specifications		Toggle Switches	Push Button Switch
Imxo	Amperage Maximum Operating	10A @ 250V AC	3A @ 250V AC
		15A @ 125V AC	6A @ 125V AC
		15A @ 32V DC	6A @ 32V DC
	Terminal Size	0.25 in (6.35 mm)	0.25 in (6.35 mm)
	Terminal Type	Quick Connect Tab	Quick Connect Tab
	Actuator Color	White	White

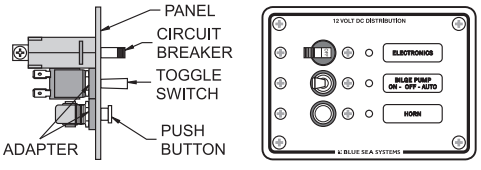
PN	Type	Pole/Throw	Action ( ) = momentary	Weight lb (kg)
8200	Push Button	SPST	OFF–(ON)	0.07 (0.03)
8204	Toggle	SPST	OFF–ON	0.08 (0.04)
8205	Toggle	SPST	OFF–(ON)	0.08 (0.04)
8206	Toggle	SPDT	ON–OFF–ON	0.08 (0.04)
8207	Toggle	SPDT	(ON)–OFF–ON	0.08 (0.04)
8208	Toggle	SPDT	(ON)–OFF–(ON)	0.08 (0.04)
8209	Toggle	DPST*	OFF–ON–(ON) OFF–OFF–(ON)	0.08 (0.04)
8210	Toggle	DPST	OFF–ON	0.08 (0.04)
8211	Toggle	DPDT	ON–OFF–ON	0.08 (0.04)
8212	Toggle	DPDT	(ON)–OFF–ON	0.08 (0.04)



Cutout Dimensions Without Adapter



Cutout Dimensions With Adapter



Panel Switch Mounting Diagram

Circuit Breaker Mounting Screws

Fits all A-Series and C-Series circuit breakers without Toggle Guards or Lockout Slides

- Sold in packages of 6

8035
Type 6-32 x 1/4" Flat Head
Weight 0.03 lb (0.01 kg)

Toggle Circuit Breaker Panel Plug

Black plug fits standard A-Series toggle circuit breaker apertures

8037
Weight 0.03 lb (0.01 kg)

Push Button Reset-Only Circuit Breaker Adapter

Provides a method of mounting Push Button Reset-Only Circuit Breakers into the magnetic circuit breaker aperture

- Adapts Push Button Reset-Only Circuit Breaker to panels that incorporate Flat Rocker circuit breakers (page 32)

4111
Weight 0.03 lb (0.01 kg)

* Progressive Two Circuit Switch - maintains circuit one while momentarily switching circuit two

12 Volt Socket-Plug System

Corrosion resistant materials to ensure solid contact and low voltage drop

- Designed to withstand the rigors of wet environments and constant vibration
- Large contact surfaces for good electrical connection
- Twist lock system—plug locks securely into socket
- Internal strain relief and cord seal
- Nickel plated copper alloy used for all current carrying components
- Plug has a sealing ring around the shaft to keep out spray and make it seat firmly in the outlet
- Plug features an LED ON-indicating light, moisture proof sealing ring, strain relief and built-in 10A fuse
- Front panel, rear panel, or surface mount
- Socket features a watertight cap, easy installation and interlocks with plug
- 1012 and 1013 Heavy duty 18 gauge wire
- 1012 Cord reaches up to 6 feet

Specifications

Vmxo	Voltage Maximum Operating	15 Volts DC
Imxo	Amperage Maximum Operating	15 Amps DC (socket)
Imxo	Amperage Maximum Operating	10 Amps DC (plug)

1010

1011

1012

1014

1013

PN	Description	Weight lb (kg)
1010	Plug	0.08 (0.04)
1011	Socket	0.10 (0.05)
1012	Single Plug with Single Socket Extension	0.54 (0.24)
1013	Single Plug with Dual Socket Extensions	0.50 (0.23)
1014	Mounting Bracket for Socket (1011)*	0.07 (0.03)
1015	Plug and Socket Set - Includes 1010 and 1011	0.20 (0.09)

* Socket not included

360 PANEL SYSTEM

See page 103 for a the 360 Panel 12 Volt DC Socket Mounting Panel.

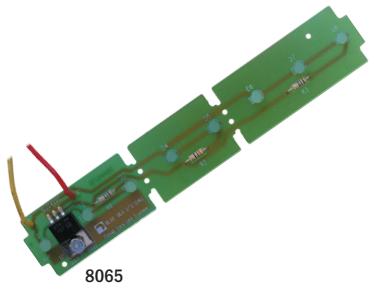
Label Backlight System

Adds label backlighting to Blue Sea Systems Traditional Metal circuit breaker panels

- Designed for 12 or 24 Volt systems
- Connects to sources via two 20 AWG wire leads
- Reverse polarity protection built-in
- 8065 snaps apart for 5 or 3 positions

Specifications

Vmxo	Voltage Maximum Operating	24 Volts DC
Ioc	Amperage Operating Current	<7 mA per label



8065

PN	Description	Weight lb (kg)
8065	8/5/3 Positions	0.08 (0.04)
8384	4 Positions	0.05 (0.02)
8069	10 Positions	0.09 (0.04)
8383	13 Positions	0.11 (0.05)

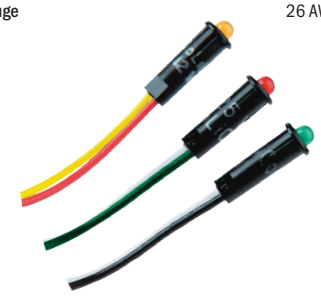
LED Indicator Lights

Directly replaces all LEDs used in Blue Sea Systems Traditional Metal circuit breaker panels

- Simple push-in installation mounts in any thickness material
- Useful as general indicator and alarm lights

Specifications

Vmxo	**Voltage Maximum Operating**	See table below
Ioc	**Amperage Operating Current**	See table below
Mounting Hole Size		11/64 in (4.36 mm)
Power Consumption		5 mW
Wire Gauge		26 AWG



PN	Color	Vmxo Voltage	Ioc Amperage	Weight lb (kg)
8033	Amber	24V DC	5 mA DC	0.03 (0.01)
8171	Red	24V DC	5 mA DC	0.03 (0.01)
8172	Green	24V DC	5 mA DC	0.03 (0.01)
8169	Amber	120V AC	0.5 mA AC	0.03 (0.01)
8066	Red	120V AC	0.5 mA AC	0.03 (0.01)
8034	Green	120V AC	0.5 mA AC	0.03 (0.01)
8167	Amber	250V AC	0.25 mA AC	0.03 (0.01)
8166	Red	250V AC	0.25 mA AC	0.03 (0.01)
8134	Green	250V AC	0.25 mA AC	0.03 (0.01)

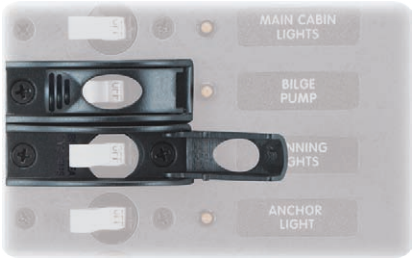
Toggle Guard

Protects toggle circuit breakers from accidental switching

- Fits all A-Series single pole toggle circuit breakers (page 36)
- Fits all panel switches (page 106)
- Can be used on any brand of circuit breaker panel (not including 360 Panel System) using standard toggle type circuit breakers
- Uses circuit breaker mounting screw holes
- Includes mounting screws

Specifications

Mounting #6 Flat Head Screw

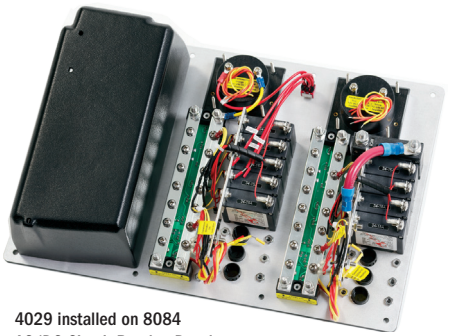


4100 (2 shown)
Weight 0.05 lb (0.02 kg)

AC Insulating Covers

Provides electrical insulation for many of Blue Sea Systems traditional metal circuit breaker panels

- Isolation of panel AC components and circuits from DC system elements
- Provides mechanical protection for panel backs protruding into lockers
- Lightweight material is easily drilled for wire entrance and exit
- Meet ABYC safety requirements for panels with combined AC and DC loads
- 4029 and 4031–Used only for Blue Sea Systems toggle circuit breaker panels



4029 installed on 8084 AC/DC Circuit Breaker Panel (page 84)

Specifications

Material UL-94 V0 Thermoplastic

PN	Description	Weight lb (kg)
4026	Cover for 5-1/4" x 3-3/4"	0.12 (0.05)
4027	Cover for 5-1/4" x 7-1/2"	0.20 (0.09)
4028	Cover for 10-1/2" x 7-1/2"	0.50 (0.23)
4029	Cover for 1 Column x 8 Position + Meter	0.24 (0.11)
4031	Cover for 2 Column x 10 Position + Meter	0.38 (0.17)

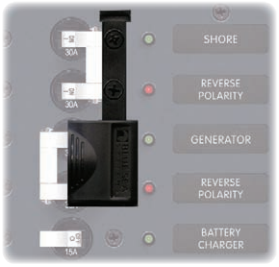
AC A-Series Circuit Breaker Lockout Slide

Enables safe management of multiple AC sources which use double pole circuit breakers

- Allows only 1 double pole AC circuit breaker to be activated at a time
- Guarantees that AC power from 2 or sources (shore power, genset, or inverter) will not be mixed
- Fits all double pole A-Series Toggle Circuit Breakers (page 36)
- Uses circuit breaker mounting screw holes
- Includes mounting screws

Specifications

Mounting #6 Flat Head Screw



4125
Poles 2
AC Sources 2
Weight 0.04 lb (0.02 kg)

4126
Poles 2
AC Sources 3
Weight 0.06 lb (0.03 kg)

AC C-Series Toggle Circuit Breaker Lockout Slide

Enables safe management of multiple AC sources which use double or triple pole circuit breakers

- Allows only 1 of a pair of double pole or triple pole AC circuit breakers to be activated at a time
- Guarantees that AC power from 2 sources (shore power, genset, or inverter) will not be mixed
- Fits all double or triple pole C-Series Toggle Circuit Breakers (page 38)
- Uses circuit breaker mounting screw holes
- Requires no special panel modification
- Includes mounting screws

Specifications

Mounting #6 Flat Head Screw
AC Sources 2

4130
Poles 2
Weight 0.06 lb (0.03 kg)

4131
Poles 3
Weight 0.17 lb (0.08 kg)

NEW

DeckHand Dimmers

Replaces PNs 7501, 7502, 7503, and 7505

Provides continuous voltage control from 0 to 100% of input voltage

7508

8216
Pole/Throw: SPDT
Action: (ON)-OFF-(ON)

Features

- Controls multiple incandescent or LED lights with one device
- Memory for last setting
- illuminated exit with adjustable time delay
- Provides continuous voltage control from 0 to 100% of input voltage
- Offset mounting tabs allow dimmers to be mounted close together
- Retail package includes momentary (ON)-OFF-(ON) switch 8216

