WARD+S
MARINE ELECTRIC

PRODUCT CATALOG 2020-2021
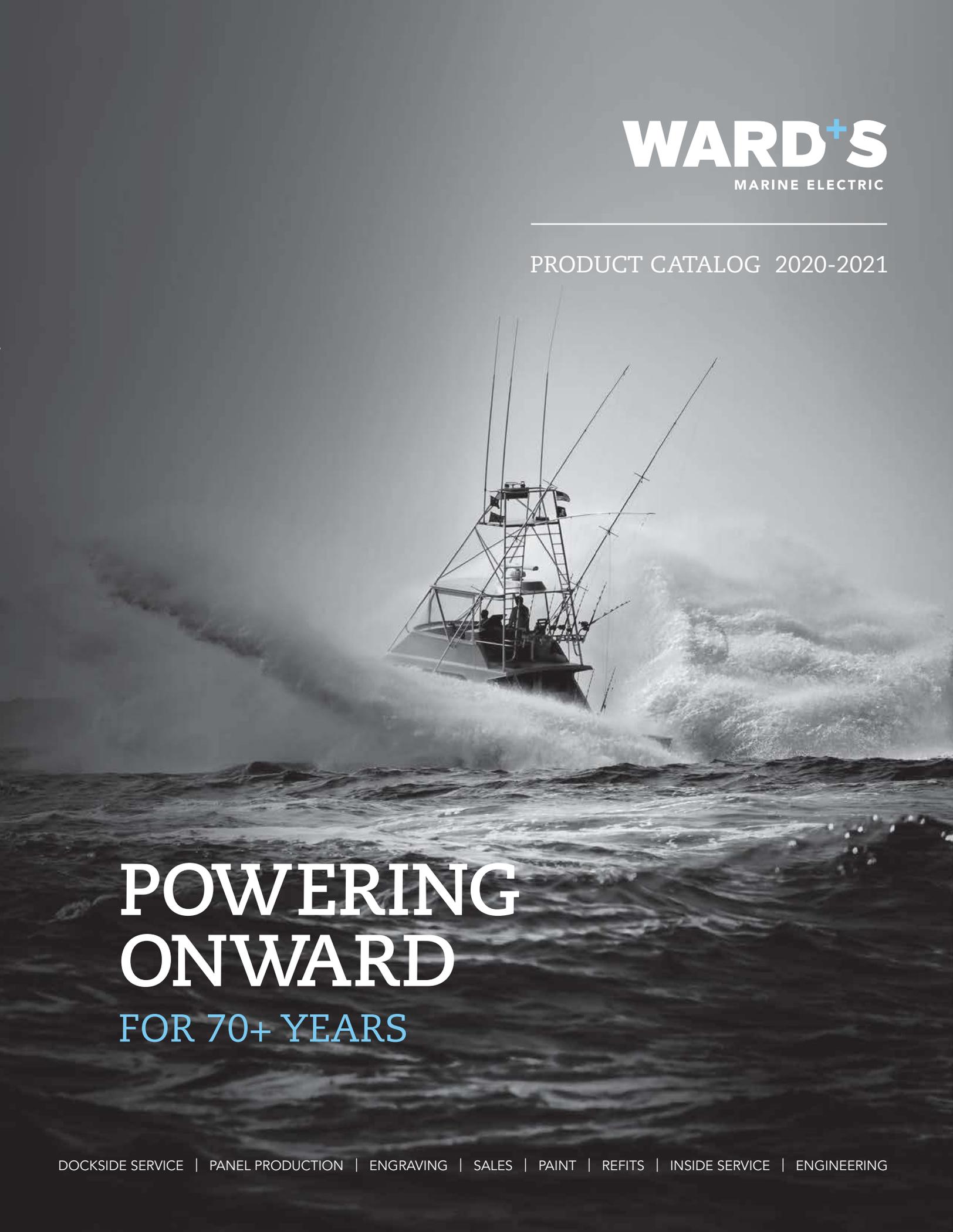
POWERING
ONWARD
FOR 70+ YEARS

DOCKSIDE SERVICE | PANEL PRODUCTION | ENGRAVING | SALES | PAINT | REFITS | INSIDE SERVICE | ENGINEERING

Department Directory

Accounting: Payables

Contact: Joylene Brooks;
joylene.brooks@wardsmarine.com
Fort Lauderdale (954) 523-2815,
ext. 103

Accounting: Receivables

Contact: Julie Roglyn;
julie.roglyn@wardsmarine.com
Fort Lauderdale (954) 523-2815,
ext. 102

Contracts Administration

The Contracts Administration office works with other departments to help identify sources of new business, evaluate solicitations and prepare proposals for Government, commercial, and large recreational projects.

Contact: Geoff Parkins – Manager;
geoff.parkins@wardsmarine.com
Fort Lauderdale (954) 523-2815,
ext. 140

Engineering

Design vessel electrical systems and switchgear systems (switchboards) either for a custom new build, refit or retrofit of existing equipment. Provide classification submittals for the various classification societies including ABS, Lloyd's, RINA, DNV etc.

Contact: John McKay – Manager;
john.mckay@wardsmarine.com
Fort Lauderdale (954) 523-2815,
ext. 115

Inside Services

Testing diagnostics and repairs of battery chargers, inverters, converters, motor controls, shore power cords and adapters. Custom engraving of panel boards including helm console, alarm, vessel profile, main distribution and control panels. Two in-house paint booths to accommodate any specification and match current products and panels installed on the vessel. Manufacturing of all WME Switchgear products, distribution panels, shore cords and adapters.

Contact: Steve Treaster – Manager
steve.treaster@wardsmarine.com
Fort Lauderdale (954) 523-2815,
ext. 109

Programming and Systems Engineering

Design and development of Power Management Systems (PMS) for control over generator load sharing and generator load demands. Design and development of Touch Screen Interface (TSI) for all WME Switchgear products as well as other manufacturers' switchboards offering intuitive control, customization, 24 hour monitoring, quick reference guides, easy access to ship's manuals, data tracking and operation log storage. Design and troubleshooting of lighting control systems and

Programmable Logic Controllers (PLC) during the new build or refit process.

Contact: Jerry Kathalynas; jerry.kathalynas@wardsmarine.com Fort Lauderdale (954) 523-2815, ext. 300

Geoff Parkins; geoff.parkins@wardsmarine.com Fort Lauderdale (954) 523-2815, ext.140

Purchasing

Fort Lauderdale: Willie Soles – Manager; willie.soles@wardsmarine.com (954) 523-2815, ext. 120

Riviera Beach: Jason Pavone – Manager; jason.pavone@wardsmarine.com (561) 863-7100, ext. 201

Sales

Representatives are available to answer questions and provide customer service in both showroom locations. Our team of outside sales representatives visits local businesses, as well as others throughout the state and all across the country. In-house Business-to-Business specialists offer dedicated service to fellow marine businesses.

Fort Lauderdale:
Ward Eshleman III – Sales Manager;
wardy.eshleman@wardsmarine.com
(954) 523-2815, ext. 122

Riviera Beach:
Jason Pavone – Manager;
jason.pavone@wardsmarine.com
(561) 863-7100, ext. 201

Service

Fleet of American Boat and Yacht Council (ABYC) certified marine electricians providing dockside services that include refit, repair, new installations and modifications. Electrical, corrosion, lightning and pre-purchase surveys are performed and recommended during various stages of a vessels' journey and usage. Extensive experience and technical knowledge allow for the management of large projects including new build and new design as well as forensic investigation and expert witness testimony.

Fort Lauderdale:
Luis Lopez – Manager;
luis.lopez@wardsmarine.com
(954) 523-2815, ext. 113

Richard Yasparro – Service Coordinator;
richard.yasparro@wardsmarine.com
(954) 523-2815, ext. 135

Riviera Beach:
Gregg Scrudders – Manager;
gregg.scrudders@wardsmarine.com
(561) 863-7100, ext. 203

Shipping

Domestic, International and HAZMAT certified

Fort Lauderdale:
Matt Blake – Manager;
matt.blake@wardsmarine.com
(954) 523-2815, ext. 111

Standard Terms of Payment:

Hours of Operation

Monday through Friday 8:00am to 4:00pm EST excluding holidays

Prices

Prices and discounts are subject to change without notice. Prices in our catalog are list prices only. Trade discounts are available upon prior approval only. Prices do not include sales, use, excise, or similar taxes. In order to be exempt from state sales tax, Ward's Marine Electric, Inc. (WME) must have an original signed and current Florida Annual Resale Certificate for Sales Tax on file. Some items are available via special order and may be subject to a special handling fee.

Warranty (Equipment)

Warranty of products is the sole responsibility of the manufacturer. With respect to products manufactured by our suppliers, Ward's Marine Electric, Inc. (WME) makes no express warranties whatsoever and disclaims any thereof. WME has taken appropriate measures to assure the quality of these products and that they are backed by their own fully supportable warranty. WME will provide warranty information for these products upon request. Products manufactured by WME (other than our Marine Switchgear Systems line of switchboards and panel boards), are warranted to be free from defects in materials and workmanship under normal use and operation. The warranty period shall be one year from the date of shipment. The obligation of this warranty shall be limited to repairing or replacing any part of the completed product that WME agrees is defective. Products returned for warranty evaluation and repair must include a copy of the sales invoice and shipment will be at the customer's expense. For warranty information regarding our Marine Switchgear Systems line of products, please call our engineering department. To the extent allowed by law, this warranty is exclusive and is made expressly in lieu of all other warranties, including the warranties of merchantability and fitness for particular purpose. WME shall not be liable for any incidental or consequential damages resulting from a violation of this warranty.

Warranty (Service)

Ward's Marine Electric, Inc (WME) warrants its work for a period of ninety (90) days from the date of the completion of such work, except as provided for in this paragraph. The warranty is in lieu of all expressed or implied warranties granted to a boat owner under Florida law. This warranty does not apply to defects caused by the negligence of the Owner, corrosion, or for defective work in areas which are hidden from view or are not readily accessible to WME workmen. If the equipment is sold by WME, the Owner shall look solely to the manufacturer's warranty for any defect in the equipment being sold hereunder. This warranty does not include travel expenses, travel time, labor charges or freight charges if required. WME shall not be liable for any incidental or consequential damages resulting from its work.

Shipping

Unless otherwise specified, appropriate carrier F.O.B. Fort Lauderdale, FL or Riviera Beach, FL will send all shipments. Merchandise shipped is packaged in compliance with carrier requirements. All Hazardous materials and or products, if purchased for resale, must be prepared in accordance with HMR (US DOT 49CFR parts 100-185) Hazardous Material Regulation. Product MSDS are available upon request. Title to all merchandise ordered and sold, and risk of loss thereon, shall pass to the customer upon delivery. Customer will be responsible for freight on items drop shipped from manufacturers as well as any inbound freight charges for special order items. The customer shall submit any and all claims directly to the carrier for shortages and damages suffered in transit. All orders All orders will be subject to a $6 handling fee. This fee is charged regardless of and in addition to any freight charges.

Returns

A copy of the sales invoice must accompany all returns. All goods must be returned within 15 days of purchase, in new condition and in original boxes, to receive full credit and not incur a 20% restocking and handling fee. No returns will be accepted after 30 days. Special orders non-stock items), items cut to length, and items made to order are not returnable. Returned goods shipping charges must be prepaid.

Payment

Credit Cards WME accepts VISA, MasterCard, and American Express credit cards. Terms of payment are to be specified. With approved credit, standard terms of payment are 30 days net unless otherwise noted under the terms code on the sales invoice front page. A service charge of 1.5% per month will be included on all past due accounts. In the event of suit for collection, reasonable attorney's fees and collection costs, including any appellate costs, will be added to this invoice. All special order items, marine switchgear, and custom panel boards require a 50% deposit and payment in full prior to shipping and or delivery.

Liability

Seller's liability on any claim for loss or damage arising out of or connected with the supplying of any goods hereunder, or their sale, resale, operation or use, whether based on contract, warranty, tort (including negligence), or other grounds, shall not exceed the price allowable to such good or part thereof involved in the claim. Seller shall not, under any circumstance, be liable for any labor charges without the prior written consent of Seller.

WARD+S
MARINE ELECTRIC

CREDIT APPLICATION

Date	Legal Name of Company		Doing Business As

Street Address:		City/State	Zip Code

Email Address	Phone Number:	Fax Number:

Billing Address (If different than above)	City/State	Zip Code

Owner of Company	Account Contact	Phone Number

Year Business was established	Annual Sales	DUNS#

Purchase Order required ___ Yes ___ No	Name of Purchasing Agent

Sales Tax Exemption ____ Yes ____ No	If yes, please attach a copy of your Certificate of Resale to this application.

Type of Business (Please check one)

___ AC/Refrigeration	___ Electronics Contractor	___ Marina	___ Yacht Management
___ Boat Builder	___ Engine Repair	___ Marine Surveyor	___ Other (Please specify)
___ Boat Yard	___ Generator Repair	___ Marine Wholesaler	
___ Electrical Contractor	___ Manufacturer	___ Yacht Broker	

Bank Name	Contact	Checking Account Number

Bank Address	City/State	Zip Code	Phone Number

Bank Transit Number

Major Credit Card (Visa, Master Card, American Express)	Account Number	Expiration Date	Validation Code:

Trade References:

1. Name	Address	Phone Number
		Fax Number
		Email Address

2. Name	Address	Phone Number
		Fax Number
		Email Address

3. Name	Address	Phone Number
		Fax Number
		Email Address

Statements are mailed the FIRST of each month for the previous month's invoices and are due by the FIFTEENTH of the same month. Your signature on this application is acknowledgment and acceptance of credit terms. A late fee of 1.5% will be added to any account not paid by the fifteenth of the month. In the event of suit for collection, reasonable attorney's fees and collection costs including any appellate costs will be added to this account.

Name (Please Print): _____ Signature: _____ Title: _____

Sections

BRING A LIFETIME OF EXPERIENCE ONBOARD

WARD⁺S
MARINE ELECTRIC

Hella

- 304 stainless steel through panel buzzer
- IP50 rated
- Ideal for warning light or installing into custom switch panel
- Includes red LED light ring, which can be wired to show power to a system or signal circuit activation

PANEL BUZZER

Item Number	Volt	Price
958456101	24	$48.89

Sonalert

- Completely solid state with no moving parts, no arcing, no mechanical wear, no RF field generated
- Temperature ratings -30ºC to 65ºC
- Panel Mounted 1.25" Hole punched

SONALERT

Item Number	Volts DC	Tone	Price
SC628	6-28	Continuous	$44.84
SC628ANP	6-28	Fast-Pulse	$79.48
SC648	10-48	Continuous	$33.88

Projects Unlimited

- Made out of ABS plastic
- IP54 rated
- Temperature rating -25ºC to 70ºC
- Adjustable volume control

PUI SIREN

Item Number	Volts DC	Tone	Price
XL-501	9-28	32 selectable tones	$93.51

Edwards

- Produces long continuous tone
- Die cast housing, bell size 4"
- Corrosion resistant heat flowed epoxy finish
- Mounts directly on surface or electrical box
- dB at 1m/10ft.: 100/90
- UL and FM approved

EDWARDS

Item Number	Volts DC	Current	Price
EDW435-4E1	12	0.125	$198.00
EDW435-4G1	24	0.062	$198.00

Images are representative of products listed and may not be actual product.

Alarms and Signaling

Pyra Strobe

- 5 Joules flashing strobe
- IP66 rated, type 4 and 4X

STROBE ONLY

Item Number	Lens Color	Housing Color	Volts	Price
21510154055	Amber	Gray	90-135 VAC	$135.00
21510155000	Red	Red	90-135 VAC	$135.00
21510804055	Amber	Gray	18-30 VDC	$135.00
21510805000	Red	Red	18-30 VDC	$135.00

Patrol Sounders

- Blended ABS/ polycarbonate housing
- 100dB(A)
- 3.4"(86.36mm)H x 4.3"(109.2mm)W x 3.2"(81.28mm)D
- Flame retardant and UV resistant
- IP66 rating with molded integral gasket type 4 and 4X
- Choose from 80 tones with 4 stages of alarm

SOUNDER ONLY

Item Number	Housing Color	Mounting Options	Volts	Price
23310100055	Gray	Surface	195-253 VAC	$135.00
23310150055	Gray	Surface	95-127 VAC	$135.00
23310630055	Gray	Surface	10-57 VDC	$125.00

Patrol Flashing Sounders

- Blended ABS/ polycarbonate housing
- Flame retardant and UV resistant
- IP66 rating with molded integral gasket type 4 and 4X
- Choose from 80 tones with 4 stages of alarm
- Lights come prewired to a single terminal strip in back of box for ease of installation with optional wiring arrangement allowing for control of light

STYLE B GRAY   STYLE B RED   STYLE A GRAY   STYLE A RED

Item Number	Lens Color	Housing Color	Style	Volts	Dimensions HxWxD in " (mm)	Nominal SPC@1m	Price
23311154055	Amber	Gray	B	90-135 VAC	6.8(172.72) x 4.3(109.22) x 3.2(81.28)	100 dB(A)	$270.00
23311155000	Red	Red	B	90-135 VAC	6.8(172.72) x 4.3(109.22) x 3.2(81.28)	100 dB(A)	$270.00
23311804055	Amber	Gray	B	18-30 VDC	6.8(172.72) x 4.3(109.22) x 3.2(81.28)	100 dB(A)	$260.00
23311805000	Red	Red	B	18-30 VDC	6.8(172.72) x 4.3(109.22) x 3.2(81.28)	100 dB(A)	$260.00
23351154055	Amber	Gray	A	90-135 VAC	8.5(215.9) x 6.4(162.56) x 5.2(132.08)	105 dB(A)	$345.00
23351155000	Red	Red	A	90-135 VAC	8.5(215.9) x 6.4(162.56) x 5.2(132.08)	105 dB(A)	$345.00
23351804055	Amber	Gray	A	18-30 VDC	8.5(215.9) x 6.4(162.56) x 5.2(132.08)	105 dB(A)	$345.00
23351805000	Red	Red	A	18-30 VDC	8.5(215.9) x 6.4(162.56) x 5.2(132.08)	105 dB(A)	$345.00

List pricing in catalog is subject to change without notice.

Cole Hersee

4099

12 & 24VDC Universal Buzzer

- Works with any temperature, pressure, door or momentary switch.
- Electrical contacts are designed for instant response and uninterrupted signal.

- Impact resistant ABS resin case
- Moisture repellent insulator

Item Number	Voltage	Dimensions	Terminals	Price
Item 4099 - While Supplies Last				
4099	12VDC	1 7/8" x 2 1/2" x 2 17/32" (47.75 x 63.2 x 64.3mm)	2 Screw	$24.28
40151	24VDC	1 7/8" x 2 1/2" x 2 17/32" (47.75 x 63.2 x 64.3mm)	2 Screw	$31.72

12 & 24VDC Buzzer and LED Indicator "Dual Alarm"

- Rugged combination warning light and buzzer gives audible and visible alert. Device is a universal application and can be used with any electrical switch. Red lens, long-life LED. 11/16" (1746mm) diameter mounting stem, 17/32" (13.88mm) long.
- Additional information: littelfuse.com/Alarms

DUAL ALARM

Item Number	Voltage	Dimensions	Terminals	Price
4112-RC	12VDC	1 7/8" x 1" x 1 11/32" (47.75 x 25.4 x 34.04mm)	2 Screw	$48.20
4124-RD	24VDC	1 7/8" x 1" x 1 11/32" (47.75 x 25.4 x 34.04mm)	2 Screw	$55.25

Schneider

- Continuous or intermittent illuminated red buzzer
- 24V AC/DC

RED BUZZER

Item Number	Current Consumption	Mounting Diameter	Cap/Operator or Lens Colour	Noise Level	Bezel Material	IP Degree of Protection	Dimensions HxWxD in " (mm)	Product Weight	Price
XB5KS2B4	<= 58mA	0.87 in (22 mm)	Red	90 dB at 4 kHz 90 dB at 6.8 kHz	Plastic	IP69, IP67	1.14(29mm) H 2.17(55mm) W 1.14(29mm) D	0.05 ib(US) (0.024 kg)	$86.96

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Alarms and Signaling

Blue Sea Systems

Floyd Bell Turbo Series Alarm

- Rotating bezel adjusts alarm volume
- Threaded attachment ring
- Fits 1 inch round aperture
- Adjustable volume control

TURBO SERIES
ALARM

Item Number	Nominal Voltage	Terminal Type	Operating Voltage	Operating Current	Operating Frequency	Weight	Price
1070	12/24V AC/DC	Male Quick Connect	5–30VDC	25mA @ 30VDC	2900 ± 250 Hz	1.60lb (0.73 kg)	$29.19

Ultra Safety Systems

- This panel-mounted 103 dB audio alarm (extra load) is used in conjuction with the Ultra Safety UPS-01 Senior Pump Switch with High Water Alarm Circuitry, or their UPS-03 Alarm Sensor Switch.

ULTRA BILGE ALARM
RECESSED MOUNT

ULTRA BILGE ALARM
SURFACE MOUNT

| Item Number	Size	Weight	Voltage	Price
A201-RECESSED	3-5/8"W x 4-3/4"H	2.0 lbs	9V Battery Operated	$182.00
A201-SURFACE	3-5/8"W x 4-3/4"H	2.0 lbs	9V Battery Operated	$182.00

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Maretron

- NMEA 2000® Network Interface
- Super loud 105dB audible alarm
- Bright Red LED visual alarm
- Green LED status indicator
- Mounts in standard electrical wall box or flush mount directly in wall
- 32 selectable alarm patterns
- Waterproof - Can be mounted indoors or outdoors

ALARM MODULE

Item Number	Parameter	Value	Comment	Price
		Electrical		
ALM100-01	Operating Voltage	9 to 32 Volts	DC Voltage	$395
	Power Consumption	100 mA	NMEA 2000 Interface	
	Load Equivalence Number (LEN)	2	NMEA 2000® Spec. (1LEN = 50mA)	
	Reverse Battery Protection	Yes	Indefinitely	
	Load Dump Protection	Yes	Energy Rated per SAE J1113	
		Electrical		
	Size	2.75" x 4.50" x 2.00" (70mm x 114mm x 51mm)	Including wall plate – Mounts in standard single-gang electrical box	
	Weight	13 oz. (368.5g)		
		Environmental		
	IEC 60945 Classification	Exposed		
	Degree of Protection	IP67		
	Operating Temperature	-25°C to 55°C		
	Storage Temperature	-40°C to 70°C		
	Relative Humidity	93%RH @40° per IEC60945-8.2		
	Vibration	2-13.2Hz @ ±1mm, 13.2-100Hz @ 7m/s² per IEC 60945-8.7		
	Rain and Spray	12.5mm Nozzle @ 100liters/min from 3m for 30min per IEC 60945-8.8		
	Solar Radiation	Ultraviolet B, A, Visible, and Infrared per IEC 60945-8.10		
	Corrosion (Salt Mist)	4 times 7 days @ 40°C, 95%RH after 2 hour Salt Spray Per IEC 60945-8.12		

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Batteries

AGM

- Ideal universal battery
- Excellent starter function
- Glass fibre technology ensures low internal resistance
- Perfect upgrade for wet lead acid batteries

- 100% sealed maintenance free
- 2 year manufacturer warranty
- Threaded insert M* stud; standard supplied with easy to mount adaptive round battery terminals
- Cold cranking @ 0°F(-18°C)
- Operating temperature -4°F(-20°C) to 131°F(55°C)

AGM SERIES

Item Number	CCA DIN/SAE	Battery Size	Dimensions in " (mm) LxWxH (w/terminals)	Capacity C20	Price
C20=battery capacity at a discharge time of 20 hours, till 1.75V per cell, dimensions include terminals					
62000900	360/570	Group 31	13(330) x 6.8(173) x 8.7(220)	90 Ah	$440.22
62001300	590/940	4D	16.1(409) x 6.9(175) x 9(228)	130 Ah	$598.18
62001600	550/870	—	19.1(485) x 6.7(170) x 9.5(241)	160 Ah	$702.72
62002250	680/1080	8D	20.6(523) x 9.7(246) x 8.8(223)	225 Ah	$945.46
62002700	750/1200	Super 8D	20.6(523) x 10.6(269) x 8.9(226)	270 Ah	$1,120.86

MVG Gel Series

- Perfect service battery for medium and large 12V and 24V systems
- Extremely long lifespan
- No gas formation with normal use
- Fast recharge, high charge current possible

- For intensive cycle use with high number of charge/discharge cycles
- Very low self discharge
- High return on investment

MVG GEL SERIES

Item Number	Cold Cranking Amps DIN/SAE	Dimensions in " (mm) LxWxH (w/terminals)	Capacity C20	Price
64002000	630/1100	20.4(518) x 10.6(269) x 9.4(238)	200 Ah	$1257.90

Slimline

- Ideal universal and starter battery
- Compressed AGM technology
- Saves up to 15% in volume and weight
- 2x 185 Ah for a 200 Ah battery footprint
- 2 year manufacturer warranty

SLIMLINE

Item Number	Cold Cranking Amps DIN/SAE	Dimensions in " (mm) LxWxH (w/terminals)	Capacity C20	Price
63001851	580/930	22(559) x 5(127) x 11(279)	200 Ah	$957.58

List pricing in catalog is subject to change without notice.

Mastervolt

- Multifunction battery of 4.3kWh
- Saves up to 70% in volume and weight
- High cycle efficiency 3500 cycles at 80% DOD at 25°C, max
- Battery monitoring (Ah consumed, state of charge) no shunt needed
- Integrated Battery Management (BMS)

- Waterproof electronics cabinet IP65
- 2 year manufacturer warranty
- Tested and certified according to UN38.3, UL in progress
- Czone /NMEA, or MasterBus / CAN communication

LITHIUM ION

Item Number	Nominal Voltage	Dimensions in " (mm) LxBxH (including handles)	Capacity C20	Price
66015000	12	24.5(622) x 7.8(198) x 14(355)	360Ah / 5KWh	Call for pricing
66025000	24	24.5(622) x 7.8(198) x 14(355)	180Ah / 5KWh	Call for pricing
66012750	12	—	—	Call for pricing

True Blue Power®

- Certified for engine-start performance by Lloyd's Register
- NanoPhosphate® lithium-ion cell chemistry
- Ultra lightweight — Save more than 100 lbs.
- 30% smaller than competing battery systems
- 550% more cranking amps per pound
- Only 40 minutes for complete recharge when fully discharged

- Field-upgradeable software via USB port
- Real-time monitoring
- Zero maintenance
- 6–10 year battery life
- Anodized aluminum casing
- Environmentally friendly

6430016-1   6430020-1   6430030-1   6430040-1

Item Number	Description	Price
Advanced Lithium-ion Batteries		
6430016-1	26.4 VDC output voltage, 16 amp-hour, 840 cranking amps/500 amps continuous, 16 lbs. (7.26 kg)	$5,880.00
6430020-1	26.4 VDC output voltage, 20 amp-hour, 960 cranking amps/560 amps continuous, 19.5 lbs. (8.8 kg)	$9,035.00
6430030-1	26.4 VDC output voltage, 30 amp-hour, 1,440 cranking amps/840 amps continuous, 27.7 lbs. (12.6 kg)	$13,435.00
6430040-1	26.4 VDC output voltage, 40 amp-hour, 1,500 cranking amps/1,120 amps continuous, 36.6 lbs. (16.6 kg)	$17,835.00

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Battery Chargers and Equipment

Charge Master Series

- MasterBus compatible
- The 3 step charging technology guarantees fast and complete charging
- The cos phi 1 regulation gets the most out of limited generator capacity
- CE, E-mark, ABYC A-31, SAE J1171/ ISO 8846 ignition protected
- -25°C to 60°C, derating >40°C
- IUoUo, automatic three step charge for Gel/ AGM/ Wet/ Lithium Ion
- 2 year manufacturer warranty
- 90-265V 50/60Hz

12V SYSTEM   **24V SYSTEM**

Item Number	Battery Outlets	Output Rating Amps	Battery Capacity (Ah)	Dimensions in" (mm) HxWxD	Weight in lbs. (kg.)	Price
* denotes 180-265V ONLY						
12V Systems						
43011000*	1	10	25-100	7.1(180) x 4.8(122) x 2(51)	2.2(1)	$305.91
44010250	3	25	50-250	9.2(234) x 5.2(132) x 2.4(61)	4(1.8)	$414.22
44010350	3	35	70-350	11.5(292) x 8.3(211) x 5.2(132)	9(4)	$614.17
44010500	3	50	100-500	11.5(292) x 8.3(211) x 5.2(132)	9(4)	$755.81
24V Systems						
43020600*	1	6	25-70	7.1(180) x 4.8(122) x 2(51)	2.2(1)	$374.93
44020200	3	20	40-200	11.5(292) x 8.3(211) x 5.2(132)	9(4)	$672.50
44020300	3	30	60-300	11.5(292) x 8.3(211) x 5.2(132)	9(4)	$881.97
44020800	1+2@10A	80	160-800	17(432) x 11(279) x 5.9(150)	18(8)	$2,397.19
44021000	1+2@10A	100	200-1000	17(432) x 11(279) x 5.9(150)	18(8)	$3,101.80

Charge Master Plus Series

- Revival mode: automatically revives even fully depleted batteries.
- Multi voltage: charge 12 V starter battery in a 24 V system, without additional components.
- Priority Charge: redirect available power to the lowest battery, for faster charging.
- Smart Input: charge all three batteries from one single alternator for continuous charging on the go.
- Multicharger with two outputs, one in/output, DC-DC converter, current limiter and VSR.
- 80-275V 35-70Hz

- Combine Lithium Ion, Gel or AGM, and large or small battery banks on a single battery charger.
- Charges multiple batteries while being underway.
- Extended specifications: offers 20% more output at 14.4 V and 80% charging power at 60°C.
- Safe Charge: quickly recognize the State of Charge for extended battery life.
- Very wide operating range of 80-275 V AC, 35-70 Hz.
- Compact, easy to connect and quick to install.
- MasterBus compatible

CHARGE MASTER PLUS

Item Number	Battery Outlets	Output Rating	Battery Capacity	Dimensions in"(mm) HxWxD	Weight in lbs. (kg)	Price
12VDC						
44310750	3	75	320-800 Ah	15.1(384) x 9.8(249) x 5.0(127)	13(5.9)	$1,407.62
44311000	3	100	400-1000 Ah	15.1(384) x 9.8(249) x 5.0(127)	13(5.9)	$1,824.31
24VDC						
44320400	3	40	160-400 Ah	15.1(384) x 9.8(249) x 5.0(127)	13(5.9)	$1,074.61
44320600	3	60	200-500 Ah	15.1(384) x 9.8(249) x 5.0(127)	13(5.9)	$1,482.50

List pricing in catalog is subject to change without notice.

ChargeMaster Plus CZone

- MasterBus, CZone and NMEA communication.
- Multicharger with two outputs, one in/output, DC-DC converter, current limiter and VSR.
- Combine Lithium Ion, Gel or AGM, and large or small battery banks on a single battery charger.
- Charges multiple batteries while being underway.
- Extended specifications: offers 20 % more output at 14.4 V and 80 % charging power at 60 °C.

- Safe Charge: quickly recognize the State of Charge for extended battery life.
- Very wide operating range of 80-275 V AC, 35-70 Hz.
- Compact, easy to connect and quick to install.

24 VOLT

Item Number	Battery Outlets	Output Rating	Battery Capacity	Dimensions in" (mm) HxWxD	Weight in lbs. (kg.)	Price
12VDC						
44310755	3	75A	320-800 Ah	15.1(384) x 9.8(249)x 5(127)	13(5.9)	$1449.82
44311005	3	100A	400- 1000 Ah	15.1(384) x 9.8(249)x 5(127)	13(5.9)	$1,879.02
24VDC						
44320405	3	40A	160-400 Ah	15.1(384) x 9.8(249)x 5(127)	13(5.9)	$1,106.83
44320605	3	60A	200-500 Ah	15.1(384) x 9.8(249)x 5(127)	13(5.9)	$1,526.97
44320805	3	80A	160-800 Ah	—	—	$2,157.45
44321105	3	110A	200-1000 Ah	—	—	$2,791.61

Mass Series

- Designed for the most difficult conditions
- Suitable for every type of battery, also charges entirely empty batteries
- Full power at temperatures of up to 45ºC
- Reliable charger/supply for GMDSS
- Certified by Germanisch Lloyd, Lloyd, Bureau Veritas, connections in accordance with CE, ABYC A-31 and IEC60945
- Type approval for application in safety zones A, B, and C

- Supplies your system without battery (except model 43011000)
- IUoUo, automatic three step charge for Gel/ AGM/ Wet/ Lithium Ion
- Nominal Input Voltage: 230 volt, 50/60 Hz.
- 2 year manufacturer warranty

24 VOLT MASS SERIES

Item Number	Battery Outlets	Output Rating Amps	Battery Capacity (Ah)	Dimensions in" (mm) HxWxD	Weight in lbs. (kg.)	Price
24V Systems						
40020256	1+1@3Amp	25	50-250	12.8(325) x 8.7(221) x 4.4(112)	7.3(3.3)	$1,347.82
40020506	1+1@3Amp	50	100-500	13.4(340) x 10.3(262) x 5.1(130)	10.1(4.6)	$1,974.64
40020756	1	75	150-750	16.5(419) x 12.5(318) x 5.1(130)	17(7.7)	$3,007.75
40021006	1	100	200-1000	16.5(419) x 12.5(318) x 5.1(130)	17(7.7)	$3,890.97

Images are representative of products listed and may not be actual product.

Battery Chargers and Equipment

Mass Series

TOUCH SCREEN

MASTERBUS

COMMUNICATION PORT

MASTERLINK

Item Number	Description	Price
	Charger Options	
77030100	Communication port between MasterBus and the USB port of your PC; makes possible reading and configuration of your MasterBus system on PC when combined with Masterview System software	$215.00
70403105	MasterLink MICC inverter/charger advanced battery monitor	$772.01
77010310	Easyview 5" touchscreen control panel	$397.42
77020110	MasterShunt 500	$310.45

Pacific Gen. 2 Series

- Universal line voltage 90-265 volt AC 45-65 Hz.
- Field serviceable AC input power protection
- Selective float moves each battery individually to float voltage ending absorption period to prevent overcharging
- Charge coordination works with Blues Seas Systems ACRs to properly charge batteries with shore power at the dock or alternator power underway

- Extensive suite of diagnostic screens
- UL 1236 marine
- CE marked and CSA C22.2 No.107.2-01 standards
- Ignition protected: SAE 1455, SAEJ1171 and ISO 8846
- 5 year manufacturer warranty

7531

7520

Item Number	Amps	Volts DC	Output	Dimensions in" (mm) HxWxD	Price
7531	25	12	3	13.03(331) x 8.46(215) x 4.30(109)	$632.50
7532	40	12	3	13.03(331) x 8.46(215) x 4.30(109)	$805.01
Item Number	**Description**	**Volts DC**		**Dimensions in " (mm) HxWxD**	**Price**
	Charger Options				
7520	Battery charge (LED) remote display	12		3.01(76) x 4.15(105) x .95(24)	$126.99

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Marinco

28210

28220

- 28210 has: Sense-Send senses the power needs of each battery and sends correct charge regardless of serial or parallel output connections
- Waterproof with an IP65 rating
- 2 LED charge indicator
- Ignition and short circuit protected
- 90-265 volt, 50/60 Hz.
- 12 or 24 volt DC output
- Meets UL, CSA, ABYC, USCG, FCC & new CEC regulations

Item Number	Banks	Amps	Battery Type	Dimensions in "(mm) HxWxD	Price
28210	2	10	Flooded and AGM	5.5(140) x 7.8(198) x 2.4(61)	$236.80
28220	2	20	Gel, AGM, Flooded	7(178) x 9.6(244) x 2.9(74)	$394.08

Newmar PT Series

PT SERIES

PT Series

- Smart circuitry provides three stage charging: bulk, absorption, and float
- Gel-Cell/ Flooded Lead-acid/ AGM battery type switch selects optimum charge/float voltages
- Multiple isolated output banks: ammeter indicates total output current
- Current limiting prevents damage from overloading
- Charger status clearly displayed with LED and/or audible indicators or optional remote panel
- Can power loads without a battery in line
- CE Certified & EN 60335-2-29/ EN 60335-I
- Ignition protected: USCG CFR 183.410
- 2 year manufacturer parts warranty

Item Number	Output Volts	Input VAC (50-60 Hz.)	Amp/ Amp Hours	Dimensions in "(mm) HxWxD	Compliance Ref.	Price
			PT Series			
PT-14W	12	85-264	14/ 28-140	11.2(284) x 7.7(196) x 4.8(122)	CG, CE, ABS	$541.16
PT-25W	12	90-132 OR 180-264	25/ 50-250	11.2(284) x 7.7(196) x 4.8(122)	CG, ABS	$664.00
PT-40U	12	90-264	40/ 80-400	13.9(353) x 9.5(241) x 4.8(122)	CG, CE, ABS	$1,070.70
PT-80	12	90-264	80/ 160-800	17.5(445) x 12(305) x 7.2(183)	CE, ABS	$1,743.00
PT-24-13W	24	90-132 OR 180-264	13/ 26-130	11.2(284) x 7.7(196) x 4.8(122)	CG, ABS	$664.00
PT-24-20U	24	85-135 OR 170-270	20/ 40-200	13.85(352) x 9.6(244) x 4.8(122)	CG, CE, ABS	$1,067.38
PT-24-45U	24	90-264	45/ 90-450	14.8(376) x 9.6(244) x 5.4(137)	EN, CE, ABS	$1,746.32
PT-24-60W	24	207-253	60/ 120-600	17.5(445) x 12(305) x 7.2(183)	EN, CE, ABS	$2,292.00
PT-24-95U	24	90-264	95/ 180-950	17.5(445) x 12(305) x 7.2(183)	EN, CE, ABS	$2,693.00
PT-32-25W	32	104-125	25/ 50-250	13.8(351) x 9.9(251) x 5(127)	EN, CE, ABS	$2,113.18

Item Number	Description	Price
	Accessories	
RP	Remote Panel, works on all PT chargers except: PT-24-60W and PT-32-25W	$158.61
TCS-12/24	Temperature Sensor for all PT chargers except: PT-7, PT-24-60W, PT-32-25W 7 PT-24-95W, P, F (ONLY FOR U)	$101.26
TP	Temperature sensor for PT-24-60W, PT-32-25W, and PT-24-95W ONLY	$115.00

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Battery Chargers and Equipment

Victron Skylla & Centaur Series

Skylla TG Series
- Charge voltage can be precisely adjusted to suit any sealed or unsealed battery system
- Charging process takes place in accordance with IUoUO characteristic and charges more rapidly than other processes
- Can be used as a power supply
- 2 isolated outputs, the second limited to approximately 4 amp and with a slightly lower output voltage, intended to top up a starter battery
- Voltage sense facility so the battery always receives the correct charge voltage
- Input voltage: 230 volt AC voltage range: 185-264 volt DC

Centaur
- Universal 90-265 volt AC, 45/65 Hz. input voltage range
- Three outputs that each can supply the full output current
- Three stage charging, with temperature compensation
- Charges at bulk rate until the output has reduced to 70% of the rated amp, at which a 4 hour timer begins; after the timed period the charger switches to float rates
- Dip switch available to select the optimum charge/float voltages for flooded lead acid, gel-cell or AGM batteries

Skylla-i Series
- Features 3 isolated outputs. All outputs can supply the full rated output current
- Next to a CAN bus (NMEA2000) interface, a rotary switch, DIP switches and potentiometers are available to adapt the charge algorithm to a particular battery and its conditions of use
- The storage mode kicks in whenever the battery has not been subjected to discharge during 24 hours
- The Skylla-i is provided with a voltage sense facility so that the battery always receives the correct charge voltage.

SKYLLA TG SERIES

CENTAUR SERIES
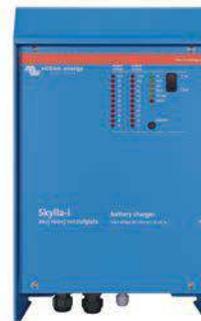
SKYLLA-I SERIES

Item Number	Output Volts	Amps	Dimensions in "(mm) HxWxD	Battery Capacity	Price
Skylla TG Series					
SDTG2400503	24	50	14.4(366) x 9.9(250) x 5.8(147)	150-500	$1,079.00
SDTG24050300	24	50	14.4(366) x 9.9(250) x 5.8(147)	150-500	$1,604.00
SDTG2401003	24	100	16(406) x 9.9(250) x 5.9(150)	500-100	$2,132.00
Centaur Series					
Centaur 12/20	12	20	14(356) x 8.5(216) x 4.3(109)	80-200	$373.00
Centaur 12/30	12	30	14(356) x 8.5(216) x 4.3(109)	120-300	$427.00
Centaur 12/40	12	40	16.8(427) x 9.4(239) x 5.3(135)	160-400	$527.00
Centaur 12/50	12	50	16.8(427) x 9.4(239) x 5.3(135)	200-500	$559.00
Centaur 12/60	12	60	16.8(427) x 9.4(239) x 5.3(135)	240-600	$601.00
Centaur 12/80	12	80	19.9(505) x 10(254) x 5.2(132)	320-800	$982.00
Centaur 24/30	24	30	14(356) x 8.5(216) x 4.3(109)	120-300	$714.00
Centaur 12/100	12	100	19.9(505) x 10(254) x 5.2(132)	400-1000	$1,242.00
Centaur 24/40	24	40	19.9(505) x 10(254) x 5.2(132)	160-400	$933.00
Centaur 24/60	24	60	19.9(505) x 10(254) x 5.2(132)	240-600	$1,067.00
Skylla TG Series					
SKI024080002	24	80	16(406) x 9.9(251) x 5.9(150)	400-800Ah	$1617.00
SKI024100002	24	100	16(406) x 9.9(251) x 5.9(150)	500-1000Ah	$1964.00

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Battery Chargers and Equipment

FR Series

- Reliable Ferro-Resonant technology
- Full cutoff when full charge reached – no "trickle" charge
- No boiling or dehydration
- Models available for 50/60 Hz
- Designed for quiet operation
- Drip proof cabinet
- Current limited and ignition protected

- Input 120 or 240 volt AC
- Automatic reset DC breaker
- AC fuse protection
- Front panel controls and indicators
- Indictors/controls include ammeter, manual/automatic selector switch, full charge and "On" indicator lights
- J in item number denominates 50/60 Hz

- 2 year manufacturer warranty
- Any of the sentry charger models listed below can be built to charge AGM batteries.
- When ordering a charger to work for AGM batteries add a "M" to the model number. Sample (SFR126M/3X)
- Part SFR1220/3X can NOT charge AGM batteries.

FR SERIES

Item Number	Amps	Banks	Dimensions in "(mm) HxWxD	Output Volts	Price
SFR1220/3B	20	3	14.5(368) x 13.25(337) x 6(152)	12	$1,950.00
SFR1240/3X	40	3	14.5(368) x 13.75(349) x 6(152)	12	$1,998.00
SFR1260/3X	60	3	16.25(413) x 13.75(349) x 7.25(184)	12	$2,070.00
SFR2440/3X	40	3	16.25(413) x 13.75(349) x 7.25(184)	24	$2,105.00
SFR2440/3XJ	40	3	16.25(413) x 13.75(349) x 7.75(184)	24	$2,705.00
SFR2460/3XJ	60	3	16.25(413) x 13.75(349) x 7.75(197)	24	$2,710.00
SFR2460/4XJ	60	4	16.25(413) x 13.75(349) x 7.75(197)	24	$2,850.00
SFR3230/3X	30	3	16.25(413) x 13.75(349) x 7.25(184)	32	$2,340.00

Item Number	Description	Price
FR Series Replacement Parts		
4030575	Cooling fan for FR1220, FR1240, FR1260, FR2425	$78.00
40904-00	Fuse holder A.C.	$18.00
42101-00	115VAC pilot light amber	$9.00
42102-00	115VAC pilot light red	$9.00
40403-03	Resonant capacitor 3 MFD	$48.00
40403-05	Resonant capacitor 5 MFD	$39.00
40403-10	Resonant capacitor 10 MFD	$39.00
FR12NX	Control 4-Bank 115/230 12V	$270.00
FR24NX	Control 4-Bank 115/230 24V	$270.00
FR32NX	Control 4-Bank 115/230 32V	$285.00

True Charge2 Series

- Wide voltage range operation (90-135 volt AC, 47-63 Hz)
- Parallel stacking feature allows two chargers to work together to combine the output current
- Drip proof design
- Settings for AGM, flooded or gel lead-acid batteries
- Power factor corrected, temperature compensated during charging

- Automatic 21 day top-up program
- Durable and corrosion resistant chassis
- CSA E60335-2-29, CE Marked
- Ignition protected rated UL1564 and UL1236, including the Marine Supplement, drip test
- Ingress protection rated IP32 per EN/IEC 60529
- 2 year manufacturer warranty

TRUE CHARGE2 SERIES   **REMOTE PANEL**

Item Number	Banks	Amps	Dimensions in "(mm) HxWxD	Output Volts	Price
804-1220-02	3	20	2.8(71) x 6.7(170) x 9.8(249)	12	$403.00
804-1240-02	3	40	2.8(71) x 6.7(170) x 9.8(249)	12	$523.00

Item Number	Description	Price
Accessories		
808-0232-01	Temperature sensor	$42.00
808-8040-01	Remote panel	$100.00

Images are representative of products listed and may not be actual product.

Battery Chargers and Equipment

Premium Series

- New robust and compact casing
- 3 completely isolated battery outputs
- Digital management with up-to-date microcontroller
- 4 charging programs including one for lithium ion iron phosphate with integrated BMS
- Full power at temperatures up to 50° C

- Automatic weekly equalisation for all charging programs
- Automatic 115/230 volt switchover (12 volt 25 amp, 12 volt 40 amp & 24 volt 20 amp only)
- Night mode: silent-without fan (12 volt 25 amp, 12 volt 40 amp & 24 volt 20 amp only)
- Conformal coating of PCB to prolong the life of the battery charger

PREMIUM SERIES

Item Number	Output	Battery Capacity	Dimensions in"(mm) HxWxD	Price
		Premium Series		
99020	12V-25A	50-250 Ah	4.75(121) x 13.88(353) x 3.75(95)	$489.00
99030	12V-40A	80-400 Ah	4.75(121) x 13.88(353) x 3.75(95)	$759.00
99040	24V-20A	40-200 Ah	4.75(121) x 13.88(353) x 3.75(95)	$839.00
99050	12V-60A	n/a	9.44(240) x 4.21(107) x 10.79(274)	$905.00

Dolphin Series

- Can operate up to 65° C without de-rating
- Internal diode isolator without voltage drop
- Solid casing in aluminum, mounting by 4 easily accessible screws
- Integrated control panel, LED display indicating the charging curve as well as anomalies and faults

- Automatic switchover: equipped with three isolated outputs, automatic switchover 115 volt / 230 volt / 60Hz.
- Conformal coating of PCB to prolong the life of the charger
- Using built in CAN BUS J1939 interface

PRO SERIES

Item Number	Output	Battery Capacity	Dimensions in"(mm) HxWxD	Price
		Pro Series		
99507	12V-70A	120-70 Ah	16.72(425) x 16.17(410) x 5.98(152)	$1,320.00
99501	12V-90A	180-900 Ah	13.4(340) x 14.2(361) x 4.9(124)	$1,602.00
99502	24V-40A	80-400 Ah	13.4(340) x 14.2(361) x 4.9(124)	$1,278.00
99503	24V-60A	120-600 Ah	13.4(340) x 14.2(361) x 4.9(124)	$1,373.00
99504	24V-100A	200-1000 Ah	13.4(340) x 14.2(361) x 7.5(191)	$2,461.00

Item Number	Description	Price
	Accessories	
99047	Temperature sensor adjusts the charging voltage depending on battery temperature	$62.00

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Pro Nautic Series

- Automatically senses and distributes up to full capacity to any one bank or combination of all banks
- Up to 12 performance & precision 4 stage charging profiles: charge, condition, auto maintain, and recondition
- Automatic dockside power mode for 12 volt DC lighting and appliances
- Conservation energy mode
- Automatically programs conditioning time based on discharge state of batteries
- Remote temperature probe included
- Meets marine spec ULc 1236, CE marked, CTick, FCC class B, CEDC, and ABYC approved

DIGITAL DISPLAY AND CONTROL REMOTE

PRONATIC P SERIES

Item Number	Output Voltage	Amps	Dimensions LxWxH in "(mm)	Weight lbs(kg)	Price
			Pro Nautic P Series		
100-260 Autoarranging AC input Voltage, 50/60 cycle, 3 banks					
63120	12	20	10.25(260) x 8.50(215) x 3.50(89)	5(2.2)	$546.20
63130	12	30	10.25(260) x 8.50(215) x 3.50(89)	5(2.2)	$668.13
63140	12	40	10.25(260) x 8.50(215) x 3.50(89)	5(2.2)	$718.45
63150	12	50	12.25(311) x 8.50(215) x 3.50(89)	7(3.1)	$919.99
63160	12	60	12.25(311) x 8.50(215) x 3.50(89)	7(3.1)	$1,135.89
63170	24	20	10.25(260) x 8.50(215) x 3.50(89)	5(2.2)	$735.98
63180	24	30	12.25(311) x 8.50(215) x 3.50(89)	7(3.1)	$1,152.56

Item Number	Description	Price
	Accessories	
63106	Remote temperature sensor	$17.23
63100	Digital display and control remote	$141.62

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Battery Chargers and Equipment

Balmar

- Dual models can control two alternators on single engine
- Presets for gel, AGM, and flooded types
- Advanced time & voltage adjustments
- Amp manager & equalization functions
- Bright LED alphanumeric display and easy to navigate programming mode increase user friendliness

- Belt load manager allows user to reduce maximum regulator field output in 5% increments to ensure that belts are protected from undue wear
- MC regulators have special programming for systems with voltage sensitive halogen lighting
- ARS items designed for single alternator use
- MC units designed to specifically control two alternators

ARS-5-H

MC-TS-B

MC-TS-A

Item Number	Amps	Volts	Bat. Eq.	Dual Alt.	Dimensions in "(mm) HxWxD	Price
			Alternator Regulators			
H item numbers come equipped with harness						
ARS-5-H	9	12	No	No	4.1(104) x 3.2(81) x 1.5(38)	$418.00
MC-612 -DUAL-H	15	12	Yes	Yes	4.8(122) x 3.2(81) x 1.5(38)	$526.00
MC-614-H	15	12	Yes	Yes	4.8(122) x 3.2(81) x 1.5(38)	$459.00
MC-624-H	15	24	Yes	Yes	4.8(122) x 3.2(81) x 1.5(38)	$540.00

Item Number	Sensor Type	Price
	Temperature Sensors	
MC-TS-B	Battery	$67.99
MC-TS-A	Alternator	$53.99

Centerfielder

- For use with max charge regulators only
- Eliminates alternator "chatter" by unifying power output to a single battery bank
- Provides field current from a single regulator to both port and starboard alternators when both engines are in use

- Adjustable for 12 volt or 24 volt operation
- NOT suitable for systems utilizing internally regulated alternators
- 1 year limited manufacturer warranty

CENTERFIELDER

Item Number	Volts	Fusing	Wiring Included	Price
CF-12/24-II	12/24	15A ATC	Fused 12 AWG power wires (2)	$310.00

List pricing in catalog is subject to change without notice.

ABYC
CERTIFIED
MARINE TECHNICIAN

MARINE ELECTRICAL
MARINE CORROSION

The following definitions are derived from the American Boat and Yacht Council standards and are meant to be for reference only.

Bulk Charge: This is initiated at power up and provides the charger's full-rated current to the battery bank until a predetermined voltage level is attained and/or a certain time has passed. This mode provides a rapid recharge.

Absorption Charge (also called acceptance charge): This stage immediately follows the bulk charge mode. It maintains the battery voltage at the bulk charge voltage level; the current decreases as the battery accepts its final charge. This mode continues for a given time or until a predetermined current level is reached.

Float Charge: This stage is designed to hold the battery at a safe, lower voltage while providing up to the chargers full-rated amperage to accommodate DC load requirements. Most units will remain in this mode until the AC power is cycled off and then on again, or battery voltage drops to a predetermined level due to excessive load.

Equalization: This feature can be found in some linear and multi-stage chargers. It is important that the voltage and time of this cycle be very well controlled so that its primary purpose of removing residual sulfate, bringing all flooded battery cells to an equal potential and mixing of the electrolyte occurs without damaging the battery. This mode of charging is not recommended for SVR batteries.

Note: Different manufacturers have different philosophies regarding the operation of these four stages. This includes the amount of time the charger stays in the bulk mode or if a certain DC load demand will trigger the charger to return to the bulk mode. Careful consideration should be given to these important characteristics, based on the anticipated application. Due to the frequencies involved, electrical interference can be an issue and may show up in radios or televisions if the charger is not properly installed.

Battery Management

Surepower Industries

- Eliminates multi-battery drain when two or more battery banks are in a charging system
- Solid-state electronics
- Each battery discharges and charges according to its own needs
- Multiple battery banks
- Systems 6-48 volts

BI SERIES

Item Number	Amps	Input	Banks	Price
BI2402	240	1	2	$289.98
BI702	70	1	2	$59.13
BI703	70	1	3	$100.00
BI2702	70	2	2	$132.92
BI2703	70	2	3	$164.86
BI1202	120	1	2	$101.86
BI1203	120	1	3	$132.45
BI3203	120	2	3	$290.95
BI1603	160	1	3	$220.33
BI3002	300	1	2	$851.30
BI3003	300	1	3	$1,163.30

Newmar

- Enables installation of a seamless, redundant power system for critical electronic loads
- Selects the higher voltage of two isolated DC power sources and routes power to the load
- In case of a fault or fail the second source will automatically supply the load with no transfer delay, operation continuous uninterrupted
- Easy installation
- Rugged rust proof anodized aluminum case

APS-70

Item Number	Dimensions in " (mm) HxWxD	Amps	Voltage DC	Banks	Price
		Auto Power Selector			
APS-70	3.25(82.55) x 4.50(114.30) x 3.10(78.74)	70	6-50	2	$123.00
APS-160	9.00(228.60) x 4.50(114.30) x 3.10(78.74)	160	6-50	2	$337.00

List pricing in catalog is subject to change without notice.

Mastervolt

Battery Watch

- Switches off loads when batteries are nearly empty
- LED lights provide clear read out
- Undervoltage can be set using DIP switches
- Corrosion proof material with aluminum heat sinks
- Electronic components are encased in synthetic materials
- Charges 2 or 3 batteries at high capacity
- LED displays whether the input power is active or not

Battery Mate

- Compatible with any type of alternator/battery charger
- Negligible voltage loss between alternator and battery
- Corrosion proof material with aluminum heat sinks
- Electronic components are encased in synthetic materials
- Charges 2 or 3 batteries at high capacity
- LED displays whether the input power is active or not

BATTERY WATCH

BATTERY MATE

Item Number	Max Load	Input Volts	Switch off 12V	Switch off 24V	Dimensions in " (mm) HxWxD	Price
Battery Watch						
83200150	150A	8-32VDC	9-12VDC	18-24 VDC	6.25(157.75) x 5.5(139.70) x 3.1(78.74)	$254.15

Item Number	Max Output/Charger	Max Output/Alternator	Bank Amount	Dimensions in " (mm) HxWxD	Price
Battery Mate					
83116025	120A	160A	2	8.1(205.74) x 5.5(139.70) x 3.1(78.74)	$340.67
83116035	120A	160A	3	8.1(205.74) x 5.5(139.70) x 3.1(78.74)	$381.77
83125035	200A	250A	3	8.1(205.74) x 5.5(139.70) x 3.1(78.74)	$412.05

Balmar

- Provides current and voltage controlled output to your starting battery, during house battery charge
- Programmable for 12 or 24 volt operation or four battery systems
- Provides up to 30 amps of smart charging power
- Automatically responds by isolating the starting battery ensuring that there is no accidental discharge of the starting battery

- The DDC is a solid state battery combiner
- Auto/manual control
- Start battery temperature sensing available with the MC-TS-B sensor cable

DDC

Item Number	Amps	Volts	Program Sets	Dimensions in " (mm) HxWxD	Price
DDC-12/24	30	12/24	GEL, AGM, STD. FLD., FDC	4.8(121.92) x 3.2(81.28) x 1.5(38.10)	$324.00

Images are representative of products listed and may not be actual product.

Battery Management

Blue Sea Systems

SI ACR

- Senses charging on two battery banks
- Start isolation allows temporary isolation of house loads from engine circuit during engine cranking to protect sensitive electronics from sags and spikes
- Integrated LED Indicators status
- CE marked, ISO 8846
- UL 1500 and SAE J1171
- IP67

ML Series

- 500 amps magnetic latching (bi-stable) relay automatically combines batteries during charging and isolates batteries when discharging and starting engines
- Dual sensing, senses charging on two battery banks
- LED output to remotely indicate when batteries are combined isolated, in voltage lockout, in start or engine isolation (requires optional LED)
- Silver alloy contacts provide high reliability for switching live loads
- Manual override knob provides an added level of safety allowing control with or without power and offering locked off capability for servicing
- CE Marked, ISO 8846 and SAE J1171
- IP67
- Manual override control provides an added level of safety.

7610

7622

9160

Item Number	IC Rating	Under Voltage Lockout 12/24	Combine Relay 12/24 (30 sec.)	Open Relay 12/24 (30 sec.)	Price
		SI ACR			
7610	120A Continuous, 210A Intermittent	9.5VDC/ 19VDC	13.6VDC/ 27.2VDC	12.75VDC/ 25.50VDC	$121.90
		ML Series			
7622	12VDC	9.6VDC	13.5VDC	12.75VDC	$291.99
7623	24VDC	19.2VDC	27.0VDC	25.5VDC	$291.99

Item Number	Description	Price
9160	Tin plated copper link bus, for paralleling ML battery switches and charging relay 500A continuous rating	$17.69

Mini ACR

- Senses charging on two battery banks
- LED indicates ACR status
- CE marked, ISO 8846, SAE J1171
- UL 1500
- IP67, up to 1 meter for 30 minutes
- 12/24V

Add-A-Battery

- Compact
- Automatically share a single source of charging between two batteries
- Protects the start battery from house loads that can lead to discharge
- Designed for alternators up to 65 amps

7601

7649

Item Number	IC Rating	Under Voltage Lockout	Combine Relay	Open Relay	Price
		Mini ACR			
7601	65A Continuous, 115A Intermittent	9.5-19.0VDC	13.6-27.2VDC	12.75-25.5VDC	$83.99

Item Number	Description	Price
	Add-A-Battery Kit	
7649	Contains M-Series Dual Circuit Plus battery switch and the 65A Mini ACR with start isolation	$137.99

List pricing in catalog is subject to change without notice.

BEP

- Safely charge two or more independent battery banks from one charge source such as an alternator or battery charger
- Charges engine starting batteries before combining auxiliary bank for charging
- Protects start batteries from becoming flattened by domestic loads
- Isolates electronics from harmful electrical surges from starter motors
- Simple to install 3 wire connection leaves alternator wiring intact
- No volts drop vs diode isolators
- Ignition protected
- Multi voltage, auto selects between 12 and 24 volts DC operation

710-140A

Item Number	Integration Point	Disconnect Point	Continuous Rating	Price
710-140A	13.2 VDC	12-7 VDC	140A	$158.08

Newmar Battery Integrator

- Enables charging of two separate banks without voltage drop, yet maintains 100% isolation at all other times
- Heavy duty silver plated contactor, continuous duty rated
- Easy three wire hook up for two bank systems (BATT +, BATT +, Ground)
- Terminal for optional wiring of remote light indicating when battery banks are integrated
- Terminals: 5/16" copper alloy stud
- 12 volts 100 amps with ignition protection
- Optional internal connection can be wired for key starter or manual over ride switch tying battery banks together for extra booth during engine start

BI-100

Item Number	Integration Point	Disconnect Point	Max Current	Peak Current	Price
BI-100	13.2VDC/ 26.4VDC	12.8VDC/ 25.6VDC	100/200	400/600	$173.00
BI-200	13.2VDC	12.8VDC	200	600	$307.00
BI-24-100	26.4VDC	25.6VDC	100	400	$189.00

Newmar

DC Energy Monitor
- Waterproof and suitable for installation above deck area
- Meter, touchpad and surrounding bezel are fully waterproof and the ABS housing is UV stabilized
- Displays volts, amps, energy used, and remaining time for 12 or 24 volt systems up to 500 amps and up to 3000 amp hours
- Monitors up to three separate banks

- One bank may be programmed for these functions: Monitor charge/discharge amperage, total energy monitor can be set for amp hours or percent of charge, high/low voltage alarm, plus alarm set point for low amp hours remaining
- 500 amps shunt included
- DCE outputs NMEA 0183
- Power supply 9.5 to 33.0 volts DC
- Display: 4 digit LCD, 5 levels of back lighting

DCE

Item Number	Dimensions in " (mm) HxWxD	Price
DCE	3.61(91.69) x 2.5(63.50) x 4.1(104.14)	$473.10

Images are representative of products listed and may not be actual product.

Battery Management

Victron

- High resolution 10 milliamps (0.01a) with shunt
- Low current consumption: 1mA
- Separate front bezel for square or round appearance
- Rear or front mounting
- Includes 10 meter 6 core UTP with RJ12 connectors and cable fuse +connection
- The BMV-700 Series also displays state of charge, time to go,and power consumption in watts.
- BMV-702 additional features additional input to measure voltage (of a second battery), temperature or midpoint voltage,

and corresponding alarm and relay settings.
- Information displayed: battery voltage, battery charge/discharge current, amp hours consumed, state of charge, time to go at the current rate of discharge
- Visual and audible alarm: over voltage, under voltage, battery discharge
- Programmable alarm or generator start relay
- The BMV-702 features an additional input which can be programmed to measure the voltage (of a second battery).

- Monitors battery status
- Constantly measures the battery voltage, battery current, and temperature
- Calculates the state of charge of your battery
- Must be used in conjunction with either VE. Net Panel (VPN) or VE. Net Blue Power Panel (BPP)
- All electrical connections are to the quick connect PCB on the current shunt.

BMV-700

VBC00300000

Item Number	Voltage Range	Dimensions in " (mm) WxH	Input Voltage Range	Shunt	Price
		Battery Monitor			
BMV-702	6.5-95VDC	2.0(50.80) x 1.2(30.48)	6.5-95VDC	500A/50mV	$210.00
BMV-700	6.5-95VDC	2.0(50.80) x 1.2(30.48)	9-90VDC	500A/ 50mV	$169.00

Item Number	Price
	VE. Net Battery Controller
VBC00300000	$270.00

Mastervolt

- Three battery sets, service (full), starter, and bowthruster
- Read out for voltage, current, amp hours, time remaining indication, and battery capacity in %
- The built in microprocessor calculates the remaining capacity and stores historic data
- Not compatible with the Masterbus
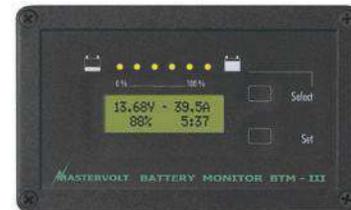
70403163

Item Number	Voltage Range	Dimensions in " (mm) WxH	Amp Range	Shunt	Price
70403163	7-35VDC	4.7(119.38) x 2.63(66.80)	0-500	500A/ 50mV	$476.11

Newmar

- Heavy duty aluminum construction
- Operates on 6-48 volts DC systems
- Integral mounting flanges for secure installation
- Nickel plated brass and stud connectors
- Color coded wire leads to make in-line installation easy
- Can be used singularly or in combination to attenuate conducted line noise, either at the affected equipment or at the noise source

PC-10 & PC-25

Item Number	Filtered Frequency Rating	Amps	Dimensions in " (cm) HxWxD	Installation Location	Price
PC-10	Audio-200MHz.	10	1.25(3.18) x 4.25(10.80) x 3(7.62)	@ (+) and (-) Power Leads	$71.81
PC-25	Audio-200MHz.	25	2(5.08) x 4.25(10.80) x 3(7.62)	@ (+) and (-) Power Leads	$108.00

List pricing in catalog is subject to change without notice.

Blue Sea Systems

M-Series

- Ic continuous rating: 300 amps per circuit
- Dimension: 2.825"(72mm)W x 3.850"(98mm)H
- Mounting centers: 2.176"(55mm)
- Terminal stud size: 3/8"-16 (M10)
- Ignition protected: UL 1500 & SAE J1171
- Ingress protection: IP66
- ISO 8846
- ABYC Certified

MINI X4   TWO POSITION   FOUR POSITION

Item Number	Switch Type	Operation	Max Volts (5 min.)	I100 Cranking (30 sec.)	I60 Cranking	Price
		M-Series				
6006	Single Circuit- On/Off	Switches a single battery to a single load group	48	1500A	775A	$35.39
6007	Selector- 4 Position	Switches isolated battery banks to all loads or combines battery banks to all loads	32	1500A	775A	$47.29
6010	Dual Circuit	Simultaneously switches between two isolated battery banks	32	1000A	650A	$58.99
6011	Dual Circuit Plus	Simultaneously switches two isolated battery banks or combines battery banks to all loads	32	1000A	650A	$58.99

E-Series

- Ic continuous rating: 350 amps per circuit
- Dimensions: 3.850"(98mm)W x 3.850"(98mm)H
- Mounting centers: 3"(76mm)
- Terminal stud: 3/8"-16 (M10)
- Ignition protected: UL 1500 & SAE J1171
- Ingress protection: IP66
- Work with most standard Perko & Guest battery switch hole patterns
- ID circuit label kit sold separately (7902)
- Accepts up to 4/0 AWG cable
- Case design allows surface, rear, or front panel mounting options
- ABYC Certified
- Includes AFD (alternator field disconnect) which protects the diodes in the alternator in the event of the switch being turned to OFF position while the engine is running

FOUR POSITION   DUAL CIRCUIT
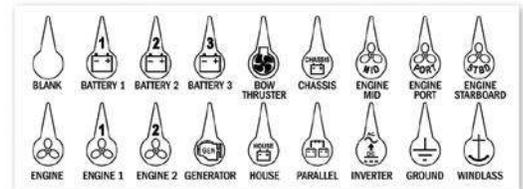
7902

Item Number	Switch Type	Operation	Max Volts (1 min.)	I100 Cranking (30 sec.)	I300 Intermittent (5 min.)	AFD	Price
		E-Series					
9003e	Single Circuit- On/Off	Switches a single battery to a single load group	48	1200	600A	—	$59.99
9004e	Single Circuit- On/Off	Switches a single battery to a single load group	48	1200	600A	Yes	$74.99
11001	Selector - 3 Position	Switches battery banks to all loads	32	1200	600A	Yes	$62.99
9001e	Selector - 4 Position	Switches isolated battery banks to all loads or combines battery banks to all loads	32	1200	600A	—	$56.99
5510e	Dual Circuit	Simultaneously switches between two isolated battery banks	32	700	525A	—	$71.99
5511e	Dual Circuit Plus	Simultaneously switches two isolated battery banks or combines battery banks to all loads	32	700	525A	—	$71.99

Item Number	Description	Price
7902	Icon circuit identification label kit m, e, HD Series switches	$7.39

Images are representative of products listed and may not be actual product.