Specifications

Vmxo	**Voltage Maximum Operating**	16 Volts DC
Vn	**Nominal Voltage**	12 Volts DC
Imxo	**Amperage Maximum Operating**	See table below
Maximum parasitic current		2mA
Temperature Rating		-40°C to 85°C

PN	Imxo Amperage Maximum Operating	Weight lb (kg)
7506	6 Amps	0.4 (0.18)
7507	12 Amps	0.58 (0.26)
7508	25 Amps	0.64 (0.29)

Dimmer Replacement Reference Chart

New PN	Amp Max. Operating	Nominal Voltage	Width in (mm)	Height in (mm)	Replaces PN	Amp Max. Operating	Nominal Voltage	Width in (mm)	Height in (mm)
7506	6 Amps	12V DC	3.25 (82.55)	3.5 (88.9)	7501	2 Amps	32V DC	1.7 (43.2)	2.05 (52.1)
7506	6 Amps	12V DC	3.25 (82.55)	3.5 (88.9)	7502	5 Amps	32V DC	2.2 (55.9)	3.06 (77.7)
7507	12 Amps	12V DC	3.25 (82.55)	3.5 (88.9)	7503	10 Amps	32V DC	2.2 (55.9)	3.06 (77.7)
7508	25 Amps	12V DC	3.25 (82.55)	3.5 (88.9)	7505	20 Amps	32V DC	2.2 (55.9)	3.06 (77.7)

Example of nested dimmer switches

Water Resistant Contura Dimmer Switches

Pre-labeled momentary switches are an ideal control switch for Blue Sea Systems dimmers

- Mounts in Blue Sea Systems Contura waterproof panels (page 67)
- Legend–BRIGHT and DIM
- Contura Switch Mounting Panels (page 105)
- For use with DeckHand Dimmers (see left)
- Ignition Protected—safe for installation aboard gasoline powered boats

Specifications

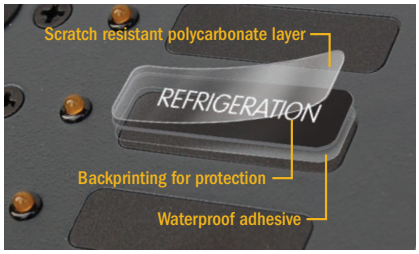
Vmxo	**Voltage Maximum Operating**	20A @ 12V DC 15A @ 24V DC
Terminal Size		0.25 in (6.35mm)
Terminal Type		Quick Connect Tab
Seals		Internal and External Gasket Panel Seal
Temperature Rating		-40°C to 85°C
Mounting Hole		1.45 x 0.83 in (36.83 x 21.08 mm)

8216
Pole/Throw: SPDT
Action: (ON)-OFF-(ON)

8291
Pole/Throw: SPDT
Action: (ON)-OFF-(ON)

Labels

Blue Sea Systems offers labels with standard and custom text for all panel formats. Custom labels ship rapidly due to an in-house printing facility, and over 500 standard labels are ready to order. All labels are made using a high quality polycarbonate material, waterproof adhesive, and are backprinted for scratch resistance. To order standard labels online or download a custom label order form, go to bluesea.com/labels.



Square Format Labels

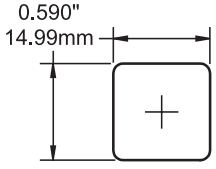
Used with 360 Panel System (pages 68), Battery Management (pages 16–21) and WeatherDeck™ Panels (pages 65)

- Reinforced, weatherproof material
- Available for purchase in sets or individually (pages 112–113)
- For a list of labels included, see page 111

PN	Color	Description	Quantity
4215	Black	DC Labels	30 Labels
4218	Black	DC Labels	30 Labels
4216	Black	DC Labels	60 Labels
4217	Black	DC Labels	120 Labels
4205	Black	DC Panel Basic	30 Labels
4206	Black	AC Panel Basic	30 Labels
4207	Black	DC Panel Extended	120 Labels
4208	Black	AC Panel Extended	120 Labels
6522	Black	AC Panel Extended (French)	120 Labels
6523	Black	DC Panel Extended (French)	120 Labels
6524	Black	AC Panel Extended (Italian)	120 Labels
6525	Black	DC Panel Extended (Italian)	120 Labels

NOTE: 6522/6524 are based on 4208 and 6523/6525 are based on 4207

4215



CABIN LIGHTS

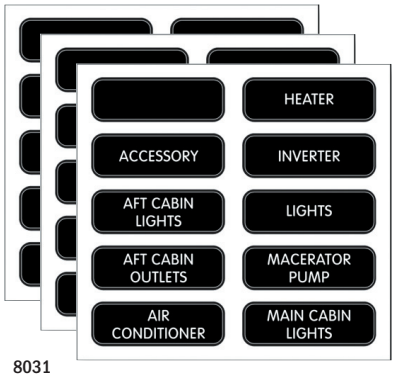
Large Format Labels

Used on Traditional Metal Panels, ST Glass Fuse Block and selected Contura Waterproof Panels

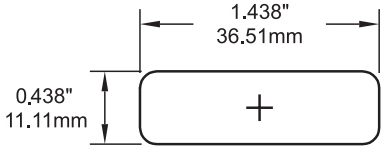
- Reinforced, weatherproof material
- Used on Contura Waterproof Fuse Panels 8053, 8054 (page 67)
- Available for purchase in sets or individually (page 112–113)
- For a list of labels included, see page 111

PN	Color	Description	Quantity
8031	Black	AC Panel Basic	30 Labels
8067	Black	AC Panel Extended	120 Labels
8030	Black	DC Panel Basic	30 Labels
8039	Black	DC Panel Extended	120 Labels
6398	Black	AC Panel Extended (French)	120 Labels
6399	Black	DC Panel Extended (French)	120 Labels

NOTE: 6398 is based on 8067 and 6399 is based on 8039



8031



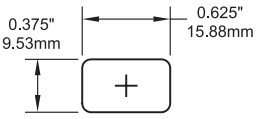
CABIN LIGHTS

Small Format Labels

Used with most Blue Sea Systems Contura Waterproof Panels (page 67) or ST Blade Fuse Block (page 47)

- Reinforced, weatherproof material
- For a list of labels included, see page 111

CABIN LIGHTS



8214 Quantity: 60 labels
Color: Black (shown)

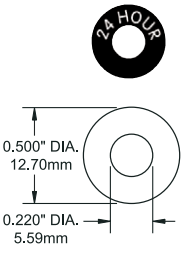
8217 Quantity: 60 labels
Color: Gray

24-Hour Round Label

Fits around any Blue Sea Systems panel LED

- Reinforced, weatherproof material
- Sold in packages of 12
- Can be used on any standard panel
- Included with Traditional Metal Battery Main Distribution Panels (pages 16-21)

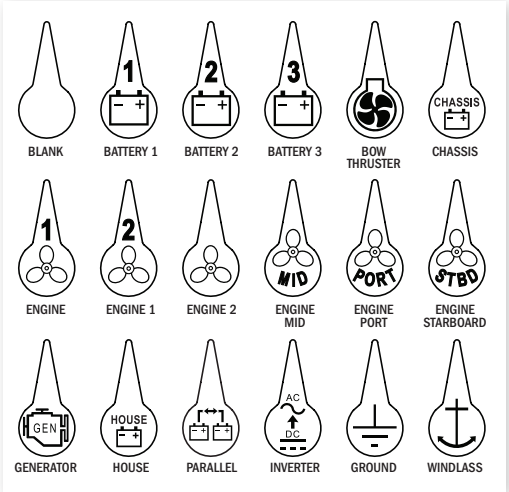
4140



ICON Circuit Identification Label Kit

Used on any m-Series, e-Series and HD-Series battery switches (pages 10–13)

- Reinforced, weatherproof material



7902
Color White
Quantity 18 labels

Labels Included in Sets

4215

ACCESSORY
AERATOR
ANCHOR LIGHT
AUTOPILOT
BAIT PUMP
BILGE PUMP
BLOWER
CABIN LIGHTS
DEPTH SOUNDER
ELECTRONICS
GPS
HORN
INSTRUMENTS
KNOTMETER
NAV LIGHTS
RADAR
REFRIGERATOR
RUNNING LIGHTS
SEARCH LIGHT
SPARE
SPREADER LIGHTS
STEAMING LIGHT
STEREO
TRIM TABS
VHF
WASH DOWN
WATER PRESSURE
WATER PUMP
WINDLASS
WIPERS

4206 and 8031

(BLANK)
ACCESSORY
AFT CABIN LIGHTS
AFT CABIN OUTLETS
AIR CONDITIONER
AIR CONDITIONER 2
APPLIANCES
BATTERY CHARGER
CABIN OUTLETS
COMPUTER
ENTERTAINMENT CENTER
FWD CABIN LIGHTS
FWD CABIN OUTLETS
GALLEY
GALLEY OUTLETS
HEATER
INVERTER
LIGHTS
MACERATOR PUMP
MAIN CABIN LIGHTS
MAIN CABIN OUTLETS
MICROWAVE
OUTLETS
REFRIGERATOR
SPARE
STOVE
TV/STEREO
VCR
WASHER/DRYER
WATER HEATER

4217

(BLANK)	DC OUTLETS	FOREDECK LIGHT	ON-OFF
12 VOLT DC	DC SUB PANEL	FRESH WATER PUMP	OUTLETS
12 VOLT DC OUTLETS	DECK LIGHTS	FRESH WATER WASH DOWN	PUMP
24 VOLT DC	DEFROSTER	FUEL PUMP	PUMPOUT
AIR HORN	DEPTH/SPEED	FUEL TRANSFER	RADIO
ANCHOR LIGHT MAIN	DIMMER	FURLER JIB	ROD LOCKER
ANCHOR LIGHT MIZZEN	DISCHARGE PUMP	FURLER MAINSAIL	RUDDER ANGLE INDICATOR
ANCHOR WASH DOWN	DOCKING LIGHT PORT	GALLEY	SAILING CONTROLS
APPLIANCES	DOCKING LIGHT STBD	GAS ALARM	SAILING INSTRUMENTS
ARCH LIGHTS	DOCKING LIGHTS	GPS/PLOTTER	SALT WATER PUMP
AUTO/MAN	DOWN RIGGER	HAILER	SEAWATER WASH DOWN
BAITWELL	ELECTRIC HATCH	HAM RADIO	SHOWER SUMP PUMP
BATTERY	ENGINE HATCH	HEAD	SOLAR PANEL
BATTERY PARALLEL	ENGINE INSTRUMENTS	HEATER	SSB
BILGE ALARM	ENGINE ROOM BLOWER	IGNITION	START-STOP
BILGE PUMP 2	ENGINE ROOM LIGHTS	INSTRUMENT LIGHTS	STERN LIGHT
BILGE PUMP ON-OFF-AUTO	ENGINE SHUTDOWN	INTERCOM HAILER	STROBE LIGHT
BOW LIGHT	ENTRY STEP	LAZARETTE LIGHTS	SUMP PUMP
BOW THRUSTER	FAN	LIGHTER	TRANSFER
BRIDGE INSTRUMENTS	FAN 2	LIGHTS	TRICOLOR LIGHT
BRIDGE LIGHTS	FIRE ALARM	LIVEWELL	TROLLING MOTOR
CABIN	FIRE EXT	LOCKER LIGHTS	WASHDOWN PUMP
CB RADIO	FISH FINDER	LPG CONTROL	WASHDOWN
CD PLAYER	FISHING LIGHT	MAIN	WINCHES
CHART LIGHT	FISHWELL PUMP	MAST LIGHTS	WIND GENERATOR
CHART PLOTTER	FLOOD LIGHTS	MASTHEAD LIGHT	WIND INSTRUMENTS
COCKPIT LIGHTS	FLYBRIDGE	MIZZEN FLOOD	WINDSHIELD WASHER
COMPASS LIGHT	FLYBRIDGE ELECTRONICS	NAVIGATION ELECTRONICS	WIPER CENTER
COURTESY LIGHTS	FLYBRIDGE LIGHTS	NAVIGATION INSTRUMENTS	WIPER PORT
DAVIT	FOG LIGHTS	NAV LIGHT ANCHOR OFF NAV	WIPER STBD

8214 and 8217

(BLANK)
12 VOLT DC
24 VOLT DC
ACCESSORY
AERATOR
ANCHOR LIGHT
AUTO PILOT
BAIT PUMP
BAITWELL
BATTERY
BATTERY CHARGER
BILGE
BILGE PUMP
BLOWER
BOW LIGHT
CABIN
CABIN LIGHTS
CB RADIO
CELLULAR PHONE
CHARGER INVERTER
CHART PLOTTER
DECK LIGHTS
DEPTH SOUNDER
DOWN RIGGER
ELECTRONICS
FAN
FISH FINDER
FISHING LIGHT
FLOOD LIGHTS
FUEL PUMP
GAS ALARM
GPS
HORN
IGNITION
INSTR. LIGHTS
INVERTER
KNOT METER
LIGHTS
LIVEWELL
NAV LIGHTS
OUTLETS
RADIO
RADAR
REFRIGERATION
RUNNING LIGHTS
SEARCH LIGHT
SPARE
SPREADER LIGHTS
STEAMING LIGHT
STEREO
STROBE LIGHT
TRICOLOR LIGHT
TRIM TABS
VHF
WASH DOWN
WATER PRESSURE
WATER PUMP
WINCHES
WINDLASS
WIPERS

4218

12 VOLT DC
24 VOLT DC
ALARM
BILGE PUMP
BILGE PUMP 2
BILGE PUMP 3
BILGE PUMP 4
BOW THRUSTER
CLOCK
DC MAIN
DC SUB PANEL
ELECTRONICS
ENGINE
ENGINES
ENG 1/ENG 2
GENERATOR
HOUSE
HOUSE/ENG
HOUSE/GEN
INVERTER
LIGHTS
MEMORY
PORT/STBD ENG
RADAR
RADIO
SOLAR PANEL
VHF
WINCH
WINDLASS
Blank (Write On)

4216

(BLANK)
12 VOLT DC
12 VOLT DC OUTLETS
ANCHOR WASH DOWN
BAITWELL
BATTERY
BATTERY PARALLEL
BILGE
BILGE PUMP 2
BILGE PUMP ON-OFF-AUTO
BOW LIGHT
CABIN
CB RADIO
CELLULAR PHONE
CHART LIGHT
CHART PLOTTER
COCKPIT LIGHTS
COMPASS LIGHT
COURTESY LIGHTS
DAVIT
DC OUTLETS
DC SUB PANEL
DECK LIGHTS
DOCKING LIGHTS
DOWN RIGGER
ELECTRIC HATCH
ENGINE ROOM BLOWER
ENGINE ROOM LIGHTS
FAN
FISH FINDER
FISHING LIGHT
FISHWELL PUMP
FLOOD LIGHTS
FRESH WATER PUMP
FUEL PUMP
GALLEY OUTLETS
GAS ALARM
GPS/PLOTTER
HEAD
IGNITION
INSTRUMENT LIGHTS
LIGHTS
LIVEWELL
MACERATOR PUMP
NAV LIGHT ANCHOR-OFF-NAV
OUTLETS
PUMPOUT
RADIO
SEAWATER WASH DOWN
SHOWER SUMP PUMP
SSB
STERN LIGHT
STROBE LIGHT
TRICOLOR LIGHT
TROLLING MOTOR
WASHDOWN
WATER MAKER
WINCHES
WIPER PORT
WIPER STBD

4207 and 8039

(BLANK)	DECK LIGHTS FWD	HELM GAUGES	SATELLITE DISH
12 VOLT DC	DEPTH RECORDER	HELM INSTRUMENTS	SEARCHLIGHT
12 VOLT DC OUTLETS	DEPTH/SPEED	HIGH WATER ALARM	SEAWATER TEMP
AFT CABIN	DESALINATOR	HOLDING TANK	SEAWATER WASH DOWN
AFT HEAD	DIMMER	HOLDING TANK ALARM	SECURITY SYSTEM
ALARM SYSTEM	DINING AREA LIGHTS	HOLDING TANK PUMP	SHOWER SUMP PUMP
ANCHOR WASH DOWN	DOCKING LIGHTS	INSTRUMENT LIGHTS	SONAR
BAIT PUMP	EMERGENCY LIGHTS	INSTRUMENTS	SPEED/LOG
BILGE ALARM	ENGINE ROOM BILGE ALARM	INTERCOM	SSB
BILGE PUMP 2	ENGINE ROOM LIGHTS	INTERIOR LIGHTS	SUB PANEL
BRIDGE INSTRUMENTS	ENGINE ROOM PANEL MAIN	LIGHTS 2	SUMP PUMP
CABIN 2 LIGHTS	ENGINE ALARM	LIVEWELL	TELEPHONE SYSTEM
CABIN 3 LIGHTS	EXTERIOR LIGHTS	LOG	TRACK LIGHTS
CABIN 4 LIGHTS	FAN 2	LORAN	TRANSFER PUMP
CABIN FANS	FIRE ALARM	MAIN CABIN	TRIM TABS
CABIN LIGHTS	FISHING LIGHT	MAP LIGHT	TV
CB RADIO	FLOOD LIGHTS	MAST LIGHTS	TV/VCR
CELLULAR PHONE	FLYBRIDGE ELECTRONICS	NAV STATION ELECTRONICS	UTILITY
CHART LIGHT	FLYBRIDGE LIGHTS	NAV STATION GAUGES	VIDEO PLOTTER
CHART PLOTTER	FRESH WATER PUMP	NAV STATION INSTRUMENTS	WATER ALARM
COCKPIT LIGHTS	FRESH WATER WASH DOWN	NAV STATION LIGHTS	WATER MAKER
COLOR SOUNDER	GALLEY LIGHTS	NAVIGATION ELECTRONICS	WATER PUMP
COMM ELECTRONICS	GPS/PLOTTER	NAVIGATION INSTRUMENTS	WEATHER FAX
DC LIGHTS	HAILER	NAVIGATION LIGHTS	WEATHER INSTRUMENT
DC MAIN	HAM RADIO	RACK LIGHTS	WINCHES
DC OUTLETS	HEAD	RADIO	WIND INSTRUMENTS
DC REFRIGERATOR	HEAD LIGHTS	SALOON	WINDEX LIGHT
DC SUB PANEL	HEAD LIGHTS 2	SALOON LIGHTS	WIPER PORT
DECK LIGHTS	HEATER 2	SAT/COM	WIPER STBD
DECK LIGHTS AFT	HELM ELECTRONICS	SAT/NAV	WIPERS

4205 and 8030

ACCESSORY
ANCHOR LIGHT
AUTOPILOT
BILGE PUMP
BLOWER
COMPASS LIGHT
DEPTH SOUNDER
ELECTRONICS
ENGINE INSTRUMENTS
FAN
FOREDECK LIGHT
FWD CABIN LIGHTS
GPS
HORN
KNOTMETER
LIGHTS
MACERATOR PUMP
MAIN CABIN LIGHTS
RADAR
REFRIGERATOR
RUNNING LIGHTS
SAILING INSTRUMENTS
SPARE
SPREADER LIGHTS
STEAMING LIGHT
STEREO
STROBE LIGHT
TRICOLOR LIGHT
VHF
WATER PRESSURE

4208 and 8067

(BLANK)	CABIN HEATER	GFI OUTLET	OUTLETS 2
120 VOLT AC OUTLETS	CABIN LIGHTS	HALLWAY LIGHTS	OUTLETS 3
120 VOLTS AC / 60 HZ	CHARGER/INVERTER	HEAD 2 OUTLETS	OUTLETS 4
AC COMPRESSOR	COCKPIT LIGHTS	HEAD 3 OUTLETS	OUTLETS DECK
AC FAN	COCKPIT REFRIGERATOR	HEAD 4 OUTLETS	OUTLETS EXTERIOR
AC MAIN	COMPARTMENT LIGHT	HEAD LIGHTS	OUTLETS INTERIOR
AC PANEL	COOKTOP	HEAD LIGHTS 2	RACK OUTLETS
AC POWER	DECK LIGHTS	HEAD LIGHTS 3	RANGE
AC REFRIGERATOR	DIMMER	HEAD LIGHTS 4	REFRIGERATOR/FREEZER
AC SUB PANEL	DINING AREA LIGHTS	HEAD OUTLETS	REVERSE POLARITY
AFT CABIN	DINING AREA OUTLETS	HEADLIGHTS	SALOON
AFT HEAD	DISHWASHER	HEATER 2	SALOON HEATER
AIR CONDITIONER 3	DISPOSAL	HEATER 3	SALOON LIGHTS
AIR CONDITIONER 4	DRYER	HEATER 4	SALOON OUTLETS
ALARM SYSTEM	EMERGENCY LIGHTS	HOOD FAN	SATELLITE DISH
AMPLIFIER	ENGINE ROOM LIGHTS	ICEMAKER	SHIP
AUDIO/VIDEO SYSTEM	ENGINE ROOM OUTLETS	INTERIOR LIGHTS	SHORE
BATTERY CHARGER 2	EXHAUST FAN	INVERTER OUTLET	SHORE POWER
BRIDGE LIGHTS	EXTERIOR LIGHTS	ISOLATION TRANSFORMER	STEREO
BRIDGE OUTLETS	FAN	LAZARETTE LIGHTS	STOVE/MICROWAVE
CABIN	FAN 2	LECTRASAN	SUB PANEL
CABIN 2	FAN 3	LIGHTS 2	TELEPHONE SYSTEM
CABIN 2 LIGHTS	FAN 4	LIGHTS 3	TRACK LIGHTS
CABIN 2 OUTLETS	FLOOD LIGHTS	LIGHTS 4	TRASH COMPACTOR
CABIN 3	FREEZER	LIGHTS AFT	TV
CABIN 3 LIGHTS	FURNACE	LIGHTS FWD	UPS SYSTEM
CABIN 3 OUTLETS	GALLEY APPLIANCES	MAIN	VACUUM
CABIN 4	GALLEY LIGHTS	MAIN BREAKER	VIDEO SYSTEM
CABIN 4 LIGHTS	GARBAGE DISPOSAL	MAIN CABIN	WASHER
CABIN 4 OUTLETS	GENERATOR 1	NAV STATION LIGHTS	WATER MAKER