Battery Management

Blue Sea Systems (Continued)

HD-Series

- Dimensions: 3.850"(98mm)W x 3.850"(98mm)H
- Mounting centers: 3"(76mm)
- Terminal stud: 1/2" (M12)
- Ignition protected: UL 1500 & SAE J1171
- Ingress protection: IP66
- ABYC Certified
- Fits most Perko and Guest low amperage battery switch hole patterns

- Case design allows surface, rear, or front panel mounting
- CE marked, ISO 8846
- Includes AFD (alternator field disconnect) which protects the diodes in the alternator in the event of the switch being turned to OFF position while the engine is running

HEAVY DUTY X2   HEAVY DUTY X4

Item Number	Switch Type	Operation	I100 Cranking (10 sec.)	I60 Cranking (1 min.)	I300 Intermittent (5 min.)	AFD	Ic Continuous Rating	Price
3000	Single Circuit- On/Off	Switches a single battery to a single load group	2750A	1325A	900A	–	600A	$116.99
3001	Single Circuit- On/Off	Switches a single battery to a single load group	2750A	1325A	900A	Yes	600A	$133.99
11003	Selector- 3 Position	Switches battery banks to all loads	2750A	1150A	700A	Yes	500A	$123.37
3002	Selector- 4 Position	Switches isolated battery banks to all loads or combines battery banks to all loads	2750A	1150A	700A	–	500A	$121.99
3003	Selector- 4 Position	Switches isolated battery banks to all loads or combines battery banks to all loads	2750A	1150A	700A	Yes	500A	$138.99

ML-Series

- 500 amp magnetic latching remote battery switch allows high amp switching under load, manually or from a remote location
- Bi-Stable ML coil function
- Manual override knob provides added level of safety allowing control with or without power and offering LOCKED OFF capability for service
- Auto releasing versions can be controlled with SPST or SPDT switch for applications where a normally open relay is desired
- Current rating dependent on wire size, call for detailed information
- Ignition protected: UL 1500 & SAE J1171
- Ingress protection: IP66
- Silver alloy contact
- Terminal stud: 7/8"(22mm)
- Includes control switch item #2145: SPDT (ON)-OFF-(ON)
- CE marked, ISO 8846 protected

7700

7620B

Item Number	Coil Volts DC	Contact Circuit Voltage	Multi Station Switching Capabilities	Price
7700	12	16	Yes w/ manual control	$252.99
7701	12	32	Yes w/o manual control	$234.99
7702	24	16	Yes w/ manual control	$234.99
7703	24	32	Yes w/o manual control	$252.99
7713	12	16	Yes w/ manual control	$291.99
7620B	12	16	No manual overide knob	$300.15

List pricing in catalog is subject to change without notice.

Marinco

Pro Installer

- Dimensions LxWxH in " (mm): 3.85(98) x 3.85(98) x 3.62(92)
- Removable knob allows isolation during servicing
- Pro Installer can be mounted: surface, rear panel, or front panel
- 3 removable side place for protection
- Innovative nut retention allows use of metric or imperial fasteners

PRO INSTALLER

PRO INSTALLER EZ

Item Number	Continuous A DC	Intermittent A DC	Cranking A DC	Operation	Stud	EZ Mount Price	Pro Installer Price
To order EZ mount use suffix (EZ) with item number							
770	400	600	1500	On/Off	2x (3/8 / 10mm)	$73.63	$68.15
770-DP	2x 400	2x 600	2x 1500	On/Off (2 Pole)	4x (3/8 /10mm)	$97.65	$89.43
771-S	400	600	1500	1-2-Both-Off	3x (3/8 /10mm)	$79.18	$72.55
771-SFD	400	600	1500	1-2-Both-Off	3x (3/8 /10mm)	N/A	$80.30
772-DBC	2x 400	2x 600	2x 1500	1, 1/2, Parallel, Off (2 Pole)	4x (3/8 /10mm)	$99.18	$94.43

Guest

Battery Selector

- Polycarbonate case
- For use with 6, 12, 24, or 36 volts systems
- Surface mount
- Cable lug: 1/2"

BATTERY SELECTOR

Item Number	Continuous Amp	Momentary Amps	Operation	Dimensions in " (mm) HxWxD	Price
2102	230	345	On/Off	5.5(139.70) x 2.63(66.80)	$83.03

Diesel Battery Switch

- Polycarbonate case
- For use with 6, 12, 24, or 36 volts systems
- Built with heavy duty copper sweep contacts
- Features alternator field disconnect (AFD)

SELECTOR SWITCH OEM BLACK

ON/OFF SWITCH OEM BLACK

Item Number	Continuous Amp	Momentary Amps	Type	Operation	Price
2303A	450	800	Heavy Duty	On/Off	$287.85
2304A	600	1000	Extra Duty	On/Off	$296.38
2300A	360	600	Selector Switch	1, 1&2, 2, Off	$211.65

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Battery Management

BEP

Heavy Duty

- Well suited for large vessels
- Uses patented contour locking systems
- RoHS Compliant
- ABYC Certified

720

Item Number	Dimensions in " (mm) LxWxH	Continuous Rating (1Hr.)	Intermittent Rating (5min.)	Cranking Rating (10sec.)	Operation	Stud Size	Price
Heavy Duty							
720	4(102) x 4(102) x 3.5(89)	600A DC	800A DC	2500A DC	On/Off	1/2(12) x 2	$117.10

Contour Series

- Removable side plates on four sides for access up to 1/0 cable
- Can either be surface mounted or recess mounted by cutting 2.1"(52mm) hole
- Control knob cannot be removed unless switching in a 45 degree counter clockwise position
- Uses patented contour locking system
- ABYC Certified
- Ignition protected
- RoHS compliant
- 48VDC max

701

701-PM

701-S

701-MD

Item Number	Dimensions in " (mm) LxWxH	Continuous Rating (1Hr.)	Intermittent Rating (5min.)	Cranking Rating (10sec.)	Operation	Stud Size	Style	Price
Contour								
701	2.75(69.9) x 2.75(69.9) x 3(76.2)	275A DC	455A DC	1250A DC	On/Off	3/8(10) x 2	Standard	$41.23
701-PM	2.75(69.9) x 2.75(69.9) x 3(76.2)	275A DC	455A DC	1250A DC	On/Off	3/8(10) x 2	Panel Mount	$36.13
701-S	2.75(69.9) x 2.75(69.9) x 3(76.2)	200A DC	455A DC	1250A DC	1-2-Both-Off	3/8(10) x 2	Compact	$53.73
701-MD	3(76.2) x 3(76.2) x 3.9(99.1)	275A DC	455A DC	1250A DC	Motorized On/ Off	3//8(10) x 2	Standard	$248.63

Easy Fit

- Easily removable ring will allow for panel thicknesses up to 3/4"(19mm)
- Control knob cannot be removed unless switching in a 45 degree counter clockwise position
- Can be surface mounted offering a unique style
- Can easily be retrofitted in place of most European post and lever type switches
- ABYC Certified
- Ignition protected
- RoHS compliant

700

Item Number	Dimensions in " (mm) LxWxH	Continuous Rating	Intermittent Rating	Cranking Rating	Operation	Stud Size	Price
Easy Fit							
700	2.75(69.9) x 2.75(69.9) x 3(76.2)	275A DC	455A DC	1250A DC	On/Off	3/8(10) x 2	$47.88

Battery Distribution Clusters

- Combines BEP battery switches and VSR's completely bused and pre-wired internally
- RoHS Compliant

717-140A-DVSR

719-140A-DVSR

Item Number	Dimensions in " (mm) LxW	Engine	Battery Banks	Price
Battery Distribution Clusters				
717-140A-DVSR	5.4(137.2) x 8.1(205.7)	Twin outboard	3	$488.73
719-140A-DSVR	8.1(205.7) x 8.1(205.7)	Triple outboard	4	$710.80

List pricing in catalog is subject to change without notice.

Hella Marine

- Removable key in OFF position
- Current interrupting
- VDA compliant

PLASTIC   HEAVY DUTY

Item Number	Material	12/24 Amp	Max. Load 12V/24V (10 sec.)	Price
87181	Plastic	100/50	1000A/500A	$26.67
62471	Steel key and plate	200/100	2500A/1000A	$77.78

Item Number	Description	Price
	Accessories	
87185	Spare key for battery master switch #87181	$8.89

Cole Hersee

- Suitable for 6-36 volts DC Systems
- Mounting stems: brass 3/4" (19.1mm) #16 thread
- Terminals: two 3/8" (9.5mm) diameter studs
- Silver laminated contact (M-284-01)
- UL 707B approved and CE Listed

DISCONNECT SWITCH

Item Number	Positions	Intermittent Rating	Continuous Ratings	Price
M-284-01	Off-On	800A	175A	$84.99

Images are representative of products listed and may not be actual product.

Battery Management

Blue Sea Systems Accessories

9160

Item Number	Description	Price
	Accessories Blue Seas Systems	
9160	Tin plated copper link bus, for paralleling ML battery switches and charging relay 500A continuous rating	$17.69

7902

- Reinforced, waterproof labels
- Used on M-Series, E-Series and HD- Series Battery Switches
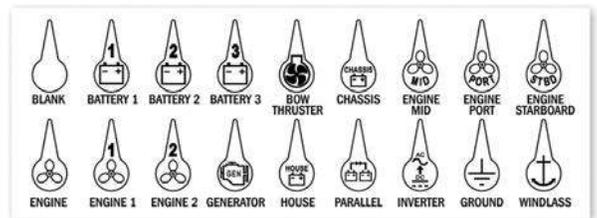
Item Number	Description	Price
7902	ICON Circuit Identification Label Kit for Blue Seas m,e,HD Series	$7.39

List pricing in catalog is subject to change without notice.

Quick

- Anodes and propeller sold separately

BTQ-140

BTQ-185

BTQ-250

BTQ-300

Item Number	Series	Price
Anode		
ANODE-BTQ140	BTQ140	$42.00
ANODE-BTQ185	BTQ185	$84.00
ANODE-BTQ250	BTQ250	$95.00
ANODE-BTQ300	BTQ300	$115.00
Propeller		
FVSGEL140000A00	D140	$47.00
FVSGEL185L00A00	D185 LEFT HAND	$58.00
FVSGEL185R00A00	D185 RIGHT HAND	$58.00
FVSGEL250L00A00	D250 LEFT HAND	$163.00
FVSGEL250R00A00	D250 RIGHT HAND	$163.00
FVSGEL300L00A00	D300 LEFT HAND	$210.00
FVSGEL300R00A00	D300 RIGHT HAND	$210.00

Images are representative of products listed and may not be actual product.

Cable Identification

Wire Marking Books

WIRE MARKER BOOKS

Item Number	Markings (X)	Price
45 of each		
WMMB-0200	0-9	$15.15
WMMB-0000	1-45	$15.15
WMMB-0100	46-90	$15.15
WMMB-0300	+, -, 0-15, A-Z	$15.15
150 of each		
WMB-0600	T1, T2 ,23	$18.00
WMB-0700	L1, L2, L3	$18.00
450 of each		
WMB-1001	1	$18.00
WMB-1002	2	$18.00
WMB-1003	3	$18.00
WMBS-2500	Blank Write On	$19.85

Stransnaps

- Snap-on-Wire Markers

Item Number	Markings (X)	AWG	Price
30 per wand			
SSM3-(X)	0-9	22-24	$2.86
SSM4-(X)	+,-,0-9, A-Z	16-18	$2.67
SSM5-(X)	+,-,0-9, A-Z	16-14	$2.97
SSM6-(X)	+, -, 0-9, A-Z	12-10	$3.52

STRANSNAPS

List pricing in catalog is subject to change without notice.

Edge Molding

- Trims fiberglass, metal, plywood, and glass edges
- Installs quickly and permanently without use of adhesives on flanges with a ¾" min radius and with ½" min clearance from edge
- .500"H x .660"W

EDGE MOLDING

Item Number	Color	Price
Sold Per Foot		
50-39001	White	$1.66
50-39011	Black	$1.89

Expandable Sleeving

- Increased braid density for maximum coverage
- Cut and abrasion resistant
- Halogen free
- UV light resistant
- UL94V0 rated
- Max continuous 257°F(125°C) min continuous -94°F(-70°C)

CLEAN CUT WRAP

CLEAN CUT SLEEVE

Item Number	Nominal Size in "(mm)	Wall Thickness in "(mm)	Monofilament Diameter in "(mm)	Price
		Flexo Clean Cut Wrap		
Sold Per Foot, black, 25% edge overlap				
F6N0.25	.25(6.35)	.025(.635)	.10(2.54)	$0.87
F6N0.38	.38(9.65)	.025(.635)	.10(2.54)	$1.01
F6N0.50	.50(12.70)	.025(.635)	.10(2.54)	$1.08
F6N0.75	.75(19.05)	.025(.635)	.10(2.54)	$1.38
F6N1.00	1(25.40)	.038(.965)	.15(3.81)	$2.11

Item Number	Expansion Range Min "/Max "(mm)	Price
	Flexo Clean Cut Sleeve	
Sold Per Foot, black		
FW-1/2	.25(6.35)/ .75(19.05)	$0.57
FW-1	.75(19.05)/ 1.19(30.22)	$0.81
FW-1 1/4	1(25.40)/ 1.5(38.10)	$1.02
FW-1 1/2	1.25(31.75)/ 2(50.80)	$1.29

Images are representative of products listed and may not be actual product.

Cable Protection

Split Loom

- Corrugated surface protects against abrasion and pinching
- Split loom easily slides over assembly and closes for a permanent installation
- Flame retardant polypropylene
- Max 275ºF(135ºC)

SPLIT LOOM

Item Number	Amount Sold	Diameter in " (mm)	Price per ft	Price
X = Length (Per Foot, L-50', C-100'), black *Available in white only in lengths of 100' and 50'				
1/4-LOOM-(X)	Per Foot, C	.25(6.35)	$0.78	$78.03
3/8-LOOM-(X)*	Per Foot, C	.40(9.52)	$0.96	$96.03
1/2-LOOM-(X)*	Per Foot, C	.50(12.70)	$1.32	$132.05
3/4-LOOM-(X)*	Per Foot, C	.75(19.05)	$1.62	$162.06
1-LOOM-(X)*	Per Foot, L	1.00(25.40)	$2.40	$120.09
1-1/4-LOOM-(X)	Per Foot, L	1.25(31.75)	$3.06	$153.06
1-1/2-LOOM-(X)	Per Foot, L	1.50(38.10)	$5.70	$285.11

Spiral Wrap

- Easy wire breakouts
- Acid, solvent, gas and oil resistant
- Melt temperature 239ºF(115ºC)
- UV resistant

SPIRAL WRAP

Item Number	Diameter in " (mm)	Price
UV Protection black, Sold Per Foot		
UR-1/4	.25(6.35)	$1.02
UR-3/8	.38(9.52)	$1.33
UR-1/2	.50(12.70)	$1.14
UR-3/4	.75(19.05)	$2.11
UR-1	1.00(25.40)	$3.72

List pricing in catalog is subject to change without notice.

Liquid Tite

- UV resistant
- High flexibility
- High fatigue life
- Low fire hazard and self extinguishing
- Halogen free
- CE, RU, and Lloyd's approved
- Max 240°F(120°C)

LIQUID TITE

SUPPORT CLIPS

Item Number	Diameter in " (mm)	Price
UV Protection black, Sold Per Foot		
LT-12	.50(12.70)	$1.48
LT-34	.75(19.05)	$2.39
LT-1	1.00(25.40)	$3.03
LT-1.25	1.25(31.75)	$4.17
LT-1.5	1.50(38.10)	$5.81

Item Number	PMA	Diameter in " (mm)	Price
Support Clips			
BFH-17-0	17	.50(12.70)	$1.90
BFH-23-0	23	.75(19.05)	$3.60
BFH-29-0	29	1.00(25.40)	$4.37
BFH-36-0	36	1.25(31.75)	$6.00
BFH-48-0	48	1.50(38.10)	$8.04

Images are representative of products listed and may not be actual product.

Cable Protection

Liquid Tite (continued)

CONNECTOR 90 DEGREE BEND	STRAIGHT CONNECTOR	BFHS-PH1	BFHS-PH

Item Number	Diameter in " (mm)	Price
90 Degree Bend		
LTC-1290	.50(12.70)	$7.04
LTC-3490	.75(19.05)	$8.32
LTC-190	1.00(25.40)	$10.54
LTC-1.2590	1.25(31.75)	$12.50
LTC-1.590	1.5(38.10)	$17.54
LTC-290	2.00(50.80)	$51.98
Straight		
LTC-12S	.50(12.70)	$2.58
LTC-34S	.75(19.05)	$3.96
LTC-1S	1.00(25.40)	$5.64
LTC-1.25S	1.25(31.75)	$8.50
LTC-1.5S	1.50(38.10)	$13.14
LTC-2S	2.00(50.80)	$13.58

Item Number	Description	Price
Accessories		
BFHS-PH	Position support clamp PMA	$2.26
BFHS-PH1	Rail distance spacer PMA	$1.01

List pricing in catalog is subject to change without notice.

Hubbell Nylon

- Neoprene bushing
- UL 94-V2, type 4, 4X, 12 &13 Listed
- CSA Certified
- Temperature range -40°F (-40°C)-225°F(143°C)

| T/B ROUND STRAIGHT | ROUND STRAIGHT | 90 DEGREE | FLAT STRAIGHT |

Item Number	NPT	Range in "	Price
Round Straight			
SHC1023CR	1/2	.38"-.5"	$12.00
SHC1024CR	1/2	.50"-.63"	$12.25
SHC1035CR	3/4	.38"-.5"	$13.25
SHC1036CR	3/4	.50"-.63"	$13.25
SHC1037CR	3/4	.63"-.75"	$13.25
SHC1041CR	1	.63"-.75"	$16.50
T/B2703	1-1/4	1.080-1.280	$39.66
T/B2707	1-1/2	1.39-1.650	$82.19
Flat Straight			
UFC0001CR	1/2	.25-.55	$12.38
UFC0003CR	3/4	.26"-.78"	$13.25
90 Degree			
NHC1023CR	1/2	.38"-.5"	$20.50
NHC1024CR	1/2	.5"-.63"	$20.50
NHC1035CR	3/4	.38"-.50"	$25.50
NHC1042CR	1	.75"-.88"	$39.25

Locknuts available on page 37

Hubbell Aluminum

- -40°F(-40°C)- 300°F(149°C)
- IP66 suitability
- UL Listed and CSA Certified

CORD GRIP

Item Number	NPT	Range in "	Price
SHC1053	1-1/4	1.13"-1.25"	$49.38
SHC1054	1-1/4	1.25"-1.38"	$49.38
SHC1061	1-1/2	1.38"-1.50"	$82.88
SHC1067	2	1.50"-1.63"	$86.00
SHC1069	2	1.75"-1.88"	$86.00
SHC1080	2-1/2	2.19"-2.31"	$127.00

Locknuts available on page 37

Images are representative of products listed and may not be actual product.

Cable Support

Nickel Plated Brass

- Pressure rating 5 bar, 70 psi
- Seal rings factory installed
- Temperature -30°F(-34°C) to 80°F(26.7°C)
- Insert ethylene-propylene cauthchouc
- Protection rating is IP68, NEMA 4X

NICKEL PLATED

Item Number	NPT	Range in "	Price
CG38NPB	3/8	.177-.394	$16.39
CG12NPB	1/2	.275-.512	$18.80
CG34NPB	3/4	.354-.669	$26.54
CG1NPB	1	.433-.827	$47.76
CG114NPB	1-1/4	.748-1.103	$46.96
CG112NPB	1-1/2	1.063-1.379	$67.28

Locknuts available on page 37

Skintop II

- Corrosion resistant dome sealing nut
- Neoprene compression gland automatically adjusts to the size of cable
- Contoured sealing ring, molded beneath the wrenchingnut, providing hermetic seal
- Protect up to 70 psi
- IP 68, 5 Bar
- Vibration proof
- Temperature -4°F(-20°C) to 176°F(80°C)
- Internationally approved UL, CSA, VDE, and SEV

NYLON

Item Number	Thread Type	Dimension Range in " or mm	Price
Gray unless otherwise noted, PG sizes include appropriate locking nut			
S1107	PG7	2.5-6.5 mm	$2.13
S1113	PG13	6.0-12.0 mm	$2.91
S1116	PG16	9.0-14.0 mm	$2.40
S1121	PG21	13.0-18.0 mm	$3.90
S1129	PG29	14.0-25.0 mm	$7.29
S1136	PG36	24.0-32.0 mm	$31.50
S1142	PG42	35.0-38.0 mm	$50.17
S1148	PG48	39.0-44.0 mm	$56.38
S1138	3/8	.138-.315 inches	$1.59
S2138 (Black)	3/8	.138-.315 inches	$1.80
S1112	1/2	.197-.472 inches	$1.68
S2112 (Black)	1/2	.197-.472 inches	$2.22
S1134	3/4	.512-.709 inches	$4.65
S2134 (Black)	3/4	.512-.709 inches	$3.72
S1101	1	.748-1.00 inches	$5.64
S2101 (Black)	1	.748-1.00 inches	$10.23

Locknuts available on page 37

List pricing in catalog is subject to change without notice.

Sealing Rings

SEALING RING

See T/B cordgrips on page 35

Item Number	NPT	Price
T/B5265	1-1/4	$5.68
T/B5266	1-1/2	$7.44
T/B5267	2	$8.38

Lock Nuts

See cordgrips on pages 35-37

Item Number	NPT	Price
Steel		
BRI101	1/2	$0.48
BRI102	3/4	$0.20
BRI103	1	$0.48
BRI104	1-1/4	$0.54
BRI105	1-1/2	$0.87
BRI106	2	$0.90
BRI107	2-1/2	$2.11
BRI108	3	$1.81
Aluminum		
1-125A	1-1/4	$7.55
1-150A	1-1/2	$12.15
1-200A	2	$19.96

Item Number	NPT	Price
Nickel Plated Brass		
LN38NPB	3/8	$2.61
LN12NPB	1/2	$3.52
LN34NPB	3/4	$4.02
LN1NPB	1	$4.73
Nylon		
316-22-002	3/8	$0.64
316-22-003	1/2	$0.76
316-22-007	3/4	$1.52
316-22-008	1	$2.56

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Cable Support

Nylon

- Exceeds industry and aerospace standards SAE AS23190
- Stainless steel barb made of 316 corrosion resistant stainless steel
- Provides consistent performance and reliability for users who prefer a cable tie with a metal barb
- Ribbed and stippled strap body prevents axial and lateral movement

WEATHER UV RESISTANT STANDARD SCREW MOUNT STANDARD SCREW MOUNT WEATHER UV RESISTANT

Item Number	Length in " (mm)	Load Capacity in Lbs.	Max Bundle Dia. in " (mm)	Price	
Weather Resistant UV (Black)					
Sold in X (C=100, M=1,000 packs)				**C**	**M**
TY4UV-(X)	4(101.6)	18	.90(23)	$9.21	$34.37
TY6UV-(X)	6(152.40)	40	1.5(38)	$10.05	$61.81
TY8UV-(X)	8(203.2)	50	2(51)	$11.03	$78.51
TY11UV-(X)	11(279.4)	40	3(76)	$24.92	$137.06
TY15UV-(X)	15(381)	50	4(102)	$25.34	$179.45
Sold in X (L=50 pack, T=250 pack)				**L**	**T**
TY15HUV-(X)	15(381)	120	4(102)	$18.74	$75.52
Sold in 50 packs					
TY31UV-L	31(787.4)	120	9(229)		$57.31
Standard (White)					
Sold in X (C=100 pack, M=1,000 pack)				**C**	**M**
TY4N-(X)	4(101.6)	18	.90(23)	$7.07	$28.67
TY6N-(X)	6(152.4)	40	1.5(38)	$8.12	$53.69
TY8N-(X)	8(203.2)	50	2(51)	$10.33	$68.53
TY11N-(X)	11(279.4)	40	3(76)	$17.43	$108.40
TY15N-(X)	15(381)	50	4(102)	$23.73	$165.24
Sold in X (L=50 pack, T=250 pack)				**L**	**T**
TY15HN-(X)	15(381)	120	2(51)	$17.28	$65.78
Screw Mount Standard (White)					
Sold in X (C=100 pack, D=500 pack)				**C**	**D**
TY8NMT-(X)	8(203.2)	50	4(102)	$18.90	$74.53
Sold in 50 packs					
TY15HNMT-L	15(381)	120			$26.79
Screw Mount Weather UV Resistant (Black)					
Sold in X (C=100 pack, D=500 pack)				**C**	**D**
TY8UVMT-(X)	8(203.2)	50	2(51)	$21.95	$84.72
Sold in X (L=50 pack, T=250 pack)				**L**	**T**
TY15HUVMT-(X)	15(381)	120	4(102)	$33.95	$127.36

Installation Tools available on page 42

List pricing in catalog is subject to change without notice.

Stainless Steel

- Designed for use in critical applications where vibration, radiation, weathering, corrosion, and temperature extremes are a factor
- Non-magnetic stainless steel
- Rounded sides and smooth surface make it safe to handle
- TY series loop tensile strength of 100 lbs., MLT series loop tensile strength of 250 lbs.

- Self- locking design simplifies installation and eliminates protruding ends when used with installation tool
- PCS cushioning sleeve makes bundles more resilient available size: 18"(4.6mm) or .31"(7.9mm)

STAINLESS STEEL

Item Number	Length in " (mm)	Max Bundle Dia. in " (mm)	Price
TY Series			
TY5SS	5(127)	1(25)	$1.94
TY8SS	7.9(200.66)	2(50)	$2.38
TY14SS	14.3(363.22)	4(102)	$2.85
TY27SS	26.8(680.72)	8(203)	$5.40
TY33SS	33(838.20)	10(254)	$3.38
MLT Series			
MLT2EH-LP	11.8(299.72)	2(51)	$2.53
MLT4EH-LP	17.1(434.34)	4(102)	$2.97
MLT6EH-LP	24(609.60)	6(152)	$4.45
MLT10EH-LP	36(914.40)	10(254)	$7.17

Mounts

SCREW MOUNT

ADHESIVE MOUNT

Item Number	Screw Number	Price
Screw Mount		
Sold in pack of 100 black=BK, white=WH		
CTM8-50-BK-C	8	$18.63
CTM8-50-WH-C	8	$17.00
CTM8-120-BK-C	8	$38.48
CTM8-120-WH-C	8	$34.17
CTM10-120-BK-C	10	$38.48
CTM10-120-WH-C	10	$34.90
CTM14-120-WH-C	14	$33.48

Item Number	Load Capacity in Lbs.	Price
Adhesive Mount		
Sold in packs of 100 (C), or 50(L) black=BK		
MBA-30-BK-C	30	$44.27
MBA-30-WH-C	30	$45.23
MBA-50-BK-C	50	$61.04
MBA-50-WH-C	50	$55.46
MBA-150-BK-C	150	$78.72
MBA-150-WH-C	150	$71.60
MBA-150-BK-L	150	$39.36
MBA-150-WH-L	150	$35.56
Stainless Steel Mount (2-way mount)		
MTM2H-Q*	8 (M4)	$4.41

Images are representative of products listed and may not be actual product.

Cable Support

- Facilitate and simplify repairs at sea
- Protect against galvanic corrosion
- Maximize design and work sequence flexibility
- All metal parts made of 304 & 316 stainless steel

All Click Bond adhesive-bonded fasteners are supplied with disposable installation fixtures or has a built in installation fixture. These fixtures clamp the fasteners in place under positive pressure while the adhesive cures, ensuring optimal joint strength and bond-line consistency.

Mounts

CM460VG5   CB4561V5   CB3019A3N

Item Number	Description	Material	Dimension"(mm)	Max Tie Performance	Price
CB3019A3N	Swivel cable mount	Thermoplastic/aluminum	1.25(31.8) x 1.25(31.8)	150 lbs. (68 kg) shear	$2.50
CM467VG	Large tie mount	Thermoplastic	2.02(51.3) x 1.10(27.9)	---	$6.22
CB4561V5	Low profile cable tie anchor mount	Glass	1.12(28.45) x 0.75(19.1)	50 lbs. (22 kg) shear	$2.79
CB9302V3	Miniature cable mount	Glass	0.44(11.2) x 0.44(11.2)	170 lbs. (77) shear	$2.09
CM460VG5	Low profile cable tie mount	Glass	1.12(28.4) x 0.75(19.1)	50 lbs. (22 kg) shear	$2.36
CM905VGP	Webbing loop	Glass	3.25(82.6) x 1(25.4)	400 lbs. (181 kg) shear	$9.88

Studs

1.5" BASE   2" BASE   CN125-1420-16CRMP

Item Number	Screw Size	Performance	Price
.62" Base			
CS62-1032-16CRP	10-32x1	250 lbs. (113 kg) tension/ 400 lbs. (181 kg) shear	$4.30
1.5" Base			
CS125-1032-116CRMP	10-320 x 1	1000 lbs. (454 kg) tension/ 2000 lbs. (908 kg) shear	$4.87
CS125-1420-16CRMP	1/4-20 x 1	1000 lbs. (454 kg) tension/ 2000 lbs. (908 kg) shear	$5.39
2" Base			
CS200-1420-16CRMP	1/4-20 x 1	1000 lbs. (453 kg) tension/ 1500 lbs. (680 kg) shear	$14.08
CS200-3816-16CRMP	3/8-16 x 1	1700 lbs. (771 kg) tension/ 4000 lbs. (1814 kg) shear	$17.95
1-1/4" Standoff Base			
CN125-1420-16CRMP	1/4-20 x 1	1000 lbs. (453 kg) tension/ 2,000 lbs.(907 kg) shear	$28.73

List pricing in catalog is subject to change without notice.

Adhesives

- Resealable cartridge reduces adhesive waste
- Convenient 40 and 50ml packets for production
- Bonds unprepared metal
- Water Resistant
- Fast cure at room temperature
- Provides high strength and fatigue endurance

- Versatile for many different substrates including ABS, acrylics, aluminum*, FRP, PVC, carbon steel*, and stainless steel* (*recommend primer)
- ABS approved please call for MDS data sheets

ADHESIVE

CB92

Item Number	Description	Mix Ratio	Working Time	Handling Strength	Size	100%	Price
CB200-40	Two part thixotropic	8:01	5 min.	30 min.	40 ml	24 hrs.	$16.22
CB4250-50E	Two part methacrylate	10:1	4-6 min.	18 min.	50 ml	24 hrs.	$32.45

Item Number	Description	Price
CB92	Adhesive mix kit for CB200	$5.20

Tools and Dispensers

CB100-81

CB106

Item Number	Description	Price
CB100-81	Manual dispensing gun and slide	$66.92
CB106	Mixing Tip	$1.29
CB911	Solvent wipes	$1.12

Images are representative of products listed and may not be actual product.

Cable Support

Tools

Stainless Steel
- Tensioning is controlled by installer, flush cut off is made by twisting tool
- Single handle trigger for fast installation

Nylon
- Max cable thickness: .06"(1.6mm)
- Max cable width: .18"(4.8mm)
- Max test strength: 50 lbs.
- Auto cutter for cables .089"(2.26mm) to .189"(4.80mm)

ST2MT

FD600A

Item Number	Description	Price
Stainless Steel		
ST2MT	Used with standard, light-extra heavy cross section PAN-STEEL® type MLT ties, type MLTC/MLTFC coated ties, and type MLTDH double wrapped ties	$285.20
Nylon		
FD600A	Fastening tool with adjustable pressure	$38.00

Nylon Clamps

- Molded in open position for easy assembly
- Beveled inner edges to prevent abrasion
- High quality nylon
- Temperature range -40°F(-40°C)-365°F(185°C)

NYLON STANDARD

NYLON UV

Item Number	Size in "	Standard Price / UV Price
This product available in 100 packs, UV protected. Also available in black with suffix code UV		
N3	3/16	$.36 / $.25
N4	1/4	$.27 / $.42
N6	3/8	$.42 / $.57
N7	7/16	$.48 / $.57
N8	1/2	$.42 / $.30
N10	5/8	$.48 / $.66
N12	3/4	$.57 / $.78
N14	7/8	$.63 / $.84
N16	1	$.63 / $.87
N5UV (not available in white)	5/16	$0.44

List pricing in catalog is subject to change without notice.

Cushioned Clamps

- General purpose EPDM
- Durable cushion helps reduce vibration while protecting your product
- Open position for ease of assembly
- .265" mounting hole diameter
- 365°F(185°C) to -40°F(-40°C)

STAINLESS STEEL

Item Number	Size in "	Price
Stainless Steel 1/2" Wide		
S225SSE4	1/4	$1.40
S225SSE6	3/8	$1.40
S225SSE8	1/2	$1.40
S225SSE10	5/8	$1.68
S225SSE12	3/4	$1.68
S225SSE14	7/8	$1.76
S225SSE16	1	$2.40
S225SSE18	1-1/8	$2.40
S225SSE20	1-1/4	$2.40
S225SSE22	1-3/8	$2.40
S225SSE24	1-1/2	$2.40
S225SSE28	1-3/4	$2.40
S225SSE32	2	$2.40
S225SSE40	2-1/2	$6.22
S225SSE48	3	$7.00

Aluminum Tray

ALUMINUM TRAY

Item Number	Width in " (mm)	Price
All tray comes in 6' (2meters) lengths only		
CT2-AL	2(50)	$50.16
CT3-AL	3(80)	$56.40
CT4-AL	4(102)	$63.65
CT6-AL	6(153)	$79.50
CT9-AL	9(229)	$105.60
CT12-AL	12(304)	$126.96

Images are representative of products listed and may not be actual product.

Cable Support

Wire Duct

- All ducts come in 6' (2 meters) White lengths only
- Rigid PVC, self-extinguishing
- Non slip cover design (included)
- Burr free edges
- Recess boss for rapid mounting of components
- Restricted slot opening
- Two predetermined breaklines

T1

T1E

Item Number	Actual: Slat/Space in " (mm)	Nominal Dimensions in " (mm)	Price
T1			
T1-1010W	.20(5)/ .30(7.6)	1(25.4) x 1(25.4) x 72(1828)	$31.20
T1-1515W	.31(8)/ .47(12)	1.5(38.1) x 1.5(38.1) x 72(1828)	$43.08
T1-1530	.31(8)/ .47(12)	1.5(38.1) x 3(76.2) x 72(1828)	$57.00
T1-2222W	.31(8)/ .47(12)	2.25(57.15) x 2.25(57.15) x 72(1828)	$49.44
T1-3030W	.31(8)/ .47(12)	3(76.2) x 3(76.2) x 72(1828)	$73.80
T1-4040W	.31(8)/ .47(12)	4(101.6) x 4(101.6) x 72(1828)	$96.48
T1E			
T1E-1022W	.16(4)/ .24(6)	1(25.4) x 2.25(57.15) x 72(1828)	$42.24
T1E-1522W	.16(4)/ .24(6)	1.5(38.10) x 2.25(57.15) x 72(1828)	$46.80
T1E-2222W	.16(4)/ .24(6)	2.25(57.15) x 2.25(57.15) x 72(1828)	$49.44
T1E-2230W	.16(4)/ .24(6)	2.25(57.15) x 3(76.2) x 72(1828)	$60.96
T1E-3030W	.16(4)/ .24(6)	3(76.2) x 3(76.2) x 72(1828)	$73.80

Item Number	Dimensions in "	Price
Covers		
COV-10W	1 x 6	$6.96
COV-15W	1.5 x 6	$9.36
COV-22W	2.25 x 6	$11.52
COV-30W	3 x 6	$17.16
COV-40W	4 x 6	$19.56

Cable Retainer

- Provide additional strain relief of wire duct fingers
- Eliminates bulging against sidewalls

Item Number	Dimensions in "	Price
CL-1515	1.5 x 1.5	$1.42
CL-1522	1.5 x 2.25	$1.54
CL-1530	1.5 x 3	$1.68
CL-2222	2.25 x 2.25	$1.88
CL-2230	2.25 x 3	$1.94
CL-3030	3 x 3	$2.58
CL-4040	4 x 4	$3.52

List pricing in catalog is subject to change without notice.

Glands

- Nickel plated brass, PA 6, galvanized mild steel, EPDM rubber
- Compact design suited for small areas
- Seals between one and four cables
- UL/NEMA 4, 4x, 12 and 13, CSA 4, 4x, 12 and 13 approved
- IP 66/67 according to IEC60529

RG M63/4

Item Number	Description	Price
RG M63/4	2 piece kit for cables from .157"(3.99mm) - .571"(14.50mm)	$86.80

RM Modules

| RM15 | RM20 | RM30 | RM40 | RM60 |

Item Number	Cable/Pipe Dia. in "(mm)	Exterior Dimensions in"(mm)	Price
RM15	.118(2.99) - .433(11.00)	.591(15.01) x .591(15.01) x 2.362(59.99)	$9.18
RM20	.157(3.99) - .571(14.50)	.787(19.99) x .787(19.99) x 2.362(59.99)	$10.26
RM30	.394(10.01) - .984(24.99)	1.181(30.00) x 1.181(30.00) x 2.362(59.99)	$15.70
RM40	.846(21.49) - 1.358(34.49)	1.575(40.01) x 1.575(40.01) x 2.362(59.99)	$22.38
RM60	1.102(27.99) - 2.126(54.00))	2.362(59.99) x 2.362(59.99) x 2.362(59.99)	$62.74
RM15W40	.138(3.51) - .413(10.49)	1.575(40.01) x .591(15.01) x 2.362(59.99)	$27.64
RM20W40	.138(3.51) - 0.65(16.51)	1.575(40.01) x .787(19.99) x 2.362(59.99)	$19.64

Images are representative of products listed and may not be actual product.

Cable Transit

RM Solid Modules

SOLID MODULE

Item Number	Exterior Dimensions in "(mm)	Price
*Pack of 12		
RM10/0X12*	.394(10.00) x .394(10.00) x 2.36(59.94)	$24.42
RM15/0	.591(15.01) x .591(15.01) x 2.36(59.94)	$6.90
RM20/0	.787(19.98) x .787(19.98) x 2.36(59.94)	$8.28
RM30/0	1.18(29.97) x 1.18(29.97) x 2.36(59.94)	$12.94
RM40/0	1.57(39.87) x 1.57(39.87) x 2.36(59.94)	$29.68
RM60/0	2.36(59.94) x 2.36(59.94) x 2.36(59.94)	$52.12

Accessories

LUBRICANT

60MM STAYPLATE

120 MM STAYPLATE

60MM WEDGE

120MM WEDGE

WEDGE KIT

Item Number	Description	Price
ROX LUBE	Lubricant 10ml	$4.34
STAYPLATE60	60mm galvanized stayplate	$11.02
STAYPLATE120	120mm galvanized stayplate	$11.62
WEDGE60GALV	60mm galvanized compression wedge	$82.54
WEDGE120GALV	120mm galvanized compression wedge	$149.68
WEDGEKIT	Galvanized wedge kit contains: (1) 120mm wedge, (5) stayplates, and (1) lubricant	$206.58

List pricing in catalog is subject to change without notice.

DC

Contura

- For use with open cockpit and flybridge applications using switches to compliment existing controls commonly used
- Designed for 12 or 24 volt systems
- Watertight mounting gasket
- ON indicating LED embedded in all switches
- Includes small format label set 8217 or 8214
- Switching rating: 20 amps@ 12 volts DC/ 15 amps@ 24 volts DC
- Circuit breaker rating: 15 amps, CLB

Weatherdeck Waterproof

- Green LED illuminated circuit label
- Integrated switch guards reduce risk of accidental switching
- Independent label backlighting allows switching and dimming
- Multiple panel mount options
- Panel front rated IP67, when properly mounted with water tight mounting gasket
- UV stabilized weather resistant faceplate, square format labels includes amp max operating: 15 amps@ 12 volts DC (per circuit)/ 9 amps@ 24 volts DC
- Backlight voltage 12 or 24 VDC
- Circuit breaker rating: 15 amps, CLB
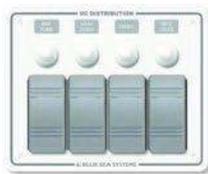
8274	8272	8374	8372	4376

| Item Number	Direction/Color	Breakers Amt	Dimensions in" (mm) WxHxD	Price
Contura Water Resistant				
8274	Vertical/White	3	4.50(114.30) x 3.75(95.25) x 3.25(82.55)	$136.99
8272	Horizontal/White	4	5.25(133.35) x 4.25(107.95) x 3.25(82.55)	$165.99
8273	Vertical/White	6	4.50(114.30) x 7.5(190.50) x 3.25(82.55)	$219.99
8271	Horizontal/White	8	9.37(238) x 4.25(107.95) x 3.25(82.55)	$283.99
8374	Vertical/Black	3	4.50(114.30) x 3.75(95.25) x 3.25(82.55)	$136.99
8372	Horizontal/Black	4	5.25(133.35) x 4.25(107.95) x 3.25(82.55)	$165.99
8373	Vertical/Black	6	4.50(114.30) x 3.75(95.25) x 3.25(82.55)	$219.99
8371	Horizontal/Black	8	9.37(238) x 4.25(107.95) x 3.25(82.55)	$283.99
Weatherdeck Waterproof				
4374	Vertical/Black	4	4.25(107.95) x 4.3(109.22) x 3.5(88.9)	$124.99
4376	Vertical/Black	6	4.25(107.95) x 6(152.4) x 3.5(88.9)	$154.99
4378	Vertical/Black	8	4.25(107.95) x 7.7(195.58) x 3.5(88.9)	$215.99

Images are representative of products listed and may not be actual product.

Circuit Breaker Panels

Design and Order a Custom Panel in Three Easy Steps

Design and Order custom panels online

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

List pricing in catalog is subject to change without notice.

48   www.wardsmarine.com

Back-printed for durability

Waterproof adhesive

Scratch resistant polycarbonate layer

Blue Sea Systems labels are made using a scratch resistant polycarbonate material and are back-printed for durability. Custom Labels for the 360 Panel System can be ordered in any language and are available directly from Blue Sea Systems along with over 500 standard or square format labels.

1

Launch
the Panel Wizard at wards.panelwizard.bluesea.com

2

Design
the panel with modules, circuit breakers, and labels. The list price is updated with each change.

3

Save
the panel design and request a quote. Panels ship within ten business days of order receipt.

Completed 3 × 3 Panel

Images are representative of products listed and may not be actual product.

Circuit Breaker Panels

Custom 360 Panel System

Flexible frame and module configurations from a single
module to a 25 module panel with 100 circuit breakers.

Completed 2 × 2 Panel

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

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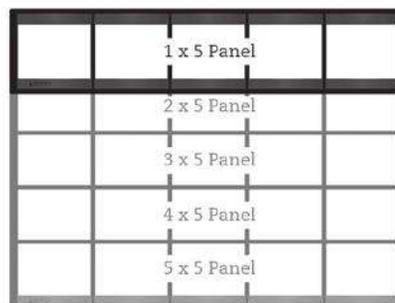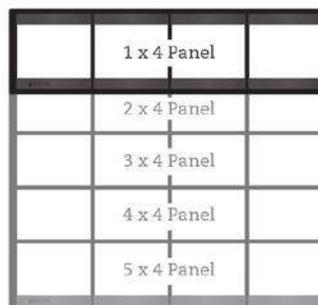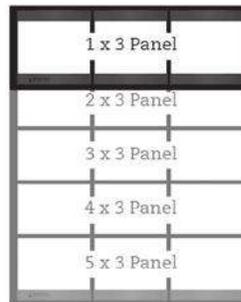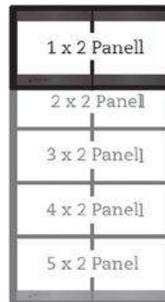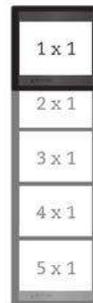
m-Series Battery Switch

m-ACR Automatic Charging Relay

m-LVD Low Voltage Disconnect

Battery Management

Battery Management Blank

P12 Battery Charger Remote Display

DC Flat Rocker Circuit Breaker

Rotary Switch Source Selection

M2 OLED Meter

2 Inch Gauge

COTS Circuit Breaker

Circuit Breaker Source Selection

Digital Meter

2 Inch Gauge Blank

Push Button Circuit Breaker
with Rocker Switch

Residual Current Circuit Breaker
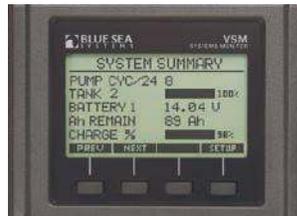
Vessel Systems Monitor

Socket, Dual USB Charger

Push Button Circuit Breaker

European RCBO Mount

Analog Meter

DC Accessories

Bilge Pump

Medium Duty Push Button
Circuit Breaker

DIN Meter

120V AC Dual Outlet

AC Flat Rocker Circuit Breaker

285 Series Circuit Breaker

Blank / Custom BusBar Module

120V AC Dual Outlet Blank

Images are representative of products listed and may not be actual product.

Circuit Breaker Panels

DC (Continued)

Branch Circuit 360 Series

- Used with A series style circuit breakers
- ON Indicating LED in all circuit positions
- Includes 4205 label set

- Panels with voltmeter include a toggle switch to monitor voltage on up to three battery banks
- Pushbutton reset only circuit breakers

BS1457

BS1200

BS1223

BS1201

Item Number	Total Positions	Circuit Breaker	Dimensions in "(mm) WxHxD	Price
		Branch Circuit Breaker		
BS1457	8	8 P/B(10A) & 8 cb On-Off spst	4.88(123.3) x 7.75(196.85) x 3.50(88.9)	$201.99
BS1200	8	8(15A)	4.88(123.3) x 7.75(196.85) x 3(76.20)	$420.63
BS1223	12	12(15A)	4.88(123.83) x 10.75(273.05) x 3(76.20)	$615.99
BS1201	16 w/ Voltmeter & Ammeter	16 (15A)	13.63(36.08) x 7.75(196.85) x 3(76.20)	$999.99

AC

Main Circuit Breaker

- Used with A series style circuit breakers
- Red reverse polarity indication LED
- Green ON indicating LED
- Backlit label positions for select models
- 120 volts AC nominal voltage

Branch Circuit

- ON indicating LED in all circuit positions
- Backlit label positions
- 100 max amps
- Flat rocker actuators

BS1210

Item Number	Total Positions	Circuit Breaker	Dimensions in "(mm) WxHxD	Price
		Branch Circuit Breaker		
BS1210	4	4 (15A)	4.88(123.83) x 4.75(120.65) x 3(76.20)	$259.99

List pricing in catalog is subject to change without notice.

NSX Series

- High performance with a wide range of interchangeable trip units to protect most applications
- Can be equipped with MA or TM thermal magnetic trip units or Micrologic 2/5/6 electronic trip units to provide protection against short circuits and overloads
- Complies with many marine classifications including: Veritas, Lloyd's Register of Shipping, Det Norske Veritas

NSX SERIES

Item Number	Pole	Ratings	Series	Price
LV429003	3	36kA 380/415V	100	$938.55
LV430403	3	36kA 380/415V	160	$740.00
LV431390	3	25kA 380/415V	250	$940.00
LV431403	3	36kA 380/415V	250	$1,200.00
LV432413	3	36ka 380/415	400	$1,311.20
LV432403	3	50ka 380/415	400	$1,814.00

Trip Units

- Thermal magnetic or electronic
- Accurate measurement for complete protection
- Torque limiting screws
- Easy and sure changing of trip units
- "Ready" LED for a continuous self-test

THERMAL MAG TRIP UNIT   SHUNT TRIP   UVR   MOTOR MODULE   AUX. CONTACTS

Item Number	Pole	Amps	Series	Price
Thermal-Mag Trip Unit				
LV429031	3P	80	100	$301.00
LV429030	3P	100	100	$342.19
LV430431	3P	125	160	$327.84
LV430430	3P	160	160	$540.00
LV431431	3P	200	250	$584.80
LV431430	3P	250	250	$696.97
Micro Logic Trip Unit				
LV429070	3P	2.2 100A	100/160/250	$825.00
LV430470	3P	2.2 160A	100/160/250	$867.00
LV431470	3P	2.2 250A	250	$940.00
LV432081	3P	2.3, 400 LSI	400	$1,560.00

Images are representative of products listed and may not be actual product.

Circuit Breakers

NSX Series (Continued)

Item Number	Ratings	Series	Price
Auxiliary Contacts			
MG29450	AUX CONT BLK	100/160/250/400	$90.53
Shunt Trip			
LV429384	24VAC 50/60 Hz.	All	$201.60
LV429390	24VDC	All	$220.77
UVR			
LV429406	110-130V 50/60 Hz.	All	$230.40
LV429407	208-277V 60 Hz. | 220-240V 50/60 Hz.	All	$230.40
LV429408	380-415V 50/60 Hz	All	$230.40
LV429410	24VDC	All	$230.00
Motor Operator			
LV429433	110-130V 50/60 Hz.	100/160	$1,073.33
LV429434	208-277V 60 Hz. | 220-240V 50/60 Hz.	100/160	$1,073.32
LV431540	110-130V 50/60 Hz.	250	$1,870.65
LV431541	208-277V 60 Hz. | 220-240V 50/60 Hz.	250	$1,611.20
LV431542	380-415V 50/60 Hz. | 440-480V 60 Hz.	250	$1,611.20
LV432640	110-130V 50/60 Hz.	400/630	$2,082.79
LV432641	208-277V 60 Hz. | 220-240V 50/60 Hz.	400/630	$2,169.56

C60 Series

- Fast closing
- C curve, operates between 5 and 10 times the amp rating
- D curve, operates between 10 and 14 times amp rating
- Positive indication of contact disconnect
- Suitable for reverse feeding
- Can be used to provide supplementary protection in OEM equipment
- 10kA at 415 volt AC
- IEC 60947-2, VDE 0660, and CE Marked

SINGLE POLE   DOUBLE POLE

Item Number	Amps	Price
C curve unless otherwise noted		
Single Pole		
M9F11101	1	$76.33
M9F11102	2	$76.33
M9F11103	3	$76.33
M9F11104	4	$76.33
M9F11106	6	$76.33
M9F11110	10	$76.33
M9F11116	16	$76.33
M9F11120	20	$76.33
M9F11125	25	$76.33
M9F11132	32	$76.33

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C60 Series (Continued)

SINGLE POLE   DOUBLE POLE   TRIPLE POLE

Item Number	Amps	Price
C curve unless otherwise noted		
Single Pole		
M9F11140	40	$83.50
M9F11150	50	$84.33
M9F11163	63	$88.89
Double Pole		
C Curve unless otherwise noted		
M9F11203	3	$164.58
M9F11204	4	$164.58
M9F11206	6	$164.58
M9F11210	10	$164.58
M9F11216	16	$164.58
M9F11220	20	$164.58
M9F11225	25	$164.58
M9F11232	32	$164.58
M9F11240	40	$169.41
M9F11250	50	$180.48
MG24529	50 (D curve)	$143.74
M9F11263	63	$182.33
Triple Pole		
M9F11302	2	$238.56
M9F11303	3	$238.56
M9F11306	6	$238.56
M9F11310	10	$238.56
M9F11316	16	$238.56
M9F11320	20	$238.56
M9F11325	25	$238.56
M9F11332	32	$238.56
M9F11340	40	$254.25
M9F11350	50	$267.17
M9F11363	63	$267.17

UVR   SHUNT TRIP

Item Number	Ratings	Price
Auxiliary Contacts		
MG26924	AUX CONT BLK C60/C120	$67.34
Shunt Trip w/ Aux		
MG27109	For C60 series	$158.00
MG27118	For C60 series	$89.08

Images are representative of products listed and may not be actual product.

Circuit Breakers

C120 Series

- Fast closing
- Trip free mechanism
- Isolation with positive break indication
- C curve: overcurrent protection for all application types; magnetic release operates between 5 and 10 times ampere rating

- D curve: overcurrent protection for loads with high inrush currents (motors, transformers); magnetic release operates between 10 and 14 ampere rating
- Suitable for reverse feeding

- Maximum voltage 440 volt AC
- C120 use the same electrical auxiliaries as the C60, but do not accept the NC100H accessories
- IEC Rated 947-2, VDE 0660, CE Marked

SINGLE POLE

DOUBLE POLE

TRIPLE POLE

Item Number	Amps	Price
Single Pole		
A9N18446	80	$84.90
A9N18447	100	$111.03
A9N18448	125	$88.87
Double Pole		
C Curve unless otherwise noted		
A9N18456	63	$169.97
A9N18457	80	$232.44
A9N18458	100	$232.44
A9N18459	125	$230.94
A9N18502	100 (D Curve)	$186.06
Triple Pole		
C Curve unless otherwise noted		
A9N18468	80	$346.45
A9N18469	100	$346.45
A9N18513	100 (D Curve)	$265.69
A9N18470	125	$359.83
A9N18514	125 (D Curve)	$343.57

DPN Breakers

- C curve trip design
- Magnetic trip operates between 5 and 10 times amp rating
- Provides protection on the phase pole, but switches both the phase and neutral
- IEC 60947-2 & IEC 60898 Rated

DPN BREAKER

Item Number	Amps	Price
Single phase plus neutral, 60/50 Hz., 230V AC		
M9P22606	6	$110.88
M9P22610	10	$110.88
M9P22616	16	$110.88
M9P22620	20	$110.88

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VIGI Modules

- Combined with C60, the VIGI module forms a residual current device which conforms to IEC 61009 & EN61009
- Combines with C120 to provide high level of protection against leakage faults
- Combines current sensing toroidal and residual current relay in one case and operates without an auxiliary power supply
- Protection against indirect contact (per IEC standards)
- Rating 220-415 volt AC 125 amp
- IEC 1009 Standards

M9V11363   MG27062   MG26970

Item Number	Poles	Series	Amps	Milliamps	Price
M9V11363	3	C60	30	30ma	$401.97
M9V11263	2	C60	30	30ma	$366.84
A9N18591	2	C120	30	30ma	$1,448.94
A9N18594	3	C120	30	30ma	$1,439.72

Item Number	Description	Price
MG27062	DIN rail spacer	$5.55
MG26970	Lockouts (pkg 2): clips onto the face of the C60 device, allows to be locked in either the ON or the OFF positions. IEC recognized only	$18.59

Bus Bars

SINGLE POLE

DOUBLE POLE

TRIPLE POLE

Item Number	Position	Pole	Price
A9XPH112	12	1	$10.22
A9XPH157	54	1	$129.61
A9XPH212	12	2	$28.06
A9XPH224	(2) 24	2	$40.26
A9XPH257	54	2	$118.10
A9XPH312	12	3	$61.13
A9XPH357	54	3	$183.29

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Circuit Breakers

C3 & C3DC Bus Bar Chassis

- C3 style suitable for C60/C120/DPN/ & VIGI RCBO's
- C3DC style suitable for C60
- Industrially proven & robust range
- Tough oven bake insulation
- Easy identification with color coded bar work
- Cold formed single piece conductors ensuring no hot joints

- Current rating 250 amp
- Insulation voltage 690
- Bus bar thickness 2mm
- Conforms to standards AS3439-1 and AS3439-3
- IEC rated not UL Recognized
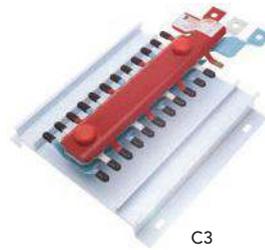
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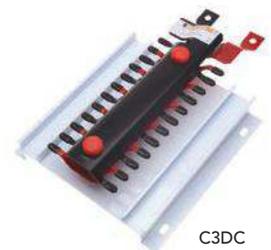
C3DC

Item Number	Position	Pole	Price
C3			
C325243TF	24	3	$264.81
C325363TF	36	3	$314.52
C325483TF	48	3	$299.69
C325603TF	60	3	$330.10
C3DC			
C3DC363	36	2	$260.34
C3DC483	48	2	$379.03

ST200M Series

- High performance MCB with interrupt rating up to 10 kA
- Certified for AC and DC use acc. to UL 1077 and CSA 22.2 No. 235
- Suitable for many applications due to a wide range of product types and available accessories
- High calibration temperature of 40 °C for reduced derating in ICP applications
- Short-circuit current rating (SC) U2 enables continuous high level short circuit protection
- Laser printing provides clear product information on device
- Clear contact position indication in red/green ("real CPI")
- Unique, patented twin terminal for wiring up to 35 mm² with captive screws
- Field wiring available for most types
- Robust thermoplastic housing material for better protection against external influences

SINGLE POLE

| Item Number	Amps	Price
Single Pole		
ST201M-K3	3	$67.60
ST201M-K6	6	$71.40
ST201M-K10	10	$67.60
ST201M-K16	16	$67.60
ST201M-K20	20	$67.60

List pricing in catalog is subject to change without notice.

ST200M Series (Continued)

SINGLE POLE DOUBLE POLE TRIPLE POLE

Item Number	Amps	Price
Single Pole		
ST201M-K25	25	$67.60
ST201M-K32	32	$72.00
ST201M-K40	40	$85.00
ST201M-K50	50	$77.43
ST201M-K63	63	$118.10
Double Pole		
ST202M-K3	3	$157.40
ST202M-K6	6	$166.60
ST202M-K10	10	$137.20
ST202M-K16	16	$166.60
ST202M-K20	20	$166.60
ST202M-K25	25	$166.60
ST202M-K32	32	$157.50
ST202M-K40	40	$174.20
ST202M-K50	50	$190.80
ST202M-K63	63	$229.40
Triple Pole		
ST203M-K6	6	$253.70
ST203M-K10	10	$251.90
ST203M-K16	16	$251.90
ST203M-K20	20	$251.90
ST203M-K25	25	$251.90
ST203M-K32	32	$240.70
ST203M-K40	40	$264.00
ST203M-K50	50	$295.20
ST203M-K63	63	$340.10

Item Number	Description	Price
Accessories		
AST50/15	Four module plates, blanking	$36.55
SZ-AST55I	Connection Terminal 1/0 Straight	$19.79
SZ-AST5OI	Connection Terminal 1/0 90 Degree	$19.11
SZ-ES68/83	Height Adjuster	$4.38
SZ-ESK2	Busbar Terminal Block 14-2 AWG	$11.27

Images are representative of products listed and may not be actual product.

Circuit Breakers

Bus Bars

ABB BUSBAR
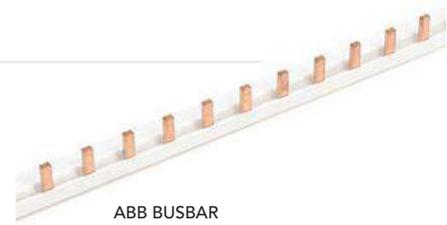
Item Number	Description	Price
80 Amps		
PS-END	2 Pole Endcap	$3.92
PS-ENDSP	3 Pole Endcap	$4.25
PS1/60/16	1 Pole 60 Position	$71.76
PS2/58/16SP	2 Pole 58 Position	$167.43
PS3/60/16SP	3 Pole 60 Position	$253.28

Toggle

- Voltage 65 volt DC / 250 volt AC
- Switching cycles 10,000 @ rated amp and volt
- Magnetic hydraulic trip free
- CE Marked, TUV Certified, CSA Certified, UL 1077 Recognized

- Single pole 2"(50.8mm)H x .75" (19.05mm)W x 2"(50.8mm)D
- Double pole 3"(76.2mm)H x 1.5" (38.10mm)W x 2"(50.8mm)D
- #10-32 stainless steel terminal screw

AA1 SERIES

AA2 SERIES

BB3 SERIES

Item Number	Amps	Price
	AA1	
Single Pole, AC/DC, XX = * Red (RD), Black (BK) or White (WH)		
AA1-5-(XX) *	5	$17.10
AA1-10-(XX) *	10	$17.10
AA1-15-(XX) *	15	$17.10
AA1-20-(XX) *	20	$17.10
AA1-25-(XX)	25	$17.10
AA1-30-(XX)	30	$17.10
AA1-35-(XX)	35	$17.10
AA1-40-(XX)	40	$17.10
AA1-50-(XX)	50	$17.10

List pricing in catalog is subject to change without notice.

Toggle (Continued)

Item Number	Amps	Price
AA2		
Double Pole, Double Toggle AC/DC, XX = Black (BK) or White (WH)		
AA2-5-(XX)	5	$40.23
AA2-10-(XX)	10	$40.23
AA2-15-(XX)	15	$40.23
AA2-20-(XX)	20	$40.23
AA2-25-(XX)	25	$40.23
AA2-30-(XX)	30	$40.23
AA2-35-(XX)	35	$40.23
AA2-40-(XX)	40	$40.23
AA2-50-(XX)	50	$40.23
AB2		
Double pole, Single White Toggle		
AB2-30A-WH	30	$40.23
AB2-50A-WH	50	$40.23
BB3		
Triple Pole, Single White Toggle, Reverse polarity protection		
BB3-30-AVT	30 (2 pole current / 1 pole trip)	$98.18
BB3-50-AVT	50 (2 pole current / 1 pole trip)	$98.18

Sealed Toggle

- Switch rated
- Magnetic hydraulic trip free
- Temperature stable
- Sealed actuator

- Volts: 80 volt DC/ 277 volt AC
- 50/60 Hz. @ DC
- CSA Certified, UL 1077 Recognized
- Mounting dimension ½"-32

AMI SERIES

Item Number	Amps	Price
AM1		
Single Pole, Weather Proof, Metal Toggle		
AM1-5	5	$34.00
AM1-10	10	$34.00
AM1-15	15	$34.00
AM1-20	20	$34.00
AM1-25	25	$34.00
AM1-30	30	$34.00
AM1-50	50	$34.00

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Circuit Breakers

A Series Accessories

- Toggle guard uses circuit breaker mounting holes
- Lockout slide allows only 1 double pole AC breaker to be activated at one time
- Fits all double pole A Series toggle
- Uses circuit breaker mounting hole

BOOTS   TOGGLE BOOT   GUARDS   LOCKOUT

Item Number	Description	Price
Boots		
1113/40	Single pole weatherproof boot	$15.80
1113/42	Double pole weatherproof boot	$18.10
50154 25 17	Sealed toggle weatherproof boot (AM Series only)	$7.71
Guards		
4100	Toggle Guard, protects against accidental switching, includes mounting screws	$4.29
Lockout		
4125	Breaker lockout slide Double Pole/ 2 Source	$18.79

Flat Rockers

- Flat actuator resists accidental switching
- Voltage 32 volt DC / 250 volt AC
- Switching cycles 10,000 @ rated amp and volt
- Magnetic hydraulic trip free
- #10-32 stainless steel terminal screw

- CE Marked, TUV Certified, CSA Certified, UL 1077 Recognized
- Single pole 2.217"(56.31mm)H x .75"(19.05mm)W x 2.4"(60.96mm)D
- Double pole 2.31"(58.67mm)H x 1.5"(38.10mm)W x 2.4"(60.96mm)D

A21 SERIES   A22 SERIES

Item Number	Amps	Price
A21		
Single Pole, Black Rocker		
A21-5A	5	$28.09
A21-10A	10	$28.09
A21-15A	15	$28.09
A21-20A	20	$28.09
A21-25A	25	$29.13
A21-30A	30	$28.09
A21-50A	50	$29.13

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Flat Rockers (Continued)

Item Number	Amps	Price
A22		
Double Pole, Single Rocker		
A22-5A	5	$56.11
A22-10A	10	$54.45
A22-15A	15	$54.45
A22-20A	20	$54.45
A22-25A	25	$56.11
A22-30A	30	$56.11
A22-40A	40	$54.99
A22-50A	50	$54.99

Raised Rockers

- Colored actuator indicates OFF
- Voltage 32 volt DC / 250 volt AC
- Switching cycles 10,000 @ rated amp and volt
- Magnetic hydraulic trip free
- #10-32 stainless steel terminal screw

- CE Marked, TUV Certified, CSA Certified, UL 1077 Recognized
- Single pole 2.217"(56.31mm)H x .75"(19.05mm) W x 2.4"(60.96mm)D
- Double pole 2.31"(58.67mm)H x 1.5"(38.10mm) W x 2.4"(60.96mm)D

AD1 SERIES

Item Number	Amps	Price
AD1		
Single Pole, Red Rocker Indicator		
AD1B0344504G1C	5	$45.20
AD1B0346104G1C	10	$45.20
AD1B0346154G1C	15	$45.20
AD1B0346204G1C	20	$45.20
AD1B0346254G1C	25	$81.21
Single Pole, White Rocker Indicator		
AD1B0344504B1C	5	$45.20
AD1B0346104B1C	10	$45.20
AD1B0346154B1C	15	$45.20
AD1B0346204B1C	20	$45.20
AD1B0346304B1C	30	$81.21

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Circuit Breakers

Toggle

- Hydraulic magnetic
- STUD terminals
- Temperature stable
- Volts: 65 volt DC/ 240 volt AC
- 50/60 Hz. DC

- Interrupting ratings:
  25 volt DC-5000 amp
  250 volt AC-5 thru 50-3000 amp
  250 volt AC-51 thru 100-1000 amp
- UL 1077 Recognized and CSA Certified

CA1 SERIES   CA2 SERIES   CA3 SERIES

Item Number	Amps	Price
CA1		
Single Pole, AC/DC, Black		
CA1-5	5	$27.60
CA1-10	10	$27.60
CA1-15	15	$27.60
CA1-20	20	$27.60
CA1-25	25	$27.60
CA1-30	30	$27.60
CA1-40	40	$27.60
CA1-50	50	$27.60
CA1-60	60	$27.60
CA1-70	70	$27.60
CA1-80	80	$27.60
CA1-100	100	$27.60
CA2		
Double Pole, AC/DC, LTD=Long Time Delay, Double Toggle		
CA2-10	10	$64.24
CA2-15	15	$64.24
CA2-20	20	$64.24
CA2-25	25	$64.24
CA2-30	30	$64.24
CA2-35	35	$64.24
CA2-40	40	$64.24
CA2-50	50	$64.24
CA2-50-LTD	50	$64.24
CA2-60	60	$99.41
CA2-65	65	$99.41
CA2-70	70	$64.24
CA2-80	80	$64.24
CA2-90	90	$64.24
CA2-100	100	$64.24
CA3		
Triple Pole, AC/DC, Triple Toggle		
CA3-30	30	$98.80
CA3-50	50	$98.80
CA3-60	60	$98.80

List pricing in catalog is subject to change without notice.

C Series Accessories

Lockout Slide
- Allows only 1 of a pair of double pole or triple pole AC circuit breakers to be activated at one time
- Guarantees that AC power from 2 sources will not be mixed
- Fits all double or triple pole C Series toggle
- Uses circuit breaker mounting hole
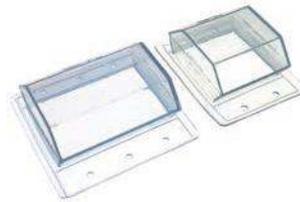
BOOTS

LOCKOUTS

Item Number	Description	Price
Boots		
HE-1020	Double pole weatherproof boot	$25.36
HE-1050	Triple pole weatherproof boot	$26.60
Lockouts		
4130	Double pole breaker lockout slide 2 Sources	$36.49
4131	Triple pole breaker lockout slide 2 Sources	$36.49

Bus Bars

- Use for A & C Series Carling breakers

00360-101

00360-103

00360-102

Item Number	Description	Price
Single Pole		
00360-101	Tin plated 15 positions	$22.26
Double Pole		
00360-103	Power connector 2 positions	$19.50
00360-102	Epoxy coated 8 positions	$47.16

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Circuit Breakers

High Load Series

- Magnetic hydraulic trip free
- Stainless steel terminals
- Large frame provides stud terminations for 5-300 amp
- Toggle type breaker
- Offers high interrupt capacity suitable for main circuit protection
- Interrupting rating 65 volt DC, 150-300 amp, 5,000 amp

HIGHLOAD SERIES

Item Number	Amps	Pole	Price
7267	150	2	$136.99
7269	200	2	$136.99
7270	250	3	$176.99

ELCI

- Leakage trip current 30 milli amp
- Flat rocker actuator
- Trips on short circuit, overload, or leakage to ground
- For installation in a power distribution panel
- ELCI main provides overcurrent and leakage protection per ABYC E-11, for whole boat shore power protection
- UL 1077, UL 943 Class A

3102100

3093

3104

Item Number	Frame Series	Poles	Amps	Price
3102100	A	2	30	$169.99
3093	C	2	50	$405.99
3104	C	3	50	$482.99

List pricing in catalog is subject to change without notice.