Individual Square and Large Format Panel Labels

To order individual labels, please indicate the Part No. (6520 or 8063) **and the Label No.**

Example:
Square Format 6520-0044 BAIT PUMP
Large Format 8063-0356 REFRIGERATOR

Label No.	Label Text
0001	LABEL #1
0002	LABEL #2
0003	(BLANK)
0005	12 VOLT DC
0004	12 VOLT DC OUTLETS
0499	12 VOLT OUTLETS INSIDE
0500	12 VOLT OUTLETS OUTSIDE
0502	120 VOLT / 60 HZ SHORE POWER
0007	120 VOLT AC / 60 HZ
0006	120 VOLT AC OUTLETS
0516	120/240V 60 HZ
0517	120/240V 60 HZ SHORE POWER
0526	230 VOLTS AC 50 HZ
0010	24 VOLT DC
0009	24 VOLT DC OUTLET
0008	240 VOLTS AC
0460	240 VOLTS AC / 60 HZ
0515	250 VOLT 50HZ SHORE POWER
0468	250 VOLTS AC / 50 HZ
0462	AC BUS 1
0011	AC COMPRESSOR
0012	AC FAN
0013	AC MAIN
0014	AC PANEL
0015	AC POWER
0016	AC REFRIGERATOR
0017	AC SUB PANEL
0532	ACCENT LIGHT
0018	ACCESSORY
0019	ADF
0020	AERATOR
0021	AFT CABIN
0022	AFT CABIN LIGHTS
0023	AFT CABIN OUTLETS
0536	AFT CABIN SUMP
0530	AFT DISCHARGE PUMP
0024	AFT HEAD
0025	AIR COMPRESSOR
0026	AIR CONDITIONER
0027	AIR CONDITIONER 2
0028	AIR CONDITIONER 3
0029	AIR CONDITIONER 4
0030	AIR CONDITIONER PUMP
0031	AIR HORN
0573	AIS
0544	ALARM
0032	ALARM SYSTEM
0461	ALTERNATOR
0033	ALTERNATOR DISCONNECT
0034	AMPLIFIER
0035	ANCHOR LIGHT
0036	ANCHOR LIGHT MAIN
0037	ANCHOR LIGHT MIZZEN
0038	ANCHOR WASH DOWN
0039	APPLIANCES
0040	ARCH LIGHTS
0041	AUDIO/VIDEO SYSTEM
0525	AUTO FILL
0042	AUTO/MAN
0555	AUTO/MAN
0524	AUTOMATIC CHARGING RELAY
0043	AUTOPILOT
0044	BAIT PUMP
0045	BAITWELL
0046	BALLAST CONTROLS
0047	BALLAST PUMP
0048	BAR
0481	BATHROOM
0049	BATTERY
0473	BATTERY 1
0474	BATTERY 2
0050	BATTERY CHARGER
0051	BATTERY CHARGER 2
0052	BATTERY COMPARTMENT
0053	BATTERY PARALLEL
0560	BATTERY SWITCH
0054	BEACON
0480	BEDROOM
0485	BEDROOM SLIDEOUT
0055	BILGE
0056	BILGE ALARM
0057	BILGE ALARM 2
0058	BILGE ALARM 3
0059	BILGE ALARM 4
0060	BILGE LIGHTS
0061	BILGE PUMP
0062	BILGE PUMP 2
0063	BILGE PUMP 3
0064	BILGE PUMP 4
0453	BILGE PUMP ON-OFF-AUTO
0559	BLANK WHITE WRITABLE
0065	BLOWER
0066	BOAT DAVIT
0067	BOOM LIGHT
0068	BOW LIGHT
0069	BOW THRUSTER
0070	BRIDGE
0071	BRIDGE INSTRUMENTS
0072	BRIDGE LIGHTS
0073	BRIDGE OUTLETS
0074	CABIN
0075	CABIN 2
0501	CABIN 2 FAN
0076	CABIN 2 LIGHTS
0077	CABIN 2 OUTLETS
0078	CABIN 3
0079	CABIN 3 LIGHTS
0080	CABIN 3 OUTLETS
0081	CABIN 4
0082	CABIN 4 LIGHTS
0083	CABIN 4 OUTLETS
0084	CABIN FAN
0085	CABIN HEATER
0086	CABIN LIGHTS
0087	CABIN OUTLETS
0088	CABLEMASTER
0089	CASSETTE PLAYER
0090	CB RADIO
0091	CCTV
0092	CD PLAYER
0093	CELLULAR PHONE
0537	CENTER LIVEWELL
0094	CHARGER/INVERTER
0095	CHART LIGHT
0096	CHART PLOTTER
0097	CHOKE
0098	CIRCULATOR PUMP
0508	CLOCK
0099	CLOSET LIGHT
0575	CO DETECTOR
0100	COCKPIT LIGHTS
0101	COCKPIT REFRIG
0102	COLOR SOUNDER
0103	COMM ELECTRONICS
0104	COMPARTMENT HEATER
0105	COMPARTMENT LIGHT
0106	COMPASS LIGHT
0107	COMPUTER
0514	COMPUTER DISPLAY
0108	CONDENSER PUMP
0109	CONSOLE LIGHT
0110	CONVERTER
0111	COOKING GRILL
0112	COOKTOP
0113	COOLING PUMP
0114	COURTESY LIGHTS
0115	CREW LIGHTS
0116	CREW QUARTERS
0117	DAVIT
0118	DC LIGHTS
0119	DC MAIN
0120	DC OUTLETS
0121	DC REFRIGERATOR
0122	DC SUB PANEL
0123	DECK
0124	DECK LIGHTS
0125	DECK LIGHTS AFT
0126	DECK LIGHTS FWD
0127	DECK LIGHTS PORT
0128	DECK LIGHTS STBD
0129	DEFROSTER
0130	DEPTH RECORDER
0131	DEPTH SOUNDER
0132	DEPTH/SPEED
0133	DESALINATOR
0134	DIMMER
0135	DINING AREA LIGHTS
0136	DINING AREA OUTLETS
0137	DISCHARGE PUMP
0567	DISCHARGE PUMP 2
0568	DISCHARGE PUMP 3
0138	DISHWASHER
0139	DISPOSAL
0140	DIVE COMPRESSOR
0141	DOCKING LIGHT PORT
0142	DOCKING LIGHT STBD
0143	DOCKING LIGHTS
0144	DOWN RIGGER
0145	DRYER
0146	DUMP VALVES
0566	ECU
0147	ELECTRIC HATCH
0469	ELECTRONIC CONTROL UNIT
0148	ELECTRONICS
0149	EMERGENCY BACKUP SYS
0150	EMERGENCY LIGHTS
0151	EMERGENCY PUMPS
0547	ENG 1/ENG 2
0545	ENGINE
0158	ENGINE ALARM
0159	ENGINE BLOCK HEATER
0160	ENGINE CONTROL PORT
0161	ENGINE CONTROL STBD
0162	ENGINE CONTROLS
0163	ENGINE DRIVEN REFRIG
0164	ENGINE EXHAUST FAN
0165	ENGINE HATCH
0166	ENGINE HEATER PORT
0167	ENGINE HEATER STBD
0168	ENGINE INSTRUMENTS
0169	ENGINE OIL PAN PUMP
0152	ENGINE ROOM BILGE ALARM
0153	ENGINE ROOM BLOWER
0154	ENGINE ROOM HEATER
0155	ENGINE ROOM LIGHTS
0156	ENGINE ROOM OUTLETS
0157	ENGINE ROOM PANEL MAIN
0170	ENGINE SHUTDOWN
0171	ENGINE TEMP
0546	ENGINES
0172	ENTERTAINMENT CENTER
0173	ENTRANCE DOOR
0174	ENTRY STEP
0175	EXHAUST FAN
0176	EXHAUST TEMP
0177	EXTERIOR
0178	EXTERIOR LIGHTS
0179	FAN
0180	FAN 2
0181	FAN 3
0182	FAN 4
0183	FAX
0184	FILLING PUMP
0185	FIRE ALARM
0186	FIRE EXT
0187	FIRE HORN
0459	FISH FINDER
0538	FISHBOX DRAIN
0188	FISHBOX ICEMAKER
0520	FISHBOX PUMP
0521	FISHBOX REFRIGERATOR
0189	FISHING LIGHT
0487	FISHWELL PUMP
0488	FISHWELL PUMP 2
0576	FLOAT SWITCH
0190	FLOOD LIGHTS
0191	FLOSCAN
0192	FLYBRIDGE
0193	FLYBRIDGE ELECTRONICS
0194	FLYBRIDGE LIGHTS
0195	FLYBRIDGE OUTLETS
0196	FOG LIGHTS
0197	FOREDECK LIGHT
0539	FORWARD BILGE
0198	FREEZER
0199	FRESH WATER
0200	FRESH WATER PUMP
0201	FRESH WATER PUMP 2
0202	FRESH WATER PUMP 3
0203	FRESH WATER PUMP 4
0204	FRESH WATER WASH DOWN
0482	FRONT SLIDEOUT
0561	FUEL GAUGE
0205	FUEL PRIMER PUMP
0206	FUEL PUMP
0207	FUEL PUMP 2
0208	FUEL PUMP 3
0209	FUEL PUMP 4
0210	FUEL TANK HEATER
0211	FUEL TRANSFER
0507	FUME DETECTOR
0212	FURLER JIB
0213	FURLER MAINSAIL
0214	FURLER SPINNAKER
0215	FURNACE
0216	FWD CABIN
0217	FWD CABIN LIGHTS
0218	FWD CABIN OUTLETS
0529	FWD DISCHARGE PUMP
0528	FWD HEAD
0219	GALLEY
0220	GALLEY APPLIANCES
0221	GALLEY DRAIN
0222	GALLEY FAN
0223	GALLEY LIGHTS
0224	GALLEY OUTLETS
0490	GALVANIC ISOLATOR
0225	GARBAGE DISPOSAL
0226	GAS ALARM
0227	GENERAL PURPOSE
0523	GENERATOR
0228	GENERATOR 1
0229	GENERATOR 2
0454	GENERATOR OFF ON START
0230	GENERATOR ROOM BLOWER
0466	GENERATOR RUNNING
0455	GENERATOR STOP
0578	GFCI
0231	GFI OUTLET
0232	GPS
0233	GPS/LORAN
0234	GPS/PLOTTER
0510	GUN LOCKS
0235	GYRO COMPASS
0236	HAILER
0237	HALLWAY LIGHTS
0238	HALON FIRE SYSTEM
0239	HAM RADIO
0240	HEAD
0241	HEAD 2
0242	HEAD 2 FAN
0243	HEAD 2 OUTLETS
0244	HEAD 3
0245	HEAD 3 FAN
0246	HEAD 3 OUTLETS
0247	HEAD 4
0248	HEAD 4 FAN
0249	HEAD 4 OUTLETS
0250	HEAD FAN
0251	HEAD LIGHTS
0252	HEAD LIGHTS 2
0253	HEAD LIGHTS 3

Label No.	Label Text
0254	HEAD LIGHTS 4
0255	HEAD OUTLETS
0256	HEADLIGHTS
0257	HEATER
0519	HEATER & AIR CONDITIONER
0258	HEATER 2
0259	HEATER 3
0260	HEATER 4
0261	HELM ELECTRONICS
0262	HELM GAUGES
0263	HELM INSTRUMENTS
0264	HIGH WATER ALARM
0265	HOLDING TANK
0266	HOLDING TANK ALARM
0267	HOLDING TANK PUMP
0268	HOOD FAN
0269	HOOD LIGHT
0270	HORN
0475	HOT TUB
0271	HOT WATER PUMP
0548	HOUSE
0549	HOUSE/ENG
0550	HOUSE/GEN
0272	HYDRAULIC ALARM
0273	HYDRAULIC SYSTEM
0274	HYDRAULIC TANK ALARM
0570	HYDRAULIC VALVE
0275	ICE MAKER
0276	IGNITION
0277	IGNITION PORT
0278	IGNITION STBD
0279	INSTRUMENT LIGHTS
0280	INSTRUMENTS
0281	INTERCOM
0282	INTERCOM HAILER
0283	INTERCOM/TELEPHONE
0284	INTERIOR LIGHTS
0556	INTERNET
0285	INVERTER
0467	INVERTER 2
0476	INVERTER AC BUS
0471	INVERTER AC SUPPLY
0470	INVERTER DC SUPPLY
0286	INVERTER OUTLET
0287	ISOLATION TRANSFORMER
0479	KITCHEN
0484	KITCHEN SLIDEOUT
0288	KNOTMETER
0289	LAZARETTE LIGHTS
0290	LECTRASAN
0291	LIGHTER
0292	LIGHTS
0293	LIGHTS 2
0294	LIGHTS 3
0295	LIGHTS 4
0296	LIGHTS AFT
0494	LIGHTS AFT CABIN
0297	LIGHTS FWD
0493	LIGHTS MASTER CABIN
0495	LIGHTS PANTRY
0492	LIGHTS PILOTHOUSE
0298	LIGHTS PORT
0491	LIGHTS SETTEE
0299	LIGHTS STBD
0300	LIVEWELL
0301	LIVEWELL INPUT
0302	LIVEWELL OUTPUT
0303	LOCKER LIGHTS
0304	LOG
0305	LORAN
0306	LPG CONTROL
0307	LUBE OIL PUMP
0308	MACERATOR PUMP
0309	MAIN
0310	MAIN BREAKER
0311	MAIN CABIN
0312	MAIN CABIN LIGHTS
0313	MAIN CABIN OUTLETS
0314	MAIN SAIL FURLING
0315	MAP LIGHT
0572	MARINE SANITATION DEVICE
0316	MAST LIGHTS
0317	MASTHEAD LIGHT
0551	MEMORY
0574	MERCATHODE
0318	MICROWAVE
0319	MINI DISC PLAYER
0320	MIZZEN FLOOD
0456	NAV LIGHT ANCHOR OFF NAV
0321	NAV STATION ELECTRONICS
0322	NAV STATION GAUGES
0323	NAV STATION INSTRUMENTS
0324	NAV STATION LIGHTS
0325	NAVIGATION ELECTRONICS
0326	NAVIGATION INSTRUMENTS
0327	NAVIGATION LIGHTS
0565	NETWORK
0328	NIGHT LIGHTS
0329	OFF
0331	OIL CHANGE PUMP
0563	OIL GAUGE
0332	ON
0330	ON-OFF
0333	OUTLETS
0334	OUTLETS 2
0335	OUTLETS 3
0336	OUTLETS 4
0505	OUTLETS AFT
0337	OUTLETS DECK
0506	OUTLETS ENGINE ROOM
0338	OUTLETS EXTERIOR
0503	OUTLETS FORWARD
0339	OUTLETS INTERIOR
0504	OUTLETS PILOT HOUSE
0458	PANEL LIGHTS
0496	PILOT HOUSE FAN
0340	PORT
0540	PORT FISHBOX
0534	PORT LIVEWELL
0341	PORT THRUSTER
0552	PORT/STBD ENG
0342	POWER
0343	POWER WASHER
0457	PRE-HEAT
0344	PRIMARY WINCHES
0345	PRINTER
0346	PUMP
0497	PUMP BLACK WATER
0498	PUMP GRAY WATER
0554	PUMPOUT
0347	RACK LIGHTS
0348	RACK OUTLETS
0349	RADAR
0350	RADAR ARCH LIGHTS
0351	RADIO
0352	RANGE
0579	RCBO
0353	RDF
0483	REAR SLIDEOUT
0354	RECEIVER
0355	RECEPTACLE
0356	REFRIGERATOR
0357	REFRIGERATOR PUMP
0358	REFRIGERATOR/FREEZER
0359	REGULATOR
0360	REVERSE POLARITY
0361	ROD LOCKER
0489	RUDDER ANGLE INDICATOR
0362	RUNNING LIGHTS
0363	SAILING CONTROLS
0364	SAILING INSTRUMENTS
0365	SALOON
0366	SALOON HEATER
0367	SALOON LIGHTS
0368	SALOON OUTLETS
0369	SALT WATER PUMP
0370	SAT/COM
0371	SAT/NAV
0372	SATELLITE DISH
0373	SCRUBBER
0374	SEARCHLIGHT
0375	SEARCHLIGHT HAND HELD
0376	SEARCHLIGHT REMOTE
0377	SEAWATER TEMP
0378	SEAWATER WASH DOWN
0379	SECURITY SYSTEM
0380	SHIP
0381	SHORE
0463	SHORE 1
0464	SHORE 2
0382	SHORE CORD REEL
0383	SHORE POWER
0384	SHORE POWER CORD
0385	SHOWER SUMP PUMP
0386	SINK DRAIN
0486	SLIDEOUT
0387	SOLAR PANEL
0388	SONAR
0542	SONAR/ACC
0389	SPARE
0390	SPEED/LOG
0391	SPREADER LIGHTS
0392	SPREADER LT MIZZEN
0393	SSB
0394	STABILIZER
0558	STAIR LIGHT
0395	STARBOARD
0396	START
0398	START PORT
0399	START STBD
0397	START-STOP
0541	STBD FISHBOX
0533	STBD LIVEWELL
0400	STBD THRUSTER
0401	STEAMING LIGHT
0569	STEERING VALVE
0402	STEP LIGHT
0403	STEREO
0577	STEREO MEMORY
0404	STERN LIGHT
0509	STERN THRUSTER
0405	STOP
0406	STOVE
0407	STOVE/MICROWAVE
0408	STROBE LIGHT
0409	SUB PANEL
0410	SUMP PUMP
0411	SUMP PUMP 2
0412	SYNCHRO
0564	TANK GAUGE
0413	TAPE DECK
0414	TELEPHONE SYSTEM
0415	TEST
0416	TOWING LIGHTS
0417	TRACK LIGHTS
0465	TRANSFER
0418	TRANSFER PUMP
0419	TRANSFORMER
0518	TRANSFORMER SECONDARY
0420	TRASH COMPACTOR
0478	TRAVEL LOCKS
0421	TRICOLOR LIGHT
0422	TRIM TABS
0527	TROLLING MOTOR
0423	TV
0424	TV ANTENNA
0425	TV/STEREO
0426	TV/VCR
0535	UNDERWATER LIGHT
0427	UPS SYSTEM
0428	UTILITY
0429	VACUUM
0430	VACUUM PUMP
0431	VCR
0432	VHF
0511	VHF 1
0512	VHF 2
0433	VIDEO PLOTTER
0434	VIDEO SYSTEM
0543	WASHDOWN
0513	WASHDOWN PUMP
0435	WASHER
0436	WASHER/DRYER
0437	WATER ALARM
0562	WATER GAUGE
0438	WATER HEATER
0439	WATER LEVEL
0440	WATER MAKER
0441	WATER PRESSURE
0442	WATER PUMP
0443	WEATHER FAX
0444	WEATHER INSTRUMENT
0571	WIFI
0553	WINCH
0445	WINCHES
0477	WIND GENERATOR
0446	WIND INSTRUMENTS
0522	WIND SHIELD VENT
0447	WINDEX LIGHT
0448	WINDLASS
0449	WINDSHIELD WASHER
0472	WIPER CENTER
0450	WIPER PORT
0451	WIPER STBD
0452	WIPERS
0557	WIRELESS

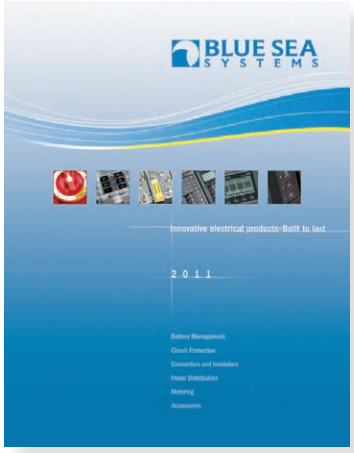
Marketing Materials

Blue Sea Systems offers sales and marketing materials that assist in the merchandising, promotion, and selection of products and the Blue Sea Systems brand. A selection of materials are shown on this page.

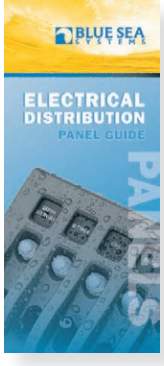
For updated information and new marketing and sales materials, visit www.bluesea.com/resources/134.