Toggle

- 2 & 3 Pole volt: 277/480 AC
- 1 Pole volt: 125 DC, 277 AC
- Ideally suited for higher amperage applications
- Interrupting rating 5000 amp
- UL 1077 Recognized & CSA Accepted

| EA1 SERIES | EA2 SERIES | EA3 SERIES | BOOTS |

Item Number	Amps	Price
EA1		
Single Pole, AC/DC		
EA1-10	10	$38.00
EA1-15	15	$38.00
EA1-20	20	$38.00
EA1-30	30	$38.00
EA2		
Double Pole, AC		
EA2-15	15	$73.82
EA2-20	20	$73.82
EA2-30	30	$73.82
EA2-50	50	$75.71
EA2-50-STUD	50	$77.25
EA2-60	60	$75.71
EA2-60-STUD	60	$77.25
EA2-70	70	$75.71
EA2-80-STUD	80	$77.25
EA2-100	100	$75.71
EA2-100-STUD	100	$86.01

Item Number	Amps	Price
EA2 Long Delay		
EA2-100-LD-STUD	100	$77.99
EA3		
Triple Pole, AC		
EA3-50	50	$133.85
EA3-50-STUD	50	$133.85
EA3-80	80	$133.85
EA3-100	100	$133.85
EA3-100-STUD	100	$133.85

Item Number	Pole	Price
Weatherproof Boots		
1113/34	2	$66.56
HE-1070	3	$27.98

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Circuit Breakers

CLB Series

- Thermal circuit protector with a compact design
- Push to reset operation
- Screw terminals
- Ratings: 125-250 volt AC, 32 volt DC

- Interrupting rating: 2500 amp
- UL , CUL, CSA, TUV, and CE Approved
- Ignition protection: UL 1500/ISO 8846
- .25 terminal tab

CLB SERIES

Item Number	Amps	Price
CLB-5A	5	$8.37
CLB-10A	10	$8.37
CLB-15A	15	$8.37
CLB-20A	20	$8.37
CLB-30A	30	$8.37
CLB-40A	40	$8.37

CMB Series

- Thermal circuit protector with a compact design
- Push to reset operation
- .250 tab terminals

- Ratings: 125-250 volt AC, 32 volt DC
- Interrupting rating; 2500 amp
- UL, CUL, CSA, TUV, and CE approved
- Ignition protection: UL 1500/ISO 8846

CMB

Item Number	Amps	Price
CMB-3	3	$3.50
CMB-5	5	$3.50
CMB-10	10	$3.50
CMB-15	15	$3.50
CMB-20	20	$3.50

CLB/CMB Boots

- Incorporated into waterproof panels
- Protects in wet environments

- 2 per package
- Replaces dress nut mounting on circuit breakers

4135　　4136　　4137

Item Number	Description	Price
Two per package		
4135	Pushbutton weatherproof boot: Clear	$4.69
4136	Pushbutton weatherproof boot: White	$4.69
4137	Pushbutton weatherproof boot: Black	$4.69

List pricing in catalog is subject to change without notice.

Circuit Breakers

6766 Series

- Manual reset
- Weatherproof SAE J1625 and ideally suited for rugged applications
- Interrupt current rating: per SAE J1625 and ABYC E-11
- 30 volt DC
- Ignition protection: SEA J1171

6766 SERIES

Item Number	Amps	Price
6766-19-80	80	$269.29
6766-19-105	105	$269.29
6766-19-135	135	$269.29

CDM Series

- 30 volt DC or 120 volt AC
- Designed to protect wiring and meet the harshest environmental requirements
- Interrupt current capacity ABYC E-11
- Weatherproof SAE J553
- Ignition protected SAE J1171
- UL Recognized E36869

CDM SERIES

Item Number	Amps	Price
CDM10	10	$23.84
CDM15	15	$23.84
CDM20	20	$23.84
CDM30	30	$23.84
CDM40	40	$23.84
7851-18-50	50	$44.03
7851-18-60	60	$57.32

SDLM Series

- 30 volt DC
- Ignition protected SAE J1171
- Weatherproof SAE J553
- UL Recognized E36869
- Interrupt capacity ABYC E-11
- Thermal breaker designed to protect wiring and meet the harshest environmental requirements
- SAEJ1625

SDLM SERIES

Item Number	Amps	Price
SDLM50	50	$57.79
SDLM60	60	$57.79
SDLM80	80	$57.79
SDLM90	90	$57.79
SDLM105	105	$57.79
SDLM120	120	$57.79
SDLM150	150	$57.79

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Circuit Breakers

W-31 Series

- Single pole
- Trip free operation
- May be used as a ON/OFF Switch
- Screw terminals
- Calibration, continuously 100% trips between 101% and 134%, MUST trip at 135% in an hour

- Interrupting rating 4X max .5-50 amp: 1000 amp @ 240 volt DC
- 30-50 amp: 1000 amp @ 50 volt DC
- Interrupting w/o 4X Max: .5-50 amp: .5-25 amp: 2000 amp @ 50 volt DC
- 10-20 amp: 2000 amp @ 120 volt AC
- UL 1077 and CSA Recognized

W-31 SERIES

Item Number	Amps	Price
W31X2M1G-5	5	$39.22
W31X2M1G-7.5	7.5	$39.94
W31X2M1G-10	10	$39.22
W31X2M1G-15	15	$39.22
W31X2M1G-20	20	$39.22
W31X2M1G-30	30	$39.22
W31X2M1G-40	40	$39.22
W31X2M1G-50	50	$51.26

W-23 Series

- Thermal breaker
- Trip free operation
- Visible trip indicator
- Black push-pull with white trip band
- Calibration: continuously 100% trips between 101% and 134%, MUST trip at 135% in an hour

- Interrupting rating 4X max: .50-50 amp: 1000 amp @ 240 volt DC
- 30-50 amp: 1000 amp @ 50 volt DC
- Interrupting w/o 4X max: .5-25 amp: 2000 amp @ 50 volt DC
- 10-20 amp: 2000 amp at 120 volt AC
- UL 1077 and CSA Recognized

W-23 SERIES

Item Number	Amps	Price
W23X1A1G-5	5	$32.33
W23X1A1G-10	10	$32.33
W23X1A1G-15	15	$32.33
W23X1A1G-20	20	$32.33
W23X1A1G-30	30	$32.33

W-58 Series

- Cannot be manually tripped
- Thermal breaker
- Button extends for visual trip indication
- .250" QC termination
- Push to reset breaker

- Max operating: 50 volt DC, 250 volt AC
- Interrupting rating 2000 amp @ 50 volt DC, 1000 amp @ 250 volt AC
  1,000 amp at 250 volt AC
- UL 1077 and CSA Recognized

W-58 SERIES

Item Number	Amps	Price
W58XB1A4A-5	5	$15.93
W58XB1A4A-10	10	$15.93
W58XB1A4A-15	15	$15.93
W58XB1A4A-20	20	$15.93
W58XB1A4A-30	30	$15.93
Boot		
NC3030.7/16-28	Clear Boot	$6.22

List pricing in catalog is subject to change without notice.

41 Series

- Thermal circuit breaker
- Trip free
- Push-pull
- Manual actuation
- Threaded neck for panel mounting
- 240 volt AC/50 volt DC

41 SERIES

Item Number	Amps	Price
412-K14-LN2-10	10	$66.40
412-K14-LN2-15	15	$66.40
412-K14-LN2-20	20	$70.66
413-K14-LN2-30	30	$76.04
413-K14-LN2-40	40	$76.04
413-K14-LN2-50	50	$76.04
413-K14-LN2-60	60	$76.04
413-K14-LN2-70	70	$78.28
X20080104	Clear Boots	$9.84

2-5700 Series

- Trip free
- Threaded neck or flange for panel mounting
- Thermal circuit breaker
- 250 volt AC/28 volt DC

45 SERIES

Item Number	Amps	Price
2-5700-5	5	$20.28
2-5700-10	10	$19.74
2-5700-15	15	$19.38
2-5700-20	20	$19.38
2-5700-25	25	$19.38
2-5700-30	30	$23.34
X20129603	Clear Boots	$8.62

1658 Series

- Thermal circuit breaker
- Trip free
- Manual reset
- 240 volt AC/28 volt DC

1658 SERIES

Item Number	Amps	Price
1658-G21-5A	5	$4.02
1658-G21-7A	7	$4.02
1658-G21-10A	10	$4.02
1658-G21-15A	15	$4.02
1658-G21-20A	20	$4.26
1658-G21-30A	30	$4.41
X20128501	Clear Boots	$3.12

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Circuit Breakers

187 Series

- Manual reset breaker with On-Off switch capability
- Thermal magnetic
- 5/16-18 threaded studs
- Panel mount breaker
- Rating 25-200 amp, 48 volt DC
- Interrupt rating 5kA@ 12 volt DC
- ABYC E-11, CE Approved
- Ignition protected SAE J11711
- Panel mounted

187 SERIES

Item Number	Amps	Price
CB187P-25	25	$47.80
CB187P-30	30	$47.80
CB187P-40	40	$47.80
CB187P-50	50	$47.80
CB187P-60	60	$47.80
CB187P-70	70	$47.80
CB187P-80	80	$47.80
CB187P-100	100	$47.80

Item Number	Amps	Price
CB187P-150	150	$47.80
CB187P-200	200	$47.80
CB187F-30	30	$46.95
CB187F-40	40	$46.95
CB187F-50	50	$46.95
CB187F-60	60	$46.95
CB187F-100	100	$46.95
CB187F-150	150	$46.95

255 Series

- Type III ignition protected
- Weatherproof
- Panel-mount
- Manual reset with "push-to-trip" option
- SEMS nuts installed
- 32 volt DC

255 SERIES

Item Number	Amps	Price
CB255-10	10	$32.20
CB255-20	20	$32.20
CB255-30	30	$32.20

Item Number	Amps	Price
CB255-40	40	$32.20
CB255-50	50	$32.20

185/285 Series

- Push to trip
- Surface mount or panel mount
- Visual indication of tripped condition
- Termination 1/4-28 threaded studs
- Ratings 25-150 amp, 48 volt DC
- Interrupt rating 30000 amp @ 30 volt DC
- SAE J1625, ABYC E-11, CE Approved
- Ignition protected SAE J1171

SURFACE MOUNT

Item Number	Amps	Price
Surface Mount		
CB285F-30	30	$32.80
CB285F-40	40	$32.80
CB285F-50	50	$32.80
CB285F-60	60	$32.80
CB285F-70	70	$32.80
CB285F-80	80	$32.80
CB285F-90	90	$32.80
CB285F-100	100	$32.80
CB285F-120	120	$32.80

Item Number	Amps	Price
Panel Mount		
CB285F-150	150	$32.80
CB185P-30	30	$36.80
CB185P-40	40	$36.80
CB185P-50	50	$36.80
CB185P-60	60	$36.80
CB185P-70	70	$36.80
CB185P-80	80	$36.80
CB185P-100	100	$36.80
CB185P-150	150	$36.80

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Circuit Protection

- Plated steel construction
- Thermal style
- Multiple mounting options
- Two stud terminal with nuts

30055-10

Item Number	Amps	Price
12V DC		
30055-10	10	$10.47
30055-15	15	$10.56
30055-20	20	$9.07
30055-30	30	$9.43
30055-40	40	$9.39
30055-50	50	$11.38
24V DC		
30172-10	10	$10.69
30172-15	15	$10.40
30172-20	20	$10.56
30172-30	30	$10.56

Hydraulic Magnetic / Quick

HMCB-40

Item Number	Amps	Price
HMCB-40	40	$145.00
HMCB-50	50	$155.00
HMCB-60	60	$160.00
HMCB-80	80	$182.00
HMCB-100	100	$240.00

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Circuit Breakers

QOU Series

- 48 volt DC/ 240 volt AC
- Thermal magnetic
- Automatic and manual
- Open circuits
- Visi-trip indicator
- Lugs on both end for ease of install
- Surface, flush, or DIN Mounting
- Typical dock power pedestal circuit breaker
- UL and CSA Recognized

QOU SERIES

Item Number	Amps	Price
Double Pole		
QOU250	50	$56.00
QOU260	60	$56.00
QOU2100	100	$316.32

QBL Series

- UL Listed
- Thermal magnetic
- Trip free mechanism
- Push to trip feature
- 240 volt AC

QBL SERIES

Item Number	Amps	Price
Double Pole		
QBL22100	100	$528.80
QBL22150	150	$528.80

List pricing in catalog is subject to change without notice.

D.E.I. Marine

Fail Safe Max

- Meets ABYC A-28 standard
- Ignition protected
- No monitoring system required
- Cool operation, no heat sinks needed
- Higher performance than Fail Safe Plus
- Higher fault current rating than Fail Safe Plus

Fail Safe Plus

- Meets ABYC A-28 standard
- Higher AC fault rating than required with substantial lightning current ratings
- Ignition protected
- No monitoring system required
- Compact design
- Cool operation, no heat sinks needed
- Solid state design requires no maintenance

FAIL SAFE MAX™

FAIL SAFE PLUS™

Item Number	Peak Lightning Surge Current	Amps	AC Fault Current	Price
Fail Safe Max				
GI-30A-FSM	100kA	30-35	5kA/ 10 cycles	$444.00
GI-50/60-FSM	100kA	50/60	5kA/ 31 cycle	$565.00
GI-100A-FSM	100kA	100	5kA/ 198 cycle	$1,683.00
GI-200A-FSM	100kA	200	5kA/ 198 cycle	$3,005.00
Fail Safe Plus				
GI-30A-FSP	75kA	30-35	3kA/ 13 cycle	$350.00
GI-50/60A-FSP	100kA	50/60	5kA/ 10 cycle	$462.00

Electro-Guard

Test Kit

- 902TI Includes: Amprobe 5XP- A digital multimeter with test leads
- Carrying case with compartments for test probes and leads
- Zinc reference probe with 20' of test lead wire
- 25' test lead wire extension
- Hardened steel test probe
- Instructions for multimeter and corrosion testing
- Determines effectiveness of cathodic protection
- Meter will check bonding system integrity and AC shoreline interface

CORROSION TEST KIT

PROPELLER SHAFT BRUSH

SHAFT WIPER BRUSH SHOE

Item Number	Description	Price
Test Equipment		
902TI	Corrosion test instrument kit	$539.00
Propeller Shaft Brush Assembly		
SB-6B	Standard Duty	$64.00
HD-SB	Heavy Duty	$93.00
Replacement Parts		
6B-1	Shaft Wiper Brush Shoe for SB-6B	$38.00
6B-2	Shaft Wiper Brush Shoe for HD-SB	$54.00

Images are representative of products listed and may not be actual product.

Corrosion Control

Evoqua Capac

CAPAC Systems provide automatic, permanent protection that prevents electrolysis and galvanic corrosion from attacking the submerged surfaces of a broad range of sea-going vessels.

Electrodes
- Ag/AgCl electrodes have long life in all services
- Ag/AgCl operate in all natural waters
- Proven 20-year installation eliminates replacement costs
- Does not fail in brackish or fresh water like Zinc electrodes
- Stability is shown to better than 10 mV (Zinc is 135mV)

Anodes
- Platinum and MMO have long life in all services and operate in all natural waters
- Proven 20-year installations eliminate replacement cost
- Does not fail in brackish or fresh water like lead alloy anodes

Test Equipment
- Shows level of cathodic protection of underwater fittings
- Complete list of freely corroded and protected meter readings of various metals included.

| 37800 | 50030 | 33428 | 33419-3 |

Item Number	Description	Price
	Electrodes	
Call for further assistance with System Configuration		
37800	Silver chloride disc, suitable for hulls up to 3"(76mm) thick 8"(203) diameter 1/2"(13) gland	$825.30
	Anodes	
37792	Platinum Titanium anode, current 2.5amp up to 5amp max 8"(203) diameter 1/2"(13) gland	$837.90
	Test Equipment	
50030	Helm Mounted Hull Potential Meter	$693.00
33428	Portable Reference Electrode	$546.25
33419-3	Portable Hull Potential Meter suitable for steel, aluminum, and bronze fittings on wood hulls	$2,930.00

List pricing in catalog is subject to change without notice.

Blue Sea Systems

12V Socket Plug System
- Corrosion resistant materials
- Large contact surface ensures reliable connections
- Twist lock system
- Internal strain relief cord

Dual USB Chargers
- Compatible with mobile devices
- Protective cap
- Corrosion resistant and protected from overheating
- Output current 2.1A DC
- CE certified
- 1045 mounts in 1 1/8" hole"

1010
1011
1012
1016
1045

Item Number	Description	Amps DC	Color	Price
12V Socket Plug System				
1010	Plug	10	Black	$12.69
1011	Socket	15	Black	$12.09
1012	Single plug with 6' socket extension	10	Black	$31.19
1011200	Socket	15	White	$12.09

Item Number	Description	Volt (Range)	Style	Color	Price
Dual USB Chargers					
1016	2.1A Socket	(9-16)	Panel Mounted	Black	$30.83
1016200	2.1A Socket	(9-16)	Panel Mounted	White	$30.83
1045	4.8A Socket	(9V-32VDC)	Panel Mounted	Black	$53.38

Marinco

- Watertight sealing cap on receptacles
- Moisture proof sealing ring on plugs
- Receptacles can be mounted with front plate (included) or from rear (locking ring included)
- Compatible with most 12 volt plugs
- 20 Amp Max

12VRC

Item Number	Description	Color	Price
12v Sealink® Deluxe			
12VRC	DC receptacle	Black	$14.00
12VRCW	DC receptacle	White	$17.53

Universal USB Chargers

- Output: 5V +/- 5%
- Amp Output: 3.1ADC

3000-1001
31743S

Item Number	Description	Volt	Style	Color	Price
3000-1001	Socket	6-30VDC	Panel Mounted	Black	$31.26
31743S	Socket	12	Panel Mounted	Black	$9.95

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DC Power Accessories

True Blue Power®

- High power — up to 3.0 amps per port
- Built-in voltage converter
- Easy installation
- USB Type-A and USB Type-C configurations
- Protects against short circuit, power surges, temperature overload
- Lighted and non-lighted units available

Digital Clock / USB Charger

- 5 modes: Local Time, Universal Time, Trip Timer, Countdown Timer and Stopwatch
- 12 and 24-hour mode
- Seconds ON or OFF
- Internal battery maintains time and Trip Timer memory
- Built-in photocell for automatic dimming

| M6430102-1 | M6430202-1 | M6430202-7 | M6430202-15 | 6420093-2 |

Item Number	Description	Price
	USB Charging Ports	
M6430102-1	Dual Type-A, 4.2 amps (2.1 amps per port), 10–32 VDC input, Rear connector	$200.00
M6430102-3	Dual Type-A, 4.2 amps (2.1 amps per port), 10–32 VDC input, Bottom connector, Lighted	$200.00
M6430202-1	Dual Type-A/Type-C, 6.0 amps (3.0 amps per port), 10–32 VDC input, Rear connector	$270.00
M6430202-5	Dual Type-A/Type-A, 6.0 amps (3.0 amps per port), 10–32 VDC input, Rear connector	$270.00
M6430202-6	Dual Type-A/Type-A, 6.0 amps (3.0 amps per port), 10–32 VDC input, Bottom connector	$270.00
M6430202-7	Single Type-C, 3.0 amps, 10–32 VDC input, Rear connector	$170.00
M6430202-11	Dual Type-A/Type-C, 6.0 amps (3.0 amps per port), 10–32 VDC input, Rear connector, Lighted	$270.00
M6430202-15	Dual Type-A/Type-A, 6.0 amps (3.0 amps per port), 10–32 VDC input, Rear connector, Lighted	$270.00
6420093-2	Digital clock and high-power USB charging port, 6.0 amps (3.0 amps per port), Dual USB Type-A, Fits 2-inch cutout, Rear-panel mount	$684.00

| 9019313-1 | 9019313-2 |

Item Number	Description	Price
	USB Charging Port Accessories	
9019313-1	Silicone rubber dust cover with nickel-plated brass bushing for USB Type-A charging ports, Black	$3.36
9019313-2	Silicone rubber dust cover with nickel-plated brass bushing for USB Type-A charging ports, Gray	$3.36

List pricing in catalog is subject to change without notice.

Hubbell

- Corrosion resistant plug, connector body, and receptacle
- UL Listed and CSA Certified
- Suitable for most 12, 24, and 32 volt systems
- Compatible with Hubbell outlet box and weatherproof cover plates

| HBL328DCR | HBL328DCP | HBL328DCC | HBL6083 | HBL6080OS | HBL74CM25WOA |

Item Number	Rating	Description	Price
30 Amp Fishing Reel			
HBL328DCR	30A 28VDC	Yellow locking single receptacle with abuse resistant face	$49.05
HBL328DCP	30A 28VDC	Yellow locking plug has rugged nylon housing and rear dust seal	$40.50
HBL328DCC	30A 28VDC	Yellow locking connector body has rugged, nylon housing and rear dust seal	$80.10

Item Number	Description	Price
30 Amp Fishing Reel		
HBL6083	Gray, high impact thermoplastic FD(deep) weatherproof box with .75"(19.1mm) NPT threaded hub, with 30 cubic inch capacity	$44.46
HBL60CM83A	Yellow, high impact thermoplastic FD(deep) weatherproof box with .75"(19.1mm) NPT threaded hub, with 30 cubic inch capacity	$44.45
HBL60CM83WA	White high impact thermoplastic FD(deep) weatherproof box with .75"(19.1mm) NPT threaded hub, with 30 cubic inch capacity	$44.45
HBL6080OS	Black phenolic type FS(shallow) weatherproof box has two .75"(19.1mm) I.P.S molded in knockouts, with 16 cubic inch capacity	$36.92
HBL74CM25WOA	Yellow, spring loaded lift cover, for weatherproofing HBL328DCR outlet	$72.45
HBL74CM25WOAW	White, spring loaded lift cover, for weatherproofing HBL328DCR outlet	$72.45

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Digital Automation

Engine Monitoring Displays

The AHD 880 E and AHD 880 E Double Engine are touch screen glass displays, designed to be compatible with the most reputable marine engine manufacturers (MAN, MTU, Caterpillar, Volvo-Penta, Cummins etc.)

Compatible protocols: SAE J1939, NMEA 2000 and MAN proprietary protocol

- Power supply: 9 / 32 VDC
- Dimension W x H x D: 270mm x 130mm x 95mm
- Desk cut-out W x H: 259mm x 114mm
- Degree of protection: IP 56 (front side) IP 22 (rear side) – suitable for external installation
- Luminous intensity: 250 cd/m², transflective
- Display resolution: 640(H) x 240(V) pixels
- Operating temperature: -20°C/+70°C

AHD 880 E

Certifications:

AHD 880 E

Item Number	Description	Price
If custom programming is required, this will be quoted separately.		
AHD 880 E - S	Single Engine Display	$5,646.00
AHD 880 E- D	Double Engine Display	$8,880.00

List pricing in catalog is subject to change without notice.

Universal Marine Interface Converter AHD-DPU 9

- Power Supply: 24 VDC (+30% -25%)
- Current Consumption: Ca. 170 mA (24VDC)
- Environmental Temp.: -30°C/+70°C
- Storage Temperature: -50°C/+85°C
- Weight : app . 0.7 kg
- Protection Class: IP 20
- Overall Dimensions (mm): 188 x 126 x 63, 28 x binary input/output channels
- Interfaces: (optocoupler, serial, static)
  - 6x CAN (galvanically isolated, termination and address)
  - 1x LAN (RJ45, 10/100 MBit)

- 1x serial (RS232/RS485)
- 2x serial (RS232/RS485/RS422), switchable, termination switchable)
- Inputs: 4x optocoupler (alarm acknowledgement, optional special functions)
- Outputs: 5x relay output (galvanically isolated, 2x contact 2-pin, 3x contact 1-pin)
- Approvals: GL (IAMC System) RS
- Required distance to compass:
  - Standard magnetic compass: 55cm.
  - Steering magnetic compass: 40cm

AHD-DPU 9

AHD-DPU 9

PS Engine →
SB Engine →

NMEA 2000 or J1939

CHART PLOTTER DISPLAY (MFD)

PS Engine →
SB Engine →
Generator →
Battery Charger →

AHD-DPU 9

NMEA 2000 or J1939

CHART PLOTTER DISPLAY (MFD)

MAN Engines

AHD-DPU 9

NMEA 2000 or J1939

CHART PLOTTER DISPLAY (MFD)

EXCLUSIVE FEATURE!

Certifications:

DNV·GL

Lloyd's Register

NMEA

Item Number	Description	Price
If custom programming is required, this will be quoted separately.		
AHD-DPU 9	AHD-DPU 9 is a universal data station, capable of converting CAN Bus and serial data to protocols compatible with MFD (Multifunctional displays), of many different brands, such as Garmin, Furuno, Raymarine, SimRad, etc. The AHD-DPU 9 can concentrate data from engine, generators, charges, or any other device on board with an open protocol, such as NMEA 2000, J1939, ModBus, NMEA 0183, etc. EXCLUSIVE FEATURE: the AHD-DPU 9 is compatible with the MAN Engines proprietary protocol.	$3,072.00

Images are representative of products listed and may not be actual product.

Digital Automation

Navigation Light Panels

The modular-designed AHD-DPS02 controls and monitors navigation and signal lights on vessels.

- Modular design (from 14 to 42 lights)
- Control panel with custom layout
- Maintenance-free: no need to replace fuses after a short circuit
- Record operating hours and the number of switching cycles
- Collective alarm and ModBus interface to integrate with third-party alarm systems
- Compatible with AC or DC lights, bulbs or LEDs.

Certifications:

Compatibility Table

System	Current Range	Voltage Range	Frequency Range
230 VAC	20mA/300mA (ca. 5W/65W at 230VAC)	140/240V	47-65Hz
115 VAC	20mA/600mA (ca. 3W/65W at 115VAC)	80/130V	47-65Hz
24 VDC Bulb	200mA/2500mA (ca. 5W/65W at 24VDC)	18/32V	—
24 VDC LED	15mA/800mA (ca. 0,5W/20W at 24VDC)	18/32V	—

Navigation Lights Panel

Item Number	Description	Price
Custom programming is available if required and will be quoted separately.		
AHD-DPS02 - 14L	For 14 lights	$4,051.00
AHD-DPS02 - 21L	For 21 lights	$5,194.00
AHD-DPS02 - 28L	For 28 lights	$6,337.00
AHD-DPS02 - 35L	For 35 lights	$7,480.00
AHD-DPS02 - 42L	For 42 lights	$8,623.00
AHd-DPS02 GC	Communication Module with ModBus RTU interface	$926.00

List pricing in catalog is subject to change without notice.

Stand-alone Alarm and Monitoring Systems
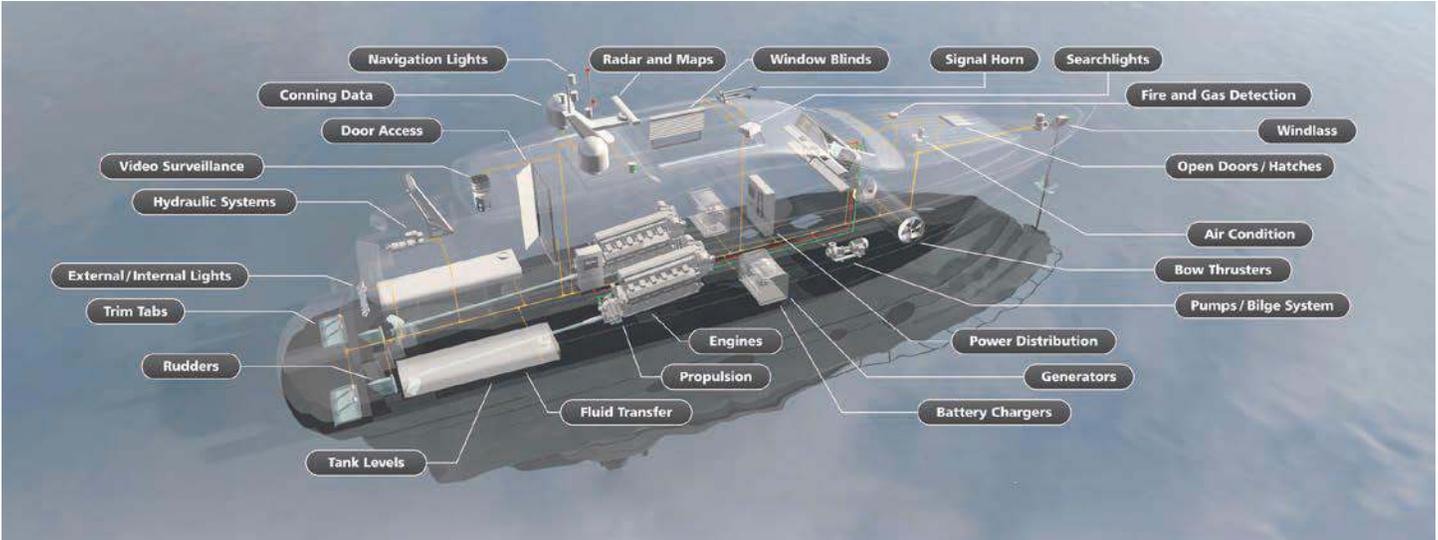
AHD-AMS – 15 inputs

AHD-AMS – 45 inputs

Certifications:

The Böning Alarm and Monitoring system is a robust solution for monitoring any kind of sensor in a vessel. Suitable for refits and new builds, utilizes the latest technologies for data processing, displayed on an elegant 8" glass touch screen.

DATA STATION
AHD-SAS 15

Tank Sensors

Bilge Sensor

Rudder Angle Sensor

Battery Voltage

Door Sensor
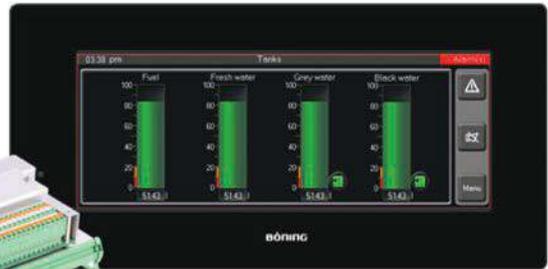
Item Number	Description	Price
Custom programming is required and will be quoted separately.		
AHD-AMS – 15 inputs	Vessel monitoring system for 15 inputs/sensors (15 programmable inputs – analog or binary)	$7,895.00
AHD-AMS – 45 inputs	Vessel monitoring system for 45 inputs/sensors (15 analog + 30 binary inputs)	$9,129.00

Images are representative of products listed and may not be actual product.

Digital Automation

Compact Alarm System AHD 414A

AHD-414A-S – Smoke Monitoring System
- Monitor up to 10 smoke detectors
- Customizable labels
- NO / NC contacts
- Relay output for external horn
- Dimensions: 144x144 mm / 5.6 x 5.6 in
- Low power consumption: 0.15A
- Certificate: Bureau Veritas
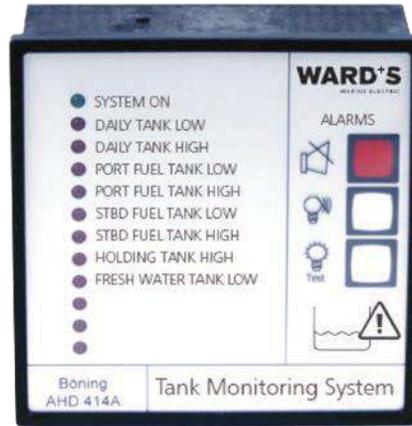
AHD-414A-T – Tank Monitoring System
- Monitor up to 10 tank level switches
- Customizable labels
- NO / NC contacts
- Relay output for external horn
- Dimensions: 144x144 mm / 5.6 x 5.6 in
- Low power consumption: 0.15A
- Certificate: Bureau Veritas

AHD-414A-B – Bilge Monitoring System
- Monitor up to 10 bilge switches
- Customizable labels
- NO / NC contacts
- Relay output for external horn
- Dimensions: 144x144 mm / 5.6 x 5.6 in
- Low power consumption: 0.15A
- Certificate: Bureau Veritas

Item Number	Description	Price
AHD-414A -S	Smoke Monitoring	$599.00
AHD-414A-T	Tank Monitoring	$599.00
AHD-414A-B	Bilge Monitoring	$599.00

Custom configurations/combinations available

Ship Whistle Control Panels

AHD-WOP – Whistle Operation Panel

The whistle operation panel AHD-WOP is designed for the control and operation of one or more whistles on board ship, providing pre-programmed outputs for most frequently used sound signals for maneuvering and warning, as well as sound signals in restricted visibility according to "Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs)" inclusive amendments.

Features
- Outputs:
  - 2 x Horn relay for whistle control perm. contact load
  - 24VDC (+30%/-25%) / 0,5A
  - 2 x Lamp relay for signal light control perm. contact load
  - 24VDC (+30%/-25%) / 0,5A

Certifications:

Lloyd's Register

AHD-GAP F - General Alarm Panel with Fire Alarm Function

The control panel AHD-GAP F is designed for the control of acoustic and optical signals in emergency situations. In addition to the manual activation of the horn, common mandatory signals such as "Abandon Ship", "General Alarm," and "Fire Alarm" are already hard-coded and can be activated in selectable intervals.

Features
- Outputs:
  - 4 x relay for acoustic and visual signal control potential-free admissible contact load 0.5 A
  - 1 x relay for status indication, potential-free, admissible contact load 0.5 A
  - Signal Sequences General Alarm (7x short, 1x long) Abandon Ship (short, long, short, long)
  - Fire Alarm (continuous sound)
  - Manual Operation (push-button)

Certifications:

Lloyd's Register

Item Number	Description	Dimensions	Price
AHD-WOP	Whistle Operation Panel	70W x 130H x 45mmD	$881.00
AHD-GAP F	General Alarm Panel with Fire Alarm Function	70W x 130H x 45mmD	$881.00

Images are representative of products listed and may not be actual product.

Digital Automation

Custom Monitoring and Automation Systems

Böning ship electronics are not only extremely well-suited for initial installations of engines in new vessels or engine retrofits, but also refit measures for used ships.

Using state of the art technology, Böning manufactures durable, modular products. This allows ships to be outfitted in an individualized, reaction-free manner, matched precisely to the customer's needs and requirements. As you'll see on the following pages, we are able to offer initial outfit and retrofit solutions that can be expanded when needed.

The use of modern communications media on the bridge – such as user-friendly touch screen displays, powerful panel PCs, and multiple redundant safety systems – allows the skipper convenient and clear access to all safety and operationally relevant data.

Panel PC Systems – Ordered by Size

Lloyd's Register

Integrated panel PC system with glass front, provides a central visualization and operation platform for alarm and monitoring systems. The large 19" and 15" screens provide sufficient room for presenting complex correlations, even within the context of extensive systems. High capacity, increased functionality, and appealing design contribute to an increase in operational safety and comfort on ship bridges. The panel PC system was developed specifically for maritime use. Dispensing with mechanically movable parts and equipping the unit with a passive cooling system

secures error-free operation even under extreme conditions. The integrated PC runs on a self-contained XP Embedded® operating system. This prevents any changes during normal operation and thus, it runs with the highest degree of stability. The excellent color graphics monitor with integrated touchscreen operation facilitates coverage of any incurring visualization and control tasks on board. High luminosities ensure the best readability even during strong sunlight. When cruising at night, automatic dimming with variable minimum brightness ensures glare-free operation.

CZONE

The CZone digital control & monitoring network simplifies installation of electrical systems through the replacement of complicated wiring. CZone replaces switch and fuse panels with state-of-the-art, robust interfaces and light NMEA 2000 network cable. It provides a sophisticated solution via automation of the control and monitoring issues required by today's complex on-board and in-vehicle systems. CZone allows the user to control multiple circuits with "One Touch", dramatically simplifying operation. With control potentially available at any point in the NMEA network, fingertip control is available anywhere around the boat, through the dedicated CZone screens, iPad, remote keyfob or through the navigation MFDs of our integration partners.

Modes

Ease of operation assured. With one press of the key users can turn on a group of circuits without having to search for, and turn on the individual circuits that they need for the operation of their vessel. When leaving, simply press 'systems off' to turn off all non-essential circuits. Entertainment mode allows preset activation of lounge lights, music, etc. All functions can be controlled remotely.

Installation

The CZone system integrates many stand-alone components into one intuitive system. Wiring is dramatically simplified as the CZone system is designed to remove complex switching clusters and wiring runs. Modules can easily be added into the system to best suit the OEM and end-users' needs.

Versatility & Security

The CZone system, designed for 9V to 32V systems, features built-in timers, dimmers (including support for halogen lighting), alarms, voltage reducers and load shedding. With safety in mind, the CZone™ system features a manual bypass. A No-Single-Failure-Point technology ensures a plug & play system with redundancies that are designed to handle mishaps. If a module is damaged, the system will automatically program the replacement module when it is plugged in.

Integration

CZone technology is integrated with easy-to-read graphics into chart plotters and multi-function displays. View CZone monitoring data, tank levels and battery capacity alongside radar, fish finder, video and chart plotter information or navigate to the CZone™ page to operate any circuit from the intuitive control page. With CZone technology, control and monitoring is available at the touch of your fingertips, at the helm or flybridge, at desired locations on the boat, programmed into the remote key fob, or from an app on your tablet.

Images are representative of products listed and may not be actual product.

Digital Automation

Displays

Touch 10

- Premium touch interface with glass dash styling and low profile mounting
- Screen: 10.1" LED-backlit projected capacitive touch display with IPS technology
- Aspect ratio: Widescreen 16:10
- Resolution : 1280 x 800 pixels
- Weight: 4.0 lb / 1.8 kg
- Power consumption: 1A @ 12V, 500mA @ 24V
- Interfaces: NMEA 2000, USB2.0, Ethernet

80-911-0100-00

Item Number	Protection	Dimensions	Brightness	Input voltage	Price
80-911-0100-00	IP66	7.72"W x 10.83"H x 1.61"D (196W x 275H x 41D mm)	500 cd/m2	8–32V	$3,711.71

Touch 5

- Built-in Wifi allows direct-connection of Ipad for Wireless Control and Monitoring of the system
- Screen: 5" LED-backlit projected capacitive widescreen touch
- Resolution: 800 x 480 pixels
- Power consumption: 900mA @ 13.5v
- Interfaces: NMEA 2000, Micro SD

80-911-0124-00

Item Number	Protection	Dimensions	Brightness	Input voltage	Price
80-911-0124-00	IPX7	5.98"W x 4.72"H x 2.28"D (152W x 120H x 57.9D mm)	1200 cd/m2	12VDC	$1,295.66

List pricing in catalog is subject to change without notice.

Wireless Interface

- User-friendly homepage to monitor and control onboard circuits
- Integrated control and monitoring of power products including battery chargers and inverters
- Monitor AC/DC
- Monitor tank levels
- Receive visible alarms
- Connect a maximum of three devices simultaneously

- Ability to personalize homepage to display favorite circuits, modes & monitoring
- Customize your layout
- Connects to CZone or MasterBus networks for control and monitoring of systems
- No MasterBus powering
- Weight: 1.5 lb / 0.685 kg
- Protection degree: IP54
- Delivered with power cable, WiFi antenna, USB extension cable, user's manual

80-911-0090-00
WIRELESS INTERFACE

80-911-0095-00
WIRELESS INTERFACE W/
MASTERBUS CONNECTOR

Item Number	Description	Dimensions	Price
80-911-0090-00	Wireless Interface	4.1"H x 7.5"W x 2.4"D / 105H x 190W x 60D mm	$980.43
80-911-0095-00	WI MasterBus connector	4.1"H x 7.5"W x 2.4"D / 105H x 190W x 60D mm	$64.54

Wired Interface

Combination Output Interface

- The Combination Output Interface (COI) combines multiple input and output devices into one module, offering a compact and intelligent replacement for traditional DC fuse and circuit breaker panels with digital control and monitoring technology.
- Communication protocol: NMEA 2000
- Channels: 30
- Output channels (high): 4 x 25A
- Output channels (low): 12 x 10A (dimmable)
- Analogue inputs: 8 (positive or negative switching, 0–32V)
- Additional monitoring: 2 voltage sensors (on main positive stud and NMEA 2000 power)
- Circuit current monitoring: all 16 output channels
- Circuit protection: Configurable electronic fuse + mechanical fuse and bypass
- Digital switch inputs: 6 digital input switches with backlight via digital breakout)
- Max. continuous current: 150A at 40°C (derating > 40°C)
- NMEA 2000 power consumption: 250 mA at 12V 180mA at 12V standby
- Connectors: Deutsch
- Power supply: M8 (5/16") stud positive, M6 (1/4") stud negative
- Voltage: 9–32V (with power available LED and voltage monitoring)
- Bilge pump circuits: 4 high current channels: integrated manual control and 'pump running' detection
- Protection degree: IPx5 (mounted at 0°C +/-90°C)
- Weight: 1.9 kg / 4.2 lb
- Approvals: CE, ABYC, NMEA

80-911-0119-00

80-911-0134-00

Item Number	Description	Dimensions	Price
80-911-0119-00	COI with Connectors (includes 80-911-0131-00 COI Deutsch Connector Kit)	13.3"H x 9.3"W x 2.4"D / 338H x 235W x 62D mm	$1,692.42
80-911-0120-00	COI No Connectors	13.3"H x 9.3"W x 2.4"D / 338H x 235W x 62D mm	$1,650.16
Options			
80-911-0134-00	COI Digital Switch Breakout	13.3"H x 9.3"W x 2.4"D / 338H x 235W x 62D mm	$153.52
80-911-0129-00	5m COI to DSB Cable (16ft)	13.3"H x 9.3"W x 2.4"D / 338H x 235W x 62D mm	$43.77

Images are representative of products listed and may not be actual product.

Digital Automation

Wired Interface (Continued)

Contact 6

The Contact 6 is a digital control and monitoring module that can be networked with other CZone products or a stand-alone. The Contact 6 has six independent channels that are positively or negatively switched and is ideal for smaller marine applications or recreational and specialty vehicles.

- Circuit Bypass: Yes (electronic)
- Connector: Amp 18 Way Connector
- Max Wire Size: 16AWG (1 mm2)
- Maximum Current: 30A Continuous
- Power Consumption: 35mA (standby)
- Voltage: 9-16V

CONTACT 6

Item Number	Description	Price
80-911-0139-00	Contact 6 (Interface Only)	$164.38
80-911-0140-00	Contact 6 (Include seal & plug kit)	$232.56

Switch Control Interface (SCI)

The Switch Control Interface provides an interface between the CZone network and the traditional mechanical switches with which manufacturers and users are familiar. The SCI simplifies your wiring, supports your existing choice of switches, protects against failures and allows for more installation options.

80-911-0011-00

Features

- Single switch position can control multiple OI channels
- Attached to switch panels via custom SCI cable
- Multiple SCI switches can control single OI channel
- Output for backlighting of switch labels (dimmable)
- Outputs systems on and function/fault codes to systems on LED of switches (dimmable)
- Choice of push button or rocker style switch
- IPX5 water ingress protection
- Programmable switch types
- 8 inputs per module (16 individual controls)
- Sequential button press functionality
- Choice of push button or rocker style switch

Item Number	Description	Dimensions	Price
80-911-0011-00	Switch Control Interface with seal	3.94"H x 6.14"W x 1.65"D (100H x 156W x 42D mm)	$233.78

List pricing in catalog is subject to change without notice.

Wired Interface (Continued)

Signal Interface (SI)

The Signal Interface connects the CZone system to your external sensors, alarms and switching devices. The SI allows intelligent, automated operation of circuits depending on the state of the input.

80-911-0013-00

Features

- Accepts inputs from traditional switch types being used to control outputs
- Accepts inputs from switches to trigger alarm i.e. high water float switch
- Accepts inputs from industry-standard tank senders (0.5V. 10-180 Ohm, 240-33 Ohm)
- Accepts inputs from general voltaic or resistive signals, can be used for controlling outputs or to display a physical position i.e. show a hatch is partially open
- LED status indicators for each input

- IPXS water ingress protection
- Outputs standard NMEA 2000 fluid, temperature and pressure sentences
- Resistive input range 0-1000 Ohms
- Voltage sensing input range 0-34VDC

Item Number	Description	Dimensions	Price
80-911-0013-00	Signal Interface with seals, connector	3.94"H x 6.14"W x 1.65"D (100H x 156W x 42D mm)	$187.10

Output Interface (OI)

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

80-911-0009-00

Features

- 4 levels of backup fusing including manual override (as required by ABYC)
- Multiple channels can be bridged together to offer higher current switching
- Power consumption 12V: 85 mA
- Small, non-metallic, easy to install care
- 6 x 20 amps circuits
- Programmable software 'fuse' size

Item Number	Description	Dimensions	Price
80-911-0009-00	Output interface with connector and protective boot	5"H x 7.87"W x 1.75"D (128H x 200W x 45D mm)	$636.73

Images are representative of products listed and may not be actual product.

Digital Automation

Wired Interface (Continued)

Motor Output Interface (MOI)

The Motor Output Interface has an output pair for controlling DC motors which require a reversal of polarity to change the direction of their mechanical operation.

Features

- Single motor control and two normal channels per unit, 20A per output
- Built-in circuit protection
- IPX5 water ingress protection
- Dimensions: 5"H x 7.87"W x 1.75"D (128H x 200W x 45D mm)

MOTOR OUTPUT INTERFACE

Item Number	Description	Dimensions	Price
80-911-0007-00	Motor Output Interface with connector and protective boot	5"H x 7.87"W x 1.75"D (128H x 200W x 45D mm)	$461.99

Meter Interface (MI)

The Meter Interface accepts inputs from external AC and DC power metering sensors such as: AC and DC voltage and amps, AC kWatts, and DC battery capacity in amp hours and % remaining. All with user definable high and low alarms.

General

- Dimensions: 6.14"H x 3.94"W x 1.65"D (156H x 100W x 42D mm)
- IPX% water ingress protection
- Outputs standard NMEA 2000 power monitoring sentences

AC

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

DC

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

METER INTERFACE (MI)

Item Number	Description	Dimensions	Price
80-911-0005-00	Meter Interface, with seal and plug	6.14"H x 3.94"W x 1.65"D (156H x 100W x 42D mm)	$334.95

List pricing in catalog is subject to change without notice.

Accessories

80-911-0137-00

80-911-0047-00

80-911-0048-00

80-911-0029-00

80-911-0046-00

Item Number	Model	Description	Price
80-911-0137-00	NMEA 2000 Power Isolator	Used for isolating power between 2 independent NMEA 2000 networks	$31.34
80-911-0047-00	2 Way Tee Connector	Connects multiple devices into the NMEA backbone	$53.42
80-911-0048-00	4 Way Tee Connector	Connects multiple devices into the NMEA backbone	$74.84
80-911-0029-00	Single Tee Connector	Connects a single device into the NMEA backbone	$28.52
80-911-0031-00 (Male)	Terminating Resistors	Use at either end of the NMEA backbone to complete the network. Each network must have a male and female terminator.	$7.39
80-911-0030-00 (Female)	Terminating Resistors	Use at either end of the NMEA backbone to complete the network. Each network must have a male and female terminator.	$10.79
80-911-0046-00	90° Elbow Connector	Space saving connector for modules, displays and cabling connections.	$20.97

Images are representative of products listed and may not be actual product.

Digital Automation

Accessories (Continued)

BLANKING CAPS

80-911-0050-00

80-911-0051-00

80-911-0123-00

80-911-0052-00

80-911-0044-00

Item Number	Model	Description	Price
80-911-0050-00 (Male)	Blanking Caps	Protects unused Tee Connector from dust and water.	$1.82
80-911-0051-00 (Female)	Blanking Caps	Protects unused Tee Connector from dust and water.	$1.82
80-911-0123-00	COI Cable Cover	Accessories & Spares for Combination Output Interface (COI) and Digital Switch Breakouts (DSB).	$22.64
80-911-0131-00	COI Deutsch Con Kit	Accessories & Spares for Combination Output Interface (COI) and Digital Switch Breakouts (DSB).	$64.74
HDT-48-00	Deutsch Crimp Tool	Deutsch Crimp Tool	$305.33
CT4-8	Deutsch Crimp Tool	Deutsch Crimp Tool	$104.00
80-911-0052-00	Through Bulkhead Adaptor	Use on the backbone to transition through a waterproof bulkhead	$10.66
80-911-0044-00	USB CAN Adapter for configuration and system set up	Connects PC to the Czone network	$475.20

Accessories (Continued)

80-911-0045-00

80-911-0057-00

80-911-0072-00
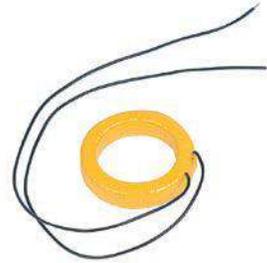
CT-HD

LB-450-50

CT-10-3

AC-VSEN-4

Item Number	Model	Description	Price
80-911-0045-00	Czone Wireless Remote Kit	• 250 ft (80) operating range • includes (2) key fobs and a receiver box • Rolling code	$103.44
80-911-0057-00	Czone Network Bridge Interface	• For Isolating sections of an NMEA 2000 network to decrease standby current draw.	$287.80
80-911-0072-00	Czone MasterBus Bridge Interface	• Connects the MasterBus and Czone networks together enabling the two	$287.01
CT-HD	Heavy-duty Current Transformer	• Maximum current 150A AC • CT-HD is available for systems with large mains cable, too large for CT-10-3 (ordered separately) • CT-HD dimensions: 1.85" x 0.4" (47 x 10.5 mm) • Hole size: 1.25" (32 mm)	$37.88
CT-10-3	Current Transformer	• Maximum current 150A AC • One CT-10-3 current transformer is supplied with ACSM. If a twin line system in in use, a second CT must be ordered. • Dimensions: 1.5"x1.55"x.55"(37.5x39.2x13.7mm) • Hole size: 0.5" (12 mm)	$29.84
LB-450-50	DC Current Shunt	• Includes 3 voltage transformers for up to 3 voltage inputs • 2.75" x 5.5" x 2" (69 x 140 x 50 mm) • Used for AC voltage measurement	$122.98

Images are representative of products listed and may not be actual product.

Digital Automation

Push Buttons

For use with CZone systems only (3.5 Volt)

- Momentary and latched actuation options available
- Blue and red circuit status indication LED options
- 19 mm mounting hole
- IP67 environmental protection
- Stainless Steel components
- Maximum 5 amps each

PUSH BUTTON RED

PUSH BUTTON BLUE

PUSH BUTTON CABLE ASSEMBLY

Item Number	Description	Color	Price
80-911-0085-01	Suitable for Switch Control Interface (SCI) and Digital Switch Breakout (DSB) Compatible with push buttons.	—	Call for Pricing
80-911-0086-01	Suitable for Switch Control Interface (SCI) and Digital Switch Breakout (DSB) Compatible with push buttons.	—	$10.28
80-911-0088-01	Suitable for Switch Control Interface (SCI) and Digital Switch Breakout (DSB) Compatible with push buttons.	—	$20.77
80-911-0060-00	Momentary (ON)OFF	Red LED	$31.72
80-911-0063-00	Latching ON/OFF	Red LED	$31.72
80-911-0062-00	Momentary (ON)OFF	Blue LED	$31.72
80-911-0061-00	Latching ON/OFF	Blue LED	$31.72

Back Bone

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

80-911-0026-00

Power Cable

- Provides power to the NMEA 2000 network.

80-911-0028-00

Drop Cable

- Thinner, more flexible Drop Cables connect individual devices to the NMEA network.

Spare Power Cable for Touch 10

- Supplies power for Touch 10 display

COI to DSB Cable 5m

- Accessories & Spares for Combination Output Interface (COI) and Digital Switch Breakouts (DSB).

80-911-0129-00

Item Number	Model	Length ft(m)	Price
80-911-0026-00	Backbone Cable	1.6(.5)	$24.32
80-911-0027-00	Backbone Cable	6.5(2)	$30.72
80-911-0024-00	Backbone Cable	16(5)	$45.30
80-911-0025-00	Backbone Cable	32(10)	$67.19
80-911-0116-00	Drop Cable	1.6(.5)	$20.77
80-911-0117-00	Drop Cable	3.2(1)	$23.75
80-911-0118-00	Drop Cable	6.5(2)	$26.77
80-911-0115-00	Drop Cable	16(5)	$40.31
80-911-0116-00	Drop Cable	1.6(.5)	$20.77
80-911-0117-00	Drop Cable	3.2(1)	$23.75
80-911-0118-00	Drop Cable	6.5(2)	$26.77
80-911-0115-00	Drop Cable	16(5)	$40.31
80-911-0028-00	Power Cable	3.2(1)	$33.78
80-911-0032-00	Spare Power Cable for Touch 10	—	$23.44
80-911-0129-00	COI to DSB Cable 5m	—	$43.77

List pricing in catalog is subject to change without notice.

MasterBus

EasyView5

- Water proof, 'daylight readable' color display.
- Intuitive touch control
- Customizable favorite pages.
- Log book for warnings and alarms.
- Buzzer and Home button.
- Easy mounting: front mount, wall mount or retrofit.
- MasterBus powered, or 12/24 V input.
- Easy updating through MasterBus and USB.

77010310

Item Number	Power Supply	Dimensions in" (mm)	Weight lbs. (kg)	Price
77010310	Masterbus powered, or 12/24V input	4.4(113)x5.0(127)x1.7(43)	0.7(0.315)	$397.42

MasterShunt 500

- Digital shunt providing the energy system with extensive information and historical data.
- Very accurate and reliable determination of State of Charge (SOC).
- Easy connection to all MasterBus devices.
- Power saving mode for reduced idle consumption.
- Service mode prevents memory loss during system maintenance.
- Realistic and precise indication of the time remaining.
- Smart MasterBus powering mode reduces idle consumption to a bare minimum.
- For higher current, multiple MasterShunt models may be installed in parallel.
- MasterConnect system makes connecting to the DC'Distribution product very easy.
- Straight forward, easy to install.
- Freedom of choice for fuse type, rating and location. Suitable for T-fuse and ANL-fuse (to be ordered separately).

- Robust housing with isolation of the DC connections.
- Battery voltage: 12. 24 or 48 VDC
- Current: 300 A continuously, 400 A for 10 min. 500 A for 5 min. and 600 A for 2 min.
- Main fuse: Bus bar included in MasterShunt, class T fuse or ANL fuse to be ordered separately
- Idle consumption: 23 mA (normal operation), <1 mA (power saving, MasterBus off)
- System functionality: Alarms, timers, auto start/stop for the generator
- System information: E.g. time remaining, voltage, current, state of charge
- Programmable alarms: Warning low voltage, low state of charge, high voltage

77020110

Item Number	Price
77020110	$310.45

Images are representative of products listed and may not be actual product.

Digital Automation

MasterBus (Continued)

DC Distribution 500

- Languages on display: ENG, NL, DE. SP, IT, FRA, FIN, SWE, DEN, NOR
- Battery voltage: 12. 24 or 48 VDC
- Current: 300 A cont. / 500 A for 5 minutes
- Standard fuses: 80 A (2x), 160 A and 125 A – ANL type (deviating values can be ordered separately)
- Spare fuse: 125 A – ANL type
- Alarms: Fuse monitoring

77010210

Item Number	Dimensions in" (mm)	Weight lbs. (kg)	Price
77020200	5.9(150)x 7.9(216)x2.5(65)	2.6(1.2)	$487.93

Digital DC 10x10A

- Follow me home (light stays on for the specific time).
- Delayed dimming of lights (including ten built-in dimmers).
- Alarm signal for overload.
- Every output has hardware and software fuse.
- Reset the fuses via the MasterBus network.
- Possibility of higher currents (up to 100 A) with parallel switching of multiple outputs.
- Logical blocks.

77020400

DC Output	
Connection	Cable max. 4 mm2
Maximum software fuse current	10A per channel
Hardware fuse current	15A per channel

DC Input	
Connections	Max. 95 mm2 or directly connected to MasterShunt or DC Distribution
Maximum current	100A
Supply voltage	8-30VDC

Item Number	Dimensions in" (mm)	Weight lbs. (kg)	Price
77020400	1.6(40)x9.0(229)x4.3(110)	1.7(0.75)	$978.48

List pricing in catalog is subject to change without notice.

MasterBus (Continued)

Interfaces

| 77030100 | 77030475 | 77030500 | 77031800 |

Item Number	Description	Price
77030100	The MasterBus USB Interface enables you to read and configure the MasterBus network via your PC.	$215.00
77030475	This interface integrates a Mastervolt Mass Combi in a MasterBus network and allows it to be operated or monitored via a EasyView 5 panel or PC.	$289.59
77030500	This potential-free programmable contact can be customized and programmed to give your MasterBus network unprecedented possibilities. Use it, for example, to control a ventilator, or to operate a generator.	$170.03
77031800	The MasterBus NMEA2000 Interface provides the MasterBus network with NMEA information, and vice versa.	$592.35

Item Number	MasterBus Powering	Dimensions HxWxD	Weight	Protection Degree	Delivered with
77030100	yes	2.6" x 3.1" x 1.3" (66x78x32 mm)	0.18 lb / ± 80 g	IP21	USB connection
77030475	yes	2.6" x 3.1" x 1.3" (66x78x32 mm)	0.18 lb / ± 80 g	IP21	Interface
77031800	no	2.6" x 3.1" x 1.3" (66x78x32 mm)	0.22 lb / ± 100 g	IP21	NMEA
77030500	no	2.6" x 3.1" x 1.3" (66x78x32 mm)	0.18 lb / ± 80 g	IP21	MasterBus cable, MasterBus, Terminator user's manual

Accessories

77050000

77040010

77040015

77040000

Item Number	Description	Price
77040000	Terminators ensure interference-free operation of the MasterBus network, prevent reflection of data signals and ensure high communication speeds.	$8.78
77040010	MasterBus RJ45 Connectors 8-pole 25 pcs	$14.25
77040015	Green isolation caps for RJ45 connector 25pcs	$14.00
77045000	Green MasterBus CAT5E UTP cable	$0.35 per ft

Images are representative of products listed and may not be actual product.

NMEA 2000

MICRO TEE

55.0 [2.17]

M12x1   M12x1

M12x1

23.5 [0.92]

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
5. Blue (Net-L)
1. Bare (Shield)
2. Red (Net-S)

MICRO TERMINATION RESISTORS

55.2 [2.17]   Ø15.0 [0.59]

M12x1

Ø16.2 [0.64]

MALE

48.5 [1.91]   Ø15.0 [0.59]

M12x1

FEMALE

56.0 [2.20]   Ø15.0 [0.59]

M12x1   M12x1

[0.59]
Ø15.0

Ø15.5 [0.61]

INLINE

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
5. Blue (Net-L)
1. Bare (Shield)
2. Red (Net-S)

MID DOUBLE-ENDED CORDSETS

55.2 [2.17]   Ø8.4 [0.33]   48.5 [1.91]   Ø15.0 [0.59]

M12x1   M12x1

Ø15.0 [0.59]

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
5. Blue (Net-L)
1. Bare (Shield)
2. Red (Net-S)

MICRO DOUBLE-ENDED CORDSETS

55.2 [2.17]   48.5 [1.91]   Ø15.0 [0.59]

M12x1   M12x1

Ø15.0 [0.59]   ANTI-VIBRATION DETENT   Ø7.2 [0.28]   ANTI-VIBRATION DETENT

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
5. Blue (Net-L)
1. Bare (Shield)
2. Red (Net-S)

MULTIPORT BOX

MOUNTING HOLE
M3 SOCKET HEAD
12mm MINIMUM LENGTH

(6x) REMOVABLE LABELS (INCLUDED)

M12x1   M12x1

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
5. Blue (Net-L)
1. Bare (Shield)
2. Red (Net-S)

WIRING DIAGRAM

J1   J3

J2   J4

MICRO/MID POWERTAP TEE

49.5 [1.95]   Ø15.0 [0.59]

M12x1   M12x1

Ø15.0 [0.59]   J1   J2

17.3 [0.68]

33.3 [1.31]

15.5 [0.61]

Ø7.0 [0.28]

5.0 METERS

50.0 [1.97]

7.0 [0.28]

MICRO/MID FIELD-ATTACHABLE CONNECTORS (STRAIGHT)

MALE

60 mm
2.36"

M12x1

Ø20.0

6-8mm
.27"
CABLE DIA.

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
5. Blue (Net-L)
1. Bare (Shield)
2. Red (Net-S)

55 mm
2.17"

M12x1

Ø20.0

6-8mm
.27"
CABLE DIA.

FEMALE

User Interface

- 8" TFT LCD panel, LED Backlit
- Widescreen aspect ratio 5:3
- 800 x 480 pixels
- 1350 nits brightness (Optically bonded)
- Solid state disk drive

- Fanless cooling system
- Flush or VESA mounting capability
- Dual CAN Bus for Single or Redundant NMEA 2000® Network Connectors
- Includes Maretron's N2KView

TSM810C-01

Item Number	Description	Price
TSM810C-01	8" vessel monitoring and control touchscreen	$2,795.00

- 5.7" high-resolution sunlight viewable color display
- Custom screen configurations and an easy-to-use five-key illuminated keypad
- Features an alert/ alarm package and electrical switching capability
- Mounting options: flush mount, surface mount, gimbal mount helm, gimbal mount ceiling
- Directly connects with any NMEA 2000® network and with the exception of AIS data will display any or all information captured throughout the vessel

- Displays a multitude of information including AC power, anchor status, battery, depth, electrical distribution, engine, environment, fuel management, GPS, heading, navigation, pressure/ vacuum, rudder, speed, status indicators, tanks, temperature, time, transmission, water makers, weather, wind and more

DSM250-01

Item Number	Description	Price
DSM250-01	High bright color display (black enclosure)	$995.00

- NMEA 2000 Network Interface
- Super loud 105dB audible alarm
- Bright Red LED visual alarm
- Green LED status indicator
- Multiple selectable alarm patterns
- Waterproof - Can be mounted indoors or outdoors
- Generates visual and audible alerts for any monitored condition

ALM100-01

Item Number	Description	Price
ALM100-01	Alarm Buzzer with Black Cover Plate	$395.00

Images are representative of products listed and may not be actual product.

Digital Automation

NMEA 2000 Gateways and Bridges

IPG100

- The Internet Protocol Gateway (IPG100) lets you connect PC's, Mac's, tablets, or smartphones to an NMEA 2000® network so you can monitor and control your vessel using Maretron's N2KView® software
- The IPG100 has an NMEA 2000® and an Ethernet data port for exchanging information between the onboard NMEA 2000® network and Internet Protocol (IP) enabled devices using conventional technology such as routers, switches, and wireless modems.
- IPG100 will automatically connect to Maretron's Real Time Cloud Service, which allows you to remotely connect to your vessel via the Internet

IPG100-01

Item Number	Description	Price
IPG100-01	Internet Protocol Gateway	$395.00

NBE100

- Maretron's NBE100 allows you to extend the maximum node count, network trunk length and cumulative drop length of any NMEA 2000®network
- Solves bus errors and other electrical issues caused by exceeding any of these limitations and makes design of large networks easier
- Segments a single large NMEA 2000® network into two smaller electrical segments.
- Optically isolates network segments, increasing signal integrity and network reliability.

NBE100-01

Item Number	Description	Price
NBE100-01	NMEA 2000® Network Bus Extender	$595.00

FPM100

- Maretron's Fluid Pressure Monitor is used to adapt up to six pressure transducers to the NMEA 2000® network (pressure transducers sold separately).
- The FPM100 also has a tank level mode, so that fluid levels in a tank can be monitored via a pressure transducer mounted at the bottom of the tank and transmitted over the NMEA 2000® network
- Allows 21 pressure sources types
- Operating voltage 9 to 32 volts.

FPM100-01

PT-0-3PSI-01

Item Number	Description	Price
FPM100-01	NMEA 2000® Network Bus Extender	$395.00
PT-0-3PSI-01	Pressure Transducer 0 to 3 PSI	$149.00

NMEA 2000 Gateways and Bridges

TLM100

- Maretron's TLM100 is used to sense fluid levels of tanks by using ultrasonic technology.
- TLM100 is capable of sensing fluid levels in tanks up to 40" (1.02m) in depth.
- It can be used for diesel, fresh water, waste water, black water, and oil tanks
- The TLM100 can be calibrated for irregular tank shapes so you can know the true fluid level in your tanks.
- Operating voltage 9 to 16 volts

TLM100-01

Item Number	Description	Price
TLM100-01	Tank Level Monitor (40" Depth Tanks)	$225.00

USB100 NMEA 2000® USB Gateway

- Maretron's USB100 is a gateway for bridging computers to an NMEA network.
- Allows you to use PC based vessel monitoring and control software
- The gateway provides one simple connection between the network and the PC
- For older PC based navigation software that requires receiving data in NMEA 0183 format, the USB100 automatically converts information from the NMEA 2000® network to NMEA 0183 sentences.

USB100-01

Item Number	Description	Price
USB100-01	Gateway NMEA 2000® / USB	$295.00

J2K100 J1939 to NMEA 2000

- Maretron's J2K100 attaches directly into J1939 networks of compatible engines, transmissions, and gensets and converts the J1939 data to the marine digital interface (NMEA 2000®).
- Critical engine, transmission, and genset data is then distributed throughout the vessel over a single cable where it can be monitored by any NMEA 2000® compatible display.
- The J2K100 can also be used as part of a complete fuel computer.
- The J2K100 is compatible with any engine, transmission, or genset equipped with a J1939 interface

J2K100-01

Item Number	Description	Price
J2K100-01	J1939 to NMEA 2000® Gateway	$395.00

Images are representative of products listed and may not be actual product.

Digital Automation

Engine Monitoring

J2K100 J1939 to NMEA 2000

- Maretron's J2K100 attaches directly into J1939 networks of compatible engines, transmissions, and gensets and converts the J1939 engine data to the NMEA 2000

- The J2K100 is compatible with J1939 products, including those from: Caterpillar,Cummins, Detroit Diesel, John Deere, Kohler, Ona, Perkins, Steyr, Volvo Penta, Yanmar

- Operating voltage 9-16 volts

MCF-2M-D12

Item Number	Description	Price
J2K100-01	J1939 to NMEA 2000® Gateway	$395.00
MCF-2M-D4	J2K100 adapter Micro female to Deutsch 4 Pin 2 Meter Cordset	$53.00
MCF-2M-D12	J2K100 adapter Micro female to Deutsch 12 Pin 2 Meter Cordset	$62.00

Electrical Monitoring and Controls

ACM100

- Maretron's ACM100 is a device which monitors AC power sources and outputs information about these sources onto the industry standard NMEA 2000® marine data network

- Monitoring AC Power Sources such as Utilities and Generators and transmitting: Voltage, Current, Frequency, Real Power, Reactive Power, Apparent Power, Power Factor, Total Energy Imported, Total Energy Exported

ACM100-01

Item Number	Description	Price
ACM100-01	Alternating Current (AC) Monitor	$495.00
M000630	100Amp AC Transducer with Cable	$59.00

DCM100

- Maretron's DCM100 DC Monitor is an advanced electronic monitoring device used to measure the voltage and current of any direct current (DC) power source or load.

- The DCM100 uses an included state-of-the-art Hall effect current sensor which simply slips over the wire - you don't have to break connections or install connectors as you do with inline shunts used by other solutions.

- DCM100 measures: Battery voltage, Battery current, Ripple voltage, Battery case, temperature, State of charge, Time remaining, Charge efficiency factor

DCM100-01

Item Number	Description	Price
DCM100-01	Alternating Current (AC) Monitor	$495.00
LEMHTA400-S	100Amp AC Transducer with Cable	$150.00
LEMHTA600-S	600 Amp Current Transducer with Cable	$195.00

List pricing in catalog is subject to change without notice.

Electrical Monitoring and Controls (Continued)

RIM100

- Maretron's Run Indicator Module monitors both AC and DC electrical circuits and reports, over an NMEA 2000® network, whether or not the electrical circuit is energized and running.
- Monitors and reports the running status of connected devices
- Works with both automatically and manually switched loads

- Can indicate the status of a wide variety of loads: Bilge Pumps, Winches, Running Lights, Transfer Pumps, Exhaust/Intake Fans
- Includes built in timers and counters so you know how long and many times a load is energized

RIM100-01

Item Number	Description	Price
RIM100-01	Run Indicator Module	$295.00

General System Monitoring SIM

SIM100

- Maretron's Switch Indicator Module monitors switch closure devices including, but not limited to, safety equipment
- Advanced features of the SIM100 include the ability to detect whether or not power has been disconnected from the monitored device or if the signal wires have been disconnected due to either corrosion, tampering, or for any other reason (if the monitored device is so equipped).
- Monitors and reports the running statuses of six independently connected devices
- Can detect and report problems like opens and shorts in switch circuits

SIM100-01

Item Number	Description	Price
SIM100-01	Switch Indicator Module	$395.00

Images are representative of products listed and may not be actual product.