20003
Blue Sea Systems Hat
- Heavyweight 100% brushed cotton
- Adjustable strap
- Navy blue
- One size

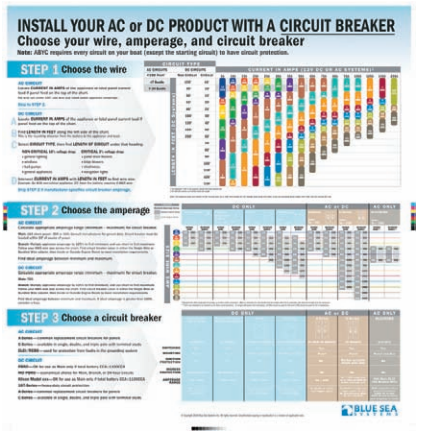
20004
Blue Sea Systems Hat
- Heavyweight 100% brushed cotton
- Adjustable strap
- Stone
- One size



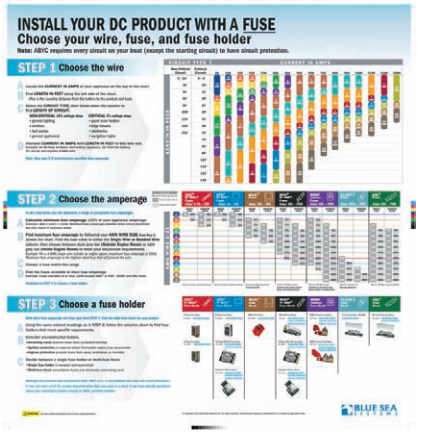
20007
2011 Blue Sea Systems Catalog
- 124 pages
- 36 catalogs in a case
- Order individually



20001
Blue Sea Systems Panel Guide
- Consumer marketing tool
- Outlines above and below deck panels and accessories
- 20 guides per pack



20005
Circuit Breaker Selection Sign
- Assists in determining the correct circuit breaker for the application
- Full color
- Heavyweight PVC material
- 24" wide x 24" high
- Order individually



20006
Fuse and Fuse Block Selection Sign
- Assists in determining the correct fuse and fuse block for the application
- Full color
- Heavyweight PVC material
- 24" wide x 24" high
- Order individually

Merchandising Plans
- Blue Sea Systems offers plan-o-grams to assist with merchandising products.
- The plans are available in various sizes and formats.
- Updated plans are always available at www.bluesea.com/resources/134.

20002 Front Back
VSM 422 Hang Tag
- Showcases the features and benefits of the VSM 422
- Card merchandises on two pegs
- 20 cards per pack

QUICK GUIDE TO CIRCUIT BREAKERS

Thermal Circuit Breakers

AC Amperage Range | DC Amperage Range

Page 32

Push Button Reset-Only—Appropriate for 24-hour circuit protection

Iic Interrupting Capacity: 3,000A @ 14.7V DC/2,500A @ 28V DC Vmxo Maximum Voltage: 32V DC

IP Meets ignition protection requirements

Itr Available amperages: 3, 5, 7, 10, 15, 20, 25, 30, 40

3–40A

Page 33

Medium Duty Push Button Reset-Only—Appropriate for 24-hour circuit protection

Iic Interrupting Capacity: 5,000A @ 32V DC Vmxo Maximum Voltage: 32V DC

IP Meets ignition protection requirements

Itr Available amperages: 15, 20, 30, 40, 50, 60

15–60A

Page 34

285-Series—Appropriate for DC Main circuit protection with battery banks under 1,100 CCA

Iic Interrupting Capacity: 3,000A DC @ 12V DC Vmxo Maximum Voltage: 24V DC

IP Meets ignition protection requirements

Itr Available amperages: 25, 30, 40, 50, 60, 70, 80, 100, 120, 150, 200

25–200A

Page 35

187-Series—Appropriate for DC Main circuit protection with battery banks over 1,100 CCA

Iic Interrupting Capacity: 5,000A @ 12V DC / 3,000A @ 24V DC/1,500A@42 DC Vmxo Maximum Voltage: 48V DC

IP Meets ignition protection requirements

Itr Available amperages: 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 110, 120, 135, 150, 200A

25–200A

Magnetic Hydraulic Circuit Breakers

Page 36

A-Series Toggle, 1 Pole—Appropriate for AC and DC Branch circuit protection

Iic Interrupting Capacity: 7,500A @ 65V DC/3,000A @ 120V AC/3,000A @ 250V AC Vmxo Maximum Voltage: 65V DC/250V AC

Itr Available amperages: 5, 8, 10, 15, 20, 25, 30, 40, 50

5–50A

Page 36

A-Series Toggle, 2 Pole—Appropriate for 120V AC Main or 240V AC Branch circuit protection

Iic Interrupting Capacity: 3,000A @ 120V AC/3,000A @ 250V AC Vmxo Maximum Voltage: 250V AC

Itr Available amperages: 10, 15, 16, 20, 30, 32, 40, 50

10–50A

Page 37

A-Series Flat and Restricted OFF Rocker, 1 Pole—Appropriate for AC and DC Branch and 24-hour circuit protection

Iic Interrupting Capacity: 5,000A @ 32V DC/3,000A @ 120V AC/1,500A @ 250V AC Vmxo Maximum Voltage: 32V DC/250V AC

Itr Available amperages: 5, 8, 10, 15, 20, 25, 30, 40, 50

5–50A

Page 37

A-Series Flat and Raised Rocker, 2 Pole—Appropriate for 120V AC Main or 240V AC Branch circuit protection

Iic Interrupting Capacity: 5,000A @ 32V DC/3,000A @ 240V AC Vmxo Maximum Voltage: 240V AC

Itr Available amperages: 10, 15, 16, 20, 30, 32, 40, 50

10–50A

Page 38

C-Series Toggle, 1 Pole—Appropriate for DC Main and AC and DC high load circuit protection

Iic Interrupting Capacity: 10,000A @ 80V DC/5,000A @ 250V AC Vmxo Maximum Voltage: 80V DC/250V AC

IP (7250I ONLY) Meets ignition protection requirements

Itr Available amperages: 5, 10, 15, 20, 25, 30, 50, 60, 80, 100

5–100A

Page 38

C-Series Toggle, 2 and 3 Parallel Pole—Appropriate for DC high load circuit protection

Iic Interrupting Capacity: 5,000A @ 65V DC Vmxo Maximum Voltage: 65V DC

Itr Available amperages: 150, 175, 200, 250, 300

150–300A

Page 38

C-Series Toggle, 2 and 3 Pole—Appropriate for 240V AC Main and AC high load circuit protection

Iic Interrupting Capacity: 5,000A @ 250V AC Vmxo Maximum Voltage: 250V AC

Itr Available amperages: 30, 50, 60, 80, 100

30–100A

Page 39

C-Series Flat Rocker, 1 Pole—Appropriate for DC Main and AC and DC high load circuit protection

Iic Interrupting Capacity: 5,000A @ 32V DC/3,500A @ 240V AC Vmxo Maximum Voltage: 32V DC/240V AC

IP Meets ignition protection requirements

Itr Available amperages: 5, 10, 15, 20, 25, 30, 50, 60, 80, 100

5–100A

Page 39

C-Series Flat Rocker, 2 and 3 Parallel Pole—Appropriate for DC high load circuit protection

Iic Interrupting Capacity: 5,000A @ 48V DC Vmxo Maximum Voltage: 48V DC

Itr Available amperages: 150, 175, 200, 250, 300

150–300A

Page 39

C-Series Flat and Raised Rocker, 2 and 3 Pole—Appropriate for 240V AC Main and AC high load circuit protection

Iic Interrupting Capacity: 5,000A @ 240V AC Vmxo Maximum Voltage: 240V AC

Itr Available amperages: 30, 50, 60, 80, 100

30–100A

Page 41

Residual Current (RCBO—includes GFCI and ELCI), 1 and 2 Pole—Appropriate for ground fault and overcurrent trip protection

Iic Interrupting Capacity (I_{ic}): 5,000A AC Vmxo Maximum Voltage: 240V AC

Itr Available amperages: 15, 30, 50

15-50A

QUICK GUIDE TO FUSES, FUSE HOLDERS AND FUSE BLOCKS

FUSES

DC Amperage Range

Page 43

AGC® and MDL® Fuse—Appropriate for small electronic devices
Iic Interrupting Capacity: 1,000A DC Vmxo Maximum Voltage: 32V DC
.25-30A
Itr Available amperages
.25, .5, 1, 1.5, 2, 2.5, 3, 4, 5, 6.25, 7, 7.5, 10, 15, 20, 25, 30

Page 43

GMA® and AGA® Fuse—Appropriate for small electronic devices
Iic Interrupting Capacity: 1,000A DC Vmxo Maximum Voltage: 32V DC
1-20A
Itr Available amperages
1, 2, 3, 4, 5, 7, 10, 20

Page 43

ATO® or ATC® Fuse—Appropriate for small electronic devices
Iic Interrupting Capacity: 1,000A DC Vmxo Maximum Voltage: 32V DC
1-30A
Itr Available amperages
1, 2, 3, 4, 5, 7.5, 10, 15, 20, 25, 30

Page 43

ATM® Fuse—Appropriate for small electronic devices
Iic Interrupting Capacity: 1,000A DC Vmxo Maximum Voltage: 32V DC
5-30A
Itr Available amperages
5, 10, 15, 20, 30

Page 43

MAXI™ Fuse—Economical high amp branch circuit protection
Iic Interrupting Capacity: 1,000A DC Vmxo Maximum Voltage: 32V DC
30-80A
Itr Available amperages
30, 40, 50, 60, 70, 80

Page 44

MEGA® or AMG® Fuse—Appropriate for DC Main circuit protection with smaller battery banks or DC Branch circuits
Iic Interrupting Capacity: 2,000A DC Vmxo Maximum Voltage: 32V DC
100-300A
Itr Available amperages
100, 125, 150, 175, 200, 225, 250, 300

Page 44

MIDI® or AMI® Fuse—Appropriate for DC Main or DC Branch circuit protection
Iic Interrupting Capacity: 5,000A DC Vmxo Maximum Voltage: 32V DC
30-200A
Itr Available amperages
30, 40, 50, 60, 70, 80,100, 125, 150, 175, 200

Page 44

Terminal Fuse—Appropriate for DC Main circuit protection at the battery post, battery switch, or terminal block
Iic Interrupting Capacity: 10,000A @ 14V DC/5,000A @ 32V DC/2,000A @ 58V DC Vmxo Maximum Voltage: 58V DC
IP Meets Ignition Protection requirements
30-300A
Itr Available amperages
30, 40, 50, 60, 75, 80, 90, 100, 125, 150, 175, 200, 225, 250, 300

Page 45

Class T Fuse—Appropriate for inverters and high amp equipment
Iic Interrupting Capacity: 20,000A DC Vmxo Maximum Voltage: 160V DC
225-400A
Itr Available amperages
225, 250, 300, 350, 400

Page 45

ANL® Fuse—Appropriate for DC Main circuit protection
Iic Interrupting Capacity: 6,000A DC Vmxo Maximum Voltage: 32V DC
IP 35-500 Ampere Fuses meet Ignition Protection requirements
Available amperages (I_{tr})
35, 40, 50, 60, 80, 100, 130, 150, 175, 200, 225, 250, 275, 300, 325, 350, 400, 500, 600, 675, 750
35-750A

FUSE HOLDERS

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Crimpable Fuse Holder—For use with AGC® or MDL® glass fuses
Imxo Maximum Amperage per circuit: 30A DC

Page 46

AGC® Waterproof Fuse Holder—For use with AGC® or MDL® glass fuses
Imxo Maximum Amperage per circuit: 30A DC

Page 46

AGC® Waterproof Fuse Holder—For use with AGC® or MDL® glass fuses
Imxo Maximum Amperage per circuit: 20A DC

Page 46

AGC® or MDL® In-Line Fuse Holder—Heavy duty fuse holder for AGC® or MDL® glass fuses
Imxo Maximum Amperage per circuit: 30A DC