Digital Automation

General System Monitoring SIM (Continued)

TMP100

- Maretron's TMP100 measures the temperature for up to 6 temperature probes and reports the information over an NMEA 2000® network. The TMP100 supports up to 4 thermistor probes and 2 high temperature thermocouple probes.
- Six External Temperature Probes are Measured and Broadcast Over NMEA 2000 Network
- Four Channels for Thermistor Probes and 2 Channels for High Temperature Thermocouple Probes
- Wide Variety of Applications Supported with Optional Temperature Probes: Cabin Temperature, Engine Room Temperature, Under Bolt Temperature, Refrigerator/Freezer Temperature, Tank Temperatures, Air Duct Temperature, Exhaust Gas Temperature

TMP100-01

TP-AAP-1
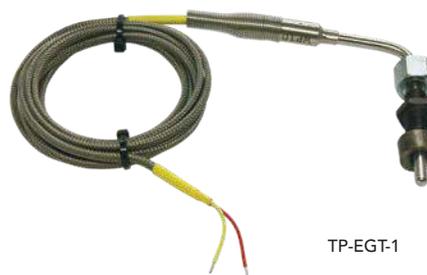
TP-EGT-1

Item Number	Description	Price
TMP100-01	Temperature Module	$295.00
TP-AAP-1	TMP100 Ambient Air Temperature Probe	$24.50
TP-EGT-1	TMP100 Exhaust Gas Temperature (EGT) Probe	$129.00

Navigation Instruments

GPS200

- Maretron's GPS200 is a state-of-the-art 99 channel GPS/GLONASS antenna and receiver capable of providing ten position fixes per second
- GPS200 broadcasts precision magnetic variation information using the current position and world magnetic model

- The GPS200 antenna/receiver is a plug-and-play device that is fully compliant and certified to the NMEA 2000® Standard.
- The GPS200 is easily mounted to a standard marine mount with 1"-14 TPI male pipe end. It can also be mounted directly to a deck.

GSP200-01

Item Number	Description	Price
GPS200-01	GPS Antenna/Receiver	$295.00

List pricing in catalog is subject to change without notice.

NMEA 2000 Connectors, Resistors and Cable

Connectors

- Color coded screw terminals for error free installations
- Rugged housing designed to withstand harsh marine environments
- Field attachable
- MICRO Tees have gold contacts for greatest reliability with keyed connectors
- Powertap tee connects to network backbone to provide bus power. Tee provides two inputs permitting double power provisions. IP67
- MICRO terminator resistors are used to terminate both ends of the trunk line and have screw terminal connectors for positive connections, IP68

Cordsets

- Double ended for trunk or drop lines
- Keyed for error free connection
- Waterproof for continued operation even while submerged in the bilge
- MID cordsets are optimized for voltage drop sensitive networks (long runs) because power pair wires have half the resistance of MICRO cables
- IP68 rated

ELB-CM-CF

CM-CF-CF

TR-CF
TR-CM

FA-CF-ST
FA-CM-ST

CF-SPWR05-CF

CM-CF-4

CM-CG1-CF-1

DM-DB1-DF-1

Item Number	Description	Color	Ratings	Volts
Call for Current Pricing				
	Connectors			
CABLE STARTER KIT	Includes: Powertap, two male terminators, two tees, two 2m and one 10m micro cables	Powertap: Yellow Connectors: Gray	—	—
CF-SPWR05-CF	MICRO/MID Powertap Tee: female (left))/5 meter yellow 4 wire power drop(bottom)/ female(right)	Yellow	4 amp	250VDC
CM-CF-CF	MICRO tee-male(left)/ female(bottom)/ female(right)	Gray	4 amp	60VDC
CM-CF-4	Multiport box (MICRO-MID male homerun, MICRO-MID female drops)	Gray	4 amp	250VDC
FA-CF-ST	MICRO/MID straight female	Gray	4 amp	30V AC/ 36VDC
FA-CM-ST	MICRO/MID straight male	Gray	4 amp	30V AC/ 36VDC
IT-CM-CF	MICRO inline terminator	Gray	121 Ohms (1/4W)	10-30VDC
ELB-CM-CF	MICRO 90° male to female connector	Gray	4 amp	50V
TR-CF	MICRO female termination resistor	Gray	120 Ohms (1/2W)	10-30VDC
TR-CM	MICRO male termination resistor	Gray	120 Ohms (1/2W)	10-30VDC

Item Number	Type	Ends	Color	Meters Sold
Call for Current Pricing				
	Cordsets			
CM-CG1-CF-XX	MICRO	Male to Female	Gray	0.5, 1, 3, 5, 8
DM-DB1-DF-XX	MID	Male to Female	Blue	0.5, 1, 2, 3, 4, 5

Images are representative of products listed and may not be actual product.

Digital Automation

NMEA 2000 Connectors, Resistors and Cable

Item Number	Description	Color	Ratings	Volts
Call for Current Pricing				
		Connectors		
FA-NF-ST	Mini Field Attachable Connector (Female)	Black	9 Amps	250V
FA-NM-ST	Mini Field Attachable Connector (Male)	Black	9 Amps	250V
NM-NF-NF	Mini Tee	Gray	9 Amps	600V
NM-CF-NF	Mini/ Micro	Gray	4 Amp (micro) 9Amp (mini)	250V
		Resistors		
Call for Current Pricing				
IT-CM-CF	Micro Inline Terminator	Black	121 Ohms (1/4 W)	10-30VDC
TR-NM	Mini Termination Resistor (Male)	Gray	120 Ohms (1/2 W)	300VDC
TR-NF	Mini Termination Resistor (Female)	Gray	120 Ohms (1/2 W)	300VDC

Item Number	Type	Max Amp	Resistance/Conductor	Volts	Length Sold
		Cable			
Call for Current Pricing					
CG1	Micro	6 Amps	18.1 Ohms/ 1000ft	Gray	per Meter
CG1-100	Micro	6 Amps	18.1 Ohms/ 1000ft	Gray	2x50m
DB1	Mid	14 Amps	4.1 Ohms/1000ft	Blue	per Meter
DB1-100	Mid	14 Amps	4.1 Ohms/1000ft	Blue	2x50m
NG1	Mini	14 Amps	3.4 Ohms/1000ft	Gray	per Meter
NG1-100	Mini	14 Amps	3.4 Ohms/1000ft	Gray	2x50m
NB1	Mini	16 Amps	3.4 Ohms/1000ft	Blue	per Meter
NB1-100	Mini	16 Amps	3.4 Ohms/1000ft	Blue	2x50m

List pricing in catalog is subject to change without notice.

ENCLOSURE RATINGS

In order to assist in the selection of an enclosure, rating classifications have been established by the National Electrical Manufacturers Association (NEMA). These ratings identify the ability of the enclosure to provide a degree of protection against incidental contact with the enclosed equipment and protection to the enclosed equipment from environmental elements such as dirt, dust, water and other corrosive agents. These ratings are intended to be used only as a guide.

NEMA 3 Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and that will be undamaged by the external formation of ice on the enclosure.

NEMA 3R Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, and snow; and that will be undamaged by the external formation of ice on the enclosure.

NEMA 4 Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose directed water;: and that will be undamaged by the external formation of ice on the enclosure.

NEMA 4X Indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose directed water and corrosion; and that will be undamaged by the external formation of ice on the enclosure.

IP44 Protection against solid bodies larger than 1mm(tools, wires, etc.) and against water splashing from a hose from all directions.

IP55 Protection against dust (no harmful deposits) and against water sprayed from a hose in all directions.

IP56 Protection against dust and water projections similar to sea wave splashes.

IP65 Complete protection against dust and against water sprayed from a hose from all directions.

Images are representative of products listed and may not be actual product.

Enclosures

Vynkier

- UL Listed and CSA Certified
- Many sizes to choose from
- Can come with hinge, latch, screw on, and with window
- Matching back plates, front plates, and stand offs

- All hardware comes in stainless steel
- Made from corrosion resistant, hot compression molded fiberglass reinforced polyester, halogen free
- Can withstand continuous temperatures from -58° F (-50° C) up to 302° F (150° C)

HINGED WITHOUT LATCH	SCREW COVER	HINGED WITH ONE LATCH	HINGED WITH TWO LATCHES	RAISED COVER

Item Number	Dimensions in " (mm) HxWxD	Price
Hinged without Latch		
VJ606HWW	6(152.4) x 6(152.4) x 4.21(106.9)	$112.31
VJ806HWW	8(203.2) x 6(152.4) x 4.21(106.9)	$117.29
VJ1008HWW	10(254.0) x 8(203.2) x 4.69(119)	$134.08
VJ1210HWW	12(304.8) x 10(254.0) x 4.84(122.9)	$153.93
VJ1412HWW	14(355.6) x 12(304.8) x 5.82(147.8)	$179.15
VJ1614HWW	16(406.4) x 14(355.6) x 5.82(147.8)	$209.61
VJ1816HWW	18(457.2) x 16(406.4) x 8.69(220.8)	$276.91
AN2416 (Gray)	22.64(575) x 14.57(370) x 8.11(206)	$647.27
Screw Cover		
VJ606WW	6(152.4) x 6(152.4) x 4.21(106.9)	$103.28
VJ806WW	8(203.2) x 6(152.4) x 4.21(106.9)	$109.07
VJ1008WW	10(254.0) x 8(203.2) x 4.69(119.1)	$119.14
VJ1210WW	12(304.8) x 10(254.0) x 4.84(122.9)	$145.02
VJ1412WW	14(355.6) x 12(304.8) x 5.82(147.8)	$170.49
VJ1614WW	16(406.4) x 14(355.6) x 5.82(147.8)	$202.52
VJ1816WW	18(457.2) x 16(406.4) x 8.69(220.8)	$268.52
VJ2016WW	21.32(541.5) x 17.32(439.9) x 11.57(293.9)	$425.89
Hinged with Latch		
Double latch unless otherwise noted		
VJ1008HWWLL1 (Single latch)	10(254.0) x 8(203.2) x 4.69(119.1)	$153.79
VJ1210HWWLL2	12(304.8) x 10(254.0) x 4.84(122.9)	$186.24
VJ1412HWWLL2	14(355.6) x 12(304.8) x 5.82(147.8)	$213.92
VJ1614HWWLL2	16(406.4) x 14(355.6) x 5.82(147.8)	$242.99
VJ1816HWWLL2	18(457.2) x 16(406.4) x 8.69(220.8)	$309.15
VJ2016HWWLL2	21.32 (541.5)x 17.32 (439.9)x 11.57 (293.9)	$494.46
Hinged Raised Cover		
RVJ1008HWW	10(254.0) x 8(203.2) x 6.66(169.1)	$150.35
RVJ1210HWW	12(304.8) x 10(254.0) x 6.84(173.7)	$172.04
RVJ1412HWW	14(355.6) x 14(355.6) x 7.95(201.9)	$192.07
RVJ1614HWW	16(406.4) x 14(355.6) x 7.95(201.9)	$226.19

List pricing in catalog is subject to change without notice.

Vynkier (Continued)

WINDOW FRONT

ALUMINUM BACKPLATE

FIBERGLASS BACKPLATE

Item Number	Dimensions in " (mm) HxWxD	Price
Hinged Window Front		
VJB806HWWLL1	8(203.2) x 6(152.4) x 4.21(106.9)	$209.85
VJB1008HWWLL1	10(254.0) x 8(203.2) x 4.69(119.1)	$237.27
VJB1210HWWLL2	12(304.8) x 10(254.0) x 4.84(122.9)	$246.72
VJB1412HWWLL2	14(355.6) x 12(304.8) x 5.82(147.8)	$373.73
VJB1816HWWLL2	18(457.2) x 16(406.4) x 8.69(220.8)	$503.84
Aluminum Backplates		
MP606A	4.88(123.9) x 4.88(123.9)	$10.78
MP806A	6.75(171.5) x 4.88(123.9)	$13.49
MP1008A	8.75(222.2) x 6.88(174.7)	$18.81
MP1210A	10.5(266.7) x 8.88(225.5)	$23.64
MP1412A	12.75(323.8) x 10.88(276.3)	$27.87
MP1614A	14.75(374.6) x 12.88(327.1)	$33.82
MP1816A	16.75(425.4) x 14.88(377.9)	$40.72
MP2016A	18.88(479.6)x 14.88(377.9)	$57.64
ABP2416A	21.65(549.9) x 13.78(350.0)	$84.70
Fiberglass Backplates		
MP606N	4.88(123.9) x 4.88(123.9)	$18.81
MP806N	6.75(171.5) x 4.88(123.9)	$20.05
MP1008N	8.75(222.2) x 6.88(174.7)	$23.64
MP1210N	10.5(266.7) x 8.88(225.5)	$38.56
MP1412N	12.75(323.8) x 10.88(276.3)	$45.04
MP1614N	14.75(374.6) x 12.88(327.1)	$51.42
MP1816N	16.75(425.4) x 14.88(377.9)	$59.53
MP2016N	18.9(479.4) x 14.9(377.8)	$64.74
Aluminum Hinged Front Plate Kit		
VFPH1816A	18(457.2) x 16(406.4)	$138.26
Stand Offs		
SO-05	.5(12.7)	$5.95
SO-10	1(25.4)	$6.35
SO-20	2(50.8)	$10.45
SO-40	4(101.6)	$21.02
Separate Latch Kits		
VJLL-KIT	Twist Latch	$23.67
VJTPL-KIT	Padlock Latch	$30.21

Images are representative of products listed and may not be actual product.

Enclosures

Stahlin

CF Series White
- Particularly useful where slim line mounting is required in tight spaces
- Recessed screws
- Made of molded fiberglass reinforced polyester (thermoset)
- Water Tight
- UV Resistant
- NEMA 250: Type 1, 3R, 4X, 6P, 12
- Temperature rating: -40°F(-40°C) to 250°F(120°C)

D Series White
- Specialized for shallow depth issues
- Recessed cover screws
- Brass inserts in all fixing positions
- Captive screw covers
- Made of fiberglass reinforced polyester with a poured in place polyurethane gasket
- IEC 529: IP66, IP67, IP68

DL Series
- Flush fitting cover fastened by captive lid screws
- Made of molded fiberglass reinforced polyester (thermoset)
- Stainless steel hardware
- Rounded edges, minimal protrusions or exposed pockets
- Temperature rating: -26°F(-32°C) to 257°F(125°C)
- IEC 529: IP66, IP67, IP68
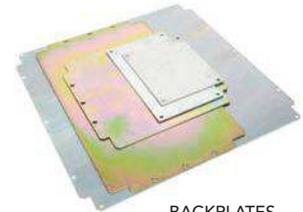
| CF SERIES | D SERIES | DL SERIES | BACKPLATES |

Item Number	Dimensions in " (mm) HxWxD	Color	Price
CF Series			
DWG6981532	5.38(136.7) x 3.03(77) x 2.87(72.9)	White	$57.75
DWG6982644	6.6(167.6) x 3.19(81) x 3.63(92.2)	White	$60.35
DWG7132844	8.26(209.8) x 3.19(81) x 3.63(92.2)	White	$68.75
F Series			
DWG6983763	6.9(175.3) x 5.9(149.9) x 2.88(73.2)	White	$78.56
DWG6984963	9.15(232.4) x 5.9(149.9) x 2.88(73.2)	White	$90.37
D Series			
D7114W	75.79(147.1) x 9.72(246.9) x 3.11(79)	Grey	$139.99
D10105W	9.29(236) x 9.49(241) x 4.29(109)	Grey	$176.80
D10165W	9.29(236) x 15.20(386.7) x 4.29(109)	Grey	$274.84
D16165W	15.39(390.9) x 15.20(386.7) x 4.29(109)	Grey	$371.72
DL Series			
DL24168W	22.67(575.8) x 15.55(396) x 7.99(203)	Grey	$570.19

Item Number	Dimensions in " (mm) HxWxD	Price
Backplates		
BP76 for DWG6983763	7(177.8) x 6(152.4) x 2.88(73.2)	$13.13
BP96 for DWG6983963	9.25(235) x 6(152.4) x 3(76.2)	$18.60

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Enclosures

Altech

- Made of polycarbonate with a polyurethane gasket
- Temperature ratings: -31ºF(35ºC) to 248ºF(120ºC)
- NEMA 4X: IP 66

ALTECH

Item Number	Knock Outs	Dimensions in " (mm) HxWxD	Price
PC77-6	PG16/11	2.56(65) x 2.56(65) x 2.24(57)	$22.21
PC97-6	PG11/11	3.46(88) x 2.56(65) x 2.24(57)	$27.95

IBOCO

- Made of polycarbonate
- IP 44, IP55, and IP56 ratings
- Solid covers, come with stainless steel screws

IP44 ROUND   IP44   IP55   IP56

Item Number	Dimensions in " (mm) HxWxD	Price
IP 44		
* Includes gland		
PC-04461	2.4(61) x 1.5(38.1)	$3.82
PC-04463	3.3(83.8) x 3.3(83.8) x 1.61(40.6)	$5.80
IP 55		
* Includes gland		
PC-04831	3.9(99.1) x 3.9(99.1) x 1.85(47)	$9.93
IP 56		
PC-04841	3.89(98.8) x 3.89(98.8) x 1.85(47)	$8.80
PC-04842	4.69(119.1) x 3.10(78.7) x 1.85(47)	$9.16
PC-04843	5.87(149.1) x 4.29(109) x 2.56(65)	$13.75
PC-04844	7.48(190) x 5.67(144) x 2.56(65)	$22.91
PC-04845	9.64(244.9) x 7.52(191) x 3.39(86.1)	$48.51
PC-04846	12(304.8) x 8.86(225) x 4.4(111.8)	$66.84
PC-04847	15(381) x 11.93(303) x 4.4(111.8)	$92.04
686.404	3.94(100) x 3.94(100) x 3.15(80)	$14.40

Cantex PVC

- UL Listed and CSA Certified
- Many sizes with cover
- Screw on application
- Molded PVC

CANTEX PVC

Item Number	Dimensions in " (mm) LxWxD	Price
2x4x4	2(50.8) x 4(101.6) x 4(101.6)	$13.21
4x4x4	4(101.6) x 4(101.6) x 4(101.6)	$19.96
5x5x2	5(127.0) x 5(127.0) x 2(50.6)	$23.26
6x6x4	6(152.4) x 6(152.4) x 4(101.6)	$26.67
6x6x6	6(152.4) x 6(152.4) x 6(152.4)	$31.11
8x8x4	8(203.2) x 8(203.2) x 4(101.6)	$50.31
8x8x7	8(203.2) x 8(203.2) x 7(177.8)	$66.81
12x12x4	12(304.6) x 12(304.6) x 4(101.6)	$68.67

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Enclosures

Receptacle

- For use with switches and receptacles
- Both old work and new work
- Thermoplastic classified for two hour firewall/fireceiling

T11   E381D   E382DE   9301   9312   9361-EK

Item Number	Gang	Mount	Dimensions in " (mm) LxWxD	Price
Aluminum				
T11	1	Surface	2(50.80) x 4(101.6)	$9.25
PVC				
E381D	1	Surface	2(50.8) x 4.56(115.8) x 2(50.8)	$17.40
E381DW (white)	1	Surface	2(50.8) x 4.56(115.8) x 2(50.8)	$13.86
E382DE	2	Surface	4.62(117.3) x 4.62(117.3) x 2(50.8)	$22.50
E382DEW (white)	2	Surface	4.62(117.3) x 4.62(117.3) x 2(50.8)	$14.14
Fiberglass				
9301	1	Flush	1.75(44.5) x 2.37(60.2) x 3.25(83.6)	$3.09
9312	2	Flush	2.75(69.9) x 4.12(104.7) x 3.25(82.6)	$6.43
9361-EK	1	Flush	2.87(72.9) x 2.37(60.2) x 3.25(82.6)	$3.33

Scame

- Gray in color
- Stainless steel screws provided with covers
- IP 66 rated
- IEC 60529 and EN 60529 regulated
- Made with halogen free self extinguishing plastic
- Resistant to chemicals, acids, alkaline, mineral oils, water, saline solutions, and weathering
- Tinted window

SCAME

Item Number	DIN Module	Dimensions in " (mm) HxWxD	Price
672.2002	2	5.31(134.9) x 3(76.2) x 4(101.6)	$49.00
672.2004	4	7.5(190.5) x 4.4(111.8) x 4.17(105.9)	$61.08
672.2008	8	7.5(190.5) x 7.24(183.9) x 4.17(105.9)	$74.96
672.2012	12	9.84(249.9) x 10(254) x 5.51(140)	$148.32
672.4024	24 (12x2)	15.74(399.8) x 10(254) x 5.51(140)	$230.72

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Mechanical Engine Controls

- Single lever control
- Six station capability
- Posi-lock gear lock out capability
- Engine sync mode
- Start interlock
- Station lockout capabilities
- Adjustable high idle settings
- Dual battery inputs
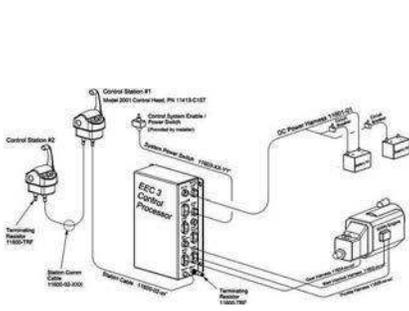
SINGLE ENGINE DUAL STATIONS
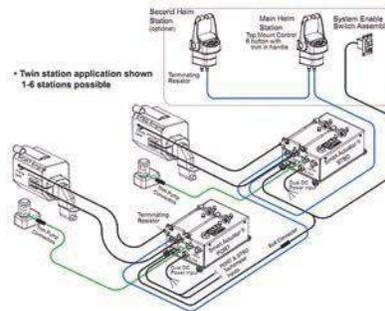
TWIN ENGINES DUAL STATIONS
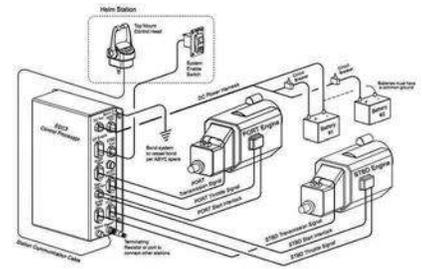
TWIN ENGINES SINGLE STATION

Item Number	Inboard/Outboard	Description	Station	Volts	Price
Single Engine					
SA2-1E-INBD-12-4B	Inboard	Mechanical shift/ mechanical throttle	Single	12	$3,070.31
SA2-1E-OBSD12	Outboard /Stern Drive	Mechanical shift/ mechanical throttle/ trim control	Single	12	$2,945.00
Twin Engines					
SA2-2E-INBD-12-4B	Inboard	Mechanical shift/ mechanical throttle	Single	12	$5,120.00
SA2-2E-INDBD-24-4B	Inboard	Mechanical shift/ mechanical throttle	Single	24	$5,120.00
SA2-2E-INBD24	Inboard	Mechanical shift/ mechanical throttle	Single	24	$5,039.00
SA2-2E-OBSD12	Outboard /Stern Drive	Mechanical shift/ mechanical throttle/ trim control	Single	12	$5,158.00
Triple Engines					
SA2-3E-OBSD12	Outboard /Stern Drive	Mechanical shift/ mechanical throttle/ trim control	Single	12	$7,765.00

Item Number	Inboard/Outboard	Engine	Price
Mechanical Station Control Heads			
SA2-1E-INBD-STA-4B	Inboard	Single	$930.00
SA2-1E-OBSD-STA	Outboard /Stern Drive	Single	$800.00
SA2-2E-INBD-STA-4B	Inboard	Twin	$1,125.00
SA2-2E-OBSD-STA	Outboard /Stern Drive	Twin	$1,005.00

Smart Actuator 2

- Suitable for use with all engines with mechanical throttle, shift, or trollings
- Includes capability for trim control
- Up to 6 station remote control

ACTUATOR

Item Number	Smart Actuator 2	Volts	Price
11314-12-TMG-P	Port	12	$1,615.00
11314-12-TMG-S	Starboard	12	$1,615.00
11314-24-TMG-P	Port	24	$1,615.00
11314-24-TMG-S	Starboard	24	$1,615.00

Images are representative of products listed and may not be actual product.

Engine Controls

Control Heads

- 2 button basic function: neutral gear positioning
- Chromes standard
- Integrated trim control
- Gear positioning lights

CONTROL HEAD IN
CHROME TOP MOUNT

TWO BUTTON KEYPAD

Item Number	Smart Actuator	Style	Price
11413-C15T	EEC3	Top mount	$1,125.00
11415-C	EEC4	Two button	$995.00
11415-C-CP	SACT	Two button topmount (control processor)	$1,185.00
11415-C-CP-SGL	SACT	Two button topmount (control processor) single	$1,040.00
11415-C2-SGL	EEC4	Two button single ID2	$800.00

Harness

Item Number	Length in Ft.	Type	Price
11600-02-05	5	Station harness	$112.20
11600-02-10	10	Station harness	$112.20
11600-02-20	20	Station harness	$112.20
11600-02-30	30	Station harness	$127.50
11600-02-40	40	Station harness	$139.00
11600-02-60	60	Station harness	$169.00
11600-02-80	80	Station harness	$199.00
11600-02-100	100	Station harness	$295.00
11600-CMM	--	Coupler harness	$102.00
11601-01	--	Power supply harness	$50.00
11602-01	30	Start interlock harness	$62.00
11603-24-60	60	CP enable 24v harness	$65.00
11603-24-100	100	CP enable 24v harness	$82.00
11604-L1-30	30	Gear ZFIRM with LED harness	$120.00
11605-M4-30	30	Engine MAN blunt cut harness	$67.00

Spare Parts

Item Number	Description	Price
11490-B	Black enable switch	$49.00
11490-W	White enable switch	$49.00
11600-03-06	M/F device net 90 degree	$112.20
11600-TRF	Terminating resistor	$25.00
99115	Ball joint quick disconnect	$5.61
99201	33C Cable clamp	$2.42
99202	Cable shim	$1.73

List pricing in catalog is subject to change without notice.

Axial Fans

- All AC units are rated at 50/60 Hz. (50 Hz. operation will decrease CFM by 20%)
- Sleeve bearing fans must be mounted for horizontal airflow only
- Single speed
- Includes 12" wire leads unless noted (*terminal connections)

ALUMINUM HOUSING WITH TERMINALS   ALUMINUM HOUSING WITH LEADS   PLASTIC HOUSING WITH LEADS

Item Number	CFM	Volts	Watts	Amps	Dimension In " (mm)	Mounting Holes OC " (mm)	Price
PBT Plastic Housing							
Driven with brushless DC motor							
4WT35	36.5	12DC	1.4	.12	3.13(79.5) x 3.13(79.5) x 1.00(25.4)	2.81(71.3)	$43.72
6KD70	138	12DC	10.0	.833	4.69(119.1) x 4.69(119.1) 1.50(38.1)	4.13(104.9)	$71.92
6KD74	138	24DC	9.2	.383	4.69(119.1) x 4.69(119.1) 1.50(38.1)	4.13(104.9)	$76.30
Cast-Aluminum Housing							
Driven with impedance-protected shaded pole or thermally protected PSC motor							
4WT40	30	115 AC	12	0.13	3.13(79.5) x 3.13(79.5) x 1.5(38.1)	2.81(71.3)	$62.40
4WT41	30	230 AC	16	0.08	3.13(79.5) x 3.13(79.5) x 1.5(38.1)	2.81(71.3)	$57.58
4WT48*	70	115 AC	11	0.13	4.69(119.1) x 4.69(119.1) 1.50(38.1)	4.13(104.9)	$58.02
4WT47*	105	115 AC	18	0.18	4.69(119.1) x 4.69(119.1) 1.50(38.1)	4.13(104.9)	$47.80
4WT33*	105	230 AC	19	0.11	4.69(119.1) x 4.69(119.1) 1.50(38.1)	4.13(104.9)	$60.24

Fan Accessories

- Wire guards are nickel chrome plated and can withstand 220 lb. separation force
- Plastic guards are made of UL listed 94V-0 material
- Plastic assemblies contain: fan guard, foam filter media, and retainer
- Cord sets are type SPT-1, 18/2 AWG, plugs into terminals of all standard 115 or 230 volts axial fans

GUARDS & CORDS

Item Number	Description	Dimension in " (mm)	Price
4YD95	Plastic Guard Assembly	3.13(79.5)	$6.70
31CC66	Plastic Guard Assembly	4.71(119.6)	$7.52
4YD96	Wire Guard (115/230V)	3.13(79.5)	$7.24
4YD87	Wire Guard	4.71(119.6)	$4.70
4YD79	Cord Set for Axial Fan	24L / 90º Head	$3.90

Images are representative of products listed and may not be actual product.

Fuse Blocks and Holders

Blue Sea Systems

- Rated IP66 on front- protected against powerful water jets
- For use with AGC or MDL fuses
- 32 volts DC max operating voltage
- 1/4" x 1-1/4" fuses

5021

Item Number	Connections	Mounting Hole Size in " (mm)	Fuse Amps	Price
5021	Quick connect	.50(12.70)	20	$3.82

Cooper Bussman

- Used with 1/4" x 1-1/4" fuses
- When fuse is inserted: 2.64"(67.05mm) max depth
- Bayonet type knob for panels up to 5/16" (7.9mm) thick
- 250 volts
- CE, UL & CSA certified

HKP-HH

Item Number	Connections	Mounting Hole Size in " (mm)	Fuse Amps	Price
HKP-HH	1/4" Quick Connect	.473(12) x .505(12.8)	15	$5.32

FIC

- Molded from high impact plastic
- Screw-thread terminals for positive connection
- UL, CSA, and CE recognized
- Dead front, watertight at face of panel
- Meets military requirements of MIL-F-19207

5200-1   5300-3   5800-11

Item Number	Mounting Hole Size in " (mm)	Connections	Fuse Amps	Price
	FIC			
5200-1	.25(6.35) x 1.25(31.75)	12-22	0-30	$218.66
5300-3	.25(6.35) x 1.25(31.75)	34-45	0-30	$232.88
5800-11	.56(14.22) x 2(50.80)	90-250	0-30	$312.60
5900-11	.81(20.57) x 3(76.20)	90-250	31-60	$391.68

Item Number	Description	Price
	Accessories	
3-1300-1	Plastic cap only for use with 5900-11	$26.80
5902-11	60 amp screw fuse cap for use with 5900-11	$234.92

List pricing in catalog is subject to change without notice.

Cole Hersee

- Glass Fuses
- Large brass contacts for maximum efficiency
- 8" (203.2mm) lead wire to install, cut wire loop

3031-0

Item Number	Terminal	Fuse Holder Description	Fuse Amps	Price
3031-0	#14 leads	Positive twist-lock seal	3-30	$2.67

Seachoice

- Watertight in line
- Made of molded heat resistant non-breakable plastic
- Has spare fuse compartment
- Supplied with two nickel plated brass fuses

50-12701

Item Number	Terminal	Type	Fuse Amps	Price
50-12701	#16	Push together	10	$6.47
50-12721	#10	Push together	30	$10.24

Blue Sea Systems

Glass Fuse
- For use with AGC or MDL glass fuses

Blade Fuse
- For use with ATO, ATC, or Maxi fuses

5060

5063

5064

5065

Item Number	Terminal	Fuse Holder Description	Fuse Amps	Price
		Glass Fuse		
5060	#12-16	Crimpable	30	$2.79
5063	#12	Heavy duty with pigtails	30	$3.88
		Blade Fuse		
5064	#12	Includes ATC pigtails	30	$3.98
5065	#12	Includes ATC waterproof cap and pigtails	30	$9.88
5068	#6	In-Line Maxi fuse holder 32VDC 60Amp Max	60	$27.19

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Fuse Blocks and Holders

Cooper Bussman

Traditional (HFA) Series
- Used for 1/4" x 1-1/4" fuses
- 250 volts
- 20 amps
- CE & UL recognized
- Dimensions in " (mm): 2.34(59.44)W x .800(20.32)H
- HFB same with 50 volts or less rating

Traditional (HEJ) Series
- Used for 13/32" x 2-1/4" fuses
- For SC style fuses
- 480 volts
- CE, UL, & CSA recognized

Traditional (HEB) Series
- Used for 13/32" x 1-1/2" fuses
- For BAF, DCM, FNM, FNQ, and KTK fuses
- CE, CSA, & UL recognized
- 600 volts (or less)
- Amps limited by conductor size

HFA

HEJ

HEB

Item Number	Crimp #	Description	Amps	Price
		Traditional		
HFA	#12-#16	Water resistant holder	20	$41.34
HFB	#12-#16	Waterproof	20	$7.45
HEJAA	#12-#8	Single pole non breakaway	35-60	$50.58
HEJBB	#10-#6	Single pole non breakaway	35-60	$44.95
HEBAA	#12-#8	Single pole non breakaway	1-30	$25.37
HEBBB	#6	Single pole non breakaway	1-30	$26.31

(HFB) Series
- In-line water resistant series

Non Rejecting (HLR) Series
- For use with GLR fuses
- Two leads: line and loadside
- 300 volts
- UL, CE, and CSA recognized

Automotive (HHX) Series
- 32 volts DC
- Amps is 80% continuous of fuse rating

HFB

HLR

HHX

Item Number	Crimp #	Description	Amps	Price
		Traditional		
HFA	#12-#16	Water resistant holder	20	$41.34
HFB	#12-#16	Waterproof	20	$7.54
HEJAA	#12-#8	Single pole non breakaway	35-60	$50.58
HEJBB	#10-#6	Single pole non breakaway	35-60	$44.95
HEBAA	#12-#8	Single pole non breakaway	1-30	$25.37
HEBBB	#6	Single pole non breakaway	1-30	$26.31
		Non Rejecting		
HLR-2A	#18-18	Black with two leads	15	$4.59
		Automotive Blade Type		
HHX	#6 red leadwire	Black with cover	20-60	$9.15
ATC-FHID	#16 black leadwire	Indicating black with cover	1-20	$4.61

List pricing in catalog is subject to change without notice.

Phoenix

Screw Connection
- Simple power distribution with integrated bridging
- Blown fuse indicators
- Test connection on both ends
- CSA, UL, and IECEE recognized

Spring Cage Connection
- Simple potential distribution with continuous function shafts
- Test connection on both ends
- LED status indicator
- CSA, UL, and IECEE recognized

SPRING-GLASS	SPRING-ATC	SCREW-GLASS	SCREW-BLADE	PLUG IN BRIDGE

Item Number	Fuse Type	Fuse Size in mm	Amps	Volts	Price
Screw Connection					
UK10-DREHSI	Glass G	5 x 20	10	500	$23.80
UK6.3-HESI	Glass G	6.3 x 32	10	500	$15.90
UK10,3-HESI N	Glass Midget	10.3 x 38	32	690	$20.66
UK6-FSI/C	ATC Blade	Flat C	30	250	$13.36
Spring Cage Connection					
ST4-HESILED24	Glass G	5 x 20	6.3	24	$16.28
ST4-HESILED60	Glass G	5 x 20	6.3	60	$16.28
ST4-HESILA250	Glass G	5 x 20	6.3	250	$16.28
ST4-FSI/C	ATC Blade	Flat C	30	400	$8.18

Item Number	Fuse Type	Pole	Amps	Price
Plug in Bridge				
The last digit in the bridge designation indicates the dimension of the terminal width.				
FBS2-8	ST4-FSI/C	2	41	$0.88
FBS3-8	ST4-FSI/C	3	41	$1.86
FBS4-8	ST4-FSI/C	4	41	$3.02
FBS10-8	ST4-FSI/C	10	41	$7.50
FBS2-6	ST4-HESILED24/60/ 250	2	32	$0.70
FBS3-6	ST4-HESILED24/ 60/ 250	3	32	$1.40
FBS4-6	ST4-HESILED24/ 60/ 251	4	32	$2.20
FBS10-6	ST4-HESILED24/ 60/ 253	10	32	$5.72
FBI10-8	UK6-FSI/C	10	57	$14.88
FBI10-12	UK10,3-HESI N	10	101	$23.72

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Fuse Blocks and Holders

Cooper Bussman

Series 8000
- Used for 1/4" x 1-1/4" fuses
- Flame retardant thermoplastic with spring bronze clips
- 300 volts
- 25 amps
- Anti-rotation pin
- UL and CSA Rated

BM Series
- Supplementary fuse block for use with any 13/32" x 1-1/2" fuses
- Cooper Bussman fuses: KTK, FNQ, FNM, BAF, PV, and AGU
- 1 pole
- 600 volts AC/DC
- 1/10 30 amps
- CE, UL, and CSA recognized

Limiter Blocks
- Used for ANL and ANN fuses
- Dimensions: 3.38"Lx.95"Wx1.62"H
- 2.43" Studs to center
- 125 volts AC, 80 volts DC
- 10-800 amps

SERIES 8000
QUICK CONNECT

SERIES 8000
SCREW CONNECT

BM SERIES

LIMITER BLOCK

Item Number	Terminal	Poles	Price
Series 8000			
S-8202-1	1/4" Quick Connect	1	$6.48
S-8301-1	Screw	1	$6.20
S-8301-4	Screw	4	$12.97
S-8301-8	Screw	8	$40.62
Limiter Blocks			
4164	Stud Terminal	1	$24.43
BM Series			
BMM603-1SQ	Quick Connect/ Screw	1	$6.48

List pricing in catalog is subject to change without notice.

Blue Sea Systems

ANL

- Accepts 5/16" (M8) ring terminals
- Insulating cover satisfies ABYC/USCG requirements
- UL 94-V0 base resists high heat
- 5005: 300 amps, 2/0 AWG wire size
- 5503: 750 amps, 4/0 AWG wire size
- Accepts ANL fuses
- 32 volt DC max

Safety (Ignition Protected)

- Sealed cover satisfies ABYC/USCG requirements
- CE marked, meets SAE J1171 and IP66 requirements
- Accepts Blue Sea Systems square format label
- 32 volts DC max
- 7720: 30-200 amps uses AMI or MIDI fuses
- 7721: 100-300 amps uses MEGA or AMG fuses

ATC (Blade) Common Source

- Sealed cover satisfies ABYC/USCG requirements
- Clear insulating cover with label recesses
- Covers include 20 write on circuit labels
- Accepts ring terminals
- Positive distribution bus with #10-32 stud
- 32 volts DC max
- 30 amps per circuit, 100 amps per block
- Accepts #8 (M4) mounting
- Accepts ATO or ATC fuses

ANL STYLE

SAFETY STYLE

BLADE STYLE

CHART A FOR DIMENSIONS

ANL FUSE BLOCKS

7720 and 7721 DIMENSIONS

7720 and 7721 COVER FRONT

BLADE FUSE BLOCKS
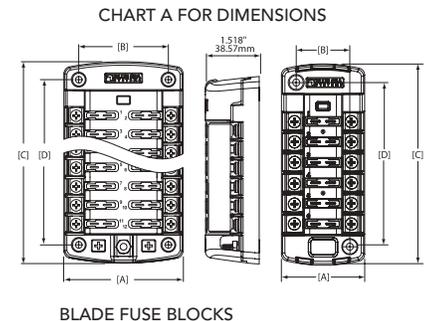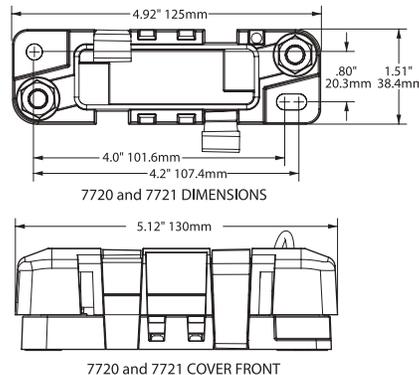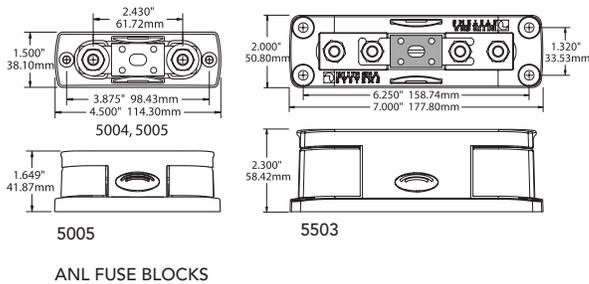
Item Number	Description	Price
ANL		
5005	300A max, w/ cover	$28.79
5503	750A max, w/ cover	$57.99
Safety (Ignition Protect)		
7721	100-300A, w/ cover	$35.19
7720	30-200A, w/ cover	$35.19
Blade		
5025	6 CKT, w/ ground	$50.99
5026	12 CKT, w/ ground	$63.99

CHART A: DIMENSION CHART FOR BLADE FUSE BLOCKS

PN	Circuits	Cover	Negative Bus	[A] Width in (mm)	in (mm) [D] Mounting	[B] Mounting Centers in (mm)	Centers in (mm) Weight	[C] Height lb (kg)
5025	6	Yes	#10-32 stud	3.32 (84.20)	2.50 (63.50)	4.89 (124.31)	3.88 (95.58)	0.55 (0.25)
5026	12	Yes	#10-32 stud	3.32 (84.20)	2.50 (63.50)	6.47 (164.39)	5.46 (138.66)	0.75 (0.34)

Images are representative of products listed and may not be actual product.

Fuse Blocks and Holders

Blue Sea Systems (Continued)

Glass

- Can be used for 24 hour circuits
- Clear insulating cover with label recesses
- Tin plated phosphor bronze fuse clips are encapsulated and cannot be sprung
- 32 volts DC
- 30 amps per circuit, 6 circuits total
- 100 amps per block
- #8 screw mounting (M4)
- Accepts AGC or MDL fuses
- 10X30mm

Class T

- Accepts 3/8" (M10) ring terminals
- Insulating cover satisfies ABYC/ USCG requirements
- UL 94-VO base resists high heat
- 16 volts DC
- 400 amps
- Up to 4/0 AWG wire size
- Accepts 3/8"-16 (M10) mounting studs
- Accepts Class T fuses available 225-400 amps
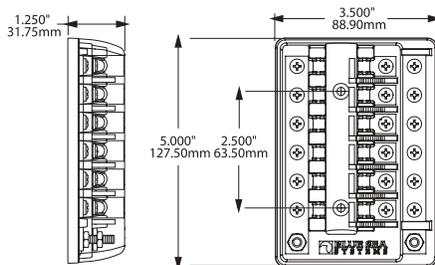
GLASS

CLASS T
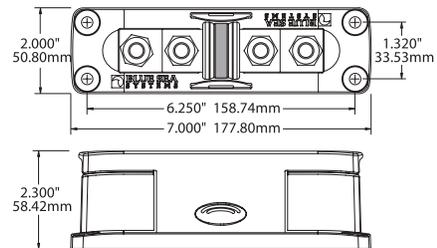
GLASS FUSE BLOCKS

CLASS T FUSE BLOCK

Item Number	Description	Max Operating	Price
Glass			
*Includes negative bus using #10-32 stud			
5015 *	6CKT, 1/4" x 1", with ground		$48.49
Class T			
5502	225-400A	320A	$57.99

List pricing in catalog is subject to change without notice.

Marinco

ANL

- High interrupt ratings up to 6,000
- High capacity fusing with fast response
- Radiused ends improve cable routing options
- Surface mount or through-bulkhead mount holder
- Easy visual inspection of fuse state
- Compact footprint saves space
- Tinned CDA260 highly conductive brass for improved strength on integral studs, stainless steel nuts and washers for longevity in the marine environment

CLASS T

- High interrupt ratings up to 2,000
- Radiused ends improve cable routing options
- High capacity fusing with fast response
- Durable construction allows for running at a maximum load
- Easy visual inspection of fuse state

*fuses not included

778-ANL	778-ANL2	778-ANLTP	778-T2S-400	778-T2S-600

Item Number	Terminal Stud	Amps	Price
ANL			
50 volts DC Determined by fuse fitted			
778-ANL	5/16	35-300	$33.85
778-ANL2S	3/8	35-750	$68.78
778-ANLTP	3/8	35-500	$82.10
Class T			
50 volts DC Determined by fuse fitted			
778-T2S-400	3/8	225-400	$68.78
778-T2S-600	3/8	450-600	$80.73

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Fuse Blocks and Holders

Blue Sea Systems

DUAL MRBF TERMINALS

- Compact, high-amp fuse—appropriate for DC Main, inverter, windlass, and bow thruster circuit protection
- Ignition protected when used with Blue Sea Systems' MRBF Terminal Fuse
- Isolated stud design uses standard M8 hardware and permits stacking of terminals
- Insulating cap prevents accidental shorts
- Accepts 5⁄16" ring terminals

ST BLADE TERMINAL

- Easy to install 4 ATO®/ATC® fused circuits
- Mounts on the battery terminal stud
- Nylon insulated ring terminals included for each screw terminal
- Ignition Protected–meets ISO 8846 and SAE J1171 for use in a gasoline engine compartment
- Insulating cover meets ABYC/USCG insulation requirements
- KIT INCLUDES: a 4-circuit negative busbar, write on labels, four 16-14 AWG and four 12-10 AWG Nylon insulated ring terminals

2151B

5023

5024

Item Number	Terminal Stud	Amps	Max Voltage	Price
DUAL MRBF Terminals				
2151B	3/8	300	58VDC	$46.47

Item Number	Circuits	Amps	Max Voltage	Price
ST Blade Terminal				
5023	4	100 per block/30 per circuit	32VDC	$26.79
5024		*5023 including kit extras		$38.99

List pricing in catalog is subject to change without notice.

GDB/GDA

- Fast acting, low breaking
- Ceramic tube GDA only
- Glass tube with brass endcaps GDB only
- .197"(5mm) x .788"(20mm)
- 250 volts AC or less
- UL Recognized, IEC 127-SI

GDB10

Item Number	Amps	Price
GDB5	5	$2.08
GDB8	8	$2.23
GDB10	10	$2.23
GDA6.3	6.3	$3.16

GMA

- Fast acting
- Glass tube with nickel plated brass endcaps
- .197"(5mm) x .788"(20mm)
- 250 volts AC (63mA-3A); 125VAC (3.15-15A)
- UL Recognized, CSA Certified, CE marked

GDB & GMA SERIES

Item Number	Amps	Price
GMA1/2	1/2	$1.43
GMA1	1	$1.39
GMA2	2	$1.39
GMA3	3	$1.39
GMA4	4	$1.39
GMA5	5	$1.39
GMA6	6	$1.39
GMA7	7	$1.46
GMA8	8	$1.46
GMA10	10	$1.46
GMA15	15	$1.46

MDA

- Time delay fuses
- Ceramic tube with nickel plated brass endcaps
- 1/4"(6.35mm) x 1-1/4"(31.75MM)
- 250 volts AC (or less); 125 volts DC (20A-30A)
- CE marked, UL listed, CSA class E certified

MDA SERIES

Item Number	Amps	Price
MDA1	1	$3.39
MDA2	2	$3.39
MDA3	3	$2.46
MDA5	5	$2.46
MDA8	8	$2.39
MDA10	10	$2.39
MDA15	15	$2.39
MDA25	25	$2.23
MDA20	20	$2.39
MDA30	30	$2.23

MDL

- Two per retail package
- When used with Blue Seas Systems safety fuse block, meets SAE J1171 and IP66
- Dimensions: 1.62"(41.15mm) x .480"(12.19mm)
- 250 volts AC (1-8A), 32V (10-30A)

MDL SERIES

Item Number	Amps	Price
MDL1	1	$2.00
MDL1-1/2	1-1/2	$1.58
MDL1-1/4	1-1/4	$1.73
MDL2	2	$1.58
MDL2-1/4	2-1/4	$1.89
MDL3	3	$1.58
MDL4	4	$1.58
MDL5	5	$1.58
MDL6	6	$1.58
MDL7	7	$1.58
MDL8	8	$1.58
MDL9	9	$1.58
MDL10	10	$1.58
MDL15	15	$2.23
MDL20	20	$2.23
MDL25	25	$2.23
MDL30	30	$2.23

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Fuses

ABC

- Fast acting fuse
- Ceramic tube with nickel plated brass endcaps
- 1/4"(6.35mm) x 1-1/4"(31.75mm)
- 250 volts AC/ 125 volts DC
- UL Listed, CE Marked, CSA Certified

ABC SERIES

Item Number	Amps	Price
ABC3/4	3/4	$1.62
ABC1	1	$1.46
ABC2	2	$1.46
ABC3	3	$1.46
ABC5	5	$1.39
ABC6	6	$1.39
ABC8	8	$1.39
ABC10	10	$1.39
ABC12	12	$1.39
ABC15	15	$1.39
ABC20	20	$1.39
ABC25	25	$2.04
ABC30	30	$2.04

AGU

- Fast acting
- Glass tube
- 13/32"(10.31mm) x 1-1/2"(38.10mm)

AGU SERIES

Item Number	Amps	VAC	Price
AGU3	3	25	$2.73
AGU5	5	32	$4.58
AGU10	10	32	$2.73
AGU15	15	32	$2.73
AGU20	20	32	$2.74
AGU30	30	32	$2.27
AGU40	40	32	$2.27
AGU50	50	32	$2.27
AGU60	60	32	$2.27

FNM

- Time delay, supplementary fuse
- 13/32"(10.31mm) x 1-1/2"(38.10mm)
- 250 volts AC or less
- CE Marked, UL Listed, CSA Certified

FNM SERIES

Item Number	Amps	Price
FNM1	1	$6.85
FNM2	2	$6.24
FNM3	3	$6.51
FNM4	4	$6.08
FNM5	5	$5.82
FNM10	10	$5.82
FNM15	15	$5.82
FNM20	20	$6.08
FNM30	30	$6.08

FNQ-R

- Time delay, branch circuit, rejection type fuse
- 600 volts AC (or less)
- Interrupting rating 200kA RMS Sym; 20kADC
- UL Listed, CSA certified
- RoHS compliant

FNQ SERIES

Item Number	Amps	Price
FNQR-1	1	$16.48
FNQR-1/2	1/2	$17.40
FNQR-1 1/2	1-1/2	$16.83
FNQR-3	3	$16.59
FNQR-4	4	$17.71
FNQR-5	5	$16.83

List pricing in catalog is subject to change without notice.

Fuses

KTK

- Fast acting supplementary fuse
- 13/32"(10.31mm) x 1-1/2"(38.10mm)
- 600 volts AC (or less)
- CE Certified, UL listed
- RoHS Compliant

KTK SERIES

Item Number	Amps	Price
KTK3/10	3/10	$19.44
KTK6/10	6/10	$18.71
KTK1/2	1/2	$15.48
KTK3/4	3/4	$17.29
KTK1	1	$14.70
KTK1-1/2	1-1/2	$15.04
KTK2	2	$13.55
KTK3	3	$12.94
KTK5	5	$12.94
KTK10	10	$12.94
KTK15	15	$12.94
KTK20	20	$12.98
KTK30	30	$12.98

SC

- Time delay fuse
- 600 volts AC (20 amps); 480 volts AC (30-60 amps)
- CE Marked, UL listed, CSA Certified
- RoHS Compliant

SC SERIES

Item Number	Dimensions in " (mm)	Amps	Price
SC20	1.41(35.81) x .41(10.41)	20	$5.19
SC30	1.62(41.15) x .41(10.41)	30	$9.27
SC40	2.25(57.15) x .41(10.41)	40	$10.27
SC50	2.25(57.15) x .41(10.41)	50	$11.62
SC60	2.25(57.15) x .41(10.41)	60	$10.04

ATC

- EZ ID: utilizes LED technology to indicate blown fuse
- Same universal color coding as traditional fuses
- Dimensions: .76"(19.30mm)W x .75 (19.05mm)H

ATC SERIES

Item Number	Amps		Price
Traditional Style			
ATC-(Amps)	1, 3, 5, 7.5, 10, 15, 20, 25, 30, 40	5 Pack	$3.25 per pack
Item Number	Amps	VAC	Price
EZ ID			
ATC-3ID	3	2 PACK	$2.12
ATC-5ID	5	2 PACK	$2.12
ATC-7-1/2ID	7 ½	5 PACK	$2.12
ATC-10ID	10	2 PACK	$2.12
ATC-15ID	15	2 PACK	$2.12
ATC-20ID	20	2 PACK	$2.12
ATC-25ID	25	2 PACK	$2.12
ATC-30ID	30	2 PACK	$2.12
ATC-40ID	40	2 PACK	$2.12
ATC-AID	3-10	1 EA	$5.10
ATC-ID-SK	5-30	7 EA	$41.72

Images are representative of products listed and may not be actual product.

Fuses

Maxi

- EZ ID: utilizes LED technology to indicate blown fuse
- Same universal color coding as traditional non-illuminated fuses
- Dimensions: 1.15"(29.21mm)W x 1.36(34.54)H

MAXI SERIES

Item Number	Amps	Price
Traditional Style		
5138	30	$3.49
5140	50	$3.49
5141	60	$3.49
5142	70	$6.67
5143	80	$6.67
EZ ID		
MAX-20ID	20	$3.60
MAX-30ID	30	$3.60
MAX-40ID	40	$3.60
MAX-50ID	50	$3.60
MAX-60ID	60	$3.60
MAX-70ID	70	$5.23
MAX-80ID	80	$5.23
MAX-100ID	100	$5.31

MIDI/AMI

- Clear window offer visible indication of blown condition
- Two per package
- 32 volts DC
- Interrupting rating 5,000 amps @ 16 volts DC; 2,000 amps @ 32 volts DC
- Fast acting

MIDI/AMI SERIES

Item Number	Amps	Price
5250	30	$7.69
5251	40	$7.69
5252	50	$7.69
5253	60	$7.69
5255	80	$7.69
5256	100	$7.69
5257	125	$7.69
5258	150	$7.69
5260	200	$7.69

AGC

- Fast acting fuse
- Glass tube with nickel plated brass endcaps
- 1/4"(6.35mm) x 1-1/4"(31.75mm)
- 250 volts AC (1/20-10 amps); 32 volts AC (12-50 amps)
- CE Marked, UL Listed, CSA Certification

AGC SERIES

Item Number	Amps	Sold in boxes of 5 Price
AGC1/8	1/8	$4.12
AGC1/4	1/4	$3.43
AGC1/2	1/2	$1.00
AGC3/4	3/4	$1.00
AGC1	1	$0.62
AGC1-1/4	1-1/4	$0.62
AGC1-1/2	1-1/2	$0.62
AGC2	2	$0.62
AGC3	3	$0.62
AGC4	4	$0.62
AGC5	5	$0.62
AGC6	6	$0.62
AGC7	7	$0.62
AGC7-1/2	7-1/2	$0.62
AGC8	8	$0.62
AGC9	9	$1.62
AGC10	10	$0.62
AGC12	12	$1.39
AGC15	15	$0.62
AGC20	20	$0.62
AGC25	25	$0.62
AGC30	30	$0.62
AGC40	40	$0.87
AGC50	50	$1.35

List pricing in catalog is subject to change without notice.

ANN

- Very fast acting limiter
- 125 volts AC; 80 volts DC
- Interrupting rating 2500 amps @ 125 volts AC; 2700 amps @ 80 volts DC
- UL Recognized, CE Marked, CSA Certified

ANN SERIES

Item Number	Amps	Price
ANN10	10	$34.17
ANN800	800	$52.87

ANL

- Element visible through clear window
- 80 volts DC
- 2700 amps @ 80 volts DC; 6000 amps @ 32 volts DC
- UL Recognized, CSA Certified
- NON time delay
- RoHS Compliant
- Dimensions: 3.19"(81.02mm) x .88"(22.35mm)
- For use with 5/16"(7.87mm) studs

ANL SERIES

Item Number	Amps	Price
ANL (Amps)	35, 40, 50, 60, 80, 100, 130, 150	$34.17
ANL (Amps)	175, 200, 250, 300, 325, 350, 400, 500	$34.17
ANL600 (IR=2,700A AC)	600	$50.56

FRN-R

- Time delay
- Class RK5
- 250 volts AC/ 125 volts DC
- Dual element
- Offers motor overload, ground fault, and short circuit protection
- Dimensions in " (mm):
  10-30 amps 2(50.8) x .56(14.22)
  50-60 amps 3(76.2) x .81(20.57)
  70-100 amps 5.88(149.35) x 1.06(26.92)
  200 amps 7.13(181.10) x 1.56(39.62)

FRNR SERIES

FRNR SERIES (70 AMPS AND HIGHER)

Item Number	Amps	Price
FRNR (Amps)	10, 15, 20, 30	$7.74
FRNR (Amps)	50, 60	$11.36
FRNR (Amps)	70, 80, 100, 125	$25.56
FRNR (Amps)	200	$25.56

NON

- 250 volts AC/ 125 volts DC
- General purpose fuse
- Dimensions: 2"(50.8mm) x .56"(14.22mm)

NON SERIES

Item Number	Amps	Price
NON3	3	$3.04
NON12	12	$3.04
NON100	100	$15.32

JJN

- Fast acting current limiting fuse
- 300 volts AC (or less), 160 volts DC (15-600A)
- 200k amps RMS Sym.; 20k amps DC @ 160 volts DC
- CE Marked, UL Listed, CSA Certified

JJN SERIES

Item Number	Amps	Dimensions in " (mm)	Price
JJN100	100	2.16(54.86) x .75(19.05)	$20.13
JJN125	125	2.44(61.97) x .88(22.35)	$34.35
JJN200	200	2.44(61.97) x .88(22.35)	$31.38
JJN250	250	2.75(69.85) x 1(25.4)	$79.53
JJN300	300	2.75(69.85) x 1(25.4)	$76.70
JJN350	350	2.75(69.85) x 1(25.4)	$67.20
JJN400	400	2.75(69.85) x 1(25.4)	$59.31

MEGA/AMG

- 32 volts DC
- Interrupting rating 1,000 amps @ 32 volts DC
- UL Rated
- Dimensions: 2.70"(68.58mm) x .75"(19.05mm)

SEA SERIES

Item Number	Amps	Price
5101	100	$11.19
5102	125	$11.19
5103	150	$11.19
5105	200	$11.19
5107	250	$11.19
5108	300	$11.19

Images are representative of products listed and may not be actual product.

Fuses

NH Fuse Links

- Used to protect cables and installation lines from overload and short circuits
- 500 volts AC/ 440 volts DC
- Interrupting rating 120k amps/ 25k amps
- DIN 43.620, IEC 269-2-1
- VDE approved
- Operational class gG

F-IK00

F-IK0

F-IK1

Item Number	Amps	Price
F-IK00		
"00" - Dimensions: 3.07"(78mm) x 2.22"(56.4mm) x 1.18"(30mm)		
NH0025	25	$24.45
NH0035	35	$26.25
NH0050	50	$17.25
NH0063	63	$32.55
NH0080	80	$32.55
NH00100	100	$17.25
NH00125	125	$20.25
NH00160	160	$20.25

Item Number	Amps	Price
F-IK0		
"0" - Dimensions: 4.87"(123.70mm) x 2.10"(53.34mm) x 1.18"(30mm)		
NH050	50	$25.50
NH063	63	$27.00
NH080	80	$30.00
NH0100	100	$25.50
NH0125	125	$25.50
F-IK1		
"1" - Dimensions: 5.31"(134.87mm) x 2.53"(64.26mm) x 1.57" (39.87mm)		
NH180	80	$34.50
NH1100	100	$33.00
NH1125	125	$41.25
NH1160	160	$41.25
NH1200	200	$41.25
NHI250	250	$41.25

DIN Style Type D

- Non- interchangeability of fuse links because of the graduated diameter of the bottom of contacts, corresponding to the fixed diameter of the gauge piece
- 400 volts AC-500 volts AC, 250 volts DC-500 volts DC
- IEC 60 269-3-1, VDE approved
- Operational class gG

EURO D11 SERIES

Item Number	Amps	Dimensions in " (mm)	Price
DIN-D-2A	2	.84(21.34) x 1.96(49.78) x .23(5.84)	$6.17
DIN-D-4A	4	.84(21.34) x 1.96(49.78) x .23(5.84)	$6.17
DIN-D-6A	6	.84(21.34) x 1.96(49.78) x .23(5.84)	$6.17
DIN-D-10A	10	.84(21.34) x 1.96(49.78) x .31(7.87)	$6.17
DIN-D-16A	16	.84(21.34) x 1.96(49.78) x .39(9.91)	$9.69
DIN-D-20A	20	.84(21.34) x 1.96(49.78) x .47(11.94)	$6.17
DIN-D-25A	25	.84(21.34) X 1.96(49.78) x .47(11.94)	$6.17
DIN-D-35A	35	1.08(27.43) x 1.96(49.78) x .62(15.75)	$6.75
DIN-D-50A	50	1.08(27.43) x 1.96(49.78) x .70(17.78)	$6.75
DIN-D-63A	3	1.08(27.43) x 1.96(49.78) x .78(19.81)	$7.10

European ANL

- Time delay limiter
- Use with 3/8"(10mm) studs
- 3.23(82.04mm) x .88(22.35mm)

EURO D11 SERIES

Item Number	Amps	Price
IP (Amps)	80, 100, 150, 200, 250, 300, 355, 425, 500	$34.56

List pricing in catalog is subject to change without notice.

Gauges

SENDERS

Fluid Levels Diesel, Fuel or Water

- SUS 316 Stainless steel
- Operational temperature: -40°F ~ +185°F (-40°C ~ +85°C)
- Protection rank: IP67
- Standard SAE 5 hole pattern
- Other lengths available- 4"- 18.5" @0.5" increments, 19"-60" @1" increments
- 12/24 volt
- Standard American 240-33 ohms, 10-180 ohms also available
- Resolution Range: 10-40mm

SSL- SERIES

Item Number	Length in "	Price
Straight Float		
SSL-9"	9	$81.20
SSL-11"	11	$84.00
SSL-12"	12	$84.00
SSL-13"	13	$84.00
SSL-14"	14	$84.70
SSL-15"	15	$85.40
SSL-16"	16	$85.40
SSL-17"	17	$86.80
SSL-18"	18	$88.20
SSL-19"	19	$90.13
SSL-20"	20	$99.15
SSL-22"	22	$105.18
SSL-24"	24	$110.21
SSL-26"	26	$117.33
SSL-30"	30	$133.52

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Gyro Stabilizers

Quick

Main features:

- High performance
- Complete protection
- Smart, compact design
- High installation flexibility
- Dynamic precession control
- Precession lock function from remote panel
- Equipped with Quick® electric motors
- Low noise emission.
- Thermal protection

MC2X stabilizers for boats up to 250 tons

9 models with output torque from 5560 to 55882 N•m (Newton meter).

* Call for pricing

| MC²X 5K | MC²X 7K | MC²X 13K | MC²X 16K | MC²X 19K |

MODEL	MC²X 5K	MC²X 7K	MC²X 13K	MC²X 16K	MC²X 19K	Price
Rated speed (1)	5000 RPM	6000 RPM	4700 RPM	5000 RPM	5700 RPM	Call for pricing
Angular momentum (2)	1811 N·m·s	2174 N·m·s	4185 N·m·s	5325 N·m·s	6090 N·m·s	Call for pricing
Output torque (3)	5560 N·m	6678 N·m	12850 N·m	16350 N·m	18700 N·m	Call for pricing
Spool-up time to rated RPM	18 min	20 min	32 min	35 min	43 min	Call for pricing
Spool-up time to stabilization	14 min	16 min	23 min	25 min	32 min	Call for pricing
Power absorbed	1400 W max	1500 W max	2100 W max	2200 W max	2800 W max	Call for pricing
AC Input voltage	90-260 Vac	90-260 Vac	90-260 Vac	90-260 Vac	90-260 Vac	Call for pricing
Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	Call for pricing
Ambient air temperature	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	Call for pricing
Noise output	< 70 dB	< 70 dB	< 70 dB	< 70 dB	< 70 dB	Call for pricing
Weight	300 kg (661 lb)	300 kg (661 lb)	490 kg (1080 lb)	500 kg (1102 lb)	553 kg (1219 lb)	Call for pricing
Dimensions	480 x 480 x 534 mm 19 x 19 x 21 in	480 x 480 x 534 mm 19 x 19 x 21 in	610 x 610 x 663 mm 24 x 24 x 26 in	610 x 610 x 663 mm 24 x 24 x 26 in	610 x 610 x 663 mm 24 x 24 x 26 in	Call for pricing

(1) Rated speed: flywheel speed (RPM: Revolutions per minute). (2) Angular momentum: it quantifies the torque that is necessary to balance the system in the time unit (Newton meter second). (3) Output torque: torque generated by the rotor at rated speed (Newton meter).

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Gyro Stabilizers

MC²X Remote Control

MC²X stabilizers can be managed using the new remote touch panel with graphic display (multi-station compatible) available in sizes 4" and 5".

MC² Mobile App*

Mc² Mobile App records the performance of the stabilizers during sea trials. Mc² Mobile App is comprehensive and viewable on both smartphones and tablets (iOS and Android).

MC²X 25K   MC²X 30K   MC²X 40K   MC²X 56K

MODEL	MC²X 25K	MC²X 30K	MC²X 40K	MC²X 56K	Price
Rated speed (1)	4000 RPM	4000 RPM	3500 RPM	3800 RPM	Call for pricing
Angular momentum (2)	8293 N·m·s	9878 N·m·s	13132 N·m·s	18000 N·m·s	Call for pricing
Output torque (3)	25464 N·m	30333 N·m	40324 N·m	55882 N·m	Call for pricing
Spool-up time to rated RPM	32 min	32 min	36 min	40 min	Call for pricing
Spool-up time to stabilization	26 min	26 min	30 min	33 min	Call for pricing
Power absorbed	4000 W max	4800 W max	6500 W max	6800 W max	Call for pricing
AC Input voltage	200-240 Vac	200-240 Vac	200-240 Vac	200-240 Vac	Call for pricing
Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	Call for pricing
Ambient air temperature	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	-10°C - +60°C (14°F to 140°F)	Call for pricing
Noise output	< 70 dB	< 70 dB	< 70 dB	< 70 dB	Call for pricing
Weight	880 kg (1940 lb)	965 kg (2127 lb)	1250 kg (2755 lb)	1400 kg (3086 lb)	Call for pricing
Dimensions	800 x 800 x 830 mm 31.5 x 31.5 x 32.6 in	800 x 800 x 830 mm 31.5 x 31.5 x 32.6 in	950 x 950 x 1050 mm 37.4 x 37.4 x 39.4 in	950 x 950 x 1050 mm 37.4 x 37.4 x 39.4 in	Call for pricing

Images are representative of products listed and may not be actual product.

Lighting

Aqua Signal

- Long lifetime, up to 100,000 operating hours (depending on ambient temperature)
- Main and back up system in one housing
- Glass-fibre reinforced polycarbonate or brass housing. Other components of non-corroding materials. Seawater resistant. Lid anodized aluminium or brass.
- High power LED light source, mounted on aluminium rod: 4 LED for side and stern lights, 6 LED for masthead, 7 LED for all-round lights. Upper section: main system, lower section: back-up system

65 SERIES LED

Item Number	Description	Nautical Mile (nm)	Price
3660005000	Series 65 Manoeuvre	5	$1,154.00
3660105000	Series 65 Signalling green	3	$1,154.00
3660205000	Series 65 Signalling red	3	$1,744.50
3660405000	Series 65 Signalling yellow	3	$1,154.00
3661005000	Series 65 Masthead	6	$1,744.50
3662405000	Series 65 Stern yellow	3	$1,163.00
3662705000	Series 65 Stern white	3	$1,154.00
3663105000	Series 65 Starboard	3	$1,163.00
3664205000	Series 65 Port	3	$1,163.00

- Application depending on required visibilities
- Suitable for ship size: >20m/65ft., <50M/164ft.
- 24V or 12v
- USCG, IMO, CE, approved

55 SERIES

Item Number	Type	Lens	Visibility (nm)	Price
Incandescent				
Lights 25 Watt				
3531750000	All Round	White	2	$252.00
3531150000	All Round	Green	2	$238.44
3531250000	All Round	Red	2	$222.22
3535150000	Starboard	Green	2	$263.79
3534250000	Portside	Red	2	$234.88
3532050000	Masthead	White	5	$236.70
3533750000	Stern	White	2	$234.89

Item Number	Type	Price
Lamp Holder		
90127-1	Holder for series 40/55	$17.95

List pricing in catalog is subject to change without notice.

Aqua Signal LED Navigation Light Panels

Control unit (frontplate) consisting of aluminum plate with printed foil, standard color black (other colors upon request), with up to 48 switches for lights and up to 4 freely programmable settings for example "Sailing" or "At Anchor". Switch and monitoring unit is mounted on a plate which has to be accommodated in a steel box. It contains the relay cards, power supply unit, melting fuses or circuit breakers and terminal rails. In case of control unit failure the lights can be switched by hand in the switch and monitoring unit. With BUS interface connection to external systems for uni- or bidirectional data transfer (RS485, RS232, Ethernet via http (Web Server) or Modbus TCP). DNV-GL certified touch panel PC can be also connected.

- Electric: 24 VDC, 230 VAC /115 VAC ± 10% - 50/60 Hz
- Approvals: Germanischer, Lloyd, Bureau Veritas, Russian Maritime Register of Shipping
- Frontplate: 3 standard sizes
- Call for pricing

Measurements inches"(mm)
For 16 + 16 + 16 circuits:
Width 29.5(750) - Height 35.4(900) - Depth 4.8(122)
For 16 + 16 circuits:
Width 29.5(750) - Height 23.6(600) - Depth 4.8(122)
For 8 + 8 circuits:
Width 19.1(485) - Height 23.6(600)

Hella

- Multivolt™ 9-33VDC
- Fully sealed for life. IP 67 certified -No bulbs, No maintenance, Ultra long service life
- Pre-wired with 2.5m of twin core marine cable
- Port, Starboard and Stern lamps consume less than 3.2 watts combined.

NAVILED PRO SERIES

Item Number	Description	Nautical Mile (nm)	Price
959900-001	NAVILED PRO PORT Black	2	$160.00
959900-011	NAVILED PRO PORT White	2	$160.00
959909-001	NAVILED PRO STBD Black	2	$160.00
959908-011	NAVILED PRO STBD White	2	$160.00
959909-001	NAVILED PRO Stern Black	2	$160.00
959909-011	NAVILED PRO Stern White	2	$160.00

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Lighting

Lopolights

Product Image	Item Number	Product	Price
		Vessels Under 12 Meters	
	101-001	1nm 112.5° Starboard sidelight w/2.5 meter cable	$274.39
	101-001-B	1nm 112.5° Starboard sidelight, black w/2.5 meter cable	$274.39
	101-002	1nm 112.5° Port sidelight w/2.5 meter cable	$274.39
	101-002-B	1nm 112.5° Port sidelight, black w/2.5 meter cable	$274.39
	101-003	1nm Combined sidelights w/2.5 meter cable	$392.38
	101-003-B	1nm Combined sidelights, black w/2.5 meter cable	$392.38
	101-004	1nm Combined sidelights w/2.5 meter cable	$392.38
	101-005	1nm Tri-color w/0.7 meter cable	$514.48
	101-009S	1nm Tri-color/anchor/strobe w/0.7 meter cable	$583.08
	201-010	2nm 225° Masthead w/0.7 meter cable	$392.38
	201-010DL	2nm 225° Masthead w/decklight, w/0.7 meter cable	$651.68
	201-020	2nm Masthead/anchor w/0.7 meter cable (power boats)	$583.08
	201-020-B	2nm Masthead/anchor w/0.7 meter cable black (power boats)	$583.08
	201-030	2nm Masthead/anchor/stern w/0.7 meter cable (sailboats)	$583.08
	301-005	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-005-B	2nm 135° Stern light w/2.5 meter cable black	$425.03
	301-006	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-006-B	2nm 135° Stern light w/2.5 meter cable black	$425.03

List pricing in catalog is subject to change without notice.

Lopolights (Continued)

Product Image	Item Number	Product	Price
		Vessels Under 20 Meters	
	201-003	2nm Combined sidelights w/2.5 meter cable	$468.29
	201-003-B	2nm Combined sidelights w/2.5 meter cable black	$468.29
	201-004	2nm Combined sidelights w/2.5 meter cable	$468.29
	201-005	2nm tri-color w/0.7 meter cable	$544.93
	201-007S	2nm tri-color/anchor/strobe w/0.7 meter cable	$936.57
	201-011	3nm 225° Masthead, vertical mount w/0.7 meter cable	$715.21
	201-011DL	3nm 225° Masthead w/decklight w/0.7 meter cables	$953.61
	201-021	3nm Masthead/stern/anchor (power boats)	$800.34
	301-001	2nm 112.5° Starboard sidelight, vertical mount w/2.5 meter cable	$327.63
	301-001-B	2nm 112.5° Starboard sidelight, vertical mount, black w/2.5 meter cable	$327.63
	301-001-B 6M	2nm 112.5° Starboard sidelight, vertical mount w/6 meter cable black	$370.26
	301-002	2nm 112.5° Port sidelight, vertical mount w/2.5 meter cable	$327.63
	301-002 6M	2nm 112.5° Port sidelight, vertical mount w/6 meter cable	$370.26
	301-002-B	2nm 112.5° Port sidelight, vertical mount, black w/2.5 meter cable	$327.63
	301-008	2nm 112.5° Starboard sidelight, horizontal mount	$345.52
	301-008-B	2nm 112.5° Starboard sidelight, horizontal mount, black	$345.52
	301-009-B	2nm 112.5° Port sidelight, horizontal mount, black	$345.52
	301-005	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-005-B	2nm 135° Stern light, black w/2.5 meter cable	$425.03
	301-006	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-006-B	2nm 135° Stern light, black w/2.5 meter cable	$425.03

Images are representative of products listed and may not be actual product.

Lighting

Lopolights (Continued)

Product Image	Item Number	Product	Price
		Vessels under 20 meters - Double Lights	
	201-013ST	2nm 135° Towing light, double w/2.5 meter cable, PE-base	$1,021.72
	201-013ST-B	2nm 135° Towing light, double w/2.5 meter cable, PE-base, black	$1,021.72
	301-005ST	2nm 135° Stern light, double w/2.5 meter cable, PE-base	$783.32
	301-005ST-B	2nm 135° Stern light, double w/2.5 meter cable, PE-base, black	$783.32
	301-001ST	112.5° Starboard, double w/2.5 meter cable	$681.14
	301-002ST	112.5° Port, double w/2.5 meter cable	$681.14
	301-002ST-B	112.5° Port, double w/2.5 meter cable black	$681.14
	301-008ST	112.5° Starboard, double w/2.5 meter cable, PE-base	$681.14
	301-008ST-B	112.5° Starboard, double w/2.5 meter cable, PE-base, black	$681.14
	301-009ST	112.5° Port, double w/2.5 meter cable, PE-base	$681.14
	301-009ST-B	2nm 112.5° Port, double w/2.5 meter cable, PE-base, black	$681.14
		Vessels under 50 meters	
	200-012	2nm 360° White - Anchor w/0.7 meter cable	$568.50
	200-012-B	2nm 360° White - Anchor w/0.7 meter cable black	$568.50
	200-012S	2nm 360° White w/strobe (4nm 120 fl/min) w/0.7 meter cable	$796.94
	200-012H	2nm 360° White - Anchor, Hoistable w/20 meter cable	$796.94
	201-013	2nm 135° Yellow Towing light w/2.5 meter cable	$566.71
	200-014	2nm 360° Red w/0.7 meter cable	$568.50
	200-014-B	2nm 360° Red w/0.7 meter cable black	$568.50
	200-015	2nm 360° Green w/0.7 meter cable	$568.50
	200-016	2nm 180° Red w/0.7 meter cable	$327.63
	200-018	2nm 180° Green w/0.7 meter cable	$327.63
	200-024	2nm 180° White w/0.7 meter cable	$327.63

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Lopolights (Continued)

Product Image	Item Number	Product	Price
	301-001	2nm 112.5° Starboard sidelight, vertical mount w/2.5 meter cable	$327.63
	301-001-B	2nm 112.5° Starboard sidelight, vertical mount, black w/2.5 meter cable	$327.63
	301-002	2nm 112.5° Port sidelight, vertical mount w/2.5 meter cable	$327.63
	301-002-B	2nm 112.5° Port sidelight, vertical mount, black w/2.5 meter cable	$327.63
	301-006	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-006 6M	2nm 135° Stern light w/6 meter cable black	$467.16
	301-006-B	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-006-B 6M	2nm 135° Stern light w/6 meter cable black	$467.16
	301-008	2nm 112.5° Starboard sidelight, horizontal mount	$345.52
	301-008-B	2nm 112.5° Starboard sidelight, horizontal mount black	$345.52
	301-009	2nm 112.5° Port sidelight, horizontal mount	$345.52
	301-009-B	2nm 112.5° Port sidelight, horizontal mount black	$345.52
	301-005	2nm 135° Stern light w/2.5 meter cable	$425.03
	301-005-B	2nm 135° Stern light, black w/2.5 meter cable	$425.03
	300-037	225° Masthead, cable back w/0.7 meter cable	$1,621.00
	300-036	225° Masthead, CD/CS alu base	$1,621.00
	300-036-B	225° Masthead, CD/CS alu base, black	$1,621.00
Vessels under 50 meters - Double Lights			
	201-013ST	2nm 135° Towing light, double w/2.5 meter cable	$1,021.72
	201-013ST-B	2nm 135° Towing light, double w/2.5 meter cable black	$1,021.72
	200-012ST	360° White - Anchor, double w/0.7 meter cable	$1,021.72
	200-012ST-B	360° White - Anchor, double w/0.7 meter cable black	$1,021.72
	200-014ST	360° Red, double w/0.7 meter cable	$1,021.72
	301-005ST	2nm 135° Stern light, double w/2.5 meter cable	$783.32
	301-005ST-B	2nm 135° Stern light, double w/2.5 meter cable black	$783.32
	301-001ST	112.5° Starboard, double w/2.5 meter cable	$681.14
	301-002ST	112.5° Port, double w/2.5 meter cable	$681.14
	301-002ST-B	112.5° Port, double w/2.5 meter cable black	$681.14

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Lighting

Lopolights (Continued)

Product Image	Item Number	Product	Price
	301-008ST 301-008ST-B	112.5° Starboard, double w/2.5 meter cable 112.5° Starboard, double w/2.5 meter cable black	$681.14 $681.14
	301-009ST 301-009ST-B	112.5° Port, double w/2.5 meter cable 2nm 112.5° Port, double w/2.5 meter cable black	$681.14 $681.14
	300-039CD	225° Masthead, double light, cable down w/0.7 meter cable	$2,652.54
	300-038 300-038-B	225° Masthead, double light, CD/CS aluminum base 225° Masthead, double light, CD/CS aluminum base black	$2,652.54 $2,652.54
		Vessels over 50 meters	
	301-101 301-101-B	3nm 112.5° Starboard w/2.5 meter cable 3nm 112.5° Starboard w/2.5 meter cable black	$936.58 $936.58
	301-102 301-102-B	3nm 112.5° Port w/2.5 meter cable 3nm 112.5° Port w/2.5 meter cable black	$936.58 $936.58
	301-105	3nm 135° Stern light CD/CS alu base	$1,249.90
	301-106	3nm 135° Stern light w/2.5 meter cable	$1,123.89
	301-109	3nm 112.5° Port sidelight, CD/CS aluminum base	$1,123.89
	300-112	3nm 360° White, CD/CS aluminum base	$1,123.89
	300-114	3nm 360° Red, CD/CS aluminum base	$1,123.89

List pricing in catalog is subject to change without notice.

Lopolights (Continued)

Product Image	Item Number	Product	Price
		Vessels over 50 meters - Double Lights	
	301-101ST-B	3nm 112.5° Starboard sidelight, double w/2.5 meter cables black	$1,788.01
	301-102ST-B	3nm 112.5° Port sidelight, black w/2.5 meter cables	$1,788.01
	301-105ST 301-105ST-B	3nm 135° Stern light double, CD/CS aluminum base 3nm 135° Stern light, double, black, CD/CS aluminum base	$2,043.44 $2,043.44
	301-106ST-B	3nm 135° Stern light double, black w/2.5 meter cables	$1,473.31
	301-108ST	3nm 112.5° Starboard sidelight, double, CD/CS aluminum base	$2,043.44
	301-109ST	3nm 112.5° Port sidelight, double, CD/CS aluminum base	$2,043.44
	301-113ST 301-113ST-B	3nm 135° Yellow Towing light, double, CD/CS aluminum base 3nm 135° Yellow Towing light, double, CD/CS aluminum base black	$2,043.44 $2,043.44
	300-114ST	3nm 360° Red, double, CD/CS aluminum base	$2,043.44
	300-138 300-138-B	225° Masthead, double light, CD/CS aluminum base 225° Masthead, double light, CD/CS aluminum base black	$3,094.63 $3,094.63

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Lighting

Item Number	Product	Price
	Special Lights	
200-022S	360° Blue constant & w/strobe (Single flash, 80cd intensity) w/0.7 meter cable	$766.29
	Deck/Interior Lights	
400-122	Deck/interior White & Red, 30°, 170lm, surface mount, dimmable	$315.03
	Spreader/Deck Lights	
400-124	3W Spreader/deck light 30°, surface mount, dimmable	$315.03
400-300	Marine grade shielded cable 2 x 0.5mm2 (per meter)	$6.81
	Accessories	
400-036	Ultra low K-lock mounting ring	$76.63
400-036-B	Ultra low K-lock mounting ring, black	$76.63
400-034	Pro-mount 2 side cable / 2 bottom cable K-lock	$194.13
400-034-B	Pro-mount 2 side cable / 2 bottom cable K-lock, black	$194.13
400-401	Circular Baseplate for horizontal mount lights aluminium	$120.90
400-404	Circular Baseplate for horizontal mount lights PE	$51.09
	Aqua Signal Retrofit Accessories	
400-402	AQS 55 Square Base-plate for horizontal mount lights	$163.48
400-403	AQS 70 Square Base-plate for horizontal mount lights	$200.94

Lopolight Monitoring Relay

- For all superyachts and commercial vessels it is required to have a system for monitoring the navigation lights.
- The LMR is able to monitor lopolight Navigation lights very accurately and will detect whether the lights is operational, has a partial fault or complete fault.
- The LMR will learn the profile of the navigation light shall monitor and will follow it through its life, also showing when the light is getting old.
- The LMR offers both manual panel connections which has priority and a communication channel for control from an integrated bridge system via RS485.

400-018

Item Number	Product	Price
400-018	Monitoring Relay (formerly known as NLC) Lloyds approved	$342.79

List pricing in catalog is subject to change without notice.

Full Size NLC Systems

- Scalable from 3 to 28 Nav lights
- User customized switch panel IP67 protection
- Integration to integrated bridge systems
- Automatic switch over to emergency light or power
- Plug and play integration with all Lopolight Nav lights
- Compact form factor
- Conforms to IMO MSC253 and type approved to IEC60945
- Available with single or dual power supplies, in 24VDC, 115VAC, 230VAC versions

Item Number	Description	Price
500-100-21-2AC+AC/NLC	Lopolight NLC 21 lights, 2 power supplies AC+AC, no panel, 21 channel	Call for Pricing
500-100-21-2AC+DC/NLC	Lopolight NLC 21 lights, 2 power supplies AC+DC, no panel, 21 channel	Call for Pricing
500-100-21-2DC+DC/NLC	Lopolight NLC 21 lights, 2 power supplies DC+DC, no panel, 21 channel	Call for Pricing
NLC System Accessories		
500-125	RS-232 to RS-422 converter for VDR	$2,085.01

- Scalable from 3 to 28 Nav lights
- User customized switch panel IP67 protection
- Integration to integrated bridge systems
- Automatic switch over to emergency light or power
- Plug and play integration with all Lopolight Nav lights
- Compact form factor
- Conforms to IMO MSC253 and type approved to IEC60945
- Available with single or dual power supplies, in 24VDC, 115VAC, 230VAC versions

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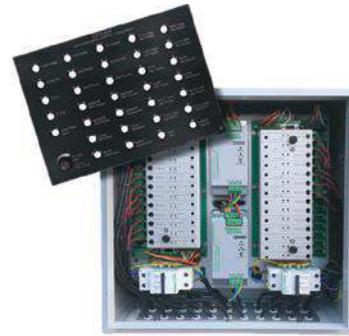
Lighting

Navigation Lights Panels

The modular-designed AHD-DPS02 controls and monitors navigation and signal lights on vessels.

Features:

- Modular design (from 14 to 42 lights)
- Control panel with custom layout
- Maintenance-free: no need to replace fuses after a short circuit
- Record operating hours and the number of switching cycles
- Collective alarm and ModBus interface to integrate with third-party alarm systems
- Compatible with AC or DC lights, bulbs or LEDs.

Certifications:

System	Current Range	Voltage Range	Frequency Range
		Compatibility Table	
230 VAC	20mA…300mA (ca. 5W-65W at 230VAC)	140-240V	47-65Hz
115 VAC	20mA…600mA (ca. 3W-65W at 115VAC)	80-130V	47-65Hz
24 VDC Bulb	200mA-2500mA (ca. 5W-65W at 24VDC)	18-32V	—
24 VDC LED	15mA-800mA (ca. 0.5W-20W at 24VDC)	18-32V	—

Item Number	Description	Price
	Navigation Lights Panel	
AHD-DPS02 - 14L	For 14 lights	$4,051.00
AHD-DPS02 - 21L	For 21 lights	$5,194.00
AHD-DPS02 - 28L	For 28 lights	$6,337.00
AHD-DPS02 - 35L	For 35 lights	$7,480.00
AHD-DPS02 - 42L	For 42 lights	$8,623.00
AHd-DPS02 GC	Communication Module with ModBus RTU interface	$926.00

List pricing in catalog is subject to change without notice.

Engine Room and Utility Lights

- Protection: IP65
- LED Type: Cool White
- Surface mount (hardware Included)

41389

Item Number	Volts	Watts	Dimensions in"(mm)	Lumen	Price
41389	12	18	13(330.20)x2.75(69.85)x1(25.40)	1154	$125.00

- Protection: IP67
- LED Type: Cool White
- Flush or Surface Mount

41593P

Item Number	Volts	Hertz	Watts	Dimensions in"(mm)	Lumen	Price
41593P	12/24 VDC, 110/220 VAC	50-60Hz	30	16.63(422.40)x6(152.40)x1.63(41.40)	3400	$339.00

- Protection: IP67
- LED Type: Cool White
- Surface Mount (wire can exit from bottom or end of fixture)

41590P

Item Number	Volts	Watts	Dimensions in"(mm)	Lumen	Price
41590P	12/24	10	6.38(162.05)x3.75(95.25)x.63(16.00)	727	$65.00

- Protection: IP67
- LED Type: Cool White
- Surface mount, 2 SS Screws included

41466P

Item Number	Volts	Watts	Dimensions in"(mm)	Lumen	Price
41466P	12/24	11.6	11.19(284.23)x2.16(54.86)x.50(1270)	550	$63.14

- Protection: IP67
- LED Type: White
- Surface mount, 2 SS Screws included

TL50261100

Item Number	Volts	Watts	Dimensions in"(mm)	Lumen	Price
TL50261100	120/277	140	11.19(284.23)x2.16(54.86)x.50(1270)	2200	$410.00

Images are representative of products listed and may not be actual product.

Lighting

AC

- Housing constructed of self extinguishing SMC fiberglass compound
- Rated to accept existing industry standard enclosed strip fixture
- IP 65 Rated
- Suitable for wet and damp locations
- Gasketed enclosure, dust and moisture resistant
- High impact acrylic/ DR crepe pattern diffuser
- Brass fixture mounting stud

VT FIXTURE

Item Number	Watts	Length in Ft.	Price
VT Series			
120 / 240 Volt, 50/60 Hz.			
VT217-UNIV	2 x 17	2	$141.63
VT232-UNIV	2 x 32	4	$145.75
Stainless Steel Enclosed			
0801003019	20	2	$510.95

Item Number	Description	Price
Replacement Parts		
VT-LATCHES	Fixture latch	$1.50
VT217LENS	Lens for VT217-UNIV	$35.00
VT232LENS	Lens for VT232-UNIV	$45.50
VTN217-LENS	2' Vaportight 6-3/8"	$59.90
VTN232-LENS	4' Vaportight 6-3/8"	$55.50
VT-PLUG	VT Fixture Plug	$.78
RPVTBRKTRGD	90°Bracket	$14.30

Utility

458
- Corrosion resistant light fixture
- High impact polycarbonate guard
- Lighting magnifying Fresnel glass lens and plastic lens guard, is O ring sealed
- Use in 12VDC, 32VDC, and 110V AC
- Accepts standard lamps up to 25W (not included)
- Not vapor proof
- Dimensions in" 4.5H X 5W X 7L

NVX15GHGA
- Non metallic and vaportight
- Includes fixture, mounting box, guard, and heat resistant glass globe
- Accepts up to 150W Type A lamp (not included)
- UL1571 and UL595 approved

458   NVX15GHGA   NVBA

Item Number	Cap Color	Price
Multi Light		
Switch not included		
458	White	$67.99
Fixture Only		
NVX15GHGA	Grey	$160.29

Item Number	Description	Price
Accessories		
NVBA	90° adapter for NVX15GHGA	$45.80

List pricing in catalog is subject to change without notice.

LED Rope Lighting

ROPE LIGHT

Item Number	Sold per:	Diameter	Volts	Price
CW= Cool White WW= Warm White				
RL-LED-CW-120V	Foot	3/8"	120	$7.80
RL-LED-CW-24V	Foot	3/8"	24	$7.80
RL-LED-WW-120V	Foot	3/8"	120	$7.80
RL-LED-WW-24V	Foot	3/8"	24	$7.80
RL-LED-CW-120V-150	150'	3/8"	120	$1,170.00
RL-LED-CW-24V-150	150'	3/8"	24	$1,170.00
RL-LED-WW-120V-150	150'	3/8"	120	$1,170.00
RL-LED-WW-24V-150	150'	3/8"	24	$1,170.00

LED Rope Lighting Accessories

POWER CORD   WHITE SPLICE   CLIP   SAFETY CAP

Item Number	Size in "	Price
* Sold in 3 Ft. Lengths		
Channel		
*CH-1	3/8	$7.67
Clips		
ML-5	3/8	$0.45
Safety Cap		
ML-6	3/8	$0.60

Item Number	Description	Size in "	Price
Connector			
RL-LED-LVCK	DC Connection Kit	3/8"	$9.90
RL-LED-120VCK	120V Connection Kit	3/8"	$10.90
ML-3	White Splice	3/8"	$10.35

Images are representative of products listed and may not be actual product.

Lighting

LED Dimmers

DMS series universal PWM dimmers are designed for smooth, flicker-free dimming of all constant voltage LED modules, including MR16 bulbs as well as 12V/24V Incandescent/Halogen bulbs.

- Control: 0-10 V controls, Pot 100k Ohm, Dry Contact
- Dimming Mode: PWM
- Dimming Range: 0-100%
- No-Load proof: Yes
- Housing Dimensions: 3"x 1.5"x 0.75"

DMS-500-X

Item Number	Input Voltage	Output current max.	Price
DMS-500-X	6- 30VDC	5A	$76.70
DMS-850-X	6- 30VDC	8.5A	$89.70
DMS-1200-X	6- 30VDC	12A	$128.70

Designed for dimming DC (filament lamp) lighting circuits, and compatible with some LED products that lack specific built-in dimmer interface electronics. These marine lighting dimmers are controlled by any "normally-open" single pole single throw momentary switches (any brand).

- Soft-start function: Prolongs Bulb Filament Life
- Memory function that records last light-level setting so same brightness is resumed when turned on again
- Master/slave function that allows either dimmer to act as the master or the remote allowing unlimited power potential
- Warranty 2 Years
- Housing Dimensions: 4.73" x 3.15" x 1.58"
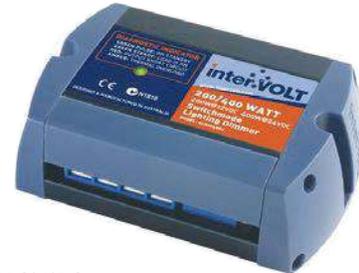
SLD2040DC

Item Number	Input Voltage	Output current max.	Price
SLD2040DC	9-33VDC	16.5A	$165.00

- Digital PWM output compatible with all Imtra PowerLEDs (including Captiva)
- Analog input: 0-10V Sink, 0-10V Sink/Source, 4-20mA, and 10KΩ-100KΩ Potentiometer
- Works with Single or Double Throw Momentary Switches
- Dipswitches for customized functions
- Dimmer Compatibility: 4/5-wire Imtra PowerLEDs (& Captiva)
- Housing Dimensions: 0.80" x 2.66" x 2.08"

ILIM80120

Item Number	Input Voltage	Capacity	Price
ILIM80120	10-40VDC	30 PowerLED Units	$165.39

List pricing in catalog is subject to change without notice.

Quick

- Digital PWM output compatible with all Imtra PowerLEDs (including Captiva)
- Analog input: 0-10V Sink, 0-10V Sink/Source, 4-20mA, and 10KΩ-100KΩ Potentiometer
- Works with Single or Double Throw Momentary Switches
- Dipswitches for customized functions
- Dimmer Compatibility: 4/5-wire Imtra PowerLEDs (& Captiva)
- Housing Dimensions: 0.80" x 2.66" x 2.08"
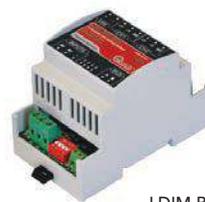
LDIM BUS 2CH

HDIM 300 PLUS

Item Number	Power consumption	Power Supply	Control Type	Price
*Dimmer compatible with all the Quick Marine Lighting spotlights and LED strips.				
LDIM BUS 2CH	50 W @ 12 V - 100 W @ 24 V each channel	10-30VDC	Push Buttons switches	$650.00
*Dimmer compatible with all the Quick Marine Lighting LED and Halogen devices.				
HDIM 300 Plus	150 W @ 12 V - 300 W @ 24 V each channel	10-30VDC	Push Buttons switches. Unlimited number	$325.00

Blue Sea Systems

Digitally controls dimming of non-regulated LED, incandescent, and halogen lights

- Illuminated exit with adjustable time delay
- Memory for last setting
- 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 (grey)

7504

8216

Item Number	Max Output Amps		Operating Range	Price
		DeckHand		
7504	6A		18V-32V	$96.99
7506	6A		9V-16V	$85.99
7507	12A		9V-16V	$96.99
7508	25A		9V-16V	$107.99
7509	12A		18V-32V	$107.99
Item Number	Pole/Throw	Action	Color	Price
		Switch		
*Denotes momentary action				
8216	SPDT	(ON)-OFF-(ON)	Gray	$15.19
8291	SPDT	(ON)-OFF-(ON)	Black	$15.17

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Lighting

Pilot Lights

- Complete assembly
- Degree of protection: IP65
- Certifications: CE, UL, CSA, CCC

XB6AV3BB

PILOT LIGHT

Item Number	Mounting Diameter in"(mm)	Lens Color	Price
Complete Devices			
12/24 Volt LED			
XB6AV3BB	0.63(16)	Green	$24.48
XB6AV4BB	0.63(16)	Red	$24.47
XB6AV5BB	0.63(16)	Yellow	$24.47
XB6AV6BB	0.63(16)	Blue	$24.47
Complete Devices			
120 Volt LED			
XB6AV3GB	0.63(16)	Green	$24.47
XB6AV4GB	0.63(16)	Red	$24.47
XB6AV5GB	0.63(16)	Yellow	$24.47
XB6AV6GB	0.63(16)	Blue	$24.47

- Degree of protection: IP65
- Certifications: CE, UL, CSA, CCC

To build your light:
1) Choose pilot light head.
2) Choose light module.
3) Add a mounting collar for each LED assembly.

ZB5AV04

ZB5AZ009

ZBVJ3

Item Number	Mounting Diameter in"(mm)	Color	Light Type	Price
Heads to Pilot light Plastic Bezel (22mm)				
ZB5AV033	0.86(22)	Green	Protected LED ONLY	$8.09
ZB5AV043	0.86(22)	Red	Protected LED ONLY	$8.09
ZB5AV063	0.86(22)	Blue	Protected LED ONLY	$8.09
ZB5AV013	0.86(22)	White	Protected LED ONLY	$8.09
ZB5AV053	0.86(22)	Orange	Protected LED ONLY	$8.09

List pricing in catalog is subject to change without notice.

Pilot Lights (Continued)

Item Number	Supply Voltage	Color	Price
	Light Modules		
ZBVJ3	12 VAC/VDC	Green	$55.38
ZBVJ4	12 VAC/VDC	Red	$55.38
ZBVJ1	24 VAC/VDC	White	$55.38
ZBVBG3	24-120 VAC/VDC	Green	$55.38
ZBVBG4	24-120 VAC/VDC	Red	$55.38
ZBVBG5	24-120 VAC/VDC	Yellow	$55.38
ZBVBG6	24-120 VAC/VDC	Blue	$55.38
ZBVM1	230-240 VAC/VDC	White	$55.38
ZBVM3	230-240 VAC/VDC	Green	$55.38
ZBVM4	230-240 VAC/VDC	Red	$55.38
ZBVM5	230-240 VAC/VDC	Yellow	$55.38
ZBVM6	230-240 VAC/VDC	Blue	$55.38

Item Number	Description	Price
ZB5AZ009	Body/Mounting Collar	$5.75

LED

- Body material: nylon
- 24AWG, 1/2" strip wire leads

LED INDICATOR

Item Number	Volts	Lens	Price
1/4 Inch, mounting hole			
LED-14-14-A	14	Amber	$7.92
LED-14-14-G	14	Green	$4.69
LED-14-14-R	14	Red	$4.69
LED-14-28-A	28	Amber	$4.59
LED-14-28-G	28	Green	$4.88
LED-14-28-R	28	Red	$4.88
LED-14-125-A	125	Amber	$4.68
LED-14-125-G	125	Green	$3.88
LED-14-125-R	125	Red	$3.88
LED-14-230-A	230	Amber	$10.77
LED-14-230-G	230	Green	$5.05
LED-14-230-R	230	Red	$5.00

Item Number	Volts	Lens	Price
3/16 inch mounting hole			
LED-316-12-G	12	Green	$3.57
LED-316-12-R	12	Red	$4.18
LED-316-28-A	28	Amber	$5.20
LED-316-28-G	28	Green	$5.26
LED-316-28-R	28	Red	$5.20
LED-316-120-G	120	Green	$4.84
LED-316-120-R	120	Red	$4.84
LED-316-230-G	230	Green	$4.84
LED-316-230-R	230	Red	$4.84
LED-316-230-A	230	Amber	$4.84

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Lighting

LED
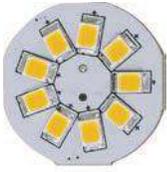
G4 WAFER BACK-PIN

MR-16

G4 HALOGEN LOOK- ALIKE

PARALLEL PINS

MINI-TOWER

Item Number	Volts	Bases	Watts	Lumens	Color	Replaces	Price
41000P	12/24	G4 Wafer Back-Pin	1.5	120	Warm White	10W Halogen	$10.00
41010P	12/24	G4 Wafer Back-Pin	2	170	Warm White	20W Halogen	$11.50
41020P	12/24	G4 Wafer Side-Pin	1.5	120	Warm White	10W Halogen	$10.00
41030P	12/24	G4 Wafer Side-Pin	2	170	Warm White	20W Halogen	$11.50
41031P	12/24	G4 Wafer Side-Pin	2	190	Cool White	20W Halogen	$11.50
41040P	12/24	G4 Wafer Side-Pin	3	270	Warm White	20W Halogen	$13.50
41008P	12/24	MR16	5	290	Warm White	20W Halogen	$15.50
41009P	12/24	MR16	5	320	Cool White	20W Halogen	$15.50
41072P	12/24	G4 Halogen Look-Alike	1.5	180	Warm White	20W Halogen	$16.50
41073P	12/24	G4 Halogen Look-Alike	1.5	180	Cool White	20W Halogen	$18.50
41075P	12/24	Parallel Pins - Single Contact	1.5	100	Warm White	53/57	$15.50
41114P	12/24	GU10 LED	5	290	Warm White	20W Halogen	$20.50
41115P	12/24	GU10 LED	5	290	Warm White	20W Halogen	$20.50
41090P	12/24	Bayonet Base Mini-Tower	1.9	170	Warm White	68/90	$14.00

Adapter

- Swivels up to 120°
- 5/8" x 1-1/8"

41120

Item Number	Description	Price
41120P	BA15d to G4	$5.00

List pricing in catalog is subject to change without notice.

LED

41080P   41082P

LED

Item Number	Volts	Bases	Watts	Lumens	Color	Replaces	Price
41080P	12/24	Parrallel Pins- Dual Contacts	3	220	Warm White	1142/1176	$16.00
41081P	12/24	Parrallel Pins- Dual Contacts	3	220	Cool White	1142/1176	$16.00
41082P	12/24	Offset Pins- Dual Contacts	3	190	Warm White	1157	$16.00
41083p	12/24	Offset Pins- Dual Contacts	3	190	Cool White	1157	$16.00

Incandescent Navigation Lamps

BAY 15 D

Item Number	Volts	Bases	Watts	Price
78291	24	Bay15D (offset pins)	10	$15.56
78293	24	Bay15D (offset pins)	25	$18.94

Screw E-27

MEDIUM SCREW BASE

Item Number	Volts	Candle Power	Price
25 Watts			
1000 Life, Medium screw base 4.2"H x 2.2"W, two per package			
25A17/24	24	1.04	$8.54
50 Watts			
1000 Life, Medium screw base 4.2"H x 2.2"W, two per package			
50A17/24	24	2.08	$8.90

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Lighting

LED

LED

Item Number	Volts	Watts	Lumens	Color	Replaces	Price
41036P	12/24	3	270	Warm White	A15 Bulb	$13.50
41037P	12/24	5.5	450	Warm White	A19 Bulb	$18.00

LED Tubes

LED TUBE

Item Number	Watts	Length in "	Type	Color	Price
Cool White					
LED8T8/4K	8	24	T8 Medium	Natural White	$40.50
LED17T8	18	48	T8 Medium	Natural White	$40.50

Fluorescent Tubes

FLUORESCENT TUBE

Item Number	Watts	Length in "	Type	Color	Price
Cool White					
F17T8TL741	17	24	T8 Medium	Natural White	$7.00
F32T8TL741	32	48	T8 Medium	Natural White	$6.50

List pricing in catalog is subject to change without notice.

Contactors

- Fits 35mm DIN rail
- Touch Safe Design
- Captive Terminal Screws
- Built in surge protection
- Magnetic coil (AE series only)
- Electronically controlled coil (AE series only)
- CE Marked
- UL Listed, CSA, IEE Certified

ABB CONTACTORS

Item Number	No. Poles NO/NC	VDC 50/60 Hz.	Aux Contactor NO/NC	Resistive/ Inductive Amps	Price
AF Series					
Non reversing, AC and DC operated, laminated magnetic circuit					
AF09-30-10-11	3/0	24-60	1/0	AC1 25A/AC3 9A	$111.40
AF09-30-10-13	3/0	100-250	1/0	AC1 25A/AC3 9A	$88.58
AF16-22-00-13	2/2	100-250	0/0	AC1 30A/AC3 17A	$127.19
AF16-30-10-11	3/0	24-60	1/0	AC1 30A/AC3 18A	$155.76
AF16-30-10-13	3/0	100-250	1/0	AC1 30A/AC3 18A	$129.80
AF16-40-00-13	4/0	100-250	0/0	AC1 30A/AC3 18A	$146.00
AF30-30-00-11	3/0	24-60	0/0	AC1 50A/ AC3 32A	$233.60
AF30-30-00-13	3/0	100-250	0/0	AC1 50A/ AC3 30A	$194.68
AF38-22-00-12	2/2	48-130	0/0	AC1 55A/AC3 22A	$305.00
AF40-22-00-13	2/2	100-250	0/0	AC1 70A/AC3 40A	$379.79
AF40-30-11-11	3/0	24-60	1/1	AC1 70A/AC3 40A	$282.28
AF40-30-11-13	3/0	100-250	1/1	AC70A/DC40A	$260.64
AF52-30-00-13	3/0	100-250	0/0	AC1 100A/AC3 53A	$264.96
AF80-22-00-13	2/2	100-250	0/0	AC1 125A/ AC3 80A	$530.30
AF96-30-00-13	3/0	100-250	0/0	AC1 130A/AC3 96A	$441.24
AF116-30-11-11	3/0	20-60	0/0	AC1 145/ AC3 116A	$652.16
AF116-30-11-13	3/0	100-250	1/1	AC1 145/ AC3 116A	$576.44
AE Series					
Non Reversing, DC operated					
AE30-30-00-81	3/0	24	N/0	50/34	$399.86
AE75-30-00-81	3/0	24	0/0	105/8	$744.00
Item Number	No. Poles NO/NC	VDC 50/60 Hz.	Aux Contactor NO/NC	Resistive/ Inductive Amps	Price
AL Series					
AL16-30-10-81	3/0	24	1/0	30/17	$261.28

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Motor Controls

Overload Relays

- Trip-free Mechanism
- Temperature Compensation
- Phase Failure Protection
- Reset and Test Functions
- UL #E48139
- Manual or automatic reset selectable

- TEST and STOP function- Trip indication on the front
- Suitable for three and single-phase applications
- Trip Class 10
- Fit Contactors AF09- AF38

TF OVERLOAD RELAYS

Item Number	Amp Range	Price
TF42-10	7.6 - 10	$70.32
TF42-13	10 - 13	$70.32
TF42-16	13 - 16	$70.32
TF42-2.3	1.7-2.3	$70.32
TF42-20	16 - 20	$70.32
TF42-24	20 - 24	$70.32
TF42-29	24 - 29	$70.32
TF42-3.1	2.3 - 3.1	$70.32
TF42-35	29 - 35	$70.32
TF42-4.2	3.1 - 4.2	$70.32
TF42-5.7	4.2 - 5.7	$70.32
TF42-7.6	5.7 - 7.6	$70.32

Accessories

CONTACT BLOCK 1P   CONTACT BLOCK 4P   MECHANICAL INTERLOCK

Item Number	Contactor Series	Contact NO/NC	Mounting	Max # of Blocks	Price
		Auxiliary Contact Blocks			
CA4-01	AF09-AF96	0/1	Front	4-6	$16.24
CA4-10	AF09-AF94	1/0	Front	4-6	$16.24
CA5-01	AE30, AE75, AF40-AF96	0/1	Front	4-6	$19.01
CA5-10	AE30, AE75, AF40-AF96	1/0	Front	4-6	$19.01
CA5-11/11M	AL16	2/2	Front	1	$38.01
CAL4-11	AF09-AF96	1/1	Side	1-2	$32.45
CAL5-11	A9-A75, AE9, AE75	1/1	Side	1-2	$38.11
CAL18-11	A95,A300	1/1	Side	1	$32.45
CAL19-11	AF116-370	1/1	Side	1	$32.45

Item Number	Range	Price
	Mechanical Interlocks	
VM96-4	AF40-AF96	$28.10
VM19	AF116-AF146	$56.20

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Contactors

- IP20 finger safe terminals with both North American and International terminal markings
- All contactors include built in auxiliary contacts
- Fits 35mm DIN Rail
- Easy to install accessories
- CE Marked
- UL Listed
- CSA Certified

TESYS™ D IEC SERIES

Item Number	V50/60Hz.	Aux Contact	Contact Ratings: Resistive/Inductive	Price
TeSys™ Series D				
Non reversing, AC operated				
LC1D09BD	24 *VDC	1/1	AC1 25A/AC3 9A	$152.08
LC1D09G7	120	1/1	AC1 25A/AC3 9A	$120.13
LC1D09U7	240	1/1	AC1 25A/AC3 9A	$120.13
LC1D18B7	24	1/1	AC1 32A/AC3 18A	$173.81
LC1D18G7	120	1/1	AC1 32A/AC3 18A	$173.81
LC1D18U7	240	1/1	AC1 32A/AC3 18A	$173.81
LC1D32G7	120	1/1	AC1 50A/AC3 32A	$219.82
LC1D32U7	240	1/1	AC1 50A/AC3 32A	$219.82
LC1D65U7	240	1/1	AC1 80A/AC3 65A	$567.43
LC1D80G7	120	1/1	AC1 125A/AC3 80A	$463.91
LC1D80U7	240	1/1	AC1 125A/AC3 80A	$463.91
LC1D95G7	120	1/1	AC1 125A/AC3 95A	$558.49
LC1D95U7	240	1/1	AC1 125A/AC3 95A	$558.49

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Motor Controls

Overload Relays

- Variety of Safety Features
- Includes Pre-wiring Kit
- Ambient Compensated
- Manual Set Automatic Mode
- Direct Mounting
- Class 10 with Single Phase Sensitivity
- UL Listed
- CSA Certified
- CE Marked

LRD SERIES

Item Number	Contactor	Range Amps	Price
TeSys D			
LRD08	D09-D32	2.5-4	$76.68
LRD12	D09-D32	5.5-8	$79.24
LRD16	D12-D32	9-13	$79.24
LRD21	D18-D32	12-18	$79.24
LRD22	D25-D32	16-24	$79.24

Accessories

LAD8N11

LADN11 & LADN22

LADN20

Item Number	Contactor Series	Contact NO/NC	Mounting	Price
Auxiliary Contacts				
LAD8N02	LC1D01-LC1D95	2/2	Side	$26.46
LAD8N11	LC1D09-LC1D95	1/1	Side	$25.78
LADN11	LC1D09-LC1D95, LC14115-LC1F150	1/1	Front/Right Side	$25.78
LADN20	LC1D09-LC1D95, LC14115-LC1F150	2/0	Front/Right Side	$26.46
LADN22	LC1D09-LC1D95, LC14115-LC1F150	1/1	Front/Right Side	$53.04

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Fuji

Ace Series

- Sensorless dynamic torque vector control
- Motor vector control with PG (with optional card)
- Synchronous motor with sensorless vector control
- 2-channel on-board RS485 communications port
- Standard CANopen compatibility
- Removable keypad device
- Removable control terminal block board

ACE SERIES

Mini Series

- High starting torque, at 150% or more
- Compatible with a wide range of frequency settings, with output set at a max 400Hz.
- Side by side mounting options
- Equipped with Frequency setting potentiometer
- CE, UL, and cUL certifications

MINI SERIES

Item Number	HP	Volts	Dimensions in "(mm) WxHxD	Weight in lbs. (kg.)	Price
Ace Series					
FRN0020E2S-2GB	5	230	5.51 (139.95) x 5.51 (139.95) x 5.63(143)	4(1.81)	$670.73
FRN0030E2S-2GB	7.5	230	7.09(180.08) x 9.05(229.87) x 6.22(157.98)	11(4.99)	$982.93
FRN0040E2S-2GB	10	230	7.09(180.08) x 9.05(229.87) x 6.22(157.98)	11(4.99)	$1,201.95
FRN0056E2S-2GB	15	230	8.66(219.97) x 10.63(270.00) x 7.48(189.99)	18(8.16)	$1,588.29
FRN0037E2S-4GB	15	460	8.66(219.97) x 10.63(270.00) x 7.48(189.99)	18(8.16)	$1,592.68

Item Number	HP	Amps	Dimensions in "(mm) WxHxD	Weight in lbs. (kg.)	Price
Mini Series					
FRN0012C2S-2U	3	12	5.12(130.40) x 4.33(109.98) x 5.47(138.94)	3.7(1.6)	$340.00
FRN0020C2S-2U	5	17	7.09(180.09) x 5.51(139.95) x 5.47(138.94)	5.5(2.5)	$448.78

Nema 1 Kit

- When fitted to the Mini and Multi Series protects the inverter body with the structure that confirms the NEMA1 standard (approved as UL Type 1).
- Connection Box – for use when not mounted in an enclosure

NEMA KIT

Remote Keypad

- The keypad permits remote control of Mini Series and function setting and display with copy function
- Connection with the Multi Series using an extension cable for remote operation, function code data setting, monitoring, etc. from the keypad keys and panel.

REMOTE KEYPAD

Item Number	Model HP	Series	Price
Nema 1 Kit			
NEMA1-2.2C1-2	2 & 3	MINI	$80.00
NEMA1-3.7C1-2	5	MINI	$90.00

Item Number	Model		Price
Remote Keypad			
TP-E1	Mini Series		$80.00

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Panel Meters

M2 Monitoring

DC Meter

- Accurately measures and monitors State-of-Charge of 1 bank
- Measures 3 voltages and 1 current
- Supports programmable shunt ratios
- External relay activation

DC METER1830
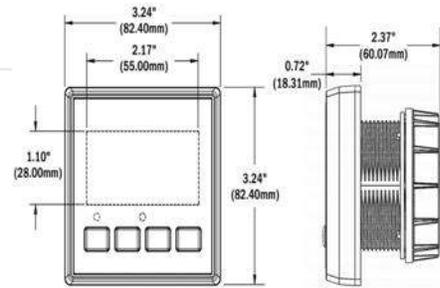
Item Number	Description	Includes Shunt	Price
	DC Meter		
1830	DC State-of-Charge meter that monitors state-of-charge on one battery bank and voltage on three battery banks. Voltages are 12V, 24V, 36, 48V, Range is –500A to 500A. The Alarm/ Relay Activation is High and Low Voltage, High Current, and Low Battery.	500A	$324.99
1832	DC Ammeter that monitors current on two circuits, the Alarm/ Relay Activation is High and Low Voltage, High Current, and Low Battery.	500A	$324.99
1833	DC Voltage meter that monitors the voltage on up to four battery banks, the Alarm/ Relay Activation is High and Low Voltage	—	$289.99
1834	DC Voltage meter that monitors the voltage of three battery banks and the current on one circuit. The Alarm/ Relay Activation is High and Low Voltage, High Current, and Low Battery.	500A	$324.99

AC Meter

- Auto-dimming, bright OLED display is easy to read
- Easy to adjust
- 80dB alarm on all models
- Isolated MOSFET relay

AC METER

Item Number	Description	Includes Shunt	Price
	AC Meter		
1836	DC Ammeter monitors current on two circuits, the operating voltage is 7V- 70VDC and the Alarm/ Relay Activation is High Current	150A	$293.99
1837 $324.99	Monitors voltage on two circuits or both legs of 120/240V, the operating oltage is 7V- 70VDC, its range is 50V-250VAC (RMS). The Alarm/ Relay Activation is High and Low Voltage.	—	
1838	Monitors voltage, current,frequency, and power on two circuits or both legs of 120/240V, the operating voltage is 7V- 70VDC its range is 50V-250VAC (RMS). The Alarm/ Relay Activation is High and Low Voltage, Current.	150A	$342.99

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Blue Sea Systems AC

- Large, bright LED characters
- Splash-proof front
- Multimeter, high and low voltage and high amperage alarms, both audio and visual
- Panel or surface mount
- Sleep mode on all units
- Input voltage 80-294 volt AC
- Blue Sea Systems AC meters are only compatible with Blue Sea Systems current transformers
- Surface mount in 2" round hole
- Dimensions: Height 2.4"(61.8mm) - Width 2.6"(66.7mm)
- **Must use Blue Sea Systems current transformers calibrated with sine wave input**

8237

Item Number	Transformer	Volt Range	Frequency	Watt Range 1 & 2	Price
Volt Meter					
8237	—	80-249VAC	—	—	$282.99
Frequency Meter					
8239	—	—	40-90Hz	—	$282.99
Ammeter					
Includes Current Transformer					
8238	150/50mA		—	—	$344.99
Multimeter with Alarm					
Includes Current Transformer					
8247	150A/50mA	80-249VAC	40-90	0-9990 & 10-45kW	$401.99

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Panel Meters

Blue Sea Systems DC

- Large, bright LED characters
- Splash-proof front
- Multimeter, high and low voltage, both audio and visual
- Easy to panel mount with a removable bezel, or surface mount
- Input voltage 8-60 volt DC

- Blue Sea Systems DC meters are only compatible with Blue Seas Systems shunts
- Applicable for 8-50 volt DC
- Dimensions:
  Width 2.896" (73.56mm)
  Height 2.43" (61.72mm)
  Depth 3.38"(85.85mm)

- 3 levels of brightness
- Display character size 9/16"
- Easy to surface mount in a 2" round hole
- **Must use Blue Seas Systems Shunt**

8248

Item Number	Volt	Sleep Mode	Shunt	Alarms	Shunt Range	Price
Multimeter with Alarm						
Includes Shunt						
8248	0-60	Programmable	500A/50mV	High and low voltage	+/-500A DC	$364.99

Item Number			Volt Range			Price
Volt						
8251		Manual	0-60 (with alarm)	High and low voltage		$267.99
8235	0-60	Manual				$238.99

Item Number			Shunt Range			Price
Ammeter						
Includes Shunt						
8236		Manual	+/- 500A DA , 50mV	High and low voltage		$282.99

DEIF

MIB

Multi-instrument, MIB

The MIB multi-instrument is a microprocessor-based measuring unit providing measurement of most electrical quantities on a 3-phase electric energy distribution network. The measurements are shown on the built-in display. The product family includes the basic MIB 7000, MIB 7000C Basic Plus RS485 modbus communication. A large number of standard analogue instruments can be replaced by the MIB in all electrical measuring applications. The MIB contains all necessary measuring circuits and presents all values on a display with white backlight. The display has 4 digits resolution for all measurements. The backlight on-time is selectable.

MIC-2 MK11

Multi-instrument, MIC-2

Versatile and intuitive, DEIF's multi-instrument MIC-2 MKII is perfectly suited for monitoring and analysis of all types of power systems.

Capable of logging all applications from single low voltage to multiple high voltage applications, the sturdy unit offers a complete overview of your SCADA system.

A microprocessor-based measuring unit for most electrical quantities on 2-phase or 3-phase electric energy distribution networks, readings are displayed on a large built-in LCD screen.

Fitted with the Ethernet TCP/IP module, the unit offers direct access to modbus data and is easy to access remotely via standard browsers.

KWh counter reset and change of settings can be password protected, and using DEIF's free utility software it is a simple and fast job to configure and adapt the unit to fit most applications

Item Number	Description	Price
MIB		
100-415VAC, 100-300VDC, 50/60Hz.		
MIB7000	Multi-instrument (basic)	$211.87
MIB7000C	Multi-instrument (modbus)	$237.71
MIC-2		
MIC-2	Multi-instrument	$627.73

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DEIF 72 MM

- Scale 90 degree
- (+/-)1.5% accuracy
- Dimensions:
  Width 2.83" (71.9mm)
  Height 2.61" (66.3mm)
  Depth 3.42" (86.9mm)
- All meters also available 96 mm
- IP 52 rating
- Panel cut out dimensions:
  68x68mm +/-0.4
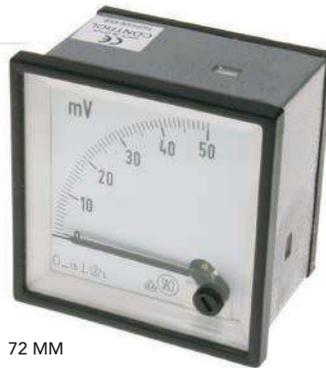
72 MM

Item Number	Range	Price
AC Ammeter		
Must order scale separate to complete meter (input from Current Transformer)		
PM72-ACA-5	5 Amp	$47.62
AC Amp Scale		
72SAC-50	0-50	$15.38
72SAC-100	0-100	$15.38
72SAC-150	0-150	$15.38
72SAC-200	0-200	$15.38
72SAC-300	0-300	$15.38
72SAC-400	0-400	$15.38
AC Volt Meter		
***Other scales available special order**		
PM72-ACV-150	0-150	$52.31
PM72-ACV-300	0-300	$52.31
Kw. Meter		
PM72-KW-100	20-0-100	$94.79
Ground Fault Meter		
Both items needed to complete Ground Fault Meter		
PM72-GFM-10A (Meter)	0-50mA	$194.20
ASK 31.3 (Transformer is REQUIRED for meter to work)	100/1A 2.5V	$66.62
Hz. Meter		
+ /− .5% Accuracy		
PM72-HZ-120/240	45-65 (85-265VAC)	$158.86

Item Number	Range	Price
DC Ammeter		
Must order scale separate to complete meter (input from Shunt)		
PM72-DMV-50	50mV input from Shunt	$93.07
DC Amp Scale (Scale Only)		
72SDC-50	0-50	$15.38
72SDC-100	0-100	$15.38
72SDC-150	0-150	$15.38
72SDC-200	0-200	$15.38
DC Volt Meter		
PM72-DCV-15	0-15	$105.63
PM72-DCV-40	0-40	$105.63

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Panel Meters

DEIF 96MM

Insulation Monitor, ADL-111Q96

The ADL is used for supervision of the insulation resistance between an isolated voltage distribution network and an earth/safety cable. The insulation monitor is applicable with DC networks for voltages of 24, 110 or 220VDC. The ADL is equipped with a relay output with adjustable set point. By means of a built-in switch, the relay can be configured to either NE (normally energized) or ND (normally de-energized).

Check Synchronizing Relay, CSQ-3

The CSQ-3 integrates synchroscope and check synchronizing relay into a microprocessor-controlled, easy-to-install package with no moving parts, making it a superior solution with four obvious advantages.

Safe: the CSQ-3 unit is operated from the front using pushbuttons behind the removable front cover, protecting users from the near hazardous voltages during set point programming: an innovative DEIF feature usually seen in similar products where switchboards have to be opened to operate the synchroscope.

Accurate: pushbuttons, rather than potentiometers, are used for programming the unit, and exact settings are clearly visible on an LED scale.

Flexible: the standard CSQ-3 can be calibrated on-site for virtually all possible settings, eliminating the need to buy customized versions to fit the unit to your specific application.

Robust: effectively solving problems with broken and reflective glass, the unit's front has been protected with an extremely robust front cover.

*Call for pricing and more information

DEIF 96MM (continued)

- Compact Q96 design
- Extremely easy pushbutton programming
- Individual programming of each input: N/O or N/C, time delay, alarm inhibit, output and cable supervision
- Up to five units connected in master/slave configuration
- Clear identification of first alarm received in case of successive alarms
- Approved by classification societies, call for more details.

Alarm Panel, AL8-2

With eight digital alarm inputs, three relay outputs, and many flexible features, the AL8-2 alarm panel is suitable for alarm monitoring at industrial and marine plants.

Alarm inputs: the alarm panel is provided with eight alarm inputs to facilitate external mechanical alarm contact connections. The inputs are individually programmable for N/O or N/C alarm contacts.

Time delay: the alarm inputs are individually programmable with a time delay to allow alarm condition registration at pre-set times within the 0.40 s range in steps of 1 s.

Alarm indicators: the AL8-2 is equipped with eight LEDs marked 1 to 8 for precise indication of alarm conditions for the individual alarm inputs. When an alarm condition occurs, the LED for the relevant input channel will flash with a red light. If more than one alarm occurs before the pushbutton "LAMP RESET" is activated, the first alarm LED will flash ahead of the others.

Alarm outputs: the alarm panel is provided with three relay outputs, one of which is used for connection to an audible/visual alarm. The remaining two relay outputs are individually programmable by the user to follow certain alarm inputs.

Call for pricing and more information

Items are special order

List pricing in catalog is subject to change without notice.

Hoyt 2.5 Inch

- Industrial style; high impact plastic
- +/- 2% accuracy
- Full scale, spring loaded pivot and jewel movement
- Window mount option requires **part#3100-WMC (special order)**
- Dimensions:
  Width 2.9" (73.7mm)
  Height 2.28" (58mm)
  Depth 2.10" (53.3mm)

AC METER

Item Number	Range	Price
AC Ammeter		
PM25-ACA-5 (separate scale required)	5A (input from CT)	$67.50
AC Amp Scale (Scales only)		
ST75-50AAC-SO	0-50	$8.13
ST75-100AAC-SO	0-100	$8.13
ST75-150AAC-SO	0-150	$8.13
ST75-200AAC-SO	0-200	$8.13
ST75-300AAC-SO	0-300	$8.13
AC Volt Meter		
PM25-ACV-150	0-150	$67.50
PM25-ACV-300	0-300	$67.50
PM25-ACV-500	0-500	$67.50
DC Ammeter		
PM25-DCA-30SC (self contained does not require separate shunt/scale)		$67.50
PM25-DMV-50 (separate scale required)	50mV (input from Shunt)	$67.50
DC Amp Scale (Scales only)		
ST75-50ADC-SO	0-50	$8.13
ST75-80ADC-SO	0-80	$8.13
ST75-100ADC-SO	0-100	$8.13
ST75-150ADC-SO	0-150	$8.13
ST75-200ADC-SO	0-200	$8.13
ST75-300ADC-SO	0-300	$8.13
DC Volt Meter		
PM25-DCV-8/16	8-16	$67.50
PM25-DCV-20/34	20-34	$67.50
PM25-DCV-26/44	26-44	$67.50
PM25-DCV-150	0-150	$67.50
Hz. Meter		
Range 45-65 Hz.		
PM25-HZ-120	120	$125.00
PM25-HZ-230	230	$125.00

Images are representative of products listed and may not be actual product.

Panel Meters

Blue Sea Systems

Micro Meters

- Backlit meter face for low light conditions
- Separate wire provided for 12 or 24 volt DC connection
- Dimensions:
  Height 2.0" (50.8mm)
  Width 2.0" (50.8mm)
  Depth 1.35" (34.3mm)

- 16m amp @ 12 volt DC, 20m amp @ 24 volt DC
- AC voltmeter: operating amp for meter only 1mA @ full scale, with back light
- AC ammeter: operating amp for meter only 50mA@ full scale
- DC voltmeter: operating amp for meter 1mA @full scale
- DC ammeter: external 50mV @full scale

AC VOLT METER	AC AMMETER	DC VOLT METER	DC AMMETER	BACK MICRO

Item Number	Range	Price
AC Volt Meter		
Connection: 2 wire to AC hot and neutral, 3 connections for backlighting		
8244	0-150VAC	$57.42
8245	0-250VAC	$57.42
AC Ammeter		
Connection: 2 wire from coil slipped over wire to be measured 3 connections for backlighting		
8246	0-50A AC	$88.99
DC Volt Meter		
Connection: 2 wire to DC positive (+) and negative (-) 3 connections for backlighting		
8028	8-16VDC	$48.99
DC Ammeter		
Connection: 2 wire from shunt, no other power required 3 connections for backlighting		
8041	0-50A DC	$104.99

List pricing in catalog is subject to change without notice.

AC Current Transformers

UNIVERSAL DONUT

UNIVERSAL FOOTED

BLUE SEA DONUT

FOOTED BLUE SEA

Item Number	Dimensions in "(mm)	Description	Current Ratio	Type	Price
Blue Sea Systems					
8256	I/S: .60(15.24), O/S:1.38(35.05)	Use with Digital M2 Ammeter	150A AC/ 50mA AC	donut	$31.29
8073	I/S: .60(15.24), O/S:1.38(35.05)	Use with Analog Ammeter	50A AC/ 50mA AC	donut	$27.49
BS1829	I/S: 1.25(31.75), O/S: 2.68(68.07)	Use with Digital AC Ammeters	300A AC/ 50mA AC	footed	$42.59

Item Number	Ratio	Power Rating VA @ 60hz.	Price
Universal Donut			
Donut Style 1.05" (26.67mm) inside diameter			
2RL-50-5	50:5	2.0	$45.77
2RL-100-5	100:5	2.0	$45.77
2RL-150-5	150:5	4.0	$45.77
2RL-200-5	200:5	4.0	$45.77
2RL-300-5	300:5	8.0	$45.77
2RL-400-5	400:5	10.0	$37.67
Donut Style 1.56" (34.7mm) inside diameter			
5RL-300-5	300:5	12.5	$60.75
5RL-400-5	400:5	12.5	$60.75
Universal Footed			
Footed style 1.13"(28.7mm) inside diameter			
2SFT-50-5	50:5	2.0	$54.12
2SFT-200-5	200:5	4.0	$54.12
2SFT-300-5	300:5	8.0	$54.12

Images are representative of products listed and may not be actual product.

Panel Meters

50MV

BASE MOUNT SHUNT

Item Number	Current Ratio	Price
Base Mount		
Dimensions LxWxH in (mm) 3.25(82.7) x 1.75(44.45) x 1.75(44.45)		
TMC-50-50	50A:50mV	$50.65
TMC-100-50	100A:50mV	$50.65
TMC-150-50	150A:50mV	$50.65
TM-200-50	200A:50mV	$72.78

Item Number	Description	Current Ratio	Dimensions W x L x H in " (mm)	Price
Blue Sea Systems DC Shunt				
8255	For use with Digital Ammeter	500 DC/50mVDC	1.26(32) x 3.27(83) x 1.69(43)	$77.99
9228	For use with Analog Ammeter	50A DC/50mVDC	1.26(32) x 2.01(51) x 1.53(39)	$49.29

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ASEA

- Precision regulation (<1%) and low harmonic distortion (<1%) to the yacht's power distribution grid
- Modular design and construction
- Compact size allows for various environments including tight spaces
- Stainless steel enclosures with conformally coated circuit boards

- Accepts 170-520 volt AC and 40-75Hz.
- Industry options for every application: seamless transfer, load management, remote touch panels, generator management modules, dual master controller
- Extensive selection of repair and replacement parts in stock

AC SERIES

Item Number	Ratings KVA	Input/Output	Weight in lbs.(kg)
See cabinet selection chart for casement dimensions. Call for pricing.			
AC12	12	1 Phase – 1 Phase	230(104)
AC15	15	1 Phase – 1 Phase	290(132)
AC18	18	1 Phase – 1 Phase	300(136)
AC24	24	1 Phase – 1 Phase	490(222.3)
AC25-1	25	1/3 Phase – 1 Phase	575(261)
AC25-3	25	1/3 Phase – 3 Phase	575(261)
AC30	30	1 Phase – 1 Phase	490(222)
AC30-1	30	1/3 Phase – 1 Phase	590(268)
AC30-3	30	1/3 Phase – 3 Phase	590(268)
AC36	36	1 Phase – 1 Phase	530(240.4)
AC36-1	36	1/3 Phase – 1 Phase	825(374)
AC36-3	36	1/3 Phase – 3 Phase	825(374)
AC45-1	45	1/3 Phase – 1 Phase	850(386)
AC45-3	45	1/3 Phase – 3 Phase	850(386)
AC54-1	54	1/3 Phase – 1 Phase	890(404)
AC54-3	54	1/3 Phase – 3 Phase	890(404)
AC75-3	75	3 Phase – 3 Phase	1240(562.45)
AC75-3/2	75	1/3 Phase – 3 Phase	1650(748.43)
AC90-3	90	3 Phase – 3 Phase	1400(635)
AC100-3	100	3 Phase – 3 Phase	1400(635)

Images are representative of products listed and may not be actual product.

Power Conversion Equipment

ASEA CABINET SELECTION

MODEL	STYLE	HEIGHT	WIDTH	DEPTH	COMMENTS
AC08, AC12	A	20.00"	23.00"	10.00"	Bulkhead Mount
AC15, AC18	B	22.40"	29.125"	12.00"	Bulkhead Mount
AC24, AC30, AC36	F	41.00"	18.00"	30.25"	Dual Shore Cords/Top Display
	O (xmfr)	14.625"	17.25"	25.75"	Dual Shore Cords/Split Cabinet
	O (Control)	24.00"	24.00"	24.00"	Dual Shore Cords/Split Cabinet
AC25, AC30, AC36	F	41.00"	18.00"	30.25"	Top Display
	L	57.675"	18.00"	21.00"	Front Display
	O (xmfr)	16.00"	19.00"	24.00"	Split Cabinets
	O (Control)	24.00"	24.00"	24.00"	Split Cabinets
AC25, AC30	M1	25.00"	37.25"	23.875"	Side Display
	M2	25.00"	23.875"	37.25"	Top Display
	M3	25.00"	23.875"	37.25"	Front Display
	Q	41.00"	13.75"	26.125"	Front Display
	N	53.00"	59.875"	10.00"	Front Display
HF: AC25, AC30, AC36, AC45	P	42.25"	18.75"	28.75"	Front Display
AC36, AC45 AC54	D1	41.00"	23.875"	30.25"	Top Display
	D2	41.00"	23.875"	30.25"	Front Display
	H1	25.00"	37.25"	23.875"	Side Display
	H2	25.00"	23.875"	37.25"	Top Display
	H3	25.00"	23.875"	37.25"	Front Display
	I	56.125"	25.00"	20.00"	Front Display
	N	53.00"	59.875"	10.00"	Front Display
AC55, AC63, AC75	E1	50.00"	23.875"	30.25"	Top Display
	E2	50.00"	23.875"	30.25"	Front Display
	K	48.25"	23.375"	28.50"	Front Display
	J	62.125"	25.00"	20.00"	Front Display
LC: AC55, AC63, AC75, AC90	S	40.00"	23.675"	28.00"	Front Display
AC90, AC100	G1	50.00"	23.875"	34.00"	Top Display
	G2	50.00"	23.875"	34.00"	Front Display
	K	48.25"	23.375"	28.50"	Front Display
	R	65.125"	25.00"	23.00"	Front Display
LC: AC100, AC125	U	46.00"	25.675"	30.37"	Front Display

Notes:
1. All units can be paralleled for higher power levels, redundant cabinets and dual shore cord applications.
2. AC125 "Chassis Style R" is high range input and output only.
3. LC: AC100LC, AC113LC and AC125LC — "Chassis Style U" is high range input and output only
4. Styles "J & R" are available with rear mounted, liquid cooled heated exchangers.
5. AC90LC is available with a low range 120/208VAC output.

Power Conversion Equipment

ASEA Q CABINET SELECTION

MODEL NUMBER	DIMENSIONS	COMMENTS
AC15Q	33.5"H x 13.75"W x 26.11"D	Dual Shore Cords 340lbs
AC20Q	33.5"H x 13.75"W x 26.11"D	Dual Shore Cords 340lbs
AC25Q-1 AC25Q-3	40.0"H x 13.75"W x 26.11"D	472lbs Field Upgradeable to 30kVA
AC30Q-1 AC30Q-3	40.0"H x 13.75"W x 26.11"D	472lbs
AC30Q/2	Dual Cabinets 33.5"H x 13.75"W x 26.11"D	Dual Shore Cords (per cabinet) 340lbs (per cabinet)
AC36Q-1 AC36Q-3	47.1"H x 19.2"W x 25.3"D	680lbs Field Upgradeable to 45kVA
AC40Q/2	33.5"H x 13.75"W x 26.11"D	Dual Shore Cords (per cabinet) 340lbs (per cabinet)
AC45Q-1 AC45Q-3	47.1"H x 19.2"W x 25.3"D	680lbs
AC50Q-3	37.5"H x 19.2"W x 25.3D	900lbs Field Upgradeable to 63kVA and 75kVA
AC50Q-1/2 AC50Q-3/2	Dual Cabinets 40.0"H x 13.75"W x 26.11"D	472lbs per cabinet Field Upgradeable to 60kVA
AC60Q-1/2 AC60Q-3/2	Dual Cabinets 40.0"H x 13.75"W x 26.11"D	472lbs per cabinet
AC63Q-3	42.5"H x 19.2"W x 25.3"D	975lbs Field Upgradeable to 75kVA
AC75Q-3	42.5"H x 19.2"W x 25.3"D	975lbs
AC75Q-1/2 AC75Q-3/2	Dual Cabinets 47.1"H x 19.2"W x 25.3"D	680lbs per cabinet Field Upgradeable to 90kVA
AC90Q-1/2 AC90Q-3/2	Dual Cabinets 47.1"H x 19.2"W x 25.3"D	680lbs per cabinet
AC100Q-3/2	Dual Cabinets 37.5"H x 19.2"W x 25.3"D	900lbs per cabinet Field Upgradeable to 125kVA and 150kVA

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Power Conversion Equipment

Combi Series

- Charges two individual battery banks
- Powerboost from battery when shore power is limited
- Parallel function, with shore generator
- Maintenance free vario fans
- 32ºF to 77ºF, thereafter derating
- Overcurrent, short circuit, and over temperature safety features
- Meets CE and ABYC Standards (A-31)

COMBI SERIES

Item Number	Series	Power Ratings	Charger Ratings	Charger Input Volts	Inverter Output Volts	Dimensions in " (mm) HxWxD	Weight lbs.(kg)	Price
				12V				
36012200	Mass Combi 12/2200-100	2150 W	100A @ 14.25V	180-265V/ 45-65Hz.	230V, 50Hz.	19.5(495) x 12.5(318) x 6.1(155)	24.3(11)	$3,460.49
				24V				
38023500	Mass Combi Ultra 2 4/3500-100	3500W	100A @ 28.5V	184-275V/ 35-68Hz.	230V, 50/60Hz.	18.6(472) x 12.5(318) x 7(178)	33.7(15.3)	$5,150.40

CombiMaster Series

- UL Listed, IP23, 2 year warranty
- Intelligent 3-step+ battery charger for fast and safe charging for lithium Ion, Gel, AGM, flooded
- Wide DC input voltage ranges 10- 18VDC and flat battery support at 25% under 10V.
- Wide AC input range (90-135V)
- Allows both vertical and Horizontal mounting orientations.
- Micro processor functionality delivers true rated output even at elevated temperatures up to 104°F (40°C)- Transfer (time)- 30A(10ms)
- Battery Chemistry: Flooded, AGM, Gel, Li-on
- Communication: CZone/ NMEA 2000/ MasterBus
- AC voltage/ Frequency: 120V/60Hz

COMBIMASTER SERIES

Item Number	Series	Continuous Power Rating 104°F/40°C	Surge Power (200%)	DC Output (full power)	Continuous Battery Charge Output	Dimensions in" (mm) HxWxD	Weight lbs.(kg)	Price
				12V				
35512000	CombiMaster 12/2000- 100 120V	2000W	4000W	10-15V	100A DC@ 14.25V	17.6(447)x 11.3(287)x6.10(155)	16(7)	$1,550.95
35513000	CombiMaster 12/3000- 160 120V	3000W	6000W	10-15V	160A DC@ 14.25V	17.6(447)x 11.3(287)x6.10(155)	19(9)	$1,831.95
35522000	CombiMaster 24/2000-60 120V	2000W	4000W	20-30V	60A DC@ 28.25V	17.6(447)x 11.3(287)x6.10(155)	16(7)	$1,987.20
35523000	CombiMaster 24/3000-70 120V	3000W	6000W	20-30V	70A DC@ 28.50V	17.6(447)x 11.3(287)x6.10(155)	19(9)	$2,187.61

Accessories

- Adapter cable connects Mastervolt equipment with NMEA 2000 network
- M12 to RJ45 drop cable contains an extra plug for seating into MasterBus ports

Item Number	Description	Price
77060100	Czone- MasterBus Drop Cable 1m	$10.21
77060200	Czone- MasterBus Drop Cable 2m	$11.18
77060500	Czone- MasterBus Drop Cable 5m	$14.76

List pricing in catalog is subject to change without notice.