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ATO® or ATC® In-Line Fuse Holder
Imxo Maximum Amperage per circuit: 30A DC

ATO® or ATC® Waterproof Fuse Holder
Imxo Maximum Amperage per circuit: 30A DC

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FUSE BLOCKS

ST Glass Fuse Block (6 Circuit Models Available)—Uses AGC® or MDL® Fuses
Vmxo Maximum Voltage: 32V DC Imxo Maximum Amperage per circuit: 30A DC Imxo Maximum Amperage per block: 100A DC

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MAXI™ Fuse Block—Uses MAXI™ Fuses
Vmxo Maximum Voltage: 32V DC Imxo Maximum Amperage: 80A DC

Page 46

ST Blade Fuse Block (6 and 12 Circuit Models Available)—Uses ATO® or ATC® Fuses
Vmxo Maximum Voltage: 32V DC Imxo Maximum Amperage per circuit: 30A DC Imxo Maximum Amperage per block: 100A DC

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Terminal Fuse Block—Uses Terminal Fuses
Vmxo Maximum Voltage: 58V DC Imxo Maximum Amperage: 300A DC

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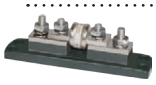
MIDI® or AMI® Safety Fuse Block—Uses MIDI® or AMI® fuses
Vmxo Maximum Voltage: 58V DC Imxo Maximum Amperage: 300A DC

Page 48

MEGA® or AMG® Safety Fuse Holder—Uses MEGA® or AMG® fuses
Vmxo Maximum Voltage: 58V DC Imxo Maximum Amperage: 300A DC

Page 48



Class T Fuse Block—Uses Class T Fuses
Vmxo Maximum Voltage: 160V DC Imxo Maximum Amperage: 400A DC

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ANL® Fuse Block—Uses ANL® Fuses
Vmxo Maximum Voltage: 32V DC
Imxo Maximum Amperage: 300A DC

ANL® Heavy Duty Fuse Block—Uses ANL® Fuses
Vmxo Maximum Voltage: 32V DC
Imxo Maximum Amperage: 750A DC

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SafetyHub 100 Fuse Block—Holds 3 MIDI® or AMI® and 4 ATO® or ATC® Fuses
Vmxo Maximum Voltage: 12V DC Imxo Maximum Amperage per block: 300A DC
MIDI® or AMI® Fuse Block—Imxo Maximum Amperage per circuit: 200A DC
ATO® or ATC® Fuse Block—Imxo Maximum Amperage per circuit: 30A DC Imxo Maximum Amperage per block: 50A DC

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SafetyHub 150 Fuse Block—Holds 4 MIDI® or AMI® and 6 ATO® or ATC® Fuses
Vmxo Maximum Voltage: 12V DC Imxo Maximum Amperage per block: 350A DC
MIDI® or AMI® Fuse Block—Imxo Maximum Amperage per circuit: 200A DC
ATO® or ATC® Fuse Block—Imxo Maximum Amperage per circuit: 30A DC Imxo Maximum Amperage per block: 50A DC

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SafetyHub 250 Fuse Block with Remote Battery Switch—Holds 3 MIDI® or AMI® and 4 ATO® or ATC® Fuses
Vmxo Maximum Voltage: 12V DC Imxo Maximum Amperage: 240A DC
MIDI® or AMI® Fuse Block—Imxo Maximum Amperage per circuit: 200A DC
ATO® or ATC® Fuse Block—Imxo Maximum Amperage per circuit: 20A DC Imxo Maximum Amperage per block: 50A DC

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DC Main Circuit Protection and Branch Circuit Protection

Purpose

Fuses and circuit breakers are used to protect wire insulation from melting and starting fires in the event of overcurrents or short circuits which cause more amperage to flow in a wire than that wire is rated to carry. It is important to note that, except for those wires that are intended to carry starting currents, *every positive wire* in the DC Main Power Distribution System must be protected by a fuse or circuit breaker.

Considerations for DC Main Circuit Protection

Mounting Placement–distance from power source.

The DC Main circuit protection system uses circuit breakers or fuses to protect the wires of the DC Main distribution system. The American Boat and Yacht Council (ABYC) publishes voluntary standards for the type and placement of the fuse or circuit breaker to be used as a DC Main circuit protection device. Wire intended to carry engine starting currents between the batteries, the switch, and the starter is not required to have main circuit protection devices installed. Maximum mounting placement dimensions for a fuse or circuit breaker are 7" if the conductor is not housed in a sheath or enclosure in addition to the wire insulation, 40" if the conductor is housed in a sheath or enclosure in addition to the wire insulation, and 72" if the conductor is connected directly to the battery and housed in a sheath or enclosure in addition to the wire insulation.

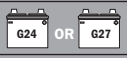
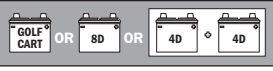
Selecting DC Main Circuit Protection.

The principal attribute of a DC Main circuit protection device is its Ampere Interrupt Capacity (AIC) rating. Specifications listed in the ABYC standards determine the AIC a DC Main circuit protection device must have. The required AIC rating is determined by the total CCA of the batteries connected to the circuit. See the tables at right for the required AIC ratings.

Wire selection for DC applications on boats is usually based on voltage drop requirements. However, there is a maximum continuous current that the wire can withstand without overheating. Higher grade marine wires are rated for service up to 105°C (221°F)—the ABYC wire capacity table for 105°C is most frequently quoted. The 105°C table accurately reflects the capacity of single conductors exposed to freely circulating cooling air. However, other factors, such as covering bundles of wire in outer jackets to form a cable, or use of conduits or structural voids to protect wires, can reduce the cooling and reduce the safe capacity of the wire. A more conservative strategy is to use the 105°C wire, but treat it according to the 75°C table above when selecting circuit protection unless the wire is openly exposed for cooling.

See the Blue Sea Systems Circuit Wizard on our Web site at circuitwizard.bluesea.com for more assistance with wire and circuit protection selection.

ABYC Interrupt Rating Table

Total Connected Battery Cold Cranking Amperes (CCA) *		Ampere Interrupt Capacity	
12 VOLTS AND 24 VOLTS			
The white boxes identify two batteries, of the same size, placed in parallel configuration.		DC MAIN	DC BRANCH
	650 CCA or Less	1,500 AIC	750 AIC
	651–1,100 CCA	3,000 AIC	1,500 AIC
	Over 1,100 CCA	5,000 AIC	2,500 AIC
32 VOLTS			
	1,250 CCA or Less	3,000 AIC	1,500 AIC
	Over 1,250 CCA	5,000 AIC	2,500 AIC

* Battery cold cranking performance rating at -17.8°C (0°F): The discharge load in amperes that a battery at -17.8°C (0°F) can deliver for 30 seconds, and maintain a voltage of 1.2 Volts per cell or higher, (e.g. 7.2 Volts for a 12 Volt battery). The CCA for the battery icons in this chart is an approximation and could be slightly higher or lower. Consult the battery with manufacturer's specifications for precise CCA ratings. A battery rated in MCA will have a CCA capacity approximately 80% of MCA

ABYC E-11 requires the use of circuit breakers that can be reused and reset and that they be applied as per the table above. The standard does not strictly require that fuses be applied in the same way, but it is an issue to consider, especially with high amperage fuses used to protect panel feeders or inverters. Fuses under 10 Ampere rating generally have such a high internal resistance they prevent fault currents from reaching 1000 Amperes in 12 Volt circuits. The apparent contradiction when using these fuses for bilge pumps and other circuits directly off the battery is less of an issue than it might seem. If a fuse blows, and the case appears to be cracked or metal has been ejected, the fuse holder should be replaced.

ABYC Ampacity Rating Table at 30°C

WIRE SIZE		TEMPERATURE RATING OF CONDUCTOR INSULATION												REFERENCE DATA		
US	Metric	75°C		90°C		105°C		75°C		90°C		105°C			Ohms	Ohms
AWG	mm^2		EngRm		EngRm		EngRm		EngRm		EngRm		EngRm	mm dia	/1000ft	/1000m
	0.75	9.5	7	19	15.5	19	16	6.6	5.0	13	11	13	11	0.98	7.29	23.92
18	0.82	10	8	20	16	20	17	7	5	14	12	14	12	1.02	6.67	21.88
	1.0	13	10	21	17	21	18	9	7	15	12	15	13	1.13	5.47	17.94
16	1.3	15	11	25	21	25	21	11	8	18	14	18	15	1.29	4.17	13.70
	1.5	16	12	24	20	29	24	11	9	17	14	20	17	1.38	3.65	11.96
14	2.1	20	15	30	25	35	30	14	11	21	17	25	21	1.63	2.63	8.63
	2.5	21	16	34	28	38	32	15	11	23	19	26	22	1.78	2.19	7.18
12	3.3	25	19	40	33	45	38	18	13	28	23	32	27	2.05	1.65	5.42
	4.0	34	25	46	38	51	43	24	18	32	27	35	30	2.26	1.37	4.49
10	5.3	40	30	55	45	60	51	28	21	39	32	42	36	2.59	1.04	3.41
	6.0	53	40	57	47	65	55	37	28	40	33	45	39	2.76	0.91	2.99
8	8.4	65	49	70	57	80	68	46	34	49	40	56	48	3.27	0.65	2.14
	10.0	79	60	84	69	100	85	56	42	59	48	70	60	3.6	0.55	1.79
6	13.3	95	71	100	82	120	102	67	50	70	57	84	71	4.1	0.41	1.35
	16.0	105	79	113	93	134	114	73	55	79	65	94	80	4.5	0.34	1.12
4	21	125	94	135	111	160	136	88	66	95	78	112	95	5.2	0.26	0.85
	25	141	106	150	123	175	148	99	74	105	86	122	104	5.6	0.22	0.72
3	27	145	109	155	127	180	153	102	76	109	89	126	107	5.8	0.21	0.67
2	34	170	128	180	148	210	179	119	89	126	103	147	125	6.5	0.16	0.53
	35	173	130	186	153	217	185	121	91	130	107	152	129	6.7	0.16	0.51
1	42	195	146	210	172	245	208	137	102	147	121	172	146	7.3	0.13	0.42
	50	220	165	235	193	273	232	154	116	164	135	191	163	8.0	0.109	0.36
0	54	230	173	245	201	285	242	161	121	172	141	200	170	8.3	0.102	0.34
00	68	265	199	285	234	330	281	186	139	200	164	231	196	9.3	0.081	0.27
	70	274	206	292	239	341	289	192	144	204	168	238	203	9.4	0.078	0.26
000	85	310	233	330	271	385	327	217	163	231	189	270	229	10.4	0.064	0.21
	95	334	251	357	293	413	351	234	175	250	205	289	246	11.0	0.058	0.19
0000	107	360	270	385	316	445	378	252	189	270	221	312	265	11.7	0.051	0.17
	120	387	290	414	339	478	406	271	203	290	237	335	284	12.4	0.046	0.15
	150	445	333	476	390	550	467	311	233	333	273	385	327	13.8	0.036	0.12

Data based on E-11 Table VI-A (Single Conductors in Free Air)

Data based on E-11 Table VI-B (Up to three conductors in a sheath, conduit or bundle)

SAE conductors are smaller than equivalent AWG by 5% to 12% with current capacity typically less by 7%. ISO Ratings for metric wire are slightly less than these values derived from ABYC VI-A ratings.