Remote Options

CombiMaster Smart Remote
- 2.8" TFT full color display with 3 buttons
- Czone/ NMEA and MasterBus networks
- Displays four key parameters
- Protection degree: IP20
- Dimensions: 2.8"(71mm)x 2.8"(71mm)x 1.2"(30mm)

Easyview5
- Waterproof color display
- Logbook for alarms and warnings
- Buzzer and home button
- Easy mounting: front, wall, or retrofit
- Masterbus Power or 12/24volt input
- Dimensions: 4.4'' (112mm) x 5.0"(127mm) x 1.7''(43mm)

MASTERLINK

EASYVIEW5

Item Number	Series	Price
77010500	CombiMaster Smart Remote	$772.01
77010310	EasyView5	$397.42

Outback

- True sinewave AC output
- Intelligent battery charging
- High surge capacity
- Corrosion resistant circuit boards
- Neutral/ ground switching
- Silent operation
- Standard 5 year warranty
- Vented models have fully screened bug proof openings to help keep equipment cool in hot environments

SEALED AND VENTED

Item Number	Model	Power Ratings	Charger Ratings	DC Input Volts	Inverter Output Volts	Dimensions in " (mm) HxWxD	Weight lbs.(kg)	Price
FX2012MT	Sealed	2000 VA	80A DC	10.5 to 17.0	120VAC/ 60 Hz.	13(330) x 8.25(210) x 16.25(413)	62(29)	$2,369.00
FX2524MT	Sealed	2500 VA	55A DC	21.0 to 34.0	120VAC/ 60 Hz.	13(330) x 8.25(210) x 16.25(413)	62(29)	$2,369.00
FX2532MT	Sealed	2500 VA	35A DC	28.0 to 45.3	120VAC/ 60 Hz.	13(330) x 8.25(210) x 16.25(413)	62(29)	$2,369.00
VFX2812M	Vented	2800 VA	125A DC	10.5 to 17.0	120VAC/ 60 Hz.	13(330) x 8.25(210) x 16.25(413)	61(28)	$2,580.00
VFX3524M	Vented	3500 VA	82A DC	21.0 to 34.0	120VAC/ 60 Hz.	13(330) x 8.25(210) x 16.25(413)	61(28)	$2,580.00

Remote Options

Mate2
- Backlit 4 line LCD display
- 4 soft keys, dedicated inverter and AC input keys
- Input OutBack Cat5e RJ45 network cable
- Monitors AC/DC voltage and current meters, errors and warnings
- 2 year warranty
- Dimensions in " (mm): 4.5(114.30) x 6.15(156.21) x 1.7(43.18)

Mate3S
- Program, manage and monitor entire system Intuitive menu structure Easy-to-read graphical display System configuration wizard Internet-enabled Field upgradable Up to 1-year of data logging SD memory card slot*

MATE 2

MATE 3S

Item Number	Description	Price
MATE2	Complete management tool for OutBack mobile power conversion systems	$295.00
MATE3S	Advanced System Display and Controller	$595.00

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Power Conversion Equipment

Accessories

HUB4
- Communicates stacking, load share, and power save off/on signals
- Ethernet CAT 5 with RJ45 modular jacks
- Ports 4 plus MATE
- Dimensions in " (mm): 10.50(266.70) x 6.25(158.75) x 1.27(32.25)

RTS
- Measures ambient temperatures in order to recharge batteries safely and efficiently
- Systems using only 1 HUB4 or 1 HUB10 require single RTS

HUB4

RTS

Item Number	Description	Price
HUB4	Communication Manager	$195.00
RTS	Remote Temperature Sensor	$45.00

Multi Plus / Multi Plus Compact

- Multi-functional with intelligent power management, true sine wave inverter & battery charger
- Automatic and uninterruptible switching
- Virtually unlimited power thanks to parallel operation. Up to six Multi's can operate in parallel
- Split phase options, two units can be stacked to provide 120-0-120 volt

- Power control, dealing with limited generator, shore, or grid power
- Power assist, boosting the capacity of shore or generator power
- Four stage adaptive charger and dual bank battery charging

MULTIPLUS

Item Number	VA Ratings	Charger Ratings	Input Volts	Output Volts	Dimensions in " (mm) HxWxD	Weight lbs.(kg)	Price
			Multi Plus				
PMP123021102	3000	120A	9.5-17VDC	120VAC/ 60 Hz.	14.3(364) x 10.2(259) x 8.6(218)	40(19)	$1,679.00
PMP243021102	3000	70A	19-33VDC	120VAC/ 60 Hz.	14.3(364) x 10.2(259) x 8.6(218)	40(19)	$1,679.00
			Multi Plus Compact				
MP122200100	2000	80A	9.5-17VDC	120VAC/ 60 Hz.	20.5(521)x10(254)x5(127)	25(13)	$1,359.00
CMP242200100	2000	50A	19-33VDC	120VAC/ 60 Hz.	20.5(521)x10(254)x5(127)	25(13)	$1,359.00

Phoenix

- Developed for professional duty, suitable for widest range of applications
- True sine wave inverter with optimized efficiency
- Output AC & frequency: 110 volt AC/ 60Hz.

- Operating temperature: -40ºC to 50ºC
- IP 20 protected
- EN 60335-1, EN55014-1/ EN858014-2/ EN 61000-6-2/ EN 61000-6-3 certified

PHOENIX

Item Number	VA Ratings	Cont. Power Rating @ 40ºC	Input Volts	Output Volts	Dimensions in " (mm) HxWxD	Weight lbs.(kg)	Price
PHO24/800	800	700W	21-31	120VAC/ 60 Hz.	4.1(104) x 8.5 (216) x 12.0(305)	12(5.5)	$448.00

List pricing in catalog is subject to change without notice.

Quatro

- Two AC inputs with integrated transfer switch, can be connected to two independent AC sources
- Two AC outputs, main output has no-break functionality
- Virtually unlimited power thanks to parallel operation. Up to six quatro units can operate in parallel

- Three phase capability (requires multiple units)
- Power control, dealing with limited generator, shore side, or grid power. Powerful battery charger
- Power assist, boosting the capacity of shore or generator power

QUATRO

Item Number	VA Ratings	Charger Ratings	Input Volts	Output Volts	Dimensions in " (mm) HxWxD	Weight lbs.(kg)	Price
QUA2450231100	5000	120A	19-33VDC	120VAC/ 60Hz.	17.5(445) x 13.0(330) x 9.6(244)	66(30)	$3,324.00
QUA125021100	5000	200A	9.5-17VDC	120VAC/ 60Hz.	18.5(470)x 14(356)x 11.2(284)	75(34)	$3,976.00
QUA485021100	5000	70A	38-66VDC	120VAC/ 60Hz.	17.5(445)x 13(330)x 9.6(244)	66(30)	$3,324.00

Accessories

Color Control GX
- Same as Panel2, different mounting systems
- Panel is made of plastic with a more modern look
- Easy mounting from either back or front.
- **Hidden mounting holes**
- Monitor, control and configure the CCGX remotely over the internet
- BMV-7000 family can be connected directly to the VE.Direct ports on the CCGX.
- Use the CCGX as a Modbus- TCP gateway to all connected Victron products

Digital Multi Control
- Remote monitoring includes: rotary knob to set power control and power assist levels

BMV-712 Smart Battery Monitor
- Customize settings
- Monitor all important data on single screen
- View historical data
- Update the software when new features become available.

VE.BUS Smart Dongle
- Measures battery voltage
- Allows monitoring and control of Multis and Quattros with a smartphone or other bluetooth enabled device.

COLOR CONTROL GX   BPP010300100R   REC020005010

Item Number	Descriptions	Price
BPP010300100R	Color Control GX	$318.00
REC020005010	Digital Multi Control 200/200A	$173.00
BMV-712 Smart	Smart Battery Monitor	$243.00
ASS030065000	R.J 45 UTP Patch Lead 5M	$17.00
ASS030065010	RJ 45 UTP Patch Lead 10M	$21.00
ASS030065020	RJ 45 UTP Patch Lead 15M	$29.00
ASS030064920	RJ 45 UTP PATCH LEAD .9M	$9.00
ASS030064980	RJ 45 UTP PATCH LEAD 3M	$14.00
ASS030537010	VE.Bus Smart Dongle	$92.00
ASS030140000	MK3-USB VE.Bus to USB interface	$81.00
ASS030520110	VE.Bus to NMEA 2000 interface	$253.00
ASS030530209	VE. Direct cable .9m (use to connect BMV-712 to Color Control GX)	$17.00
ASS030530230	VE. Direct cable 3m (use to connect BMV-712 to Color Control GX)	$20.00
ASS030530250	VE. Direct cable 5m (use to connect BMV-712 to Color Control GX)	$22.00
ASS030530310	VE. Direct cable 10m (use to connect BMV-712 to Color Control GX)	$27.00

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Power Conversion Equipment

Mini

- Worldwide application thanks to wide range input and international approval package
- Din rail mounting
- High degree of operational safety due to high MTBF > 500,000 Hrs. and long mains buffering times > 20ms
- Compensation of voltage drops and recharging of batteries based on adjustable output voltage
- Connection in parallel possible for increased performance and redundancy
- Simplified commissioning due to LED function monitoring
- Active function monitoring through switching output for remote diagnostics
- UL and cUL Listed

MINI

Item Number	Input Volt	Output Volts	Amps	Dimensions in " (mm) HxWxD	Price
MINI-PS-12-8	85-264VAC 90-350VDC	10-15VDC	8/6.6	2.66(68) x 3.90(99) x 4.21(107)	$339.90

Trio

- Din rail mounting
- Worldwide application thanks to wide range input and international approval packages
- High degree of operational safety due to high MTBF > 500,000 hrs
- Connection in parallel possible for increased performance and redundancy
- Simplified commissioning due to LED function monitoring
- Compensation of voltage drops and recharging of batteries based on adjustable output voltage
- Efficient function of the 3-phase devices even if one phase fails permanently
- Temperature range -25°C to +70°C
- UL and cUL Listed

TRIO

Item Number	Input Volt	Output Volts	Amps	Dimensions in " (mm) HxWxD	Price
TRIO-PS-24-5	85-264VAC	22.5-29.5VDC	5	1.58(40) X 5.12(130) x 4.52(115)	$273.36
TRIO-PS-24-10	85-264VAC	22.5-29.5VDC	10	2.36(60) X 5.12(130) x 6.00(152)	$390.50
TRIO-PS-24-20	85-264VAC	22.5-29.5VDC	20	4.52(115) X 5.12(130) x 6.00(152)	$609.82

Uno

- Higher power density and tailored to all conventional 12mm control cabinets
- High efficiency
- More than 700,000 hour MTBF rating a full nominal load
- Wide operating temperature -25 C to 70 C

UNO

Item Number	Input Volt	Output Volts	Amps	Dimensions in " (mm) HxWxD	Price
UNO-PS-12-55W	85-264VAC	12VDC +/-1%	4.6	3.5(89) x 1.3(33) x 3.3(84)	$80.78
UNO-PS-24-30W	85-264VAC	24VDC +/-1%	1.25	3.5(89) x .88(22) x 3.3(84)	$58.76
UNO-PS-24-60W	85-264VAC	24VDC +/-1%	2.5	3.5(89) x 1.3(33) x 3.3(84)	$72.24
UNO-PS-24-100W	85-264VAC	24VDC +/-1%	4.2	3.5(89) x 2.2(56) x 3.3(84)	$116.28

List pricing in catalog is subject to change without notice.

Steppower

- Energy savings due to maximum energy efficiency and low no load losses
- Flexible assembly by DIN rail or screw mounting
- Reliable power supply, high MTBF of more than 500,000 hours and UI characterisitics curve

- Input voltage range: 100 volt AC to 240 volt AC
- Frequency range: 45Hz. - 65Hz.
- UL approved

STEPPOWER

Item Number	Input Volts	Output Current	Output Volts	Dimensions in " (mm) HxWxD	Price
STEP-PS-12-1.5	85-264VAC	1.5 A	12VDC +/- 1%	1.41(36) x 3.54(90) x 1.7(43)	$80.28
STEP-PS-12-3	85-264VAC	3 A	10-16.5VDC	2.12(54) x 3.54(90) x 2.4(61)	$115.30

Tripplite

- Heavy duty casings
- Multiple safety features
- Chassis mount
- Low profile design
- 1 year warranty

TRIPPLITE

Item Number Input Cont.	Intermittent	Continuous Amps	Dimension in " (mm) HxWxD	Weight in lbs. (kg)	Price
AC Input Volt 120/60, Output Rating 13.8 DC (+/- .5V)					
PR-7	7	5	3.75(95) x 6.5(165) x 7.5(191)	7(3.17)	$123.44
PR-10	10	7.5	4.5(114) x 6.75(171) x 7.75(197)	10(4.53)	$176.90
PR-15	15	12	4.5(114) x 6(152) x 10(254)	13(5.89)	$244.82

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Power Conversion Equipment

Vanner Voltmaster

- Equalizers allow for operation of 12 volt lighting equipment on 24 volt electrical systems
- Standby mode current @28.4 volt 17 milliamp nominal, operating temperature -40°C to +75°C, >97% efficiency

EQUALIZER

Item Number	Output	Input Voltage DC	Current Amps	Dimensions in " (mm) HxWxD	Weight lbs. (kg)	Price
60-20A	20 A	20-35	12	9.4(239) x 8.5(216) x 3.20(81)	5.0(27)	$485.50
66-60	60 A	18-32	32	9.8(249) x 8.5(216) x 2.47(63)	6.3(2.96)	$663.32
66-80	80 A	18-32	43	9.8(249) x 8.5(216) x 2.47(63)	6.9(3.24)	$747.00
66-100	100 A	18-32	53	9.8(249) x 8.5(216) x 2.47(63)	6.9(3.24)	$966.64

Vanner Voltmaster Equalizer Operation

In many 24 volt electrical systems, it is desirable to tap into the battery system to obtain power for 12 volt loads. This method, while seemingly simple, causes a charge imbalance resulting in Battery B (see diagram) being overcharged, and possibly boiling, while Battery A discharges.

To solve this application problem, the Vanner VoltMaster battery equalizer is connected to the battery system at the +24, +12 and ground points. The battery equalizer maintains the voltage balance and charge acceptance rate of each battery to within 0.1 volt under light loads and within 0.5 volt at full loads. When the voltage of Battery A is lighter than that of Battery B, the battery equalizer is in standby mode - meaning it is not transferring power from its 24 volt input to its 12 volt output. When a 12 volt load is present, and Battery A's voltage decreases to just below the voltage of Battery B, the battery equalizer activates and transfers sufficient current from Battery B to Battery A, satisfying the load and maintaining an equal voltage and charge in both batteries.
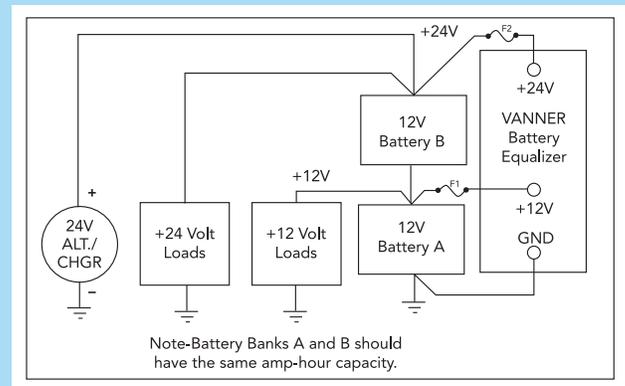
Note-Battery Banks A and B should have the same amp-hour capacity.

Newmar

- Output: 13.6 volt DC (internally adjustable 12.6-14.5)
- Output voltage maintained within 1% under all line and load conditions within rating
- Ripple: 150 mV P-P maximum
- Polyurethane conformal coating on pc board
- Duty cycle ratings: intermittent- 20 min. max on 20% duty. Current limit set at approx. 105% of intermittent rating
- Idle current less than 100 mA (including power "ON" light)

- Operating temp: 0-50ºC, derate linearly from 100% at 40ºC to 50% @ 50ºC thermal shutdown at 70ºC case temperature
- Convert 20-50 volt DC to 12 volt DC output for powering communication, navigation equipment on negative ground systems
- CE Marked
- 85% typical efficiency
- Reverse polarity protected and overvoltage protection

NEWMAR

Item Number	Amp Ratings	Dimensions in " (cm) HxWxD	Weight in lbs.(kg)	Price
Input Volts 20-50				
32-12-6C	6 Int/6 Cont	2.8(71) x 4.2(107) x 10(254)	2.5(0.9)	$325.00
32-12-10	10 Int/10 Cont	4.5(114) x 5.9(150) x 11(279)	4(1.8)	$421.64
32-12-15C	15 Int/15 Cont	4.5(114) x 5.9(150) x 11(279)	5(2.3)	$471.00
32-12-25A	25 Int/20 Cont	6(152) x 4.7(119) x 14(356)	7(3.4)	$710.48
32-12-35A	35 Int/30 Cont	6(152) x 4.7(119) x 16(406)	12(5.5)	$959.48
32-12-50	50 Int/40 Cont	6.2(157) x 6.8(173) x 18(457)	16(7.3)	$1,021.00
32-24-50	50int/40cont	6.2(157) x 6.8(173) x 18(457)	16(7.3)	$1162.00

Newmar

- Polyurethane conformal coated PC board
- Corrosion resistant heavy duty aluminum case
- Integral shock mounts
- Heat sink fins maximize air contact for cool operation and long life of components
- Supply and load circuit protection
- Over voltage protection

- Current limit (set @ 105% of intermittent rating)
- Thermal overload and input/output fusing protection
- Thermal activated cooling fan (CD units only)
- Adjustable output volt 12.6-14.5 volt DC
- Selectable input volt 115/230, 50/60 Hz.

NEWMAR

Item Number	Intermittent	Continuous	Operating Temperature	Dimension in " (cm) HxWxD	Weight in lbs. (kg)	Price
115-12-8	8	5	0-50ºC	6.0(152) x 4.6(117) x 8.5(216)	10(4.5)	$446.54
115-12-20	20	8	0-50ºC	5.7(145) x 4.8(122) x 16.3(414)	20(9.1)	$976.08
115-12-35CD	35	35	0-65ºC	6.5(165) x 9.5(241) x 14.0(356)	32(14.6)	$1,425.94

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Power Conversion Equipment

Mastervolt

- Offers full galvanic isolation between input and output
  *except model 81200100
- Step down from a 24 volt bank to a 12 volt bank
- Will charge a 12/24 volt battery with a 3 step charge characteristic

- Programmable via a PC
- Voltage stabilizing: 28.5 volt In/ 24-26 Out
- 12 or 24 volt halogen light dimmer function
- Guaranteed operation 0ºC to 60ºC (de-rating above +40ºC, 5% per ºC)

MASTER VOLT CONVERTER

Item Number	Maximum Amps	Input Volts	Output Volts	Dimensions in " (mm)	Weight lbs(kgs)	Price
81200100	20	20-32VDC	10-15VDC	7.5(191) x 5.1(130) x 2.4(61)	2.2(1)	$370.95
81300100	20	19-32VDC	10-15VDC	8.9(226) x 6.1(155) x 3.2(81)	4(1.8)	$523.45
81300200	20	19-32VDC	20-28.5VDC	8.9(226) x 6.1(155) x 3.2(81)	4(1.8)	$523.45
81300400	20	11-16VDC	10-15VDC	8.9(226) x 6.1(155) x 3.2(81)	4(1.8)	$523.45

Accessories

6769 TEMPSENSOR

PC LINK

Item Number	Description	Function	Price
21730300	PC-Link for Wizard	Interface between Mass Combi, Chargers & PC in combination with serial to QRS 232 master adjust software (free download). Can be directly mounted to a computer serial port	$170.00
41500500	Temperature Sensor 6m		$51.47
41500800	Temperature Sensor 15m		$55.62

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Orion Series

- Maintain output voltage within 1% under all line and load conditions
- Large heat sink fins maximize air contact for cool operation and long life of components
- Polyurethane conformal coating on PC boards
- Corrosion resistant anodized aluminum case
- Overcurrent, overheating, overvoltage protection

- Short circuit proof
- Fuse and reverse connected diode across input
- Varistor (also protects against load dump)
- Reverse polarity protection
- 3% voltage tolerance

ORI24-12-5

Item Number	Continuous Amps/ Max Amps	Output Volts	Input Volts	Dimensions in " (mm) HxWxD	Weight in lbs. (kg)	Price
Standard - 12 Volts						
ORI24/12-25	25/35	10-15	18-35	2.6(66) x 3.5(89) x 6.3(160)	1.5(0.7)	$92.22
ORI24/12-40	40/55	12	18-35	2.6(66) x 3.5(89) x 7.7(196)	2.0(0.9)	$131.11
ORI24/12-70	70/85	10-15	18-35	2.6(66) x 3.5(89) x 7.7(196)	2.0(0.9)	$184.44
Standard - 24 Volts						
ORI12/24-8	8/20	20-30	9-18	1.8(46) x 3.5(89) x 4.5(114)	04(.8)	$75.56
ORI12/24-10	10/20	20-30	9-18	1.8(46) x 3.5(89) x 4.5(114)	0.9(0.4)	$92.22

Orion TR Series

- Remote on-off, eliminates the need for a high current switch in the input wiring
- Adjustable output voltage, can also be used as a battery charger
- IP43 protection when installed with the screw terminals oriented downwards

STANDARD

ISOLATED

Item Number	Continuous Amps / Max Amps	Output Volts	Input Volts	Dimensions in " (mm) HxWxD	Weight in lbs. (kg)	Price
Standard						
ORI-TR-24/12-10	10/12	12.5	18-35	2.9(74) x 3.7(94) x 1.5(38)	0.44(0.20)	$42.00
ORI-TR-24/12-5	5/7	12.7	18-35	2.1(53) x 2.0(51) x 1.1(28)	0.20(0.09)	$23.33
Isolated						
ORI-TR-12/12-110W	9/12.5	10-15	8-17	4.0(102) x 4.5(114) x 1.9(48)	1.0(0.45)	$84.44
ORI-TR-24/12-110W	6/12.5	10-15	16-35	4.0(102) x 4.5(114) x 1.9(48)	1.0(0.45)	$84.44
ORI-TR-24/24-120W	5/6.3	20-30	16-35	4.0(102) x 4.5(114) x 1.9(48)	1.0(0.45)	$84.44
ORI-TR-24/24-280W	6/12.5	20-30	16-35	7.38(187) x 4.34(110) x 2.34(59)	2.80(1.27)	$152.22

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Pumps and Controls

Bilge Pumps

- Ignition protected
- Compact
- Efficient and maintenance free
- Totally submersible
- Silent and vibrationless
- Positive snaplock base
- Stainless steel shaft

1500 GPH   RM2000 GPH   2000 GPH   3700 GPH

Item Number	G.P.H.	Discharge	Price
12 Volt			
RUL02	1500	1-1/8"	$126.60
RUL10	2000	1-1/8"	$177.64
RULRM2000	2000 (Solid State H20 Sensing. NO Float Switch Required)	1-1/8"	$283.56
RUL14A	3700	1-1/2"	$290.20
24 Volt			
RUL12	2000	1-1/8"	$192.34
RUL16A	3700	1-1/2"	$304.62
32 Volt			
RUL11	2000	1-1/8"	$193.38

Automatic Float Switches

- Sealed metal capsule
- Two year manufacturer warranty
- Ignition Protected
- Automatic switch

RUL35A   RUL37A

Item Number	Max Amps (12-32 VDC)	Max Amps (110VAC)	Price
RUL35A	14	10	$45.62
RUL37A	20	10	$70.70

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Pump Panel Switches

Deluxe Switch
- Three positions auto-off-manual
- Spring return off from manual
- Stainless steel panel with red indicator light
- Pre-wired fuses

Deluxe Black Panel
- Three positions auto-off-manual
- Spring return off from manual
- Black plastic panel with lit rocker switches
- Pre-wired fuses

Non Lit Black Panel
- Three positions auto-off-manual
- Spring return off from manual
- Non lit stainless steel panel
- Pre-wired fuses
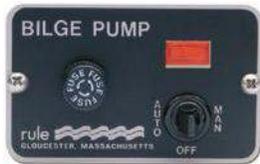
DELUXE SWITCH

DELUXE BLACK PANEL

NON LIT BLACK PANEL

Item Number	Volt	Positions	Amps	Dimensions in " (mm)	Price
Deluxe Switch					
RUL41	12	3	20	3.25(82.55) x 2(50.80)	$41.76
RUL42	24/32	3	20	3.25(82.55) x 2(50.80)	$43.50
Deluxe Black Panel					
RUL43	12	3	20	2.25(57.15) x 2(50.80)	$42.86

Pump Switches

- UL Listed & Ignition Protected
- Mercury free
- Includes test feature
- Butrate case tubing highly resistant to impact fuel, oil, and salt water

- Extra long wire leads with sealed adhesive wall heat shrink wire connectors
- Non magnetic stainless steel sensor tubing
- Buna-N Float
- Power on indicator light

ULTRA PUMP SWITCH SR.

ULTRA PUMP SWITCH JR.

ULTRA PUMP SWITCH MINI

Item Number	Volts DC	Price
Ultra Pump Switch Sr.		
1-1/4" Differential with isolated high water alarm at 3", 30A relay, 15A pump load		
UPS01-12	12	$179.00
UPS01-24/32	24/32	$179.00
UPS01-24/32-NC	24/32 (Normally Closed)	$179.00
Ultra Pump Switch Jr.		
6-1/4" High and 2-1/2" diameter with 1-1/4" ON/OFF differential, 30A relay, 15A pump load		
UPS02-12	12	$153.00
UPS02-24/32	24/32	$153.00
Ultra Pump Switch Mini		
4" High and 1-3/4" diameter with 3/4" ON/OFF differential, 40A relay, 20A pump load		
UPS06-12	12	$153.00
UPS06-24/32	24/32	$153.00

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Pumps and Controls

Electronic Switches

- Operating temperature from -15° to +70°
- 20 second switch off delay
- Nylon casing
- IP68 Protected

EBSN15

Item Number	Amps	Volts DC	Dimension in"(m)	Price
EBSN 15	15	9-31	2.96(75.18) x 3.25(82.55) x 1.5(38.1)	$125.00

Vertical Float Switches

Compact
- Ideal for shallow tanks
- Broad media compatibility
- Normally closed operation by inverting float
- 150 PSIG
- Temperature -40ºF to +150ºF
- Switch Rating 50VA

Buna-N
- Excellent in oils and water
- Broad media compatibility
- Used for high viscosity liquids
- Selectable NO or NC by inverting float
- 150 PSIG
- Temperature -40ºF to +180ºF
- Switch Rating 50VA

Stainless Steel Spherical
- High temperature and high pressure performance
- Excellent in water and oils
- Selectable NO or NC by inverting float
- 750 PSIG
- Temperature -40ºF to +300ºF
- Switch Rating 50VA

| COMPACT | BUNA | 8-6FBZ-SS | SPHERICAL | 8-8HBZ-SS |

Item Number	Stem/Float Material	NPT	Specific Gravity	Price
Compact Switch				
L003-0102-0303	Solid/ PP	1/8"	.80	$51.98
Buna-N Switch				
L180-0108-2003	SS/Buna	1/8"	.75	$74.42
L190-0201-2003	Brass/Buna	1/4"	.65	$95.96
Stainless Spherical Switch				
L195-0208-0803	SS/SS	1/4"	.79	$106.32
1JLR4	Nickel Plated Brass Nut	1/8"	.27	$2.06

Water Pressure Switches

- Designed for the control of electrically driven water pumps
- Diaphragm actuated
- Standard water pump switch, suitable for all types of pumps: jets, submersible, reciprocating, etc.
- Cut-out range (PSIG) 20-65, cut-in range (PSIG) 5-45 with an adjusted differential (PSIG) of 15-30
- Contacts open on rising pressure

WATER PRESSURE

Item Number	Connection	Price
Pumptrol		
FSG2J20M4P	1/4" NPSF Internal	$39.52
FSG9J20M4P	1/4" NPT External	$39.52

List pricing in catalog is subject to change without notice.

Mini

A2 Series

- Max inrush load 120A
- Ambient temperature -40°C +85°C
- Electrical life rate 100K cycles, typical
- Mechanical cycles 10,000,000
- Contact material AgSnO2, IP rating IP54 DIN IEC 60 529

T9 Series

- Dust protected plastic case
- Meets UL 508 and 873 spacing
- UL class F insulation standard
- Max switching voltage 277 volt AC
- Mechanical endurance 10x10,000,000 ops
- Contact material AgCdO, 1 form A, 1 NO

A2 SERIES

T9 SERIES

Item Number	Volts	Amps	Contacts	Price
		A2 Series		
A2F-24VDC	24	NO 20A, NC 10A, at 85°C	SPDT	$19.55
A2F-12VDC	12	NO 40A, NC 20A , at 85°C	SPDT	$16.00
		T9 Series		
T9AP1D52-24	24	30	SPST	$7.23

Heavy Duty

A3 Series

- Max inrush load 200 A lamp load / 150 A motor load
- Ambient temperature -40°C +125°C
- Electrical life rate 100K cycles, typical
- Mechanical cycles 10,000,000
- RoHS Compliant

A3 SERIES

Item Number	Volts	Amps	Contacts	Price
		A3 Series		
Includes bracket and resistor				
A3F-12VDC	12	NO 50A	1 Form A / SPST N/O	$20.00
A3F-24VDC	24	NO 60A	1 Form A / SPST N/O	$46.67

Accessories

RELAY BASE

CONNECTOR

Item Number	Description	Price
87123	Mini 5 or 9 pin bracket mount, black	$8.89
87269	Connector for Hella relay 87430 , blade size 9.5mm	$0.72
87272	Connector for Hella relay 87123 , blade size 6.3mm	$0.24

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Relays and Timers

40 AMP

- UL Listed
- CSA & CE Compliant
- Screw head terminals
- Minimum operating voltage for AC relays is 85% of nominal voltage
- Silver cadmium oxide contacts
- Self wiping contacts
- Molded thermoset plastic housing
- 40 amp@300 volt AC/28 volt DC contact rating (resistive)

30 AMP POWER

Item Number	Volts	Price
DPDT		
3X748	12VDC	$62.88
3X749	24VDC	$61.86
5X847	120VAC	$62.46
5X848	240VAC	$65.06

Step Relays

- 35 mm rail mount (EN 60715)
- 17.4 mm wide
- Choice of 6 switching sequences
- 1 or 2 contacts
- AC & DC coils

20 SERIES

Item Number	Volts	Price
	20 Series	
16 Amp, Single phase switch 1 NO (SPST-NO)		
20.21.9.012	12VDC	$42.97
20.21.9.024	24VDC	$42.97
16 Amp, Double phase switch 2 NO (DPST-NO)		
20.22.9.012	12VDC	$51.01
20.22.9.024	24VDC	$51.01
20.22.8.120	120VAC	$51.01

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Mini

- 5 mm pin pitch
- Use with 95 series sockets, 99 series suppression modules & 86 series timers
- Ambient temperature °C -40°C +85°C
- Meets EN 60335-1 glow wire requirements
- Coil indication and EMC suppression modules

40 SERIES

RELAY SOCKET

Item Number	Volts	Price
40 Series		
8A rated current 15A max peak current, 2 CO (DPDT)		
40.52.9.012	12VDC	$8.33
40.52.9.024	24VDC	$8.33
40.52.8.024	24VAC	$10.99
40.52.8.120	120VAC	$13.61
40.52.8.230	240VAC	$16.23
16A rated current 30A max peak current, 1 CO (SPDT)		
40.61.9.012	12VDC	$7.11
40.61.9.024	24VDC	$7.11

Item Number	Description	Price
Relay Socket		
95.05	Screw terminal (Box clamp)	$8.04
95.85.3	Screw terminal (Box clamp)	$8.33
Hardware		
095.91.3	Plastic Retaining Clip	$0.54
095.01	Plastic Retaining Clip	$0.54
095.71	Metal Retaining Clip	$0.32
095.08	8 way Jumper for 95.85.3 Sockets	$3.09
095.18	8 way Jumper for 95.05 Sockets	$3.09

Images are representative of products listed and may not be actual product.

Relays and Timers

General Purpose

- Use with 94 series sockets, 99 series suppression modules & 86 series timers
- 35 mm rail mount
- Lockable test button and mechanical flag indicator
- Ambient temperature °C -40°C +85°C
- AC or DC coils
- Socket mounted

55 SERIES

RELAY SOCKETS

Item Number	Volts	Price
55 Series		
7A rated current 15A max peak current, 4 CO (4PDT)		
55.34.8.024	24VAC	$16.08
55.34.9.012	12VDC	$16.08
55.34.9.024	24VDC	$16.08
55.34.8.120	120VAC	$16.08
55.34.8.230	240VAC	$18.85
10A rated current 20A max peak current, 2 CO (DPDT)		
55.32.9.012	12VDC	$15.15
55.32.9.024	24VDC	$15.15
55.32.8.120	120VAC	$15.15
55.32.8.230	240VAC	$17.63

Item Number	Description	Price
Relay Socket		
94.04	Screw terminal (Box clamp)	$8.80
94.74	Screw terminal (Plate clamp)	$8.33
Hardware		
094.91.3	Plastic Retaining Clip	$0.54
094.71	Metal Retaining Clip	$0.32
094.06	6 way Jumper for 94.04 Sockets	$3.09

List pricing in catalog is subject to change without notice.

General Purpose (Continued)

- Use with 90 series sockets, 99 series suppression modules & 86 series timers
- 8 & 11 pin plug-in
- AC & DC coils, including "current sensing" versions
- Available with lockable test button, mechanical flag & LED indicator
- Bifurcated contact option for low level switching

60 SERIES

RELAY SOCKET

Item Number	Volts	Price
60 Series		
10A rated current 20A max peak current, 2 CO (DPDT), 8 Pin		
60.12.9.012	12VDC	$23.01
60.12.9.024	24VDC	$23.01
60.12.8.024	24VAC	$23.01
60.12.8.120	120VAC	$23.01
60.12.8.230	230VAC	$24.88
10A rated current 20A max peak current, 3 CO (3PDT), 11 Pin		
60.13.9.012	12VDC	$23.80
60.13.9.024	24VDC	$23.80
60.13.8.120	120VAC	$23.80
60.13.8.230	230VAC	$25.49

Item Number	Description	Price
Relay Socket		
90.26	Screw terminal (Box clamp), 8 Pin	$7.90
90.27	Screw terminal (Box clamp), 11 Pin	$8.94
90.02	Screw terminal (Box clamp), 8 Pin	$9.41
90.03	Screw terminal (Box clamp), 11 Pin	$10.52
Hardware		
090.06	6 way Jumper	$4.16
090.33	Metal Retaining Clip	$0.32

Images are representative of products listed and may not be actual product.

Relays and Timers

Power

- Magnetic blow
- Use with 92 series sockets, 99 series suppression modules & 86 series timers
- AC or DC coils
- NO contacts options, > 3mm contact gap
- LED, mechanical indicator & test button options

62 SERIES

RELAY SOCKET

Item Number	Volts	Price
62 Series		
16 Amp, 3PDT-CO		
62.33.9.012	12VDC	$24.09
62.33.9.024	24VDC	$24.09
62.33.8.120	120VAC	$24.09
62.33.8.230	230VAC	$25.81

Item Number	Description	Price
Relay Socket		
92.03	Screw terminal (Box clamp), 11 Pin	$14.22

Suppression Modules

LED + Varistor

- LED modules + Varistor are used for both AC and DC coils
- The reverse voltage peaks of the relay coil are limited by the Varistor to approximately 2.5 times the nominal voltage of the supply
- When using DC coils it is essential that positive is connected to terminal A1. The relay release time increases insignificantly

LED + Diode

- Green LED + diode module (standard polarity)
- Recovery diode modules + LED are used for DC only
- The reverse voltage peaks of the coil are short circuited by the recovery diode (positive to terminal A1).
- The release time increases by an approximate factor from 3 to 5
- If an increase of the release time is undesirable use a Varistor or RC module.
- The LED indicator lights up when the coil is energized.

99 SERIES

item Number	Description	VAC/DC	Series Relay	Price
99 Series				
99.02.0.024.98	Green LED + Varistor	6-24	40, 55, 60, 62	$6.50
99.02.0.230.98	Green LED + Varistor	110-230	40, 55, 60, 62	$6.50
99.80.0.024.98	Green LED + Varistor	6-24	40, 55	$6.50
99.80.0.230.98	Green LED + Varistor	110-230	40, 55	$6.50
99.80.9.024.99	Green LED + Diode	6-24	40, 55	$5.71

List pricing in catalog is subject to change without notice.

Timers

80 Series

- Multi function & multi voltage timer
- Functions: AI (on delay), DI(interval), SW (symmetrical flasher, starting pulse on), BE (off delay with control signal), CE (on and off delay with control signal), DE (interval with control signal on)
- 17.5 mm wide
- Six time scales from 0.1s to 24h
- PWM clever technology for automatic recognition and regulation of the supply voltage

81 Series

- Multi function & multi voltage timer
- Functions: AI (on delay), DI (interval), SW (symmetrical flasher start pulse on), SP (symmetrical flasher start pulse off), BE (off delay with control signal), DE (interval with control signal on), EB (interval with control signal off)
- 17.5 mm wide
- Six time scales from 0.1s to 10h

TIMERS

Item Number	Contacts	Current	Volts	Price
80 Series				
80.01.0.240	SPDT	16A rated current 30A max peak current, 1 CO (SPDT)	12-240VAC/DC	$82.73
81 Series				
81.01.0.230	SPDT	16A rated current 30A max peak current, 1 CO (SPDT)	12-230VAC/DC	$106.06

83 Series

- Multi-function & multi-voltage
- 83.11 monofunction with ON-delay , multi-voltage
- 22.5 mm wide
- Multi Functions: AI (on delay), DI (interval), GI (pulse delayed), SW (symmetrical flasher start plus on), BE (off delay with control signal), CE (on and off delay with control signal), DE (interval with control signal on), WD (watchdog retriggerable interval with control signal on)
- Eight times scale from .05 second to 10 days
- High input/output isolation
- Wide supply range (24-240)volt AC/DC

86 Series

- Multi Functions: AI (on delay), DI (interval), SW (symmetrical flasher start plus on), BE (off delay with control signal), CE (on and off delay with control signal), DE (interval with control signal on), EE (Interval with control signal off and insert FE (Interval with control signal on and off)
- Seven time scales from 0.05s to 100h
- Plug-in for use with 90.02, 90.03, 92.03
- Wide supply range (12-240)volt AC/DC

Item Number	Contacts	Current	Volts	Price
83 Series				
83.11.0.240	SPDT	16A rated current 30A max peak current, 1 CO (SPDT)	24-240VAC/DC	$66.56
83.01.0.240	SPDT	16A rated current 30A max peak current, 1 CO (SPDT)	24-240VAC/DC	$84.75
83.02.0.240	DPDT	12A rated current 30A max peak current, 2 CO (DPDT)	24-240VAC/DC	$126.76
86 Series				
86.00.0.240	Use with 60 and 62 series relays		12-240VAC	$69.33

Images are representative of products listed and may not be actual product.

Relays and Timers

General Purpose

- Max inrush current 10 A (4 s)
- Max switching current 10 mA (at 12 V)
- Safe isolation DIN EN 50178, between coil and contact
- Inflammability class V0 (UL 94)
- Polyamide PBT, non-reinforced, color: green
- Efficient connection to system cabling using V8 adapter
- Screw and spring cage connection methods
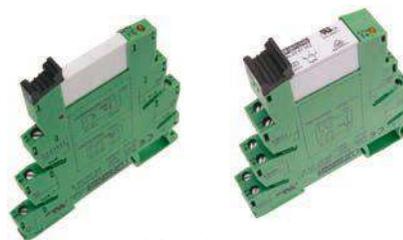
PLC SERIES

Item Number	Contacts	Volts	Price
Relay with Base			
PLC-RSC-120UC21	SPDT	120 VAC	$27.60
PLC-RSC-230UC/21	SPDT	230VAC	$33.00
PLC-RSC-12DC/21	SPDT	12VDC	$26.10
PLC-RSC-24DC/21	SPDT	24VDC	$26.10
PLCRSC120UC2121	2PDT	120VAC	$41.40
PLCRSC230UC2121	2PDT	230VAC	$46.20
PLCRSC24DC/2121	2PDT	24VDC	$34.20

Item Number	Contacts	Volts	Price
Relay Only			
REL-MR-24DC/21	SPDT	24VDC	$18.00
RELMR24DC/2121	DPDT	24VDC	$10.20
REL-MR-60DC/21	SPDT	60VDC	$26.40
RELMR110DC/2121	DPDT	110VDC	$15.00

AC Overcurrent relays provide monitoring and protection for three phase applications. Internal diagnostics annunciate when relay function or accuracy is compromised. The BE3-51 operates on only the fundamental component of the sensed current, rejecting all harmonic components. Set adjustment is based on a percentage of the relay's nominal sensing current rating. The delay adjustment prevents premature relay operation during brief current fluctuations.

List pricing in catalog is subject to change without notice.

AC Voltage Band Monitor (120VAC)

- Designed to insure that the monitored operating voltage remains within a 120 volt AC band
- Dual op-amp comparator circuit to achieve stable and repeatable trip set points
- Output relay is energized only when the voltage being monitored remains between the upper and lower set points
- LED indicator lights signal over or under voltages and de-energize the relay

- Adjustment range: over voltage 120-140 volt AC, under voltage 90-110 volt AC
- Contact rating 10 amp at 240 volt AC resistive
- 8 pin mounting socket
- Dimensions in"(mm) 1.95(49.53)H x 1.95(49.53)W x 3.25(82.55)D
- Operating temp - 20° to +130° F

TIM268

Item Number	Volts AC	Contacts	Input Hz.	Price
TIM268	120	SPDT	45-420	$156.40

AC Voltage Band Monitor (240VAC)

- The model 2681 Voltage Band Monitor is a dual set-point voltage monitor
- Under voltage range 200-240 volts AC
- Over voltage range 240-270 volt AC
- Input voltages between the upper and lower set points will cause the output contacts to pull in and the LED indicator to illuminate

- Input voltages above or below the set points will cause the output contacts to drop out and extinguish the LED indicator
- Automatic resets
- Dimensions in"(mm) 2.44(61.97)H x 1.75(44.45)W x 2.88(73.15)D
- Operating temp - 20° to +122°F

TIM2681-240V

Item Number	Volts AC	Contacts	Input Hz.	Price
TIM2681-240V	240	SPDT	50-400	$192.00

Images are representative of products listed and may not be actual product.

Shore Power

Hubbell

30 Amp Cable Sets

- UL Listed
- Jute filler inside jacket for maximum cable flexibility
- Molded flex neck adds life to cable set by helping to prevent right angle cable damage and pullout
- Strain relief bull ring protects against stress and strain on the conductors caused by boat movement, crew traffic, and rough handling
- Molded design totally encased in solid PVC material, for superior waterproofing and durability
- Exclusive copper crimp barrel termination provides protection against internal overheating and burnout compared to brass crimps

50 Amp Cable Sets

- Thermoset contact carrier is arcing and heat resistant
- Sealing lip to protect plug/ receptacle connection from moisture
- Bull ring for strain relief on the terminals
- Molded in flex feature controls the angle of cord entry and helps keep water out
- Copper crimp barrels for reliable terminations
- Nickel plated brass shell for positive alignment of keying and corrosion resistance

30 AMP YELLOW	30 AMP WHITE	50 AMP YELLOW	50 AMP WHITE

Item Number	Color	Length in Ft.	Price
30 Amp 125 Volt			
#10 AWG, 2 Pole 3 Wire, PVC Jacket			
HBL61CM03	Yellow	25	$122.63
HBL61CM08	Yellow	50	$140.63
HBL61CM08W	White	50	$140.63
50 Amp 125/250 Volt			
#6 AWG, 3 Pole 4 Wire, Vinyl Jacket			
HBL61CM52	Yellow	50	$998.20
HBL61CM52W	White	50	$998.20

List pricing in catalog is subject to change without notice.

Hubbell (Continued)

100 Amp Cable Sets

- Adheres to the standard for 100 amp pin and sleeve devices by the National Electric Code and the ABYC
- Cable sets manufactured in factory controlled conditions using specially compounded cable to accommodate a full 100 amp continuous current
- UL Listed
- IP67 protected

100 AMP YELLOW

Item Number	Pole	Number of wires in shore power cable	Length in Ft.	Type	Price
100 Amp 120/208 Volt					
#2 AWG, 105˚C, STOW Cable					
CS75IT5	3	4	75	Shore power with 4 pole/ 5 wire 100A 120/208V plug and connector body, use with isolation transformer only	$6,302.58
CS100IT5	3	4	100	Same as CS75IT5 except for length	$7,090.93
CW100IT5	3	4	100	No neutral, one-ended (male only) power supply cable, 4 pole/ 5 wire plug for use with isolation transformer & a cable winch system only	$5,053.33
CW125IT5	3	4	125	Same as CW100IT5 except for length	$5,848.63
100 Amp 125/250 Volt					
#2 AWG, 105˚C, STOW Cable					
CS75IT4	2	3	75	No neutral, with 3 Pole/ 4 Wire 100A plug and connector body, use with isolation transformer only	$5,761.58
CS100IT4	2	3	100	Same as CS75IT4 except for length	$6,409.80
CW100IT4	2	3	100	One-ended (male only) power supply cable, 3 pole/ 4 wire plug, use with isolation transformer and cable reel system only	$4,476.53
CW125IT4	3	3	125	One-ended (male only) power supply cable, 3 Pole/ 4 Wire plug, use with isolation transformer and cable reel system only	$5,104.00
CS50EXT4	3	4	50	Extension cord for shore power cable set	$5,761.58
CS754	3	4	75	Shore power with 4 pole/ 5 wire 100A 120/208 Volt plug and connector body, use with isolation transformer only	$6,205.25
CW754	3	4	75	One-ended (male only) power supply cable, 3 pole/ 4 wire plug	$4,493.53
CS1004	3	4	100	Same as CW754 except for length	$6,869.48

Images are representative of products listed and may not be actual product.

Shore Power

Hubbell

- UL & CSA approved
- Variety of styles and materials
- Dependable
- Twist locking feature for safety
- Pin & sleeve configuration
- Long lasting

| HBL26CM10 | HBL26CM11 | HBL26CM13 | HBL303INT | HBL303NM | HBL303SS | HBL303SSO |

Item Number	Description	Price
	30 Amp 125 Volt AC Twist Lock Devices	
2 Pole 3 Wire		
HBL26CM10	Single receptacle with Rynite body	$57.93
HBL26CM11	Insulgrip plug with cord grip range .36" - .93"	$41.98
HBL26CM13	Insulgrip connector body with cord grip range of .36" - .93"	$83.60
HBL303INT	Replacement interior inlet for 60CM61 & HBL303SS shore power inlets	$60.45
HBL303NM	Stylized UV resistant non-metallic shore power inlet with white Centrex cover, mounting holes 2.38" on center and match existing mounting patterns	$92.95
HBL303SS	Traditional stainless steel shore power inlet with self closing weather tight screw on cover, mounting holes 2.38" on center	$168.50
HBL303SSO	Traditional stainless steel power outlet with self closing weather tight screw on cover, mounting holes 2.38" on center	$276.15

| HBL503SS | HBL63CM60 | HBL63CM61 |

Item Number	Description	Price
	50 Amp 125 Volt Twist Lock Devices	
2 Pole 3 Wire		
HBL503SS	Traditional stainless steel self closing shore power inlet weather tight when fastened, mounting holes 2.38" on center and rear has 2.17" diameter	$270.30
HBL63CM60	Nickel plated brass connector body, heat resistant thermoset interior and combination metal and rubber cord grip range .44" - 1.14"	$160.00
HBL63CM61	Nickel plated brass plug, heat resistant thermoset interior and combination metal and rubber cord grip range .44" - 1.14"	$141.83
HBL63CM70	Single receptacle with heat resistant thermoset base	$178.33

List pricing in catalog is subject to change without notice.

Hubbell (Continued)

HBL504NM

HBL504SS

HBL63CM64

HBL63CM65

HBL63CM69

Item Number	Description	Price
	50 Amp 125/250 Volt Twist Lock Devices	
3 Pole 4 Wire		
CR16279	Replacement interior for HBL504SS power inlets	$132.60
HBL504NM	Stylized non-metallic shore power inlet, UV resistant white cover weather proof when sealed, thermoset interior, mounting holes 2.38" on center match existing patterns	$159.45
HBL504SS	Traditional stainless steel shore power inlet with self closing weather tight screw on cover, mounting holes 2.38" on center	$273.65
HBL63CM64	Nickel plated brass connector body with heat resistant thermoset interior, weather tight when securely fastened, cord grip range .44"-1.14"	$157.05
HBL63CM65	Nickel plated brass plug with heat resistant thermoset interior, weather tight when securely fastened, cord grip range .44"-1.14"	$138.58
HBL63CM69	Single receptacle with a heat resistant thermoset base	$182.78

M4100B12R

M4100C12

M4100C12R

M4100P12

M4100R12

Item Number	Description	Price
	100 Amp 125/250 Volt	
3 Pole 4 Wire, Yellow Zytel® plastic (unless noted)		
M4100B12R	Gray nylon shore power Inlet with cover, mounting holes 4.88" on center and rear portion has 3.94" diameter	$837.23
M4100C12	Connector body for mating plug to connector interface on extension cords or adapters, cord grip range 1-1.94" *Note: Cannot be mated to the shore power inlet*	$940.20
M4100C12R	Reverse service connector body, cord grip range 1-1.94" *Note: Device mates with shore power inlet only*	$896.45
M4100P12	Plug with watertight gasketed locking ring, cord grip range 1-1.94"	$855.08
M4100R12	Dockside receptacle with gasketed, spring loaded cover, mounting holes are 4.88" on center	$894.10

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Shore Power

Hubbell (Continued)

| M5100B7R & M5100B9R | M5100C9R | M5100C9 | M5100P9 | M5100R9 |

Item Number	Description	Price
	100 Amp, Three Phase, 120/208 Volt AC	
4 Pole 5 Wire, Yellow Zytal® plastic (unless noted)		
M5100B9R	Gray nylon shore power inlet with gasketed, spring loaded cover, mounting holes 4.88" on center and rear portion 3.94" diameter	$953.23
M5100C9R	Watertight connector body with gasketed locking ring, cord grip range is 1"-1.94" *Note: This device mates with shore power inlet only*	$1,019.55
M5100C9	Watertight connector body for making plug to connector interface on extension cords or adapters, cord grip 1-1.94" *Note: Cannot be mated to the shore power inlet*	$1,016.88
M5100P9	Watertight plug with gasketed locking ring, cord grip range 1"-1.94"	$925.28
M5100R9	Gray nylon dockside receptacle with gasketed, spring loaded cover, mounting holes are 4.88" on center	$957.93

| M5100C7R | M5100P7 | HBL4100C7W | HBL4100P7W |

Item Number	Description	Price
	100 Amp, Three Phase, 277/480 Volt AC	
4 Pole 5 Wire, Yellow Zytal® plastic (unless noted)		
M5100B7R	Gray nylon shore power inlet with gasketed, spring loaded cover, mounting holes 4.88" on center and rear portion 3.94" diameter	$953.23
M5100C7	Watertight connector body with gasketed locking cap, cord grip range is 1"-1.94" *Note: This device mates with shore power inlet only*	$1,016.88
M5100C7R	Watertight connector body with gasketed locking ring, cord grip range is 1"-1.94" *Note: This device mates with shore power inlet only*	$1,019.55
M5100P7	Watertight plug with gasketed locking ring, cord grip range 1"-1.94"	$925.28
M5100R7	Dockside receptacle with gasketed, spring loaded cover, mounting holes 4.88" on center	$957.93
	100 Amp, Three Phase, 480 Volt	
3 Pole, 4 Wire, Red Zytal plastic		
HBL4100C7W	Watertight connector for making inlet to connector interface, cord grip 1"-1.94"	$1,011.56
HBL4100P7W	Watertight plug with gasketed locking ring, cord grip 1"-1.94"	$815.00

List pricing in catalog is subject to change without notice.

Hubbell (Continued)

| M5200BS1R | M5200CS1 | M5200CS1R | M5200PSI | M5200RSI |

Item Number	Description	Price
200 Amp 600 Volt AC 250 Volt DC		
4 Pole 5 Wire, 50-400 Hz.		
M5200BS1R	Gray metallic watertight shore power inlet with wing nut secured lid	$1,986.00
M5200CS1	Gray/Yellow metallic watertight connector body with locking ring, for making plug/connector body interface on extension cords or adapters	$2,065.15
M5200CS1R	Gray/Yellow metallic watertight connector body with locking ring, cord range is #1AWG-250 MCM	$2,002.50
M5200PS1	Gray/Yellow metallic watertight plug with locking ring, cord grip #1AWG- 250 MCM	$1,557.15
M5200RS1	Gray metallic dockside receptacle with wing nut secured lid	$1,524.15

Russellstoll

| DS2404MP00 | JPS2034H |

Item Number	Description	Series	Configuration	Price
200 Amp, 600 Volt AC/250 Volt DC				
DS2404MP000	Load breaking male plug, 2.25" bushing, max conductor 4 AWG	MaxGuard	3P4W	$1,298.16
JPS2034H	Weathertight with spring-hinged flap cover and screw collar male plug	J-Line	3P4W	$1,616.98

Hubbell

| HBL77CM74WO | HBL74CM25WOA |

Item Number	Description	Price
Cover Plates		
*White available. Use suffix W when ordering		
HBL77CM74WO	Yellow Valox spring-loaded lift cover for weather proofing 50A receptacles, for mounting to FS/FD weatherproof boxes	$80.35
HBL74CM25WOA*	Yellow Valox spring-loaded lift cover for weather proofing HBL26CM10, for mounting to FS/FD weatherproof boxes	$74.60
HBL74CM25WOAW	White Valox spring-loaded lift cover for weather proofing HBL26CM10, for mounting to FS/FD weatherproof boxes	$74.60

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Shore Power

Hubbell (Continued)

HBL60CM31 & HBL60CM32	HBL60CM33	HBL6083	HBL77CM15	HBL77CM16W	BB100N
BB100-2W	CA100	CC100	FW60/100	LR100	PC100

MB2003W & MB2004W

Item Number	Description	Price
*Note: Fits Insulgrip devices only		
30 Amp		
HBL60CM31*	Yellow Seal-Tite cover for weather proofing plugs	$22.20
HBL60CM32*	Yellow Seal-Tite cover for weather proofing connector bodies on extension cords or adapters	$24.35
HBL60CM33*	Yellow Seal-Tite cover for weather proofing connector bodies when used on shore power inlets or outlets	$32.10
HBL6083	Gray phenolic FD (deep) weatherproof box with two 3/4" IPS molded knockouts	$45.78
50 Amp		
HBL77CM15	Yellow Seal-Tite cover for connector bodies	$51.45
HBL77CM15W	White Seal-Tite cover for connector bodies	$51.45
HBL77CM16	Yellow Seal-Tite cover for plugs	$32.25
HBL77CM16W	White Seal-Tite cover for plugs	$32.25
HBL77CM17	Yellow Seal-Tite cover for weather proofing connector bodies on extension cords or adapters	$32.81
100 Amp		
BB100-2W	15˚ angle cast aluminum back box, gray with 2.00" NPT	$248.15
BB100N	15˚ angle non-metallic back box, thermoplastic, UV protected, 1.5" NPT	$171.95
CA100	Replacement lift cover assembly; includes cover, arm, and assembly tool	$89.60
CC100	Replacement locking ring and cord clamp	$230.38
FW60/100	15˚ angle section cast aluminum back box for inlets and receptacles, gray 1.5" NPT	$369.33
LR100	Replacement locking ring only	$37.70
PC100	Closure cap for 100A plugs and connectors that have lock rings	$92.83
200 Amp		
MB2003W	15 degree angle cast aluminum back box, gray with 2" NPT	$547.50
MB2004W	15 degree angle cast aluminum back box, gray with 2.5" NPT	$615.00

List pricing in catalog is subject to change without notice.

Ward's Marine Electric Paralleling

This portable adapter will permit the safe connection of your 100 amp 120/240 volt AC single phase shore power cord to two compatible 50 amp 120/240 volt AC shore power dock receptacles. A state-of-the-art safety circuit protects from short circuits and shock hazards while easy to understand instructions ensure simple and straightforward operation.

If the two dock receptacles are supplied from the same utility power source [and can be safely interconnected] the adapter will automatically check the phase relationship, correct phasing when needed, and make a safe parallel connection. In the case of incompatible power sources [where safe parallel connection is not possible] the adapter will connect your 100 amp shore power cord to a single 50 amp power source only, which will permit the operation of limited onboard loads.

* Unit will not work on docks with GFCI protection

SPPA-50

Item Number	Price
100 Amp	
SPPA-50	$6,430.00

Hubbell Paralleling

- Call for IP ratings
- Yellow or white material
- Internal logic sense
- Fully molded
- Crimped terminations

IMPORTANT SAFETY NOTE

YQ100PLUS: This adapter must be connected to an on board, center tapped isolation transformer. DO NOT USE this adapter if such a transformer or converter is not available

YQ100PLUS

YQ230

Item Number	Description	Price
YQ230	50A, 125/250V (Boat), (2) 30A, 125V (Dock) 3 Pole Y Adapter	$669.50
YQ100PLUS	100A, 125/250V (Boat), (2) 50A, 125/250V (Dock) 2 Pole Y Adapter	$6,613.13

Images are representative of products listed and may not be actual product.

Shore Power

Ward's Marine Electric Dockside

This portable adapter permits the safe connection of one or two 50 amp 120/240 volt AC shore power cords to a single 100 amp 120/240 volt AC shore power pedestal. Dedicated 50 amp circuit breakers protect each of the 50 amp shore power systems separately. Ask our sales department about our special order unit that permits connection of your 50 amp cords to a 100 amp three phase power source, if certain safety conditions are met.

64CM100

Item Number	Ratings	Price
64CM100	(2)50A, 120/240VAC(boat), 100A, 120/240VAC (dock)	$3,075.10

This adapter can be used in conjunction with the Hubbell YQ100PLUS adapter or any 50 amp to 100 amp paralleling adapter that is not equipped with the automatic phase correction feature. The adapter will reverse the phasing of the 50 amp 120/240 volt AC shore power source. This adapter is not necessary with the Ward's Marine Electric SPPA-50 and its unique automatic phase correction feature.

50/50RVS

Item Number	Ratings	Price
50/50RVS	50A 220V Phase Rev Adapter (SM Y)	$451.50

PHASE PLUG TO CONNECTOR

Item Number	Description	Price
M41/M51-100	100A 120/240 1 phase plug to 100A 120/208 3 phase connector	$2,176.45
M41/M51/480-100	100A 120/240 1 phase plug to 100A 277/480 3 phase connector	$2,176.45
M51/M41-100	100A 120/208 3 phase plug to 100A 120/240 1 phase connector	$2,170.00

List pricing in catalog is subject to change without notice.

Hubbell Dockside (Continued)

HBL61CM72

HBL61CM100

Item Number	Description	Price
HBL61CM72	50A, 125V, 2 pole, 3 wire (boat), 50A, 125/250V, 3 pole, 4 wire (dock) twist lock	$350.88
HBL61CM100	100A (boat), 50A (dock), 125/250V, 3 pole, 4 wire	$2,477.10

HBL31CM28

HBL61CM22

HBL61CM71

HBL64CM54

Item Number	Description	Price
HBL31CM28	30A twist lock (boat), 15A straight blade (dock), 125V, 2 pole 3 wire	$59.41
HBL31CM29	30A (boat), 20A (dock), 125V 2 pole, 3 wire, twist lock	$54.60
HBL61CM22	30A (boat), 15A (dock), 125V, 2 pole, 3 wire, twist lock	$111.83
HBL61CM71	30A, 125V, 2 pole, 3 wire (boat), 50A, 125/250V, 3 pole, 4 wire (dock), twist lock	$291.80
HBL64CM54	(2) 30A, 125V 2 pole, 3 wire, twist lock (boat), 50A, 125/250V, 3 pole, 4 wire, twist lock	$373.50
HBL105GF	30A twist lock (boat), 15A straight blade (dock), 125V, 2 pole, 3 wire, GFI protected	$158.15

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Shore Power

Ward's Marine Electric

- 10% boost
- ABYC compliant
- Portable
- Durable
- Useful for 115/230 volt AC shore power systems
- Suitable for 200-220 volt dock power sources

BB208

These portable boost transformers are safe, powerful, and can protect your 115/230 volt AC equipment from many harmful low dock voltage conditions. Both the 100 amp and 50 amp versions are equipped with durable carrying handles and can be conveniently set next to your dockside power pedestal. When connected, a static 10% voltage boost is delivered to provide safer and more effective power to your boat. There are no manual overrides on these units, so the voltage will be boosted 10% regardless of input voltage. Not suitable for marinas where erratic voltage fluctuations occur.

Item Number	Price
BB208/230-100	$3,844.25
BB208/230-50	$1,885.00

International Dock Products

- Can hold up to 4 receptacles
- Extruded aluminum and welded base construction
- Isolated sections
- Individual circuit breakers
- White powder coat finish
- Compact

SPC SERIES

Item Number	Description	Price
Custom units available call for pricing		
SPC-21-3T-600	Pile Mount: (1)50A, (1)30A, 20 GFI Twist Lock	$1,006.69
SPC-36-3A-305	Slim Line: (1)50A, (1)30A, (1)20 GFI, TV, Phone, Light, H2O Hose Holder	$1,337.15
SPC-36-3A-630	Slim Line: (2) 50A (1)20A GFI, Phone, TV, Light with photocell	$1,416.93
SPB-45-4A-240	Standard Line: 100A, (2) 50A, (1) 20 GFI, H2O, Hose Holder, TV, Phone, and Light	$2,823.51

List pricing in catalog is subject to change without notice.

Hubbell Marine Electrical Products

HBL105GF

HBL61CM22

HBL104

Molded Straight Adapters

Connector Body (Female End)		Catalog Number		Plug (Male End)
15A 125V, 2P 3W Straight Blade with GFCI protection		**HBL105GF**		30A 125V, 2P 3W Twist-Lock®
30A 125V, 2P 3W Twist-Lock®		**HBL61CM22** **HBL61CM22W**		15A 125V, 2P 3W Straight Blade (lock type)
30A 125V, 2P 3W Twist-Lock		**HBL61CM25**		20A 125V, 2P 3W Twist-Lock
50A 125V, 2P 3W Twist-Lock		**HBL61CM54**		15A 125V, 2P 3W Straight Blade
30A 125V, 2P 3W Twist-Lock		**HBL61CM55**		50A 125V, 2P 3W Twist-Lock
50A 125V, 2P 3W Twist-Lock		**HBL61CM56**		30A 125V, 2P 3W Twist-Lock
30A 125V, 2P 3W Twist-Lock		**HBL61CM71**		50A 125/250V, 3P 4W Twist-Lock
50A 125V, 2P 3W Twist-Lock		**HBL61CM72**		50A 125/250V, 3P 4W Twist-Lock
100A 125/250V, 3P 4W Pin & Sleeve		**HBL61CM100**		50A 125/250V, 3P 4W Twist-Lock

HBL105

30-Series

Connector Body (Female End)		Catalog Number		Plug (Male End)
30A 125V, Twist-Lock		**HBL104**		15A, 125V Straight Blade
15 or 20A, 125V Straight Blade		**HBL105**		30A 125V, Twist-Lock

HBL64CM54

Molded "Y" Adapters

Connector Body (Female End)			Catalog Number		Plug (Male End)
(2) 30A 125V, 2P 3W Twist-Lock			**HBL64CM54**		50A 125/250V, 3P 4W Twist-Lock
(2) 50A 125V, 2P 3W Twist-Lock			**HBL64CM55**		50A 125/250V, 3P 4W Twist-Lock
(2) 30A 125V, 2P 3W Twist-Lock			**HBL64CM56**		30A 125V, 2P 3W Twist-Lock
(2) 30A 125V, 2P 3W Twist-Lock			**HBL64CM57**		50A 125V, 2P 3W Twist-Lock

HBL64CM56

One Piece Adapters

Connector Body (Female End)		Catalog Number		Plug (Male End)
30A 125V, 2P 3W Twist-Lock		**HBL31CM28**		15A 125V, 2P 3W Straight Blade
15 or 20A 125V, 2P 3W Straight Blade		**HBL31CM29**		30A 125V, 2P 3W Twist-Lock
20A 125V, 2P 3W Twist-Lock		**HBL21CM28**		15A 125V, 2P 3W Straight Blade
15 or 20A 125V, 2P 3W Straight Blade		**HBL21CM29**		20A 125V, 2P 3W Twist-Lock

HBL31CM28

HBL21CM29

Hubbell Marine Electrical Products

Boatside

30A 125V AC 2-Pole 3-Wire	HBL303NM	HBL303SS	HBL26CM13 HBL60CM33 / HBL60CM33W
50A 125V AC 2-Pole 3-Wire	HBL503NM	HBL503SS	HBL63CM60 HBL77CM15 / HBL77CM15W
50A 125/250V AC 3-Pole 4-Wire	HBL504NM	HBL504SS	HBL63CM64 HBL77CM15 / HBL77CM15W
100A 125/250V AC 3-Pole 4-Wire	M4100B12R		M4100C12R
100A 3ØY 4-Pole 5-Wire 120/208V AC 277/480V AC	M5100B9R / M5100B7R		M5100C9R / M5100C7R
200A 600V AC/250V DC 50-400 Hertz 4-Pole 5-Wire	M5200BS1R		M5200CS1R
Portable Telephone Cable TV Devices	HBLPHTVNM HBLPHTVSS HBLTVSS		PH6624 PH7440
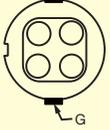
Ship-To-Shore Selector Chart

HUBBELL ®
Wiring Device-Kellems

Ship-To-Shore

YC310250 - 280' (85.3m) Yellow cable only.
WC310280 - 280' (85.3m) White cable only.

HBL61CM08 & **HBL61CM08LED** - 50' (15.2m)
HBL61CM05 & **HBL61CM05LED** - 35' (10.7m)
HBL61CM03 & **HBL61CM03LED** - 25' (7.6m)
HBL61CM08W & **HBL61CM08WLED** - 50' (15.2m)
HBL61CM03W & **HBL61CM03WLED** - 25' (7.6m)

HBL60CM31
HBL60CM31W

HBL26CM11

YC306250 - 250' (76.2m) Yellow cable only.

HBL61CM53 & **HBL61CM53LED** - 50' (15.2m)
HBL61CM43 & **HBL61CM43LED** - 25' (7.6m)

HBL77CM16
HBL77CM16W

HBL63CM61

YC406250 - 250' (76.2m) Yellow cable only.

HBL61CM52 & **HBL61CM52LED** - 50' (15.2m)
HBL61CM42 & **HBL61CM42LED** - 25' (7.6m)
HBL61CM52W & **HBL61CM52WLED** - 50' (15.2m)
HBL61CM42W & **HBL61CM42WLED** - 25' (7.6m)

HBL77CM16
HBL77CM16W

HBL63CM65

CS1004 - 100' (30.4m) 4-Wire
CS754 - 75' (22.8m) 4-Wire
CS100IT4 - 100' (30.4m) 3-Wire
CS754IT4 - 75' (22.8m) 3-Wire
CW125IT4 - 125' (38.0m) One-ended cable set for winches.
CW100IT4 - 100' (30.4m) One-ended cable set for winches.
CW754 - 75' (22.8m) One-ended cable set for winches.
CS50EXT4 - 50' (15.2m) Extension cord.

M4100P12

M4100C12

CS100IT5 - 100' (30.4m) 4-Wire
CS75IT5 - 75' (22.8m) 4-Wire

CW125IT5 - 125' (38.0m) One-ended cable set for winches.
CW100IT5 - 100' (30.4m) One-ended cable set for winches.
CS50EXT5 - 50' (15.2m) Extension cord.

M5100P9
M5100P7

M5100C9
M5100C7

M5200PS1

M5200CS1

PH6630 - 250' (76.2m) Yellow cable only.
PH6599 - 50' (15.2m)
PH6598 - 25' (7.6m)
PH6599W - 50' (15.2m)
PH6598W - 25' (7.6m)

75 Ohm TV Cable.
TV99 - 50' (15.2m)
TV98 - 25' (7.6m)
TV99W - 50' (15.2m)
TV98W - 25' (7.6m)

PH7440

PH6625

Dockside

HBL26CM10

HBL74CM25WOA
HBL74CM25WOAW

HBL63CM70

HBL77CM74WO

HBL63CM69

HBL77CM74WO

M4100R12

M5100R9
M5100R7

M5200RS1

PH6596

TV97

PH6597TV

Shore Power

Glendinning

- Completely automatic
- No slip rings needed
- Adjustable cable size
- Power extension/retraction
- Multiple safety features
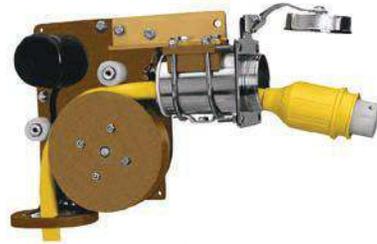
CM-7

CM-8

Item Number	Volt	Price
Cablemaster CM-7 50 AMP cable		
04020	12	$1,160.00
04022	24	$1,185.00
Cablemaster CM-8 100 AMP cable		
04091	24	$2,695.00

Item Number	Description	Price
Extension and Angling Kits		
04066	90° angling assembly kit	$170.00
04065	180° angling assembly kit	$280.50
42007	3" x 36" PVC tube for horizontal or vertical extension kit	$23.40
50004	Pipe extension plate	$6.75
50005	Connector link	$12.25
Mounting Brackets		
50006	Overhead mounting bracket	$24.50
50408	Power unit to container 17" high, can be used on any cablemaster container	$122.00

Item Number	Diameter in "	Height in "	Capacity in Ft.	Price
Cable Storage Container				
Styrene container capacity using 6/4 cable (*for 100 Amp cable)				
85424	18	18	55-60	$80.00
85421	20	15	70-75	$92.00
85420	20	18	70-75	$80.00
85425	22	22	100-110	$110.00
85480*	29	35	100	$195.00

Item Number	Description	Price
Replacement Parts		
04155	Radio remote control (12VDC and two transmitters)	$328.00
04099	24/32V CM-8 motor	$252.00
04035-PT	12V CM-7 motor	$115.00
04036-PT	24/32V CM-7 motor	$115.00
WP053	Large cluster gear	$121.50
WP010	Pivot gear assembly	$101.25

List pricing in catalog is subject to change without notice.

Glendinning (Replacement Parts)

Item Number	Description	Price
WP054	CM-8 Main shaft assembly	$166.12
WP055	CM-8 Gear cluster assembly	$139.12
WP066	CM-7 Pivot gear replacement kit	$267.24
04830	2 Foot in-limit switch assembly	$44.00
WP008-8	Out-limit collar for use with CM-8	$29.00
WP008	Out-limit collar for use with CM-7	$31.50
90001	In-limit switch	$21.00
04812	2' in-limit switch assembly w/out ring	$35.50
04824	Out-limit micro switch assembly	$21.55
51420	Stripper bolt (for roller)	$13.00
87405	Chassis gasket for CM-8	$10.25
81407	Power switch name plate	$8.51
85413	Flat roller	$4.50
87404	Chassis gasket for CM-7	$6.50
90002	Boot for in-limit switch (90001)	$6.51
85414	Lip roller for use with CM-7	$4.50
51442	Guide roller bushing for use with CM-7	$4.55
70449	Guide roller bolt for use with CM-7	$2.26
72412	Guide roller washer for use with CM-7	$0.60
85426	Concave roller for CM-8	$6.00
85442	Lip roller for CM-8	$4.50
50419	Guide roller assembly offset plate for CM-7	$9.00
04052	Pipe clamp assembly	$14.50
50459	Offset bracket for CM-8 extension kit	$24.48
51458-SK	Hawse pipe hinge spring replacement kit	$28.56
04040	Pipe end roller assembly	$35.00
04060	Pipe elbow with rollers 45 degree	$40.80
04061	Pipe couplers w/rollers 3"	$33.00
04899	In limit switch for CM-8	$44.00
04054	Guide roller assembly	$51.50
04043	Horizontal extension kit	$62.00
04045	Pipe to pipe angling assembly 45 degree	$75.00
04046	Guide roller assembly with limit switch	$75.00
04034	12/24V relay	$110.00
04080	Cap and hinge assembly for CM-8	$230.00
04050	30/50 Hawse pipe assembly	$275.00
51459	Cap & hinge SS H/P CM-7	$69.36
04093	100A Hawse pipe assembly	$650.00
04147	Remote for CM-7 and CM-8	$105.00

Images are representative of products listed and may not be actual product.

Shore Power

Single Pole Devices

- Insulgrip® Style Housing for Superior Gripping
- Non-Conductive Retaining Screw locks contacts in place
- Large Raised Alignment Arrow aids in the mating of devices

SINGLE POLE DEVICES BLACK MALE

SINGLE POLE DEVICES BLACK FEMALE

PROTECTIVE CAPS

Item Number	Male Inline	Female Inline	Price
300 Amp Inlines			
Black	HBL300MBK	HBL300FBK	$59.00
White	HBL300MW	HBL300FW	$59.00
Green	HBL300MGN	HBL300FGN	$59.00
Red	HBL300MR	HBL300FR	$59.00
Blue	HBL300MBL	HBL300FBL	$59.00
400 Amp Inlines			
Black	HBL400MBK	HBL400FBK	$59.00
White	HBL400MBK	HBL400FW	$59.00
Green	HBL400MGN	HBL400FGN	$59.00
Red	HBL400MR	HBL400FR	$59.00
Blue	HBL400MBL	HBL400FBL	$59.00

Protective Caps

Item Number	Fits Male Devices	Price
400 Amp Inlines		
Black	HBLMCAPBK	$36.13
White	HBLMCAPW	$36.13
Green	HBLMCAPGN	$36.13
Red	HBLMCAPR	$36.13
Blue	HBLMCAPBL	$36.13

List pricing in catalog is subject to change without notice.

Stancor

- Contacts 5/16"-24 UNF 2A thread
- Coil #10-32 UNF 2A thread
- High vibration
- Temperature -40°F to 150°F

586-905

Item Number	Pole Form	Coil Volt DC	Contacts	NO: Cont./ Inrush	Dimensions in " (mm)	Price
			Single Circuit			
124-902	SPNO	12	Silver Alloy	100/400	3.56(90.42) x 3.13(79.50) x 2.19(55.63)	$64.61
586-902	SPNO	12	Silver Alloy	200/600	3.69(93.72) x 3.30(83.82) x 2.90(73.66)	$122.88
124-903	SPNO	24	Silver Alloy	100/400	3.56(90.42) x 3.13(79.50) x 2.19(55.63)	$63.98
586-905	SPNO	24	Silver Alloy	200/600	3.69(93.72) x 3.30(83.82) 2.90(73.66)	$102.88

Cole Hersee

- Copper terminals
- Insulated
- Straight bracket mounts

SINGLE CIRCUIT

DUAL CIRCUIT

PLASTICIZED

Item Number	Pole Form	Coil Volt DC	Contacts	NO: Cont./ Inrush	Dimensions in " (mm)	Price
			Single Circuit			
24059-08	SPST	12	Copper	65/120	2.86(72.64) x 3.17(80.52) x 2.63(66.80)	$49.24
24117-01	SPST	12	Copper	65/120	2.86(72.64) x 3.17(80.52) x 2.63(66.80)	$60.78
24063	SPST	24	Copper	65/120	2.86(72.64) x 3.17(80.52) x 2.63(66.80)	$45.83
			Plasticized			
24063-08	SPST	24	Copper	65/120	2.86(72.64) x 3.17(80.52) x 2.63(66.80)	$61.49
			Dual Circuit			
Continuous Duty, NO/NC, CR Rating 85A/35A						
24401	DPST	12	Copper	N/C 35A, N/O 85A	2.2(55.88) x 2.75(69.85)	$62.37
24402	DPST	24	Copper	N/C 35A, N/O 85A	2.2(55.88) x 2.75(69.85)	$68.12

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Solenoids

Universal

- Single pole
- Normally open
- Insulated coil circuits

1000 AMPS

SERIES PARALLELING

Item Number	Volts	Price
1000 Amps		
SW865	12	$177.67
SW866	24	$177.00
SW867	32	$199.89
Series Paralleling		
SW844	12/24	$686.40

Unit typically utilized in 12/24V series paralleling systems for 24V cranking and 12V accessories and charging
Call for additional information

Blue Sea Systems

- Hermetically sealed contacts
- Activated by an ON-OFF switch mounted remotely
- Compact solenoid offers remote switching for application with limited space and no requirements for manual control
- Current rating 100A cranking, 275A intermittent, 250A continuous with 1/0 cable
- IP67 waterproof rating
- Ignition protected SAE J1171
- Serrated flange nut

9012

Item Number	Contacts	Type	Stud Size	Price
L Series Solenoid Switch				
9012	SPST-NO	12/24 Volt	5/16" (M8)	$234.99

WIRE SIZE AND CURRENT RATINGS

WIRE SIZE	I10 CRANKING 10 sec.	I60 CRANKING 1 min.	I300 INTERMITTENT 5 min.	Ic 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

List pricing in catalog is subject to change without notice.

Blue Sea Systems

ML-Series Solenoid Switches

- LED output to remotely indicate switch state- requires optional LED
- Silver alloy contacts provide high reliability
- 3/8" 16 tin copper studs
- CE Marked, meets ISO 8846 and SAE J1171 external ignition protection requirements IP66 protected against powerful water jets
- Magnetic Latching Bi-Stable
- SPDT (on)-off-(on)
- Remote control switch included.

LINKBUS

ML-SERIES
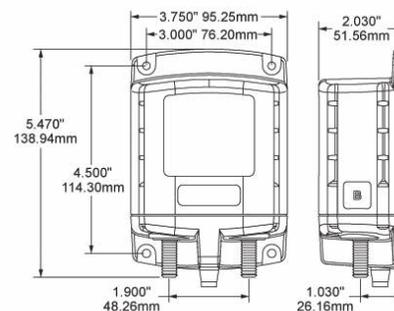
Item Number	Coil Volts	Cable End	Stud	Price
ML-Series Solenoid Switches				
7701	12	Stripped wire	3/8" x 16 (M1Ø)	$234.99
7703	24	Stripped wire	3/8" x 16 (M1Ø)	$234.99

Item Number	Description	Price
ML Series Accessory		
9160	LinkBus Ideal for paralleling ML remote battery switches	$17.69

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

Images are representative of products listed and may not be actual product.

Solenoids

Quick

- Able to operate motors for windlasses and capstans.
- Easy to install.
- The casing of this unit is IP66 waterproof.
- Sold complete with the solenoid unit and product sheet.

T6315-XX

T6415-XX

Item Number	Max power of the windlass/ capstan motor	Max contact voltage	Interruption capacity (1)	Working intermittent current (50% of work cycle) (le)	Coil rated voltage	Recommended fuse	Weight	Price
Contactor Units								
T6315-12	2500 W	48 VDC	800 A @ 48 VDC	150 A	12 VDC	2,5 A Fast	1,87 g	$170.00
T6315-24	3500 W	48 VDC	800 A @ 48 VDC	150 A	24 VDC	1,6 A Fast		$170.00
Reversing Contactor Units								
T6415-12	2500 W	48 VDC	800 A @ 48 VDC	150 A	12 VDC	2,5 A Fast	2,16 g	$200.00
T6415-24	3500 W	48 VDC	800 A @ 48 VDC	150 A	24 VDC	1,6 A Fast		$200.00

MOTOR WATTAGE	12V	24V
150	T6411-12	
250	T6411-12	
300	T6415-12	T6415-24
500	T6415-12	T6415-24
700	T6315-12	T6315-24
1000	T6315-12	T6315-24
1400	T6315-12	T6315-24
1500	T6315-12	T6315-24
1700	T6315-12	T6315-24
2000		T6315-24
2300		T6315-24
3000		T6315-24

List pricing in catalog is subject to change without notice.

S&N

- ¼ - 28 threaded shaft
- 40W max intermittent
- 18lb of pull at ½"
- 120lb of pull at hold

- Protects electrical connections from humidity and moisture

1118128

4HN57

Item Number	Description	Price
1118128	12V 2 terminal shut off solenoid	$317.85

Accesories

Item Number	Description	Price
4HN57	Solenoid coil connector with none lead type	$10.88

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Switchboards

Marine Switchgear Systems

Enclosure

- Bulkhead mounting for smaller systems, IP22 or IP23 protection.
- Deck mounting, IP22 or IP23 protection.
- Aluminum (up to 2 meters [~80"] wide) or steel enclosures.
- Custom configurations using Elsteel components are available.

AC Power Bus System

- Single, split or multi-bus systems.
- Split or multi-bus systems include tie breakers/switches with motor operators.

Input Circuit Breakers

- Input circuit breakers with electronic trip and motor operators.

AC Distribution Circuit Breakers

- AC distribution circuit breakers can be molded case and/or rail mounted in quantities and ampacities as required.

Metering

- Analog metering for each bus or each source to include:
  One (1) voltmeter w/ phase selector switch
  One (1) ammeter for each phase
  One (1) frequency meter
  One (1) kilowatt meter.
- Multi-function digital meter displays are included on each Protection and Power Management (PPM) module.
- The optional Touch Screen Interface also displays digital and graphic metering for the power sources.
- Analog ground fault current meter for grounded systems. Analog insulation monitor for isolated systems.

Modes of Operation

All WME switchgear is manual first and automated second. An automation fault never prohibits a power source from being manually connected to the bus and providing electrical power to the vessel.

- Auto Mode. The Power Management System (PMS) provides all protection and operational control.
- Switchboard Mode. The PMS provides alarm indication only. Operational control is manual. Power source circuit breakers are safety interlocked with a manual rotary selector switch.
- Manual Mode. Protection and operational control is manual. Power source circuit breakers are safety interlocked with a manual rotary selector switch.

DC Control Power

WME Switchgear uses three independent sources of 24VDC control power. These inputs are to be supplied from three separate battery banks, usually from two generator banks and a service bank.

Automated Control, Protection and Power Management System (PMS)

Using all off-the-shelf components, with no PLCs and nocustom or proprietary programming, the WME switchgear control, protection and power management system provides unsurpassed control and safety features, including:

- All automated control, protection and power management is accomplished using Deif PPM-3 digital integrated controllers, which combine individual synchronizers, load share modules, power factor/VAR controllers, reverse power and protective relay devices into a single device. These Deif compact controllers are less complicated and more reliable than multiple, individually mounted and wired components. The failure of any one Deif controller does not affect any other controller or power source. Deif PPM-3 controllers can be used with any make or size of generator or shore power connection and have approvals and/or certificates from the following agencies: ABS, BV, DNV, GL, LR, RINA, UL and others.
- A separate PPM-3 or PPM-300 controller with operator/display panel is used for each power source and tie device.
- Seamless transfer to and from all power sources.
- Automatic parallel and load share between generators.
- Synchronization across open tie-device included (if fitted on multi-bus systems).
- Protection for O/U Voltage, O/U Frequency, Over Current, Reverse Power, Loss of Field, Fail to Start, Fail to Stop, Fail to Close, Fail to Open, Fail to Sync.
- Generator Priority Selection by manual selection, by settable time-period, by running hours or by "Fuel Optimization" which runs only those generators necessary to supply the load (suitable for systems with multiple, differently sized generators).
- Load-dependent operation adds or subtracts generators by load demand.
- Load dependent two-level non-essential load shedding and load reconnect.
- Blackout recovery from shore power to generator or between generators.
- "Heavy Consumer" mode adds generating capacity in response to a high-current request signal from equipment such as a bow thruster or deck crane.
- "Fixed Power" mode runs generators in asymmetrical load share, rotating the heavier load between generators to keep each generator "hot" and prevent "wet stacking".
- "Secure" mode adds a generator to the bus for redundant safety during maneuvering or for other critical situations.
- Ability to use emergency generator (if fitted) as a "harbor" generator, to supply power to the main bus during low-power or nighttime operations.
- Alarm and Event log.
- Intra-unit communication via redundant CANBUS.
- USB service port for easy setup and maintenance.

Images are representative of products listed and may not be actual product.

Other Optional Features Available:

- Additional status indication and pre-programmed control functions via Deif Additional Operator Panel (AOP). (16 status indicators, 8 control functions per AOP)

- Touch-Screen Operator Interface (TSI) for enhanced system control and monitoring (ABS, DNV, LR approved). The TSI is the interface between the operator and the control system and contains screens for the control, management, monitoring and setup of the vessels AC power distribution system. Soft keys are used to navigate the various screens and make finding data quick and easy. Intuitive on-screen help provides setup and operational instructions. The touch screen can be connected to the internet for remote alarm notification and monitoring.

- Shore Power Priority (available only with TSI) provides automatic transfer to shore power whenever shore power is available.

- Shore power converter communication (available only with A/Sea converter & TSI).

- Engine communication via J1939 CANBUS (if available).

- Ethernet port for remote communication via TCP/IP and SMS/email function.

- Bi-directional communication with vessel's Alarm and Monitoring System.

- Manual generator starting and stopping.

- Manual generator speed adjustment.

- Manual generator voltage adjustment.

- Manual generator paralleling with independent reverse-power protection, sync scope, and sync check relay.

- Analog zero-crossing voltmeter for manual paralleling.

- Analog kWh meter for monitoring shore usage.

- Analog Power Factor meter.

- Analog kVAr meter.

- A digital multi-function meter is available to replace the analog meters.

- An AC-powered 24VDC power supply is available to allow manual control of the switchboard when all three 24VDC power sources have failed. A selector switch is used to select the power supply's AC power source from either the main bus or a switchboard input power source.

Arc Fault Protection System

- WME provides arc fault protection on all switchgear with voltages above 240VAC.

- An electrical arc fault can develop within milliseconds and produces temperatures easily exceeding 30,000°F — hotter than the surface of the sun! Arcing causes air to expand dramatically and metal conductors to vaporize. When copper is converted from solid to vapor, it expands to 67,000 times its original volume. This rapid expansion of air and metal vapor produce an intensely hot explosion that can damage equipment and jeopardize the safety of operating personnel.

- Generally, an arc will not cause any damage if eliminated within 35ms (~two cycles). If the arc is allowed to continue for 100ms, some damage may occur. An arc fault lasting 500ms may cause extensive damage to the switchgear.

- WME installs arc flash optical sensors at the main circuit breakers, the main bus bars and the distribution bus bars. These sensors are connected to an arc flash relay. If an arc flash is detected, the relay unit generates a tripping pulse in less than 1ms to the main circuit breakers. The total arcing time is thereby reduced to the mechanical opening time of these circuit breakers, typically 50-75ms. The arc is therefore extinguished with little or no damage to the switchgear or personnel and eliminates the need for venting chimneys.

Safety Warning Label

- WME provides a Safety Warning Labeling on all manufactured switchgear similar to the sample below, conforming to NEC 110-16 & NFPA 70E-2012, Section 130.5(C).
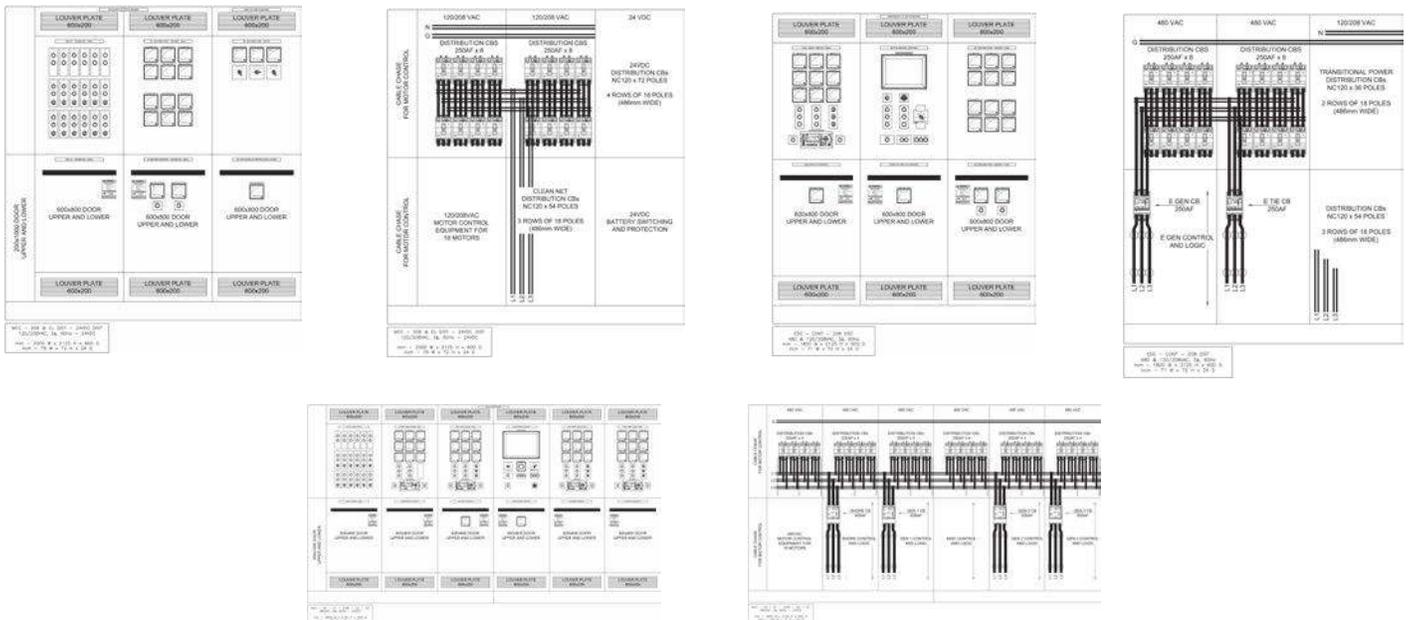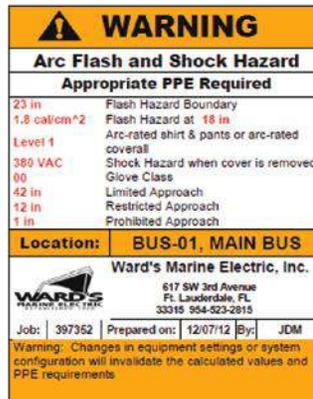
Images are representative of products listed and may not be actual product.

Switchboards
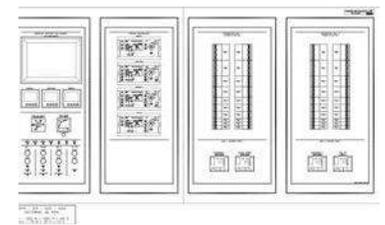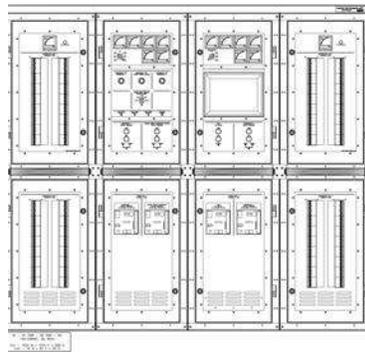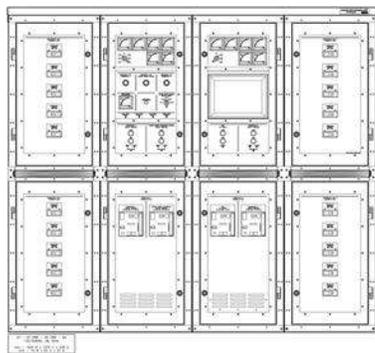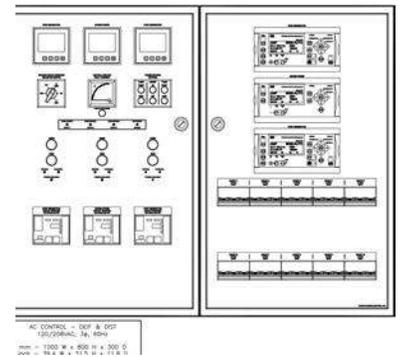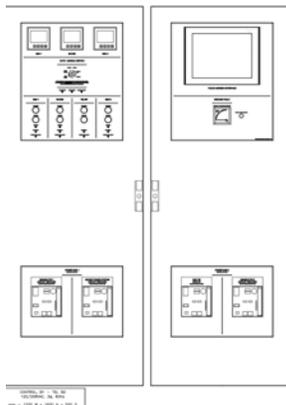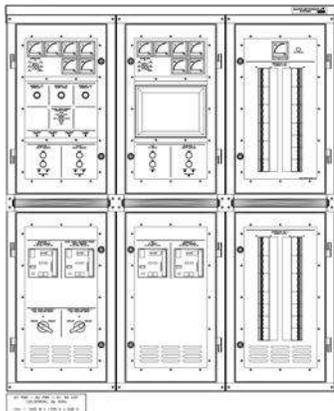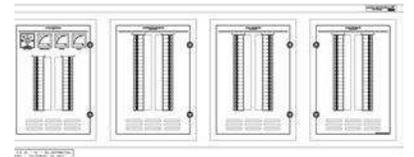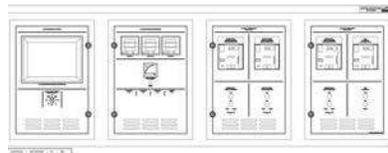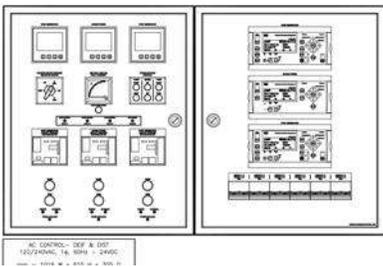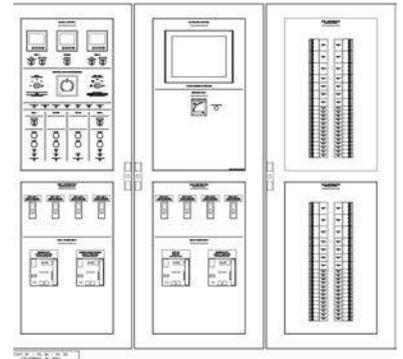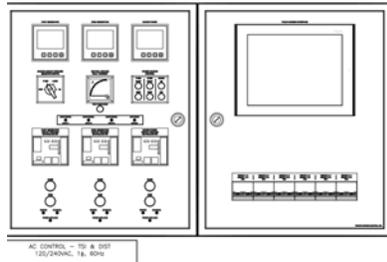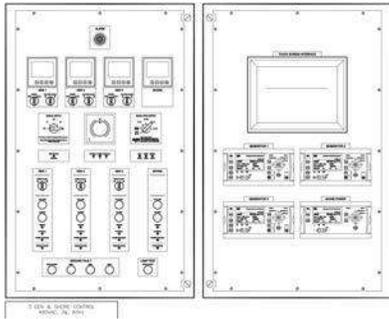
Images are representative of products listed and may not be actual product.

Manual Switchgear Systems

Enclosure

- Bulkhead mounting for smaller systems, IP22 or IP23 protection.
- Deck mounting, IP22 or IP23 protection.
- Aluminum or steel enclosures.
- Custom enclosures using Elsteel components are available.

AC Power Bus System

- Single, split or multi-bus systems.

Power Source Selection

- Input circuit breaker selection with slide bar interlock.
- Contactor input source selection.
- Rotary switch input source selection.
- Rotary switch local input source selection plus contactors for local & remote input source selection.

AC Distribution Circuit Breakers

- AC distribution circuit breakers can be molded case and/or rail mounted in quantities and ampacities as required.

Metering

- Analog metering for each bus or each source to include:
  One (1) voltmeter w/ phase selector switch
  One (1) ammeter for each phase
  One (1) frequency meter
  One (1) kilowatt meter (optional).
- Analog ground fault current meter for grounded systems. Analog insulation monitor for isolated systems.

Images are representative of products listed and may not be actual product.
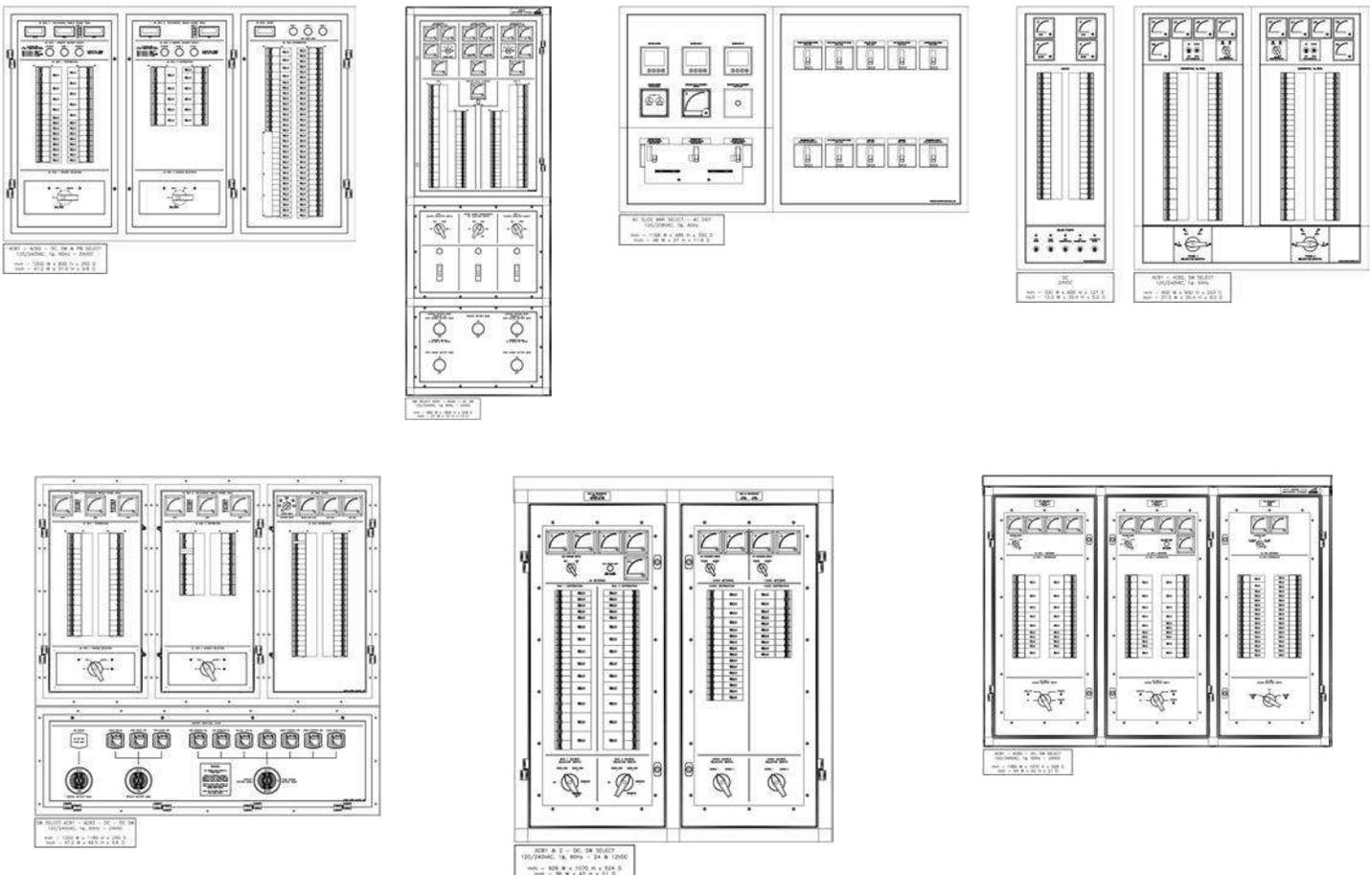
Switchboards

Generator Protection Unit

Unique Features

- Each controller contains all the functions that are needed to protect electrical equipment with a breaker, for example, a diesel generator, a busbar, or a motor.
- Each controller includes processor technology and high-speed internal communication to provide fast protection functions.
- Processor, communication, measurement, and input/output hardware modules may be replaced or added in the field. The controller automatically recognises the new hardware modules.
- The controller display unit color graphic screen allows fast access to live data. The operator can use the screen to manage alarms. With the right authorization, the operator can also check and/or change the I/O and parameter configuration. The light indicators of the display unit are visible over a long distance. The display processor can display all languages.
- You can connect several GPU 300 controllers to create one communication network. Redundant communication between the controllers is possible.

Protection & Power Management, PPM 300

Unique Features

- Incorporating an extensive range of control, protection and supervision functions, PPM 300 applications range from genset control and protection to engineered power management solutions developed for diesel generators (including emergency diesel generators), shaft generators, shore connections, and bus tie breakers.
- PPM 300 power management systems control and monitoring applications meet and maintain set power requirements and guarantee stable operation. PPM 300 power management systems also incorporate market leading fuel optimization technology.
- In multi-master solutions, the integrated PPM 300 controllers connect and communicate as a closed circuit to eradicate single point failures: in cases of unit fall-out, the master functionality automatically moves to another host, keeping the system not just operational but safe and reliable at all times.
- The PPM 300's modular build supports on-site replacement of processor, communication, measurement, and input-output modules with comprehensive class approvals. Changes to the unit at sea or in the field are assisted with automatic recognition functionality facilitating fast, easy and cost-saving service, repairs, and upgrades.
- The controller display unit includes a 5" color graphic screen with intuitive sequences and icons for fast readout of live data, and easy access to alarms handling and controller setup. Functionality is defined and targeted according to user permission levels.

Paralleling & Protection Unit, PPU 300

Unique Features

- The controller contains the functions required to protect and control a generator and its breaker (specifically, a diesel generator, a shaft generator, a shore connection, or a bus tie breaker). You can connect up to 12 controllers to create one system, with load sharing sections.
- Typically, a PLC or operator will send commands to the PPU 300 to close or open the breaker. For a diesel generator, the PLC or operator can also send commands to start or stop the generator, change the regulation-mode, and change the regulation set points.
- The controller display unit can have push-buttons for the operator to change the controller mode, close and open the breaker, and start and stop a diesel generator. The color graphic screen shows status and info messages.
- Each controller includes processors and high-speed internal communication. This provides fast protection functions. The controller design is modular, and hardware modules may be replaced or added in the field.

Images are representative of products listed and may not be actual product.

Protection and Power Management, PPM-3

Unique Features

- DEIF's Protection and Power Management 3 (PPM-3) is a market-leading Power Management System (PMS) standard suitable for a broad range of marine applications with up to 16 diesel generators, two shaft generators, two shore connections, eight bus tie breakers and two emergency/harbour generators including bus tie breaker control and the possibility for wrapped busbar applications.

- The versatile and fully redundant multi-master system has been developed with fuel-efficient engine operation in view, and is an efficient and cost-effective solution with up to three powerful microprocessors.

- Encompassing all necessary three-phase measuring circuits, values and alarms are displayed on a quality LCD screen.

- Using a separate engine interface card as a backup shutdown unit, the PPM-3 also provides extra safety for your engine with a separate microprocessor and separate power supply.

- Multiple display units and operator panels can be connected to each controller, making access to the system possible from any location on the ship. Dedicated to versatile application uses and intuitive configuration and operation installing, the redundant multi-master system is fast, easy, and requires limited space.

- DEIF's Multi-line 2: utility software v.3 (USW-3) with programmable logic (M-Logic) allows for comprehensive customization, including dedicating specific functions or logic conditions to different inputs and outputs as well as tuning select sequences to suit your requirements. Applications with shaft generators, shore connections and bus tie breakers can be easily configured to the switchboard design itself. Operator-friendly one-touch sequences handle all automatic functions. Using the application tool, even complicated systems can be configured within a few minutes.

- Traditionally, power management system (PMS) tests have been performed on mounted systems: a time-consuming procedure that interrupts day-to-day-operations and risks disturbing your application setup. Addressing those concerns, DEIF's innovative Emulation Software Solution has been created to allow for safe PMS testing at your desk, revolutionizing the design and test of power management systems for multiple diesel gensets.

Paralleling and Protection Unit, PPU-3

Unique Features

- Easy to operate and configure, DEIF's PPU-3 control and protection unit is an ideal controller for PLC-based power management systems.

- Apart from generator protection and synchronization, the PPU-3 also features regulation modes including load sharing, fixed power, fixed frequency, etc. Serial communication enables easy interfacing with PLCs, SCADA-systems and more, and the unit features all necessary three-phase measuring circuits, displaying all values and alarms on a quality LCD screen.

- Turning the PPU-3 into an engine control unit featuring start/stop and protection functionalities, the optional engine interface card also has a separate power supply and an independent microprocessor.

- In cases of PPU-3 processor break-downs, the engine interface card will enter into back-up mode and ensure uninterrupted engine supervision.

- In cases of shutdown alarms, the engine shuts down automatically, making it a reliable solution for control and supervision of marine gensets.

- Additional Operator Panels (AOP) can easily be installed and integrated for further levels of remote control, supervision and status indication. Both displays and panels feature a dimmer function for use on the ship's bridge.

- With a range of additional hardware options available, as well as DEIF's Multi-line 2:utility software v.3 (USW-3) with programmable logic (M-Logic), you can customize the application to suit your needs exactly: dedicate specific functions or logic conditions to different inputs and outputs and tune all sequences according to your requirements.

Images are representative of products listed and may not be actual product.

Switchboards

Protective Voltage Relay, RMV-112D

Unique Features

- These uni-line protective voltage relays are applied for protection of generators, motors and transformers against adverse system voltage conditions. They are applicable to both marine- and land-based installations.

The following uni-line types are available
- Type RMV-112D – undervoltage and overvoltage relay (U< + U>), 3°
- Type RMV-122D – overvoltage relay (2 levels: U> + U>)
- Type RMV-132D – undervoltage relay (2 levels: U< + U<)
- Type RMV-142D – undervoltage and overvoltage relay (U< + U>), 1°

Double Overcurrent Relay, RMC-132D

Unique Features

- This double overcurrent relay uni-line RMC-132D is applied in cases where protection against overcurrent at two levels is required (I> + I>).

Reverse Power Relay, RMP-121D

Unique Features

- The protective reverse power relay uni-line RMP-121D forms part of a complete DEIF series of relays for protection and control of generators, and is applicable to both marine and land-based installations.
- The RMP-121D is type-approved by major classification societies.

Phase Sequence Relay, RMT-111Q96

Unique Features

- The phase sequence relay with relay contacts type RMT-111Q96 is applied for check of the phase sequence of a power plant. A check of the phase sequence is required for connecting equipment to a new voltage source e.g. when changing from generator power to shore power.
- The indicator can also be applied for alarm indication on phase breakage.
- The RMT-111Q96 is equipped with two LEDs on the front for indication of the phase condition.
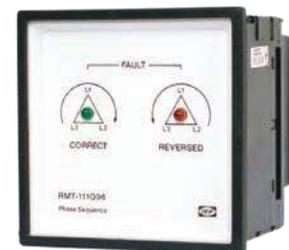
Images are representative of products listed and may not be actual product.

Selectable AC-Transducer, TAS-311DG

Unique Features

- TAS-311DG is a micro-controller-based AC-transducer with 1 analog output for measurement of RMS-voltages, RMS current, phase angle or frequency on an AC-network.

- The PC configuration software allows free choice of voltage, current, phase angle or frequency measurement including configuration of the measuring range and output range without any mechanical settings or adjustments inside the transducer.

- The transducer holds no mechanical moving parts like potentiometers and therefore the calibration stability is excellent. TAS-311DG can be delivered pre-configured or it can be delivered un-configured for customer configuration through the PC-interface.

Selectable AC-Transducer, TAS-321DG

Unique Features

- TAS-321DG is a micro-controller-based AC-transducer with 1 analog output for measurement of bi-directional current.

- The transducer can be used for measurement of active power or reactive power on a 3-phase network where only 2 phases are available for the measurement. TAS-321DG can be delivered pre-configured or it can be delivered un-configured for customer configuration through the PC-interface.

Selectable AC-Transducer, TAS-331DG

Unique Features

- TAS-331DG is a micro-controller-based AC-transducer with 1 analog output for measurement of power or reactive power on an AC-network. The transducer holds no mechanical moving parts like potentiometers and therefore the calibration stability is excellent.

- TAS-331DG can be delivered pre-configured to the desired measuring value and range or it can be delivered un-configured for customer configuration through the PC-interface. The PC-configuration makes free adjustment of the full input range and output range possible without any mechanical settings or adjustments inside the transducer

Images are representative of products listed and may not be actual product.

Switchboards

Touch Screen Interface

The WME touchscreen interface is a convenient way to view and control all of the operations and data generated by the Deif PPM-3 or PPM-300 controllers. The TSI systems are interfaces only; all of the operational logic, alarms, and configuration is handled by the Deif processors. We offer two systems. One uses Schneider software installed on a MarineNav Microsoft Windows™-based integrated computer and touchscreen display that is mounted on the door of the switchboard cabinet. The other system uses Böning touchscreen equipment and is also mounted on one of the switchboard doors. Both systems come with the Deif configuration utility and TeamViewer remote access software, which allows our engineers to remotely log into the system for remote diagnosis and maintenance.

- Both systems offer SMS support that can send a text message with alarm data.
- The Schneider system also offers the ability to email log files and historical data.
- Since both systems are interfaces to the Deif processors, the same control and display data is available.
- The Schneider system with the MarineNav display has a 70°C rating.
- Böning systems are available with 10", 15", 19" and 24" displays.
- Schneider systems are available with 12.1", 15", and 19" displays.
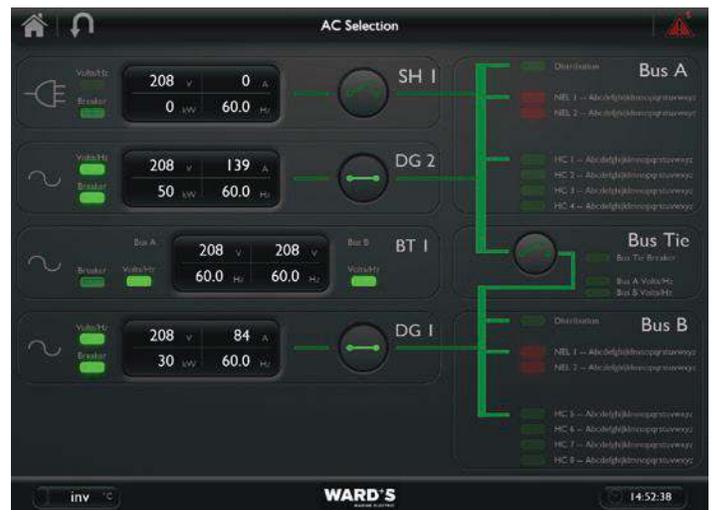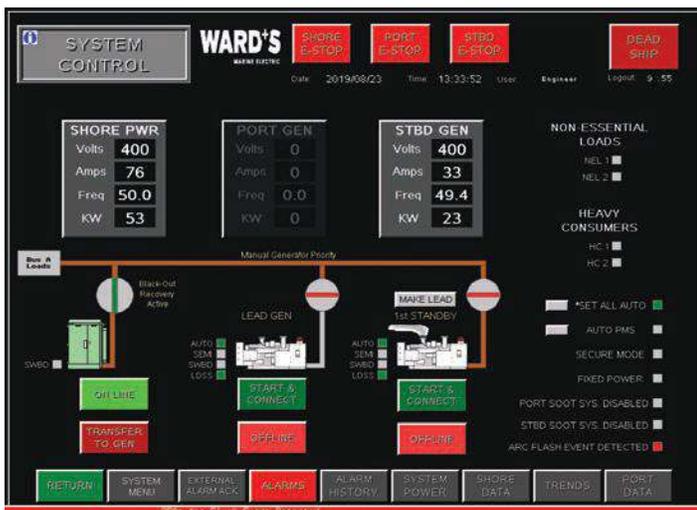
SCHNEIDER

BÖNING

Images are representative of products listed and may not be actual product.

Enclosed Distribution Panelboards

Unique Features

- Panelboard enclosures are all aluminum and rated IP20. A drip shield for meeting IP22 applications may be added by the customer.

- Available in 125-amp or 250-amp bus capacity.

- AC single-phase (A1) or three-phase (A3) bus configurations are available.

- DC single-pole (D1) or two-pole (D2) bus configurations are available.

- The 125A panelboards come in 12, 24, 36 and 48 pole versions and have screw-fastened flat front panels or formed hinged doors[*1].

- The 250A bus panelboards come in 24, 36, 48, 60 and 72[*2] pole versions and have screw-fastened flat front panels.

- Circuit breakers are rail-mounted stationary to the enclosure, not to the front panel. The front panel is easily removed for service.

- Circuit breakers are front connectable, easily changeable and available in 1, 2 or 3-pole units in 3, 6, 10, 16, 20, 25, 32, 40, 50 or 63 amp capacity.

- Panelboards are configurable for either top or bottom cable entry. Cable entry penetrations and fittings are provided by customer.

- All AC panelboards are fitted with neutral and grounding buses.

- All DC panelboards are fitted with negative and grounding buses.

- Supply conductors are terminated directly to the power, neutral (or DC negative) and grounding buses.

- Branch circuit conductors are terminated directly to the circuit breakers and to the neutral (or DC negative) and grounding buses.

- Panelboards are painted with Awl Grip in "Matterhorn White".

- Panelboards are supplied with a face mounted reverse-engraved overlay with two circuit breaker label strips for displaying panelboard and circuit breaker identification.

- Various custom options are available, including metering and "Power Available" indicator lights. Please contact WME for additional details.

125A Bus Distribution Panel

Unique Features

- The enclosure and cover plate are precision formed and stamped. Any cover will fit any other enclosure of the same size. Hinged doors are also available. For hinged doors, please add 12.7mm (½") to enclosure height and width dimensions.

- Normal mounting is with the neutral (or DC negative) and grounding buses at the top with the supply cable entering from the bottom, as shown at right, but the enclosure may be inverted for supply cable top entry.

- The cover panel is symmetrical and may be mounted with overlay text up regardless of whether the enclosure is mounted buses up or buses down so the decision to mount buses up or down may be made in the field.

- The supply cable may be sized up to 1/0AWG [70mm²] maximum (2AWG [35mm²] max for 12-pole). The supply conductors connect directly to the line buses with ¼" bolts and captive nuts and directly to the neutral (or DC negative) and grounding buses with pressure terminals. The neutral bus (blue terminals) is raised so the grounding conductors pass under it to connect to the grounding bus (green terminals).

- Output cables may be up to 2AWG [35mm²], the maximum size conductor that will fit in the CB terminal, and may enter from either top or bottom, as required.

- Circuit breaker arrangement should be final before engraving the circuit breaker label strips.

- A drip shield for meeting IP22 applications may be added by the customer.

125A 24-POLE PANEL, SHOWN WITH AND WITHOUT COVER PLATE.

Images are representative of products listed and may not be actual product.
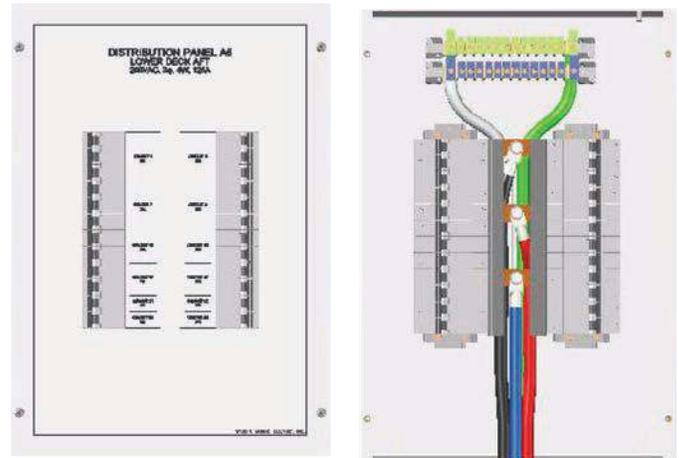
Switchboards

250A Bus Distribution Panel

Unique Features

- The enclosure and cover plate are precision formed and stamped. Any cover will fit any other enclosure of the same size.
- Normal mounting is with the circuit breakers at the top, as shown at right, with the supply cable entering from the bottom but the enclosure may be inverted for supply cable top entry.
- The cover panel is not symmetrical and may only be mounted one way. The decision of whether to mount the enclosure circuit breakers up or down must be made before the cover panel overlay text is engraved.
- The supply cable may be sized up to 4/0AWG [120mm²] conductors maximum. The supply conductors connect directly to the 10mm line bus studs with nuts and directly to the neutral (or DC negative) and grounding buses with pressure terminals. As this size conductor may be very difficult to bend, there is enough room within the enclosure to make a complete service loop before connecting to the power bus.
- Output cables may be up to 2AWG [35mm²], the maximum size conductor that will fit in the CB terminal, and may enter from either top or bottom, as required.
- Circuit breaker arrangement should be final before engraving the circuit breaker label strips.
- A drip shield for meeting IP22 applications may be added by the customer.
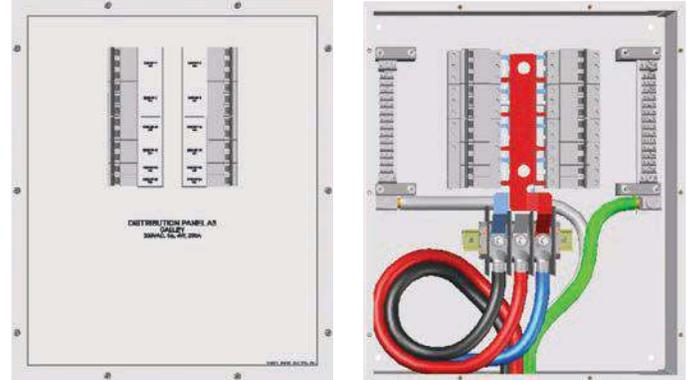
250A 24-POLE PANEL, SHOWN WITH AND WITHOUT COVER PLATE.

125A & 250A WME ENCLOSED DISTRIBUTION PANELBOARDS SIZE COMPARISON
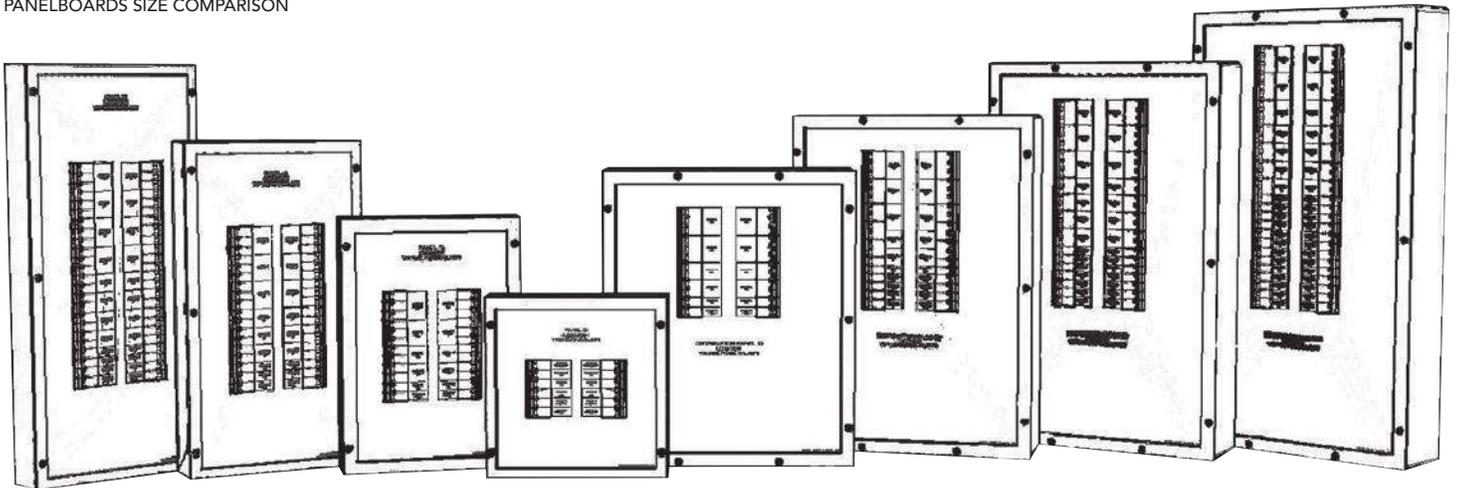
125A, 48-POLE	125A, 36-POLE	125A, 24-POLE	125A, 12-POLE	250A, 24-POLE	250A, 36-POLE	250A, 48-POLE	250A, 60-POLE
WME-125-48-A1	WME-125-36-A1	WME-125-24-A1	WME-125-12-A1	WME-250-24-A1	WME-250-36-A1	WME-250-48-A1	WME-250-60-A1
WME-125-48-A3	WME-125-36-A3	WME-125-24-A3	WME-125-12-A3	WME-250-24-A3	WME-250-36-A3	WME-250-48-A3	WME-250-60-A3
WME-125-48-D1	WME-125-36-D1	WME-125-24-D1	WME-125-12-D1	WME-250-24-D1	WME-250-36-D1	WME-250-48-D1	WME-250-60-D1
WME-125-48-D2	WME-125-36-D2	WME-125-24-D2	WME-125-12-D2	WME-250-24-D2	WME-250-36-D2	WME-250-48-D2	WME-250-60-D2

	MM	INCH		MM	INCH		MM	INCH		MM	INCH		MM	INCH		MM	INCH		MM	INCH		MM	INCH
H	800	31.5	H	650	25.6	H	500	19.7	H	350	13.8	H	594	23.4	H	702	27.6	H	810	31.9	H	918	36.1
W	350	13.8	W	350	13.8	W	350	13.8	W	350	13.8	W	500	19.7	W	500	19.7	W	500	19.7	W	500	19.7
D	97	3.8	D	97	3.8	D	97	3.8	D	97	3.8	D	145	5.7	D	145	5.7	D	145	5.7	D	145	5.7

Specifications subject to change without notice. Consult WME for latest configuration.

*1 for 125A enclosures with hinged doors, please add 12.7MM (1/2") to enclosure W & H.

*2 250A, 72-pole version available, special order, 6-8 week lead-time. 72-Pole Size, 1026MM (40.4")H x 500MM (19.7")W x 145MM (5.7")D

Images are representative of products listed and may not be actual product.

Switches

ROTARY

CSii

- Front mount
- Base mount adapter
- EN/IEC 60947-1, EN/IEC 60204-1 approved, CSA 22.2No14
- CE Marked, and UL 508 approved
- Short circuit rated

- Can be used as: ON-OFF, changeover, Multi-step, code, gang, instrument, and motor switches
- 30, 45, 60, or 90 degree angles with a maximum of 12 switching positions

CAM-SWITCHES

Item Number	Action	Poles	Positions	Price
Refer to page 231 for wiring diagrams.				
20 Amp				
N20-61325	Off-1-2-3, 90°	1	3 + off (L1, L2, L3)	$99.00
N20-61026-09s	1-Off-2, 60°	2	2 + off	$123.75
N20-61080-09S	Off-1-2-3, 60°	2	3 + off	$172.84
N20-61081-09S	Off-1-2-3-4, 60°	2	4 + off	$215.19
N20-61313-10	L3L1-L2L3-L1L2-Off-L1N-L2N-L3N	2	6 + off (LL/LN)	$88.00
N20-61101-09S	Off-1-2-3-4, 60°	3	4 + off	$297.00
N20-61100-09S	Off-1-2-3, 60°	3	3 + off	$250.25
N20-61028-09S	1-Off-2, 60°	4	2 + off	$206.25
N20-61131-09S	Off-1-2-3, 60°	4	3 + off	$297.00
N20-61132-09S	Off-1-2-3-4, 60°	4	4 + off	$394.53
30 Amp				
N25-61026-00S	1-Off-2, 60°	2	2 + off	$85.22
N25-61038-00S	1-2, 60°	2	2 & no off	$85.22
N25-61080-00S	Off-1-2-3, 60°	2	3 +off	$114.18
N25-61039-00S	1-2, 60°	3	2 & no off	$114.18
N25-61100-00S	Off-1-2-3, 60°	3	3 + off	$172.01
50 Amp				
N40-61026-06S	1-Off-2, 60°	2	2 + off	$147.18
N40-61080-00S	Off-1-2-3, 60°	2	3 + off	$196.52
N40-61027-06S	1-Off-2, 60°	3	2 + off	$196.52
60 Amp				
N63-61026-06S	1-Off-2, 60°	2	2 + off	$190.99
N63-61038	1-2, 60°	2	2 & no off	$190.99
N63-61080-00S	Off-1-2-3, 60°	2	3 +off	$175.56
N63-61069-00S	1-2-3, 60°	2	3 & no off	$175.56
N63-61027-06S	1-Off-2, 60°	3	2 + off	$263.34
N63-61081-00S	Off-1-2-3-4, 60°	2	4 + off	$335.69
N63-61100-15	Off-1-2-3, 60°	3	3 & no off	$408.05
N63-61028-06S	1-Off-2, 60°	4	2 +off	$324.50
N63-61131	Off-1-2-3, 60°	4	3 +off	$408.48

Images are representative of products listed and may not be actual product.

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Switches

CSii (Continued)

Item Number	Action	Poles	Positions	Price
85 Amp				
N80-61026-07S	1-Off-2, 60°	2	2 + off	$398.75
N80-61027-07S	1-Off-2, 60°	3	2 + off	$541.50
N80-61101	Off-1-2-3-4, 60°	3	4 + off	$962.50
130 Amp				
N125-61026-07S	1-Off-2, 60°	2	2 + off	$400.95
N125-61038-02S	1-2, 60°	2	2 & no off	$400.95
N125-61080	Off-1-2-3, 60°	2	3 + off	$547.31
N125-61081-02S	Off-1-2-3-4, 60°	2	4 + off	$547.01
N125-61027-07S	1-Off-2, 60°	3	2 + off	$561.96
N125-61100-13	Off-1-2-3, 60°	3	3 + off	$839.99
N125-61101-02S	Off-1-2-3-4, 60°	3	4 + off	$1,001.11
N125-61028-07S	1-Off-2, 60°	4	2 + off	$723.01
N125-61131	Off-1-2-3, 60°	4	3 + off	$1,015.69
200 Amp				
A200-61026-07S	1-Off-2, 60°	2	2 + off	$833.09
A200-61038	1-2, 60°	2	2 & no off	$753.70
A200-61080	Off-1-2-3, 60°	2	3 + off	$1,135.20
A200-61081-02S	Off-1-2-3-4, 60°	2	4 + off	$1,437.40
A200-61027-07S	1-Off-2, 60°	3	2 + off	$1,175.93
A200-61100	Off-1-2-3, 60°	3	3 + off	$1,799.69
A200-61101-02s	Off-1-2-3-4, 60°	3	4 + off	$2,142.61
240 Amp				
Z315-61080-02S	Off-1-2-3, 60°	2	3 + off	$1,866.73
Z315-61081	Off-1-2-3-4, 60°	2	4 + off	$2,484.49
Z315-61027-02S	1-Off-2, 60°	3	2 + off	$1,866.73
Z315-61101-02S	Off-1-2-3-4, 60°	3	4 + off	$3,525.56

List pricing in catalog is subject to change without notice.

CSii Switching Diagram

Wiring diagram for rotary switches on pages 229 and 230.

Images are representative of products listed and may not be actual product.
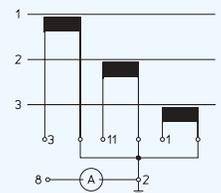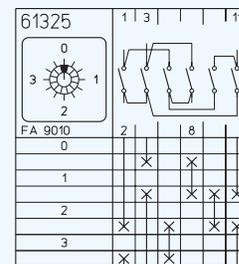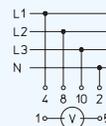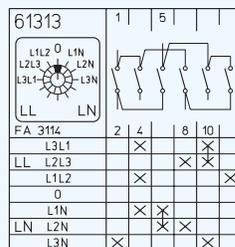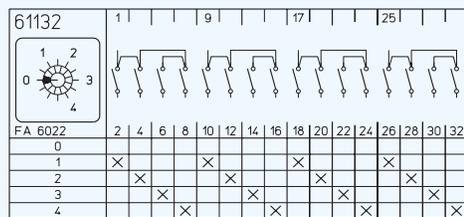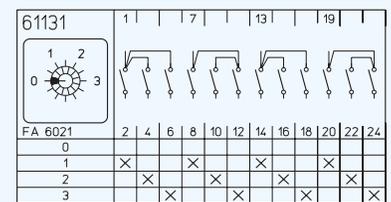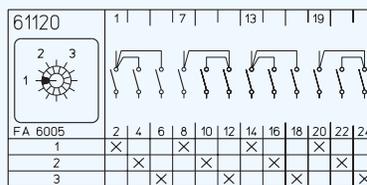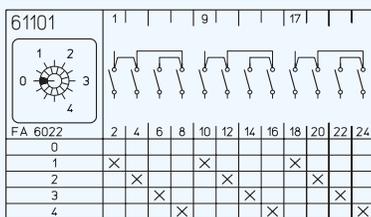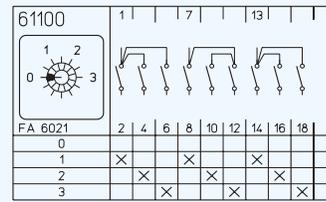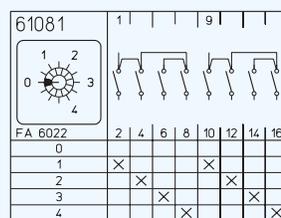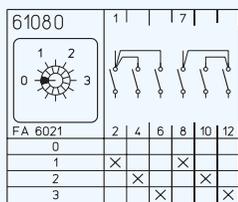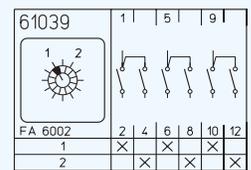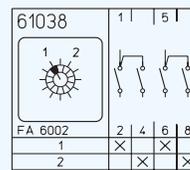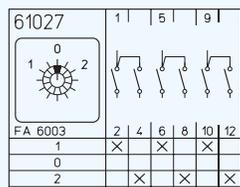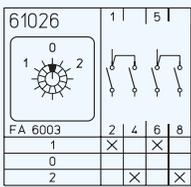
Switches

Kraus and Naimer

- Finger proof terminals
- Can be used as control switches, instrumentation switches, or motor control switches
- Supplied with open terminals to facilitate wiring
- VDE 0106, part 100(VBG 04) protected
- IEC 60947-3 and VDE 0660 part 107 approved
- Gold terminals (CA4 Series Only)

- Available in 30, 45, 60, and 90 degrees
- CA and C style switches are designed for universal application. They are recommended for instrument, isolator, double throw, and motor controls
- CH switches are ideally suited for control and instrumentation applications they are finger proof and conveniently accessible for wiring and delivered open

KRAUS AND NAIMER

Item Number	Action	Poles	Positions	Price
10 Amp				
Meter switch with off				
CA4-1-A260	Off-1-2, 60°	2	2 + off	$64.58
CA4-1-A261	Off-1-2-3, 45°	2	3 + off	$83.75
CA4-1-WAA262	Off-1-2-3-4, 30°	2	4 + off	$101.54
CA4-1-WAA480	Off-1-2, 60°	4	2 + off	$101.54
CA4-1-WAA481	Off-1-2-3, 45°	4	3 + off	$138.26
CA4-1-WAA482	Off-1-2-3-4, 30°	4	4 + off	$174.90
25 Amp				
CH16-A200-720E	Off-1, 60°	1	1 + off	$66.20
CH16-A201-720E	Off-1, 60°	2	1 + off	$75.84
CH16-A202-720E	Off-1, 60°	3	1 + off	$97.51
30 Amp				
CA25-A211	1-Off-2, 60°	2	2 + off	$157.70
CA25-A261	Off-1-2-3, 45°	2	3 + off	$202.23
CA25-WAA262	Off-1-2-3-4, 30°	2	4 + off	$246.65
CA25-A212	1-Off-2, 60°	3	2 + off	$202.23
CA25-A281	Off-1-2-3, 45°	3	3 + off	$278.07
35 Amp				
C26-A211	1-Off-2, 60°	2	2 + off	$170.53
C26-A261	Off-1-2-3, 45°	2	3 + off	$216.96
C26-A212	1-Off-2, 60°	3	2 + off	$216.96

List pricing in catalog is subject to change without notice.

Kraus and Naimer (Continued)

Item Number	Action	Poles	Positions	Price
65 Amp				
C42-A211	1-Off-2, 60°	2	2 + off	$282.55
C42-A261	Off-1-2-3, 45°	2	3 + off	$363.28
C42-A212	1-Off-2, 60°	3	2 + off	$363.28
C42-A281	Off-1-2-3, 45°	3	3 + off	$498.50
C42-WAA282	Off-1-2-3-4, 30°	3	4 + off	$604.80
C42-A213	1-Off-2, 60°	4	2 + off	$444.01
C42-US20200	Off-S1-S1&S2-Gen	4	3 + off	$545.22
C42-US20060-700	Sh1-Sh1&2-Gen	4	3 without off	$554.07
100 Amp				
C80-A211	1-Off-2, 60°	2	2 + off	$507.58
C80-A261	Off-1-2-3, 45°	2	3 + off	$680.14
C80-WAA262	Off-1-2-3-4, 30°	2	4 + off	$852.23
C80-A212	1-Off-2, 60°	3	2 + off	$687.71
C80-A281	Off-1-2-3, 45°	3	3 + off	$966.73
C80-WAA282	Off-1-2-3-4, 30°	3	4 + off	$1,204.93
C80-A213	1-Off-2, 60°	4	2 + off	$867.84
150 Amp				
C125-A211	1-Off-2, 60°	2	2 + off	$867.84
C125-A261	Off-1-2-3, 45°	2	3 + off	$1,150.40
C125-WAA262	Off-1-2-3-4, 30°	2	4 + off	$1,433.02
C125-A212	1-Off-2, 60°	3	2 + off	$1,180.67
C125-A281	Off-1-2-3, 45°	3	3 + off	$1,622.66
C125-WAA282	Off-1-2-3-4, 30°	3	4 + off	$2,009.32

Images are representative of products listed and may not be actual product.