- For bundles of 4 to 6 conductors multiply by 0.857
- For bundles of 7 to 24 conductors multiply by 0.714
- For bundles of 25 or more, conductors multiply by 0.571

Wires counted in bundles need not include:

1. Wires carrying intermittent currents no more than rating per VI-A and for less than one minute per mm of diameter, and not repeating more often than a delay of 5X times active duration.
2. Wires carrying load currents at less than 50% of the wire rating per table VI-B.

† Thermally limited amperage capacity

AC Main Power Distribution and Circuit Protection

Purpose

- Provide a path for delivering power from the ship's sources of AC power to the AC branch distribution system
- Provide a path for returning fault currents to ground via the green safety ground wire
- Provide a means for disconnecting AC power when the boat is not in use or in emergencies
- Provide electrical separation to insure that two sources of AC power are never connected
- Provide circuit protection for neutral and line wires in the AC main system
- Provide ground fault protection

AC Wire Systems

The three most common AC systems used on boats are shown here. In all cases the ground, sometimes called safety ground to clarify its purpose and differentiate it from the DC ground or negative, is said to be a "normally non-current carrying wire." Its purpose is to provide the lowest resistance path for AC currents that have strayed from their proper containment in the normally current carrying hot and neutral wires. The ground wire is connected to the exterior conductive parts of AC devices that could be touched by a person during normal operation, and it conducts errant AC currents safely to ground rather than passing them through a human body. The ground wire is never passed through a circuit breaker.

120 Volt–60 Hz	120/240 Volt–60 Hz	230 Volt–50 Hz
Hot	Hot 1	Hot
Neutral	Hot 2	Neutral
Ground	Neutral	Ground
	Ground	

Devices Qualifying as AC Main Circuit Breakers

In order to qualify as an AC main circuit breaker, these characteristics must be present:

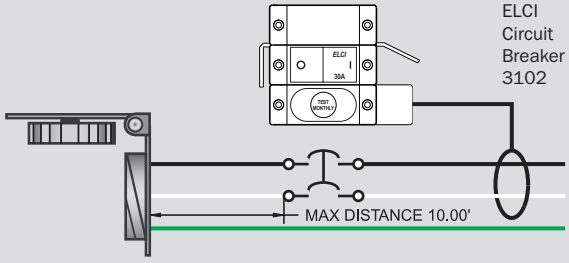
1. The circuit breaker must have an Ampere Interrupt Capacity (AIC) meeting the requirements of the following tables.
2. The circuit breaker must be multiple pole, usually 2 or 3 (see AC Wire Systems).
3. The circuit breaker must be rated for the appropriate AC system voltage in which it will be used.
4. The circuit breaker must be available in amperages appropriate to the design amperage of the system. In the USA, this is generally 30A and 50A, while European systems are generally 16A and 32A.
5. The ELCI shall have a leakage trip mechanism that trips below 30mA when current leaks to ground.

AC Shore Power Source	Main Circuit Breaker	Branch Circuit Breaker
120V - 30A	3,000	3,000
120V - 50A	3,000	3,000
120/240V - 50A	5,000	3,000
240V - 50A	5,000	3,000

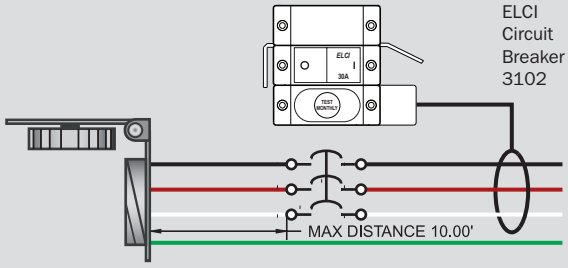
Sources of AC power, whether shore power or onboard generators and inverters, should always have a circuit breaker near the power source. This circuit breaker is designated the AC main circuit breaker. The AC main circuit breaker should always have a pole for each of the hot and neutral wires in the circuit assuring that circuit protection functions are not compromised in reverse polarity situations.

Beginning in July 2010 ABYC Standards require that an Equipment Leakage Circuit Interrupter (ELCI) with a 30mA leakage trip be installed in shore power applications as the first protective device after the power inlet. ELCIs respond to leakage of electrical current outside of the intended current path, and provide overload and short circuit protection. They serve as the main AC circuit breaker for the system. These devices will open all energized conductors and the neutral when opened manually or tripping on an overload or leakage fault. For a more complete discussion of ELCIs, see page 40–41.

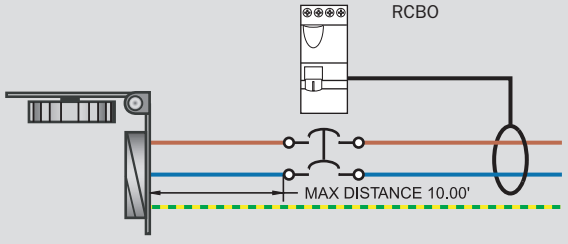
120 Volt–60 Hz



120/240 Volt–60 Hz



230 Volt–50 Hz



Choosing The Correct Wire

A Locate the CURRENT IN AMPS of your appliance across the top of the chart. Most electrical products include a rating label, or you can find the amperage rating in the documentation that came with the product.

B Find circuit LENGTH IN FEET along the left side of the chart. Note that the total length of the circuit is the roundtrip distance from power source (usually the battery) to the product and back to the source.

C Select the CIRCUIT TYPE. Allowable voltage drop is based on whether a circuit is critical or non-critical.

Critical circuits, with 3% allowable voltage drop, include

- Panel main feeders
- Bilge blowers
- Electronics
- Navigation lights

Non-critical circuits, with 10% allowable voltage drop, include

- General lighting
- Windlasses
- Bait pumps
- General appliances

Follow down the column until you find your circuit's LENGTH IN FEET.

D Intersect CURRENT IN AMPS with LENGTH IN FEET to identify the wire size.

Example: A windlass rated 80A is 25' from the battery. Circuit length is 50', circuit type is 'non-critical', and correct wire size is 4 AWG.

Although this process uses information from ABYC E-11 to recommend wire size, it may not cover all of the unique characteristics that exist on a boat. If you have specific questions about your installation, please consult an ABYC certified installer.

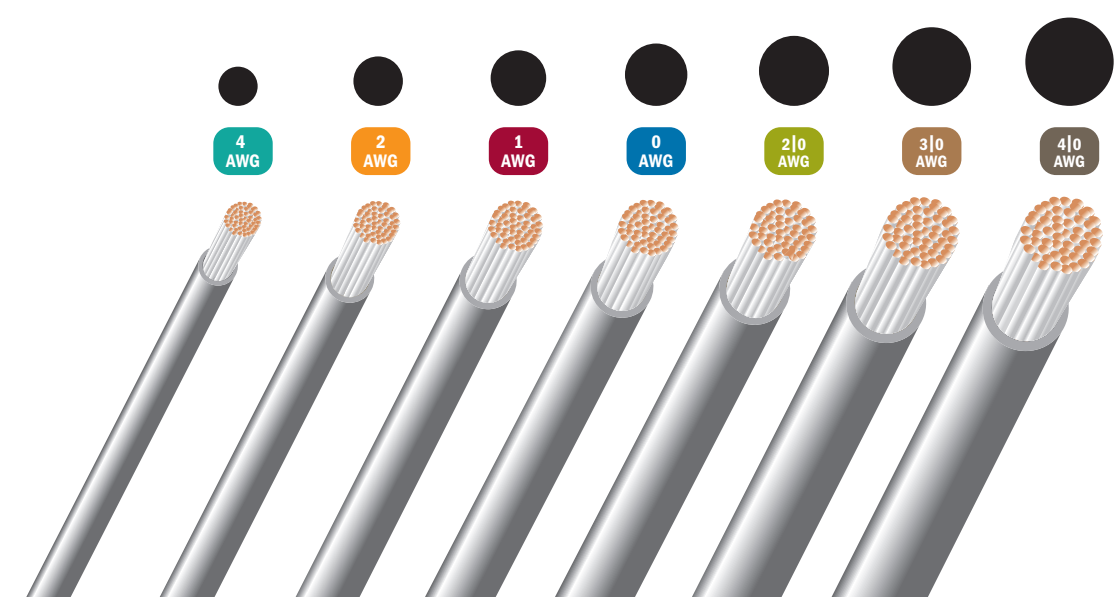
Wire Selection Chart

CIRCUIT TYPE						
LENGTH IN FEET	10% VOLTAGE DROP Non-Critical Circuit	3% VOLTAGE DROP Critical Circuit	5A	10A	15A	20A
	0'–20'	0'–6'	16 AWG	16 AWG	14 AWG	14 AWG
	30'	10'		14 AWG	12 AWG	12 AWG
	50'	15'		12 AWG	10 AWG	10 AWG
	65'	20'	14 AWG	10 AWG		8 AWG
	80'	25'	12 AWG		8 AWG	6 AWG
	100'	30'		8 AWG		
	130'	40'	10 AWG		6 AWG	4 AWG
	165'	50'		6 AWG		
	200'	60'			4 AWG	2 AWG
		70'	8 AWG			
		80'		4 AWG	2 AWG	
		90'				1 AWG
		100'	6 AWG	2 AWG		
		110'				
		120'				
		130'				

Black circles indicate actual diameter of conductor (not insulation).

CURRENT IN AMPS

25A	30A	40A	50A	60A	70A	80A	90A	100A	120A	150A	200A
12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	1 AWG	2|0 AWG
10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	0 AWG	3|0 AWG
8 AWG	6 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	0 AWG	2|0 AWG	4|0 AWG
6 AWG	4 AWG	2 AWG	1 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	2|0 AWG	3|0 AWG	
4 AWG	2 AWG	1 AWG	0 AWG	0 AWG	0 AWG	3|0 AWG	2|0 AWG	2|0 AWG	3|0 AWG	4|0 AWG	
2 AWG	1 AWG	0 AWG	2|0 AWG	2|0 AWG	2|0 AWG	4|0 AWG	3|0 AWG	3|0 AWG	4|0 AWG		
1 AWG	0 AWG	2|0 AWG	3|0 AWG	3|0 AWG	3|0 AWG		4|0 AWG	4|0 AWG			
0 AWG	2|0 AWG	3|0 AWG	4|0 AWG	4|0 AWG	4|0 AWG						



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9228	99
9229	99
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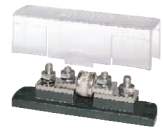
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Corporate Office
425 Sequoia Drive
Bellingham, WA 98226 USA
p 360.738.8230
p 800.222.7617 Toll Free
f 360.734.4195

Florida Office
4500 140th Avenue N
Suite 117
Clearwater, FL 33762 USA
p 727.531.4049
f 727.531.4734

www.bluesea.com
conductor@bluesea.com