Switches

Carling Technologies

- Traditional rocker style
- Appropriate for use in those applications not requiring more stringent sealing protection
- Contact 10 amp-250 volt AC, 15 amp-125 volt AC, 15 amp, 12-30 volt DC
- UL and CSA Approved

TIG SERIES

Item Number	Terminal	Action	Pole	Price
TIGO5S	Screw	Reversing	2	$37.80

Blue Sea Systems Sub-Miniature

- Ideal for applications with back panel size constraints
- Temperature 32°F(0°C) to 185°F(85°C)
- Single pole has .187"(4.8mm) quick connect tabs
- Double pole has 6"(152mm) wire leads

OFF-ON

ON-ON

(ON)-OFF-(ON)

Item Number	Pole	Action	Amps @ 12VDC	Amps @ 24VDC	Amps @ 125VAC	Amps @ 250VDC	Price
( ) Denotes Momentary Action							
7480B	SP	OFF-ON	10	10	10	10	$2.73
7481B	SP	OFF-(ON)	10	10	12	6	$3.89
7482B	SP	ON-OFF-ON	10	8	8	8	$3.89
7483B	SP	(ON)-OFF-ON	10	8	8	8	$3.89
7484B	SP	(ON)-OFF-(ON)	10	8	8	8	$3.89
7490B	DP	OFF-ON	5	5	8	4	$4.59
7492B	DP	ON-OFF-ON	5	5	8	4	$4.59
7493B	DP	ON-(ON)	5	5	8	4	$4.59
7494B	DP	(ON)-OFF-ON	5	5	8	4	$4.59
7495B	DP	(ON)-OFF-(ON)	5	5	8	4	$4.47

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Contura III Series

- Constructed of thermoplastic polycarbonate
- Actuator comes in hard nylon cover or soft touch
- Dimensions overall in "(mm): 1.95(49.53) x 1.479(37.57)
- Contact rating: 20 amp, 4-14 volt DC, 15 amp, 115-28 volt DC
- Incandescent light rated 10,000 hours
- Internal sealed switch (adding a panel gasket will meet IP 67 rating)
- Ignition protected UL 1500/ISO8846
- CSA Certified

CONTURA SERIES

Item Number	Action	Price
Single Pole Illuminated		
( ) Denotes Momentary Action, 12 volts incandescent light *12(2)		
V1D1B60B	ON- OFF	$6.08
V2D1B60B	(ON)-OFF	$7.54
V6D1D66B*	ON-OFF- ON	$9.72
V7D1B60B	ON-OFF- (ON)	$8.45
Single Pole Non-Illuminated		
( ) Denotes Momentary Action		
V1D1S00B	ON-OFF	$4.52
V2D1S00B	(ON)-OFF	$5.23
V6D1S00B	ON-OFF-ON	$17.50
V8D1S00B	(ON)-OFF- (ON)	$6.40
V351S00B	ON-(OFF)	$14.82
Double Pole Illuminated		
( ) Denotes Momentary Action 12 volts incandescent light unless noted *24volts **12(2)		
VABAB80B*	ON-OFF	$12.16
VJD1D66B	ON-OFF-ON	$11.67
VLD1D66B**	(ON)-OFF-(ON)	$11.99
VMD1A60B	OFF-ON-(ON)	$15.05
VAD1B60B	ON-OFF	$8.91
Double Pole Non-Illuminated		
( ) Denotes Momentary Action		
VAD1S00B	ON-OFF	$6.99
VJD1S00B	ON-OFF-ON	$8.39
VLD1S00B	(ON)-OFF-(ON)	$8.71
VADASW0B-CZD00	ON-OFF [LOCKS OFF]	$21.55
VADASW0B-CZL00	ON-OFF [LOCKS ON]	$21.55
VBD1S00B	(ON)-OFF	$7.83
VDD1S00B	ON-ON	$15.41

Images are representative of products listed and may not be actual product.

Switches

Contura Actuators

- Standard contura actuator will come in hard nylon except where noted soft touch
- Ward's Marine can now offer custom laser engraved Contura III actuator (VVPZC00-000 only)
- Customization is available up to three lines of text or choose from our directory of international symbols
- Please call for more information, scheduling, or pricing

ILLUMINATED ACTUATORS

NON ILLUMINATED (BLACK IS ENGRAVABLE)

Item Number	Body	Lens (Slit Amt.)	Price
Illuminated			
VVCMC00	Black	Red(1)	$1.60
VVCMH00	Gray	Red(1)	$1.60
VVCMY00	White	Red(1)	$1.60
VVCNC00	Black	Red(2)	$1.60
VVCNH00	Gray	Red(2)	$1.60
VVCNY00	White	Red(2)	$1.60
VVCGY00	White	Green(1)	$1.60
VVCHY00	White	Green(2)	$1.60
VVCTY00	White	Blue(1)	$1.60
VVCUY00	White	Blue(2)	$1.60
Non-Illuminated			
VVCZB00	Black (Soft Touch)	--	$5.00
VVCZC00	Black	--	$1.60
VVCZH00	Gray	--	$1.60
VVCZY00	White	--	$1.60
VVCZS00	Red	--	$2.35
Custom			
VVPZC00-000	Black	Laser Engraving Available	$3.82
VVPZE00-000	Pewter	Laser Engraving Available	$6.98

List pricing in catalog is subject to change without notice.

Contura Accessories

PANEL MOUNTS

PANEL SINGLE MOUNT

PANEL SEAL

PANEL TOOL

Item Number	Description	Price
	Panel Mount Parts	
VME	Panel end	$1.76
VMM	Panel middle mount	$1.63
VMS	Panel single mount	$2.15
VPS	Panel seal	$1.11
VRT	Actuator removal tool	$6.27

Sealed Toggle

- Contacts rated 15 amp, 250 volt AC
- Completely sealed switching chamber
- NEMA 3, 3R, 4, & 13 recognized
- CSA Certified
- IP637/68 Rated
- CE Approved
- Meets UL E12252
- Operating temperature -40°-160°F
- Mil-S-3950

SEALED

Item Number	Action	Position	Pole	Price
	Micro Switch NT Series			
( ) Denotes Momentary Action				
1NT1-1	ON-OFF-ON	3	SPST	$21.80
1NT1-2	OFF-ON	2	SPST	$24.42
1NT1-6	(ON)-OFF	2	SPST	$15.84
1NT1-7	(ON)-OFF-(ON)	3	SPDT	$32.68
1TL1-2D	OFF-ON [LOCKS OUT OF CENTER]	2	SPDT	$61.70
2NT1-2	OFF-ON	2	DPST	$33.46
2NT1-1	ON-OFF-ON	3	DPDT	$33.46
2NT1-7	(ON)-OFF-(ON)	3	DPST	$36.82
2TLI-2	OFF-ON	2	DPST	$48.50

Images are representative of products listed and may not be actual product.

Switches

Non-Illuminated

F Series

- Single pole
- Ratings: 10 amp @ 250 volt AC; 15 amp @ 125 volt AC; 3/4HP @ 125-250 volt AC
- UL and CSA: 1000 volt life to dead metal parts
- 50k cycles maintained, 25k cycles momentary
- 0°F(-17.8°C) to 150°F(65.6°C)
- 1000 volt live to dead metal

G Series

- Double pole
- Ratings: 10 amp @ 250 volt AC; 15 amp @ 125 volt AC; 3/4HP @ 125-250 volt AC
- 50k cycles maintained, 25k cycles momentary
- 32°F(0°C) to 185°F(85°C)
- UL/CSA: 1000 volt live to dead metal parts & opposite polarity
- VDE: 4000 volt live to dead metal parts, 1250 volt opposite polarity & open contacts

F AND G SERIES

Item Number	Action	Pole	Terminal	Price
( ) Denotes Momentary Action				
F Series				
2FAA04-78	ON-OFF	1P	Screw	$9.07
2FA54-78	ON-OFF	1P	Screw	$4.83
2FA53-78	ON-OFF	1P	.250 Tab	$4.83
2FB53-73/TABS	ON-ON	1P	.250 Tab	$7.35
2FC54-78	On-Off-On	1P	Screw	$6.48
2FC53-78	On-Off-On	1P	.250 Tab	$8.05
6FA54-78	(On)-Off	1P	Screw	$8.44
6FB54-78	On-(On)	1P	Screw	$17.15
6FC54-78	(ON)-OFF-(ON)	1P	Screw	$8.93
6FC53-78	(ON)-OFF-(ON)	1P	.250 Tab	$11.03
6FC58-78	ON-OFF-(ON)	1P	Screw	$8.93
G Series				
2GE54-78	ON-ON-ON	1P	Screw	$20.24
2GG54-78	ON-ON-OFF (Dual Circut)		Screw	$27.97
2GK51-78	ON-OFF	2P	.250 Tab	$22.26

Non-Illuminated (continued)

H & I Series

- H Series 3 Pole, I Series 4 Pole
- Ratings: 10 amp @ 250 volt AC; 15 amp @ 125 volt AC; 3/4HP @ 125-250 volt AC, 1|2|3 phase
- 50k cycles maintained, 25k cycles momentary
- 32°F(0°C) to 185°F(85°C)

H AND I SERIES

G SERIES

Item Number	Action	Pole	Terminal	Price
( ) Denotes Momentary Action				
G Series				
2GK54-78	ON-OFF	2P	Screw	$12.92
2GL54-78	ON-ON	2P	Screw	$10.29
2GM51-78	ON-OFF-ON	2P	.250 Tab	$8.47
2GM54-78	ON-OFF-ON	2P	Screw	$10.33
2GO54-78	ON-OFF-ON (Reversing)	2P	Screw	$19.54
6GO5S-78	(ON)-OFF-(ON) (Reversing)	2P	Screw	$28.40
6GG5E-78	(ON)-ON-OFF (Dual Circuit)	2P	Screw	$11.83
6GK5E-78	ON (ON)-OFF	2P	Screw	$19.99
6GM5E-78	ON-OFF-(ON)	2P	Screw	$19.92
6GM5M-78	(ON)-OFF-(ON)	2P	.250 Tab	$21.07
6GM5S-78	(ON)-OFF-(ON)	2P	Screw	$16.14
H & I Series				
HL254-78	ON-ON	3P	Screw	$33.30
HM254-78	ON-OFF-ON	3P	Screw	$33.30
IL254-73	ON-ON	4P	Screw	$31.71
IM254-78	ON-OFF-ON	4P	Screw	$34.65

Images are representative of products listed and may not be actual product.

Switches

Illuminated

LT SERIES

LT Series

- Contains neoprene bushing seals for dust and moisture protection
- .250 Tab terminal connection
- Ratings: 10 amp @ 250 volt AC; 15 amp @125 volt AC; 3/4HP @ 125-250 volt AC, 15 amp @ 15-28 volt DC
- Single pole housed in a double pole base
- 1000 volt live to dead metal parts
- 32° F to 185° F (0° to 850°C)

Item Number	Action	Pole	Actuator/Light	Price
( ) Denotes Momentary Action				
LT Series				
LT-1511-610-012	ON-OFF	1P	Satin/Red	$12.53
LT-1511-620-012	ON-OFF	1P	Satin/Amber	$12.53
LT-1511-630-012	ON-OFF	1P	Satin/Green	$12.53
LT-1511-710-012	ON-OFF	1P	Black/ Red	$12.53
LT-2561-701-012	ON-OFF-ON	2P	Black/Red	$16.87
LT-1531-610-012	(ON)-OFF	1P	Satin/Red	$33.74
LT-1581-601-012	(ON)-OFF-(ON)	1P	Satin/Red	$20.48
LT-2561-601-012	ON-OFF-ON	1P	Satin/Red	$44.80

Accessories

Boots

- Hexseal toggle switch boots are molded from a high tear strength silicone rubber bonded to a mounting nut
- Forms a watertight and dust tight seal against the front panel surface
- Resistant to: salt spray, sunlight, ozone, fungus, and most acid & lubricating oils

Switch Guards

- For use with 2 or 3 position switches
- MS approved and QPL'd per MIL-G-7703
- Spring loaded to either close or lock in open position

HALF COVER   PIN HOLE GUARD   BOOTS   HINGED END GUARD

Item Number	Color	Price
Boots		
81255	Black half cover	$8.04
C1131BK	Black	$4.80
C1131GY	Gray	$5.08
C1131WH	White	$5.70

Item Number	Color	Switch Positions	Keyway Tab Location	Price
Switch Guards				
8492K1	Black	2 or 3	Opposite pin hole	$11.57
8497K1	Red	2	Opposite hinged end	$19.46
8498K6	Red	2 or 3	Opposite hinged end	$41.26

List pricing in catalog is subject to change without notice.

Micro

- Reinforced mounting holes totally contained in case to provide maximum distance to mounting hardware
- Choice of U.S. #4 screw or metric 3mm screw
- Flame retardant, UL94V-0 self extinguishing case and cover

- Long life stainless steel spring mechanism
- NO/NC terminals, SPDT contacts
- Arc resistant case has internal barriers 4mm minimum between live parts and external hardware
- Single or double throw either N.O or N.C

BUTTON LEVER ROLLER ROLLER LEVER 20AMP

Item Number	Actuator	Price
Micro		
D449-R1AA-G2	Button	$13.60
D449-R1LD-G2	Lever	$11.60
D449-R1RA-G2	Roller	$12.65
20 Amp		
Contact SPDT, 20A @ 480VAC and 20A @ 14VDC		
A-20GV2-B7-K	Black Roller Lever	$33.17

EAO

- Stainless steel SUS 304
- Stainless steel chrome colored
- Soldering/ plug in terminals 2.8 x 0.5 mm or screw terminal
- Switching element: snap action
- NO/NC contact (changeover)
- IEC 60512-3 certified

- Voltage: 17VAC-240V
- Current: 50mA AC/DC- 3A
- Power: 1W(1VA)-720W(720VA)

82 SERIES

Item Number	Color	LED Voltage	Current Rating	Action	Price
82-5151-1113	Red	12	5A	Momentary	$26.74
82-5151-1114	Red	24	5A	Momentary	$26.74
82-5151-1123	Blue	12		Momentary	$26.74
82-5151-1124	Blue	24	5A	Momentary	$26.74
82-5151-2113	Red	12	5A	Maintained	$26.74
82-5151-2114	Red	24	5A	Maintained	$26.74
82-5151-2123	Blue	12	5A	Maintained	$26.74
82-5151-2124	Blue	24	5A	Maintained	$26.74

Images are representative of products listed and may not be actual product.

Switches

16mm Illuminated

- IP65 and NEMA 4, 4X and 13
- LED light included
- Complete Units with quick connectors/solder tabs
- Plastic bezels designed for applications where the surface area is restricted
- CE, UL, CSA, and CCC Approved
- Flush mount

PUSHBUTTON

PILOT LIGHT

Item Number	Contacts	Lens Color	Price
12/24 Volt LED Pushbutton			
( ) Denotes Momentary Action			
XB6AF3B1B	NO	Green	$39.81
XB6AF4B2B	NC	Red	$39.81
XB6AF4B5B	NO/NC	Red	$46.99
XB6AW3B1B	(NO)	Green	$39.81
XB6AW4B2B	(NC)	Red	$39.81
XB6AW5B1B	(NO)	Yellow	$39.81
XB6AW6B1B	(NO)	Blue	$39.81
120 Volt LED Pushbutton			
( ) Denotes Momentary Action			
XB6AF3G1B	NO	Green	$39.81
XB6AF4G2B	NC	Red	$39.81
XB6AF5G1B	NO	Yellow	$39.81
XB6AW3G1B	(NO)	Green	$39.81
XB6AW4G2B	(NC)	Red	$39.81
XB6AW5G1B	(NO)	Yellow	$39.81
XB6AW6G1B	(NO)	Blue	$39.81

Item Number	Lens Color	Price
12/24 AC/DC Volt LED Pilot Light		
XB6AV3BB	Green	$24.48
XB6AV4BB	Red	$24.47
XB6AV5BB	Yellow	$24.47
XB6AV6BB	Blue	$24.47
120 Volt LED Pilot Light		
XB6AV3GB	Green	$24.47
XB6AV4GB	Red	$24.47
XB6AV5GB	Yellow	$24.47
XB6AV6GB	Blue	$24.47

List pricing in catalog is subject to change without notice.

16mm Non-Illuminated

- Pushbutton includes five or six colored caps: White, Green, Red, Yellow, Black and Blue
- Rotary selector switch positions maintained 60°, spring return 45°
- Both switches must be combined with complete bodies and contact blocks
- Specifically designed for applications with restricted surface area
- IP65 protection
- CE, UL, CSA, and CCC certified
- Flush mount

PUSHBUTTON   ROTARY

Item Number	Color/Shape	Action	Price
Pushbutton			
( ) Denotes Momentary Action *Can be illuminated must order LED light module			
ZB6AA9	6 Color caps including black	(ON)	$18.74
ZB6AF9*	5 Color caps w/o Black	ON	$18.74
Rotary (Head Only)			
ZB6AD23	Black/Round	3 Positions maintained	$18.74
ZB6AD28	Black/Round	2 Positions maintained	$18.74

Item Number	Description	Price
Accessories		
ZB6YA001	Circular and square head pushbutton and switch protective cover	$17.68

16mm Contact Blocks
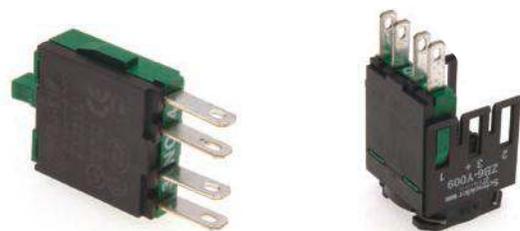
CONTACT BLOCK   CONTACT ASSEMBLY

Item Number	Contact	Contact Material	Price
Contact Block Only			
Maximum three contacts per mounting base			
ZB6E1B	NO	Silver Alloy	$7.67
ZB6E2B	NC	Silver Alloy	$7.67
ZB6E2E	NC	Gold Flashed	$10.43
ZB6E1E	NO	Gold Flashed	$10.43
Complete Contact Assembly			
Assembly includes mounting base, quick connect solder tabs for push and selector switches			
ZB6Z1B	NO		$10.01
ZB6Z2B	NC		$10.01

Images are representative of products listed and may not be actual product.

Switches

22mm Illuminated

- Combine ease of installation with robustness
- Plastic bezels resistant to chemicals
- UL, CSA, and CE listed & certified
- IP 65
- NEMA: 1,2,3,4,12,13

METAL PILOT LIGHT   PUSHBUTTON   PLASTIC PILOT LIGHT   ROTARY   ZB5AK1233

Item Number	Color		Action	Price
Pushbutton				
Use only with LED light module, ( ) Denotes Momentary Action				
ZB5AW333	Green		(ON)	$19.81
ZB5AW343	Red		(ON)	$19.81
ZB5AH033	Green		ON/OFF	$26.41
ZB5AH043	Red		ON/OFF	$26.41
ZB5AH063	Blue		ON/OFF	$26.54
Use only with incandescent, neon, or LED light module ( ) Denotes Momentary Action				
ZB5AW31	White		(ON)	$19.81
ZB5AW33	Green		(ON)	$19.81
ZB5AW34	Red		(ON)	$19.81

Item Number	Color	Positions	Action	Price
Rotary				
Use only LED light module				
ZB5AK1233	Green	2	Maintained	$37.28
ZB5AK1243	Red	2	Maintained	$37.28
ZB5AK1343	Red	3	Maintained	$37.28
ZB5AK1333	Green	3	Maintained	$37.28
ZB5AK1533	Green	3	Momentary: to center	$54.32
ZB5AK1543	Red	3	Momentary: to center	$54.32

Item Number	Color	Light Type	Price
Pilot Light			
Corrosion resistant plastic body			
ZB5AV03	Green	BA9 incandescent, Neon or LED	$8.09
ZB5AV033	Green	Protected LED ONLY	$8.09
ZB5AV043	Red	Protected LED ONLY	$8.09
ZB5ZAV05	Yellow	BA9 incandescent, Neon or LED	$8.09
ZB5AV063	Blue	Protected LED ONLY	$8.09
ZB5AV07	Clear	BA9 incandescent, Neon or LED	$8.09
ZB5AV013	White	Protected LED ONLY	$8.09
ZB5AV04	Red	BA9 incandescent, Neon or LED	$8.09
ZB5AV053	Yellow	Protected LED ONLY	$8.09

List pricing in catalog is subject to change without notice.

22mm Non-Illuminated

- Combines ease of installation with robustness
- Plastic bezels resistant to chemicals
- Ul, CSA, and CE Listed & Certified

- IP 65, IP 66 when booted
- NEMA: 1,2,3,4,12,13

TRADITIONAL METAL BODY PUSHBUTTON

BLACK PUSHBUTTON

WHITE PUSHBUTTON

MUSHROOM

ROTARY

JOYSTICK

Item Number	Color	Action	Price
Pushbutton			
Corrosion resistant plastic body, ( ) Denotes Momentary action			
ZB5AA9	6 Color caps	(ON)	$14.40
ZB5AH02	Black	ON/OFF	$18.74
ZB5AH03	Green	ON/OFF	$18.74
ZB5AH04	Red	ON/OFF	$18.74
ZB5AA7340	Green/Red	(ON)/(OFF)	$37.81
ZB5AS834	Mushroom/Red	Twist to release	$98.51
Traditional metal body, ( ) Denotes Momentary action			
ZB4BA9	6 Color caps	(ON)	$13.85

Item Number	Positions	Action	Price
Rotary			
Corrosion resistant plastic body			
ZB5AD2	2	Maintained	$19.72
ZB5AD3	3	Maintained	$19.72
ZB5AD5	3	Momentary to center	$31.31
Traditional metal body, ( ) Denotes Momentary action			
ZB4BD2	2	Maintained	$25.56
ZB4BD3	3	Maintained	$25.56

Item Number	Directions	Description	Action	Price
Joystick				
XD5PA22	2	1 step, NO per direction	Momentary	$205.55
XD5PA24	4	1 step, NO per direction	Momentary	$259.81

Images are representative of products listed and may not be actual product.

Switches

22mm Components

CONTACT BLOCK

COLLAR

INCANDESCENT
LIGHT MODULE

LED LIGHT
MODULE

Item Number	Contact	Price
Contact Blocks with Collar		
Corrosion resistant plastic body		
ZB5AZ101	NO	$23.43
ZB5AZ105	NO/NC	$40.68
Contact Blocks		
ZBE101	NO	$13.48
ZBE102	NC	$13.48
ZBE203	NO/NO	$27.31
ZBE204	NC/NC	$27.31
Collar		
ZB5AZ009		$5.75

Item Number	Contact Block	Bulb	Supply	Voltage	Price
Incandescent Light Module					
Corrosion resistant plastic body					
ZB5AW061	NO	Not included	Direct supply	≤ 250 VAC/VDC	$58.58
ZB5AW041	NO	Included	Transformer	230-240 VAC, 50/60 Hz.	$88.25
ZB5AV6	N/A	Not included	Direct supply	<250 VAC	$41.11

Item Number	Supply Volts	Color	Price
LED Light Module			
ZBVJ3	12 VAC/ VDC	Green	$55.38
ZBVJ4	12 VAC/VDC	Red	$55.38
ZBVB1	24 VAC/ VDC	White	$55.38
ZBVBG1	24-120VAC/ VDC	White	$55.38
ZBVBG3	24-120 VAC/ VDC	Green	$55.38
ZBVBG4	24-120 VAC/ VDC	Red	$55.38
ZBVBG5	24-120 VAC/ VDC	Yellow	$55.38
ZBVBG6	24-120 VAC/ VDC	Blue	$55.38
ZBVM1	230-240 VAC	White	$55.38
ZBVM3	230-240 VAC	Green	$55.38
ZBVM4	230-240 VAC	Red	$55.38
ZBVM5	230-240 VAC	Yellow	$55.38
ZBVM6	230-240 VAC	Blue	$55.38

List pricing in catalog is subject to change without notice.

22mm Components (Continued)

Item Number	Description	Price
	Accessories	
ZBPO	Clear boot for pushbutton	$10.18

Cole Hersee

- Push-pull switches
- Corrosion resistant brass case
- 10 amp @ 12 volt DC, 6-36 volt DC
- Copper alloy contacts
- SPST
- Chrome plated knob

M-482-BP

M-606-BP

Item Number	Case Type	Contacts	Price
M-482-BP	Gasket sealed	Off-On, normally off	$26.00
M-606-BP	Plasticized	Off-On, normally off	$28.15

Cole Hersee

Normally Off:
- SPST Off-Momentary On
- On with button depressed, spring return to off
- Corrosion resistant brass case, button and mounting hardware
- Moisture repellent insulators

Normally On:
- SPST On-Momentary Off
- Off with button depressed spring return to on
- Corrosion resistant brass case and mounting hardware
- Gasket sealed case

M-608-BP

M-639

M-490

M-626BP

M-485

BOOTS

Item Number	Description	Size	Amps @ VDC	Button	Price
	Normally Off				
M-490	Extra heavy duty with two brass screw terminals, fits panels up to 1" thick	5/8"-32 , 1-3/8"	35@12, 20@24, 10@36	Chrome	$24.80
M-626-BP	Same as M-490 but with black rubber cap	5/8"-32 , 1-3/8"	35@12, 20@24, 10@36	Black cap	$26.55
M-485	Heavy duty with 1" and gasket fits panels upto 3/4" thick	5/8"-32, 1"	10@12 5@24V	Chrome	$21.93
M-608-BP	PVC coated body, two 12" 18AWG leads and black rubber cap fits panels up to 1/2" thick	5/8"-32, 15/16"	10@12 5@24V	Black cap	$29.35
	Normally On				
M-639	Chrome plated brass plunger, two brass screw terminals fits panels upto 3/4" thick	5/8"-32, 1"	10@12 5@24V	Chrome plunger	$23.40
	Boots				
83280	Red (02), Black (03), Gray				$3.13

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Switches

Hubbell

- 15/32 long nickel plated brass mounting stem
- Terminals .250" spade
- Rating: 12v 5amp

HORN

Item Number	Description	Price
	Horn Switch	
( ) Denotes Momentary Action		
MH11	Single Pole, (NO)	$11.96
MHB11	Black Boot for MH11	$11.96

Ignition

- 12 volt DC: 10 amp ignition, 5 amp start
- Key is removable in the OFF position
- Chrome plated brass facenut
- Mounting stem 13/16"-24, 1-7/32"(31mm) long, fits panels up to 1"(25.4mm) thick

KEY IGNITION

BOOT

Item Number	Positions	Amps @ 12VDC	Price
	Key		
M-550	OFF-IGN-START	10	$50.21
M-489-BP	OFF-ON	10	$50.38

Item Number	Description	Price
	Boots	
83288	Chrome Plated Brass, 13/16"-24 thread	$11.86

List pricing in catalog is subject to change without notice.

DIN Rail

DR35MM/AL/30

DIN RAIL

Item Number	Length in Meters	Type	Direction	Price
15 mm				
DR15MM/AL	2	Aluminum	Straight	$29.94
DR15MM/ST	2	Steel	Straight	$17.92
35 mm				
DR35MM/AL	1	Aluminum	Straight	$16.80
DR35MM/AL/30	1	Aluminum	30 Degree	$25.28
DR35MM/AL/90	1	Aluminum	90 Degree	$27.64
DR35MM/ST	2	Steel	Straight	$15.88

Mini Feed Through Terminal Blocks

- Screw Terminal
- High Grade Copper Alloy
- UL, CUL, and CSA approved
- Can be labeled on one side, use BN-2B Labels

MBK2.5/E

MBKKB2.5

MSLKG2.5

Item Number	Amp Rating	AWG	Max Voltage	Dimensions in mm	Price
MBK2.5/E	24	24-12	250	24.5 x 5.2 x 26.5	$3.28
MBKKB2.5	24	2 x 24-12	250	62 x 5.2 x 48	$7.46
MSLKG2.5	34	24-12	Ground	35 x 7.5 x 26.5	$7.76

Accessories

EB10-5

FBRNI10-5N

Item Number	Description	Price
Insertion Bridge		
EB10-5	Gray Insertion bridge, Pitch: 5.2mm, 10 positions	$5.16
Fixed Bridge		
FBRNI10-5N	Silver fixed bridge, Pitch: 5.2mm, 10 position	$14.96

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Terminals and Devices

End Stops/Covers

D-MBK2.5/E   D-MBKKB2.5   E/MK1

Item Number	Description	Price
D-MBK2.5/E	End Cover for MBK2.5/E	$1.26
D-MBKKB2.5	End cover for MBKKB2.5	$1.52
E/MK1	Din Rail end stop for MBK2.5/E, MBKKB2.5, and MSLKG2.5	$1.44

Screw Connection Terminal Blocks

- UL, CUL, BV, DNV, RS and CSA approved
- Compact Design can be labeled
- Low contact resistances
- Cable entry funnel
- Stranded conductors can be used without ferrules
- Screw driver guidance through closed screw shafts

ST2.5 DIO/L-R SCREW CONNECTION TERMINAL SCREW CONNECTION BLUE GROUND TERMINAL DOUBLE LEVEL TERMINAL COMPONENT TERMINAL BLOCK

Item Number	AWG	Amps	Dimensions in mm	Volts	Price
Screw Connection Terminal Block					
UT2.5	26-12	32	47.7 x 5.2 x 47.5	800	$1.22
UT2.5BU	26-12 (Blue)	32	57.8 x 6.2 x 47.5	800	$1.22
UT6	24-8	57	47.7 x 8.2 x 47.5	800	$1.74
UT10	20-6	76	47.7 x 10.2 x 46.9	1000	$2.46
UT16	16-4	101	55.5 x 12.2 x 54.4	1000	$3.00
UT35	16-1/0	150	60.2 x 16 x 65.1	600	$6.44
IK70	2/0-4	220	70 x 23 x 71	600	$41.07
Double Level Terminal Block					
UTTB4	26-10	36	69.9 x 6.2 x 65	800	$3.46
USLKG Ground Terminal Block					
USLKG2.5	24-12	34	42.5 x 6.2 x 42	—	$13.14
USLKG10	20-8	61	42.5 x 8.2 x 47	—	$14.78
USLKG35	18-2	125	50 x 15.2 x 62	—	$30.48
Component Terminal Block					
UT4-TG	26-10	20	57.8 x 6.2 x 47.5	500	$2.88

List pricing in catalog is subject to change without notice.

UT

P-CO

Item Number	Description	Price
	Component Plugs	
P-CO	Diode for UT4-TG	$6.76

Spring Cage Connections

- Must use SZF-1 Screwdriver
- UL, CUL, VDE, BV, RS, ABS and CSA approved approved
- Uniform marking methods
- Compact space saving designs
- TWIN and QUATTRO are multiple conductor spring terminals

ST SERIES DOUBLE · ST SERIES · ST SERIES TWIN · ST SERIES QUATTRO

SST2.5-DIO/L-R
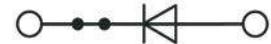
ST2.5-DIO/R-L

Item Number	AWG	Dimensions in mm	Connections	Price
		Feed Through Block		
31 Amps, 800 Volts Rated				
ST2.5	24-12	48.5 x 5.2 x 36.5	1	$1.96
ST2.5-TWIN	24-12	60.5 x 5.2 x 36.5	3	$2.26
ST2.5-TWIN-BU	24-12	60.5 x 5.2 x 36.5	4	$2.26
ST2.5-QUATTRO	24-12	72 x 5.2 x 72	4	$3.24
		Double Level Terminal Block		
31 Amps, 800 volts rated				
STTB2.5	24-12	67.5 x 5.2 x 47.5	2	$4.60

Item Number	AWG	Amps	Dimensions in mm	Price
		ST Ground Block		
ST2.5-PE	24-12	31	48.5 x 5.2 x 36.5	$6.98

Item Number	Description	Price
	Tool	
SZF-1	Screwdriver	$12.36

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Terminals and Devices

End Stops/Covers

END COVER   E/NS35N   249-116   E/UK   E/AL-NS-35

Item Number	Description	Price
ST Series End Cover		
D-ST2.5	ST2.5	$1.20
D-ST2.5-QUATTRO	ST2.5 Quattro	$1.60
D-ST2.5-TWIN	ST2.5 Twin	$1.80
D-STTB2.5	STTB2.5	$1.80
UT Series End Cover		
D-UT16	UT16	$0.90
D-UT2.5/10	UT2.5 thru UT10 series	$0.70
IK Series End Cover		
IW70	End cover for IK series	$2.70
35 mm End Stops		
E/NS35N	End Bracket to screw on NS 35, can be equipped with terminal strip marker (special order)	$1.76
249-116	Screwless end stop	$1.44
E/UK	Universal end bracket	$1.82
E/AL-NS-35	Aluminum end bracket	$8.68

Bridges

- Specific to terminal type and style
- **Terminal size and style must match bridge**
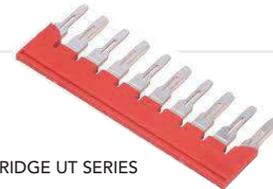
FBS2-5   BRIDGE UT SERIES

Item Number	Pitch	Poles	Amps	Price
UT Series				
Last digit in item # designates dimension of terminal width in mm				
FBS2-5	5.2mm	2	24	$0.70
FBS3-5	5.2mm	3	24	$1.40
FBS4-5	5.2mm	4	24	$2.20
FBS5-5	5.2mm	5	24	$2.72
FBS10-5	5.2mm	10	24	$5.72
FBS20-5	5.2mm	20	24	$11.44
FBS2-8	8.2mm	2	41	$0.88
FBS3-8	8.2mm	3	41	$1.86
FBS4-8	8.2mm	4	41	$3.20
FBS10-8	8.2mm	10	57	$7.50
FBS2-10	10.2mm	2	57	$2.72
FBS2-12	12.2mm	2	76	$3.18
FBS2-16	16mm	2	101	$3.62

List pricing in catalog is subject to change without notice.

Bolt Connectors

- Screw set AS on both sides, for rail or cable lug conversion
- Gray in color
- 1000 volt UK

UHV50-ASAS   HVM10-1   UHV150-AS/AS   UHV-TP2   UHV-E

Item Number	AWG	Amps	Width	Price
High Current Connectors				
UHV50-AS/AS	6-1/0	150	32	$40.12
HVM10-1	10-300	269	32	$20.42
UHV150-AS/AS	2-300	309	46	$186.10

Item Number	Description	Price
Partitions 180mm		
UHV-TP2	Separating plate, snap on w/o loss of pitch	$26.18
HVM12/2-TP	Separating barrier	$3.98
End Piece 7.2mm		
UHV-E	End piece for use with UHV Series to be fitted at both sides of the terminal strip	$4.84

Partitions/Plates

- Specific to terminal type and style

ST SERIES   UT SERIES

Item Number	Terminal Type	Price
Terminal Partitions		
ATP-ST-QUATTRO	ST-QUATRO	$1.34
ATP-ST-TWIN	ST-TWIN	$1.26
ATP-ST4	ST4	$0.92
ATP-STTB4	STTB4	$1.44
ATP-UT	UT	$0.82

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Terminals and Devices

Connecting Terminal Blocks

Modular Bus Bars

- N, PE, or phase conductor L are connected to central bus bars
- Requires the conductor and/or terminal block to be clearly labeled for corresponding circuit
- Easy to use color coordination: Blue, Black, Green/Yellow

AKG16BU   AKG16BK   AKG16GNYE

Item Number	Amps	Color	Circuit	Price
AKG16BK	76	Black	Phase	$2.30
AKG16BU	76	Blue	N	$2.30
AKG16GNYE	76	Green/Yellow	Ground	$4.34
AKG35BK	125	Black	Phase	$4.20
AKG35BU	125	Blue	N	$4.34
AKG35GNYE	125	Green/Yellow	Ground	$4.34

Bus Bar

BUS BARS

Item Number	Amps	Size	Price
NLS-CU3/10	140	3 x 10 mm	$30.64

Bus Bar Supports

AB/SS   ABN2/SS

Item Number	Rail Amp	Size	Price
AB/SS	1	3 x 10 mm	$2.50
ABN2/SS	2	3 x 10 mm or 6 x 6 mm	$2.50

List pricing in catalog is subject to change without notice.

Marker Strips

- Marker selection dependent on terminal block size

MARKER STRIPS

Item Number	Terminal Block Size	Marker Number (X-X)	Price
(X-X)= Marker Number			
BN-ZB:(X-X)	5.2	1-10, 11-20, thru 91-100	$4.28
ZB10:(X-X)	10.2	Blank, 1-10, 11-20 thru 61-70	$4.32
ZB5:(X-X)	5.2	1-10, 11-20 thru 91-100	$2.80
ZB5:(X-X)	5.2	101-110, 111-120 thru 301-310	$2.80
ZB5:(X-X)	5.2	311-320, 321-330 thru 391-400	$2.80
ZB6:(X-X)	6.2	1-10, 11-20 thru 91-100	$2.80
ZB8:(X-X)	8.2	1-10, 11-20 thru 41-50	$4.26
ZB8:(X-X)	8.2	51-60, 61-70 thru 311-320	$4.32

Feed Through Eurostrips

- Tubular screw clamps
- Flat base
- Made with self extinguishing polyamide
- Easy to cut 12 pole strips
- UL Listed

EUROSTRIPS

Item Number	Amps	Volts	AWG	Price
40-012	15	450	22-16	$4.78
40-212	30	450	18-12	$4.90
40-412	40	450	18-10	$6.11
40-712	63	750	14-6	$13.41

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Terminals and Devices

Isolated Terminal Blocks

- RoHS compliant
- Standard terminal block
- Tin contact plating
- Brass contact material
- Glass filled thermoplastic body
- 250 volt rated

MOLDED BLOCKS

Item Number	Screw Size	Gang	Dimensions in mm	Price
15 Amps				
TBK15-2	2 x #6	2	1.41 x 0.87 x 0.41	$2.92
20 Amps				
TBK20-4	4 x #6	4	2.16 x 0.87 x 0.48	$6.69
TBK20-6	6 x #6	6	2.91 x 0.87 x 0.48	$9.72
TBK20-8	8 x #6	8	3.66 x 0.87 x 0.48	$10.52
TBK20-10	10 x #6	10	4.41 x 0.87 x 0.48	$14.33
30 Amps				
TBK30-2	2 x #8	2	1.62 x 1.12 x 0.53	$7.33
TBK30-4	4 x #8	4	2.50 x 1.12 x 0.53	$9.51
TBK30-6	6 x #8	6	3.37 x 1.12 x 0.53	$13.91
TBK30-8	8 x #8	8	4.25 x 1.12 x 0.53	$14.45
TBK30-10	10 x #8	10	5.12 x 1.12 x 0.53	$19.52
TBK30-12	12 x #8	12	6.00 x 1.12 x 0.53	$22.60
TBK30-15	15 x #8	15	7.31 x 1.12 x 0.53	$29.66
TBK30-20	20 x #8	20	9.50 x 1.12 x 0.53	$39.38
65 Amps				
TBK65-2	2 x 1/4	2	4.00 x 2.48 x 1.13	$12.65
TBK65-4	4 x 1/4	4	6.25 x 2.48 x 1.13	$21.67
TBK65-6	6 x 1/4	6	8.50 x 2.48 x 1.13	$29.23

Item Number	Screw #	Price
Jumpers		
JPR-6	6	$0.45
JPR-8	8	$0.64

Common Splicing Terminal Blocks

- Nominal current 35 amp
- Rated voltage EN 400 volt, rated surge voltage 4 kilo volt
- Compact terminal block with operating levers
- Max continuous service temperature 85°C
- Side entry wiring
- UL Approved and RoHS Compliant

222-413   222-412   222-415

Item Number	Connection Points	AWG	Dimensions in mm	Price
222-413	3	28-12	17 x 14.5 x 20.5	$1.08
222-412	2	28-12	14.5 x 12.4 x 20.5	$0.72
222-415	5	28-12	26.6 x 14.5 x 20.5	$1.33

List pricing in catalog is subject to change without notice.

Junction Blocks

- Provides secure termination
- Large insulator base
- Isolated metal
- Multiple post available
- Rated for under 50 volt use

JUNCTION BLOCKS

Item Number	Amps	Stud Size in "	Dimensions in mm	Post	Price
JB38-2	500	3/8	5.00 x 1.25 x 2.13	2	$24.76
JB38-4	500	3/8	9.25 x 1.25 x 2.13	4	$44.55
JB12-1	700	1/2	3.75 x 1.50 x 2.75	1	$23.51
JB12-4	700	1/2	9.00 x 1.50 x 2.75	4	$74.97

Pro Installer Studs

- Power tapping plate: 4 x 4 mm (5/16") terminal
- Maximum current through tapping plate: 50 amp per terminal (4 x 50 amp maximum)
- High temperature, fiber reinforced plastic base provides strength and chemical resistance
- Clear polycarbonate cover with snap out extra cable access
- Stainless steel studs with metric threads
- Dimensions 49 mm x 49 mm

W/ POWER PLATE   DOUBLE   SINGLE

Item Number	Description	Price
No power passes through the stud so no amp rating is given. 50 volt DC		
IST-8MM-1S	8mm, Single	$18.97
IST-8MM-1SPT	8mm, Single w/ power tapping plate	$32.00
IST-8MM-2S	8mm, Double	$30.47
IST-10MM-8MM	10/8mm, Double	$31.75
IST-10MM-1S	10mm, Single	$19.27
IST-10MM-1SPT	10mm, Single w/ power	$33.15
IST-10MM-2S	10mm, Double	$31.67

Component Terminal Blocks

Item Number	AWG	AMPS	Price
ST2.5-DIO/L-R	24-12	31 with Integrated Diode	$10.08
ST2.5-DIO/R/L	24-12	31 with Integrated Diode	$11.30

Images are representative of products listed and may not be actual product.

Terminals and Devices

Pro Installer Havey Duty Bus Bars

- 4 stud: 500 amp bus bar, 8mm stainless steel studs
- 3, 5, and 8 stud: 650 amp, 10mm stainless steel studs
- 50 volt DC
- Tinned CDA102 copper conductors

777-BB3S-650   777-BB4S-500   777-BB5S-650   777-BB8S-650

Item Number	Studs	Dimensions in mm	Price
777-BB3S-650	3	98 x 49	$124.37
777-BB4S-500	4	98 x 49	$113.35
777-BB5S-650	5	147 x 49	$167.30
777-BB8S-650	8	249 x 49	$243.40

Pro Installer Z Bus Bars

- 10 way and 18 way versions
- 4 x 6 mm studs with anti seize lubricant
- 4 mm terminals with captive lock washers
- Stainless steel studs
- 200 amp maximum per bar (2 x 200 amp)
- 50 volt DC
- Tinned CDA copper conductors

777-Z10W-200   777-Z18W-200

Item Number	Way	Dimensions in mm	Price
777-Z10W-200	10	98 x 49	$45.27
777-Z18W-200	18	147 x 49	$70.37

Pro Installer Link Bars

- A range of linking bars to complement the pro installer of products
- High purity copper, tin plated for optimum marine performance
- Space saving design allows for compact installations
- Links can be doubled for higher loads

LINK BARS INSTALLED   PRO INSTALLER LINK BARS

Item Number	Amps	Way	Dimensions in mm	Price
		Joiners		
779-LBJ-2	650	2	74 x 25	$12.15
779-LBJ-3	525	3	123 x 25	$16.97
779-LBJ-4	450	4	172 x 25	$21.75
779-LBJ-5	400	5	221 x 25	$26.75
779-LBJ-6	350	6	270 x 25	$30.47

Item Number	Dimensions in mm	Price
	Kits	
779-LB-BSS	Link bar battery switch set contains: (1) LB-1x (2) LB-2	$30.35
779-LB-EES	Link bar end set contains: (1) LB-1, (1) LB-2	$17.42
779-LB-ZS	Link bar Z bus bar set contains: (1) x LBZ-1, (1) LBZ-2	$12.15

List pricing in catalog is subject to change without notice.

Power Bus

- Highest amp rated bus bar with 3/8" terminal studs
- Continuous Rating: 545 amp AC/600 amp DC
- Voltage Max Operating: 300 volt AC/ 48 volt DC
- Tin Plated Copper CDA 110/ UNS C11000
- CE certified

2104B

2708

Item Number	Dimensions in mm	Stud Size in "	Price
2104B	7.00 x 2.00 x 2.00	4 x 3/8-16	$131.27
2107B	11.37 x 2.00 x 2.00	8 x 3/8-16	$195.92

Item Number	Description	Price
2708	Cover for 2104B	$25.69

Maxi Bus

- Insert molded stainless steel studs eliminate need for securing nut and allow high torquing for excellent electrical contact
- Raised bus provides easy access to multiple wires on a single screw or stud
- UL 94-V0 rated base material resists high heat
- Recessed mounting holes eliminate accidental shorts to aluminum and steel mounting surfaces
- Rated for 300 volt AC/ 48 volt DC

2105B

2718

Item Number	Dimensions in mm	Stud Size in "	Price
2105B	7.93 x 1.5 x 1.91	2 x 5/16 & 12 x #10-24	$78.72
2127B	5.87 x 1.5 x 1.91	4 x 5/16	$54.37
2718	8.78 x 2.69 x 2.53	Cover for Maxi Bus	$37.79

Images are representative of products listed and may not be actual product.

Terminals and Devices

Common Bus

- Insert molded stainless steel stud eliminates need for securing nut and allows high torquing for excellent contact
- Industry standard for positive distribution and for the collection of negative or AC ground circuits
- Continuous rating: 130 amp AC/ 150 amp DC
- Voltage max operating: 300 volt AC/ 48 volt DC
- Tin plated copper CDA 110/ UNS C11000
- CE Certified

COMMON BUS

COVER

Item Number	Stud Size in "	Dimensions in mm	Price
2301B	2 x 1/4	6.10 x 1.25 x 1.50	$24.80
2302B	2 x 1/4	9.25 x 1.25 x 1.50	$37.40
2303B	4 x 1/4"	5.87 x 1.25 x 1.50	$31.35

Item Number	Description	Price
2715B	Cover for 2301B and 2303B	$4.50

Mini Bus

- Provides convenient busing for limited space applications
- Continuous rating: 100 amp AC/DC
- Voltage max operating: 300 volt AC/ 48 volt DC
- Tin plated copper CDA 110/ UNS C11000
- CE Certified

MINI BUS

COVER

Item Number	Stud Size in "	Dimensions in mm	Price
2304B	5 x #8-32	4.2 x 0.9	$18.12
2305B	4 x #10-32	4.2 x 0.9	$19.99

Item Number	Description	Price
2713	Cover for 2304B and 2305B	$3.79

Dual Bus

- Combines negative and positive buses for DC systems and neutral and ground buses for AC systems
- Continuous rating: 100 amp AC/DC
- Voltage max operating: 300 volt AC/ 48 volt DC
- Tin plated copper CDA 110/ UNS C11000
- CE Certified

DUAL BUS

COVER

Item Number	Stud Size in "	Dimensions in mm	Price
2701B	5 x #8-32	3.01 x 1.83	$23.58
2702B	10 x #8-32	5.06 x 1.83	$30.72

Item Number	Description	Price
2710	Cover for 2702B	$16.69

List pricing in catalog is subject to change without notice.

Dual Bus Plus

- Secure clear polycarbonate cover snaps on easily to meet USCG and ABYC standards
- Combines negative and positive buses on one block
- 5 terminal screws per bus and 2 studs per bus
- Cover release button
- Continuous Rating: 130 amp AC/ 150 amp DC
- Voltage Max Operating: 300 volt AC/ 48 volt DC
- Tin plated copper CDA 110/ UNS C11000

2722

Item Number	Stud Size in "	Mounting Screw	Price
2722	1/4, 5 x #10-32	#10(M5)	$31.89

Compact Power Bus

- Provides compact high amp busing
- Continuous rating: amperage is determined by wire amperage capacity connected to the power bar compact up to 600 amp
- Voltage max operating: 48 volt DC
- Tin plated copper CDA110/ UNS C11000
- CE Certified

2019

Item Number	Stud Size in "	Mounting Screw	Price
2019	2 x 3/8"-16"	2	$25.89

High Amperage Power Posts

- Insulated single stainless steel stud terminates multiple large conductors
- Includes insulator
- Continuous Rating: not rated, amperage flows between terminals stacked on post and is determined by wire and terminals used
- Voltage max operating: 48 volt DC
- CE Certified

2003B

2011B

Item Number	Stud Size in "	Stud Torque	Price
2003B	3/8 x 7/8	140 in lb.	$14.93
2011B	1/4 x 3/4	70 in lb.	$9.65

Images are representative of products listed and may not be actual product.

Terminals and Devices

Power Post

- Enables connection of multiple smaller wires in spaces where a traditional bus bar may not fit
- 150 amp bus allows small wire connections at high amperage cable connections
- Includes insulator
- Continuous Rating: 150 amp DC
- Voltage max operating: 48 volt DC
- Tin plated copper
- CE Certified

POWER POST PLUS

Item Number	Stud Size in "	Screw Size	Price
150 Amps			
2102B	5/16 x 3/4	#8-32	$28.65
2103	3/8 x 3/4	#8-32	$27.59

Dual Power Post

- Provides termination point for extending the length of outboard harnesses or other conductors
- Includes Insulators
- Continuous Rating: Not rated, amperage flows between terminals stacked on post and is determined by wire and terminals used.
- Designed for outboard engine installation when factory cables need to be extended

DUAL POWER POST

Item Number	Stud Size in "	Screw Size	Price
2017B	3/8-16	#10 (M5)	$26.43
2018	3/8-16, 5/16-18	#10 (M5)	$23.79

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Rings

- Tin plated brass sleeve protects against stress and high vibration
- Permanently attached color coded nylon insulating sleeve extends beyond metal support sleeve
- Funnel ferrule wire entrance
- Operating Temperature continuous duty -67°F(-55°C) to 221°F(105°C)

RING

Item Number	Ring Size	Amount Per Package	Price
22-18 AWG			
TN18-6R-C	6	100	$16.54
210202	8	25	$6.03
TN18-8R-C	8	100	$17.96
TN18-10R-C	10	100	$19.78
16-14 AWG			
210211	6	25	$6.03
TN14-6R-C	6	100	$17.80
210212	8	25	$6.03
TN14-8R-C	8	100	$17.80
210213	10	25	$6.03
TN14-10R-C	10	100	$17.80
210214	1/4	25	$7.63
TN14-14R-C	1/4	100	$19.06
210215	5/16	25	$7.64
TN14-56R-C	5/16	100	$24.26
210216	3/8	25	$7.64
TN14-38R-C	3/8	100	$18.30
12-10 AWG			
210221	6	25	$7.86
TN10-6R-C	6	100	$28.67
210222	8	25	$8.31
TN10-8R-C	8	100	$27.31
210223	10	25	$8.03
TN10-10R-C	10	100	$27.31
210224	1/4	25	$9.63
TN10-14R-C	1/4	100	$30.52
210225	5/16	25	$9.63
TN10-56R-C	5/16	100	$30.81
210226	3/8	25	$9.63
TN10-38R-C	3/8	100	$31.69
TN10-12R	1/2	1	$0.66
210227	1/2	25	$14.00

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Terminals and Devices

Rings (Continued)

Item Number	Ring Size	Amount Per Package	Price
8 AWG			
TN8-10R	10	1	$0.42
TN8-14R	1/4	1	$0.42
TN8-56R	5/16	1	$0.55
TN8-38R	3/8	1	$0.56
6 AWG			
TN6-14R	1/4	1	$0.73
TN6-56R	5/16	1	$1.33
TN6-38R	3/8	1	$1.33

Spades

- The spring like tongue snaps around the screw like a Quick Disconnect
- Terminal locked in place until the mounting screw can be tightened

SPADE

Item Number	Spade Size	Amount Per Package	Price
22-18 AWG			
TN18-6LF-C	6	100	$18.37
TN18-8LF-C	8	100	$17.96
16-14 AWG			
TN14-6LF-C	6	100	$18.33
TN14-8LF-C	8	100	$18.37
TN14-10LF-C	10	100	$18.96
12-10 AWG			
TN10-8LF-C	8	100	$29.37
TN10-10LF-C	10	100	$30.97

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Window Butt Splices

- Window stamped into the copper splice and covered by nylon
- Window guarantees proper wire insertion and crimp alignment

BUTT SPLICE

Item Number	AWG	Amount Per Package	Price
TN22-BS	22-18	25	$0.73
TN18-BS-C	22-18	100	$45.61
210162	16-14	25	$15.12
TN14-BS-C	16-14	100	$62.97
210163	12-10	25	$18.42
TN10-BS-C	12-10	100	$70.21
TN8-BS	8	1	$0.68

Quick Disconnects

- Tin plated brass sleeve protects against stress and high vibration
- Permanently attached color coded nylon insulating sleeve extends beyond metal support sleeve
- Funnel ferrule wire entrance
- Operating Temperature continuous duty -67°F(-55°C) to 221°F(105°C)

FEMALE

Item Number	Disconnect Size	Amount Per Package	Type	Price
22-18 AWG				
Female				
TN18-D110-C	.110	100	Insulated	$19.11
TN18-D187-C	.187	100	Insulated	$18.68
TN18-D250-C	.250	100	Insulated	$17.55
TN18D250FI-C	.250	100	Fully Insulated	$21.99
Male				
TN18D250MFI-C	.250	100	Fully Insulated	$24.16
16-14 AWG				
Female				
210818	.250	25	Insulated	$5.76
TN14-D110-C	.110	100	Insulated	$17.70
TN14-D187-C	.187	100	Insulated	$16.74

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Terminals and Devices

Quick Disconnects (Continued)

Item Number	Disconnect Size	Amount Per Package	Type	Price
16-14 AWG				
Female				
TN14-D250-C	.250	100	Insulated	$17.58
TN14-D250FI-C	.250	100	Fully Insulated	$21.99
Male				
210819	.250	25	Insulated	$6.12
TN14-D250M-C	.250	100	Insulated	$19.23
TN14-D250MFI-C	.250	100	Fully Insulated	$24.16
Piggy Back				
TN14-PB	.250	1	Insulated	$0.42
12-10				
Female				
210828	.250	25	Insulated	$8.25
TN10-D250-C	.250	100	Insulated	$22.41
TN10-D250FI-C	.250	100	Fully Insulated	$31.53
Male				
210829	.250	25	Insulated	$8.31
TN10-D250M-C	.250	100	Insulated	$32.40
TN10-D250MFI-C	.250	100	Fully Insulated	$31.34
Piggy Back				
TN10-PB-C	.250	1	Insulated	$50.25

Pins & Joints

TN14-SP-C   TN14-SPR-C   WIRE PIN

Item Number	AWG	Amount Per Package	Price
Snap Plugs			
TN14-SP-C (Plug)	16-14	100	$30.87
TN14-SPR-C (Receptacle)	16-14	100	$30.40
Wire Pins			
TN18-WP-C	22-18	100	$19.59
TN14-WP-C	16-14	100	$23.87
TN10-WP-C	12-10	100	$33.45

List pricing in catalog is subject to change without notice.

Pins & Joints (Continued)

WIRE JOINT

Item Number	AWG	Amount Per Package	Price
		Wire Joints	
TN18-WJ-C	22-18	100	$10.55
TN14-WJ-C	16-14	100	$12.44
TN10-WJ-C	12-10	100	$22.90

Kits

220004

MULTIPLE PARTS KIT

Item Number	Description	Price
220002	31 Piece set 18-10 AWG: Connectors, assorted butt, ring, spade, and male/ female disconnects includes crimping tool	$15.86
220003	120 Piece set 18-10 AWG: Connectors, assorted butt, ring, spade, and male/ female disconnects	$25.63
220004	121 Piece 18-10 AWG: Connectors, assorted butt, ring, spade, and male/ female disconnects includes crimping tool	$32.05
TK3	1625 Piece set in case with handle: Connectors, assorted butt, ring, spade, and male/ female disconnects, and crimpers	$381.84

Step Butts

- Translucent, adhesive line polyolefin tubing allows visual inspection which prevents wire corrosion and provides a waterproof seal
- Color coded tubing with wire gauge imprint provides easy ID
- UL voltage rating 600 volt
- Temperature rating 221ºF (105ºC)

STEP BUTT

Item Number	AWG	Price
Sold individually		
THS18-SBS	22-18 & 16-14	$1.36
THS14-SBS	16-14 & 12-42	$1.71
THS10-SBS	12-10 & 8	$2.51

Images are representative of products listed and may not be actual product.

Terminals and Devices

Spades

- The spring like tongue snaps around the screw like a Quick Disconnect
- Terminal locked in place until the mounting screw can be tightened

SPADE

Item Number	Spade Size	Price
22-18 AWG		
Sold in packages of 100		
THS18-8LF-C	8	$42.54
THS18-10LF-C	10	$42.54
16-14 AWG		
THS14-8LF-C	8	$42.95
THS14-10LF-C	10	$42.95
12-10 AWG		
THS10-8LF-C	8	$53.94
THS10-10LF-C	10	$53.94

Butt Splices

BUTT SPLICE

Item Number	Amount Per Package	Price
22-18 AWG		
309025	20	$15.48
THS18-BS-C	100	$46.66
16-14 AWG		
309125	14	$15.48
THS14-BS-C	100	$47.69
12-10 AWG		
309225	10	$21.40
THS10-BS-C	100	$61.07
8 AWG		
THS8-BS	1	$1.74

List pricing in catalog is subject to change without notice.

Quick Disconnects

FEMALE   MALE

Item Number	Type	Amount per package	AWG	Price
Female				
THS18-D250FI-C	Fully Insulated	100	22-18	$61.33
THS14-D250-C	Non Insulated	100	16-14	$47.25
THS14-D50FI-C	Fully Insulated	100	16-14	$59.57
THS10-D250-D	Non Insulated	500	12-10	$258.68
THS10-D250FI-C	Fully Insulated	50	12-10	$37.65
Male				
THS18-D250MFI-C	Fully Insulated	100	22-18	$62.47
THS14-D250MFI-C	Fully Insulated	100	16-14	$60.70
THS10-250MFI-L	Fully Insulated	50	12-10	$38.77

Wire Joints

- Closed end connectors join two to four wires
- Used in environments where corrosion and or vibration are a problem
- Can be used to replace wire nuts and other similar connectors
- Tubing has adhesive seal and eliminates wire pull out

WIRE JOINT

Item Number	AWG	Price
Sold in packages of 50		
THS14-WJ-L	22-14	$34.14
THS10-WJ-L	18-10	$44.08

Bullets

BULLET MALE

Item Number	AWG	Price
Sold in packages of 100		
Female		
THS14-BP180F-C	16-14	$66.51
THS18-BP180F-C	22-18	$78.69
Male		
THS14-BP180M-C	16-14	$42.76
THS18-BP180M-C	22-18	$42.39

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Terminals and Devices

Rings

RINGS

Item Number	Ring Size	Amount Per Package	Price
22-18 AWG			
THS18-6R-C	6	100	$41.92
310225	8	25	$15.19
THS18-8R-C	8	100	$41.92
310325	10	25	$15.19
THS18-10R-C	10	100	$41.92
THS18-14R-C	1/4	100	$45.37
THS18-56R-C	5/16	100	$45.37
16-14 AWG			
THS14-6R-C	6	100	$41.99
THS14-8R-C	8	100	$41.99
311225	8	25	$15.19
311325	10	25	$15.19
THS14-10R-C	10	100	$41.99
THS14-14R-C	14	100	$45.74
311425	1/4	25	$15.19
311525	5/16	25	$15.19
THS14-56R-C	5/16	100	$45.74
THS14-38R-C	3/8	100	$46.95
12-10 AWG			
312225	8	25	$20.97
THS10-8R-C	8	100	$52.77
312325	10	25	$20.97
THS10-10R-C	10	100	$52.77

ASST-KS-5000

ASST-KS-9000

KITS

Item Number	Description	Price
ASST-KS-9000	Sealed crimp connectors 60 pieces	$33.40
ASST-HST-5000	Sealed crimp connectors 120 pieces	$75.53

List pricing in catalog is subject to change without notice.

Rings (Continued)

Item Number	Ring Size	Amount Per Package	Price
12-10 AWG			
312425	1/4	25	$20.97
THS10-14R-C	1/4	100	$56.37
312525	5/16	25	$20.50
THS10-56R-C	5/16	100	$56.37
8 AWG			
THS8-10R	10	1	$1.11
THS8-14R	1/4	1	$1.11
THS8-56R	5/16	1	$1.11
THS8-38R	3/8	1	$1.11
THS8-12R	1/2	1	$1.34

Butt Splices

- Bonded with a special silver brazing alloy
- May be crimped from any direction

BUTT SPLICE

Item Number	AWG	Price
TB18-BS	22-18	$0.19
TB14-BS	16-14	$0.24
TB10-BS	12-10	$0.52
TB8-BS	8	$1.03
TB6-BS	6	$2.60
TB4-BS	4	$3.00
TB2-BS	2	$3.70
TB1/0-BS	1/0	$3.93
TB2/0-BS	2/0	$5.60
TB4/0-BS	4/0	$7.36

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Terminals and Devices

Braze Seam Rings

- Bonded with a special silver brazing alloy
- May be crimped from any direction

BRAZE-SEAM

Item Number	Ring Size	Price
16-14 AWG		
TB14-D250	.250	$0.15
TB14-14R	1/4	$0.55
TB14-8R	8	$0.60
TB14-10R	10	$0.43
12-10 AWG		
TB10-D250	.250	$0.29
TB10-14R	1/4	$0.50
TB10-10R	10	$0.42
TB10-56R	5/16	$0.51
TB10-38R	3/8	$0.47
TB10-8R	8	$0.81
8 AWG		
TB8-14R	1/4	$0.58
TB8-56R	5/16	$0.67
TB8-38R	3/8	$0.67
TB8-12R	1/2	$0.93
TB8-10R	10	$0.58
6 AWG		
TB6-10R	10	$0.82
TB6-56R	5/16	$0.89
TB6-58R	5/8	$4.78
TB6-38R	3/8	$0.86
TB6-14R	1/4	$0.82
TB6-12R	1/2	$1.18
4 AWG		
TB4-14R	1/4	$1.46
TB4-56R	5/16	$1.64
TB4-38R	3/8	$1.55
TB4-12R	1/2	$2.89
TB4-10R	10	$1.46

Item Number	Ring Size	Price
2 AWG		
TB2-14R	1/4	$2.38
TB2-56R	5/16	$2.41
TB2-38R	3/8	$2.41
TB2-12R	1/2	$2.39
1/0 AWG		
TB1/0-14R	1/4	$3.11
TB1/0-56R	5/16	$3.62
TB1/0-38R	3/8	$3.49
TB1/0-12R	1/2	$3.32
2/0 AWG		
TB2/0-14R	1/4	$5.25
TB2/0-56R	5/16	$4.39
TB2/0-38R	3/8	$4.39
TB2/0-12R	1/2	$4.35
3/0 AWG		
TB3/0-56R	5/16	$5.46
TB3/0-38R	3/8	$5.07
TB3/0-12R	1/2	$5.19
4/0 AWG		
TB4/0-56R	5/16	$6.43
TB4/0-38R	3/8	$6.95
TB4/0-12R	1/2	$6.69

List pricing in catalog is subject to change without notice.

Tubular Rings

- Bonded with a special silver brazing alloy
- May be crimped from any direction

TUBULAR

Item Number	Ring Size	Price
8 AWG		
TT8-10R	10	$1.29
TT8-14R	1/4	$1.92
TT8-56R	5/16	$2.27
TT8-38R	3/8	$1.92
6 AWG		
TT6-10R	10	$2.73
TT6-14R	1/4	$2.89
TT6-56R	5/16	$2.89
TT6-38R	3/8	$2.89
4 AWG		
TT4-14R	1/4	$3.05
TT4-56R	5/16	$3.05
TT4-38R	3/8	$3.05
TT4-12R	1/2	$2.90

Item Number	Ring Size	Price
2 AWG		
TT2-14R	1/4	$4.20
TT2-56R	5/16	$4.00
TT2-38R	3/8	$4.20
TT2-12R	1/2	$4.20
1/0 AWG		
TT1/0-14R	1/4	$4.72
TT1/0-56R	5/16	$4.96
TT1/0-38R	3/8	$4.96
TT1/0-12R	1/2	$4.72
2/0 AWG		
TT2/0-56R	5/16	$5.75
TT2/0-38R	3/8	$5.75
TT2/0-12R	1/2	$5.75
4/0 AWG		
TT4/0-56R	5/16	$7.00
TT4/0-38R	3/8	$7.35
TT4/0-12R	1/2	$7.00

Angled Tubular Rings

45 DEGREE ANGLED
TUBULAR RING

90 DEGREE ANGLED
TUBULAR RING

Item Number	Wire AWG	Ring Size	Price
45 Degree Angled Tubular Ring			
TT8-14R-45	8	1/4	$4.50
TT6-14R-45	6	1/4	$4.90
TT4-14R-45	4	1/4	$5.20
90 Degree Angled Tubular Ring			
TT8-14R-90	8	1/4	$4.50
TT6-14R-90	6	1/4	$4.90
TT4-14R-90	4	1/4	$5.20

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Terminals and Devices

Seamless Barrels

- Crimps in industry standard tooling
- Seamless barrel design
- Can be easily soldered or crimped
- Flared barrel entry for easy wire insertion

- Seamless pads prevent wicking and other types of corrosion
- AWG wire size identification on barrel
- CDA-110 copper stock 100% conductivity
- UL listed, CSA certified

SEAMLESS BARREL

Item Number	Ring Size	Price
2 AWG		
TAE2-14R	1/4	$2.89
TAE2-38R	3/8	$2.08
TAE2-56R	5/16	$2.07
4 AWG		
TAE4-38R	3/8	$1.60
TAE4-56R	5/16	$1.60
6 AWG		
TAE6-56R	5/16	$2.01
8 AWG		
TAE8-10R	10	$1.08
TAE8-14R	14	$1.13
TAE8-38R	3/8	$1.25
TAE8-56R	5/16	$1.13

Battery Clamps

Straight
- Exceeds SAE conductivity standards
- Pure tubular copper barrel provides easier crimping
- Copper to copper connection with cable

Wing Nut
- Converts standard battery post terminals to a marine connector
- Negative 5/16" with nut
- Positive 3/8" with nut

STRAIGHT   WING NUT   HEAVY DUTY

Item Number	AWG	Charge	Price
Straight			
18163	1/0	Negative	$7.06
18164	1/0	Positive	$6.27
18173	2/0	Negative	$6.28
18174	2/0	Positive	$6.28
18193	4/0	Negative	$7.27
18194	4/0	Positive	$7.27

Item Number	Charge	Price
Wing Nut		
862L-N	Negative	$9.75
862L-P	Positive	$9.75
Heavy Duty		
869L-N	Negative	$11.25
869L-P	Positive	$11.25

List pricing in catalog is subject to change without notice.

Ferrules

UNINSULATED

INSULATED

Item Number	AWG	Price
Uninsulated		
Sold as individual unit		
2389	8	$0.25
2391	6	$0.33
2395	4	$0.75
2396	2	$1.13
2816.0	1/0	$1.47
2790.0	2/0	$1.74

Item Number	AWG	Color	Price
Insulated			
Sold in packs of 100, * sold as individual unit			
FI-18-C	18	Yellow	$15.00
FI-16-C	16	Red	$15.00
FI-14-C	14	Blue	$20.00
FI-12-C	12	Gray	$20.00
FI-10-C	10	Black	$15.00
FI-14-DBL*	2 x 14	Blue	$0.15
FI-16-DBL*	2 x 16	Red	$0.34
FI-18-DBL*	2 x 18	Yellow	$0.28

Split Bolts

SPLIT BOLT

Item Number	AWG	Price
SB-8	8	$5.70
SB-6	6	$6.45
SB-4	4	$7.62
SB-2	2	$12.37
SB-1/0	1/0	$15.69
SB-2/0	2/0	$24.34

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Terminals and Devices

Ferrule Crimp Tools

- Works on insulated and non-insulated ferrules

FD2810SQ   FD2410N   1212034   1212722   1212730

Item Number	Description	Crimp Range AWG	Price
FD2810SQ	Square profile crimping tool	28-10	$118.00
FD2410N	Trapezoidal profile crimping tool	22-10	$88.00
1212034	Crimpfox 6: Trapezoidal Crimping pliers, for ferrules without insulating collar	24-10	$175.84
1212722	Crimpfox HS 6: Oval asymmetrical crimping pliers, for fully insulated shrink connectors	20-10	$304.74
1212730	Crimpfox RCI 6-M: (red, blue, yellow), three marked die stations, unlockable pressure lock, lateral entry	22-10	$184.90

Dual Wall

- Flame retardant tubing (except clear) with an internal layer of thermo plastic adhesive which provides a barrier against contaminants
- Highly flexible for conforming to irregular shapes
- Protection of marine wire splices and harness breakouts
- Adhesive lining provides a seal against corrosion
- Shrink ratio 3 to 1

DUAL WALL

Item Number	Length in "	Amount Per Package	Color	Price
1/2" Diameter				
HSDW-1/2B-12	12	1	Black	$2.47
HSDW-1/2B-48	48	1	Black	$9.88
HSDW-1/2B-4PK	12	4	Black	$9.60
HSDW-1/2BU-12	12	1	Blue	$3.54
HSDW-1/2C-12	12	1	Clear	$2.47
HSDW-1/2G-12	12	1	Green	$3.54
HSDW-1/2R-12	12	1	Red	$2.47
HSDW-1/2R-48	48	1	Red	$9.88
HSDW-1/2R-4PK	12	4	Red	$9.88
HSDW-1/2W-12	12	1	White	$3.54
1/4" Diameter				
HSDW-1/4B-12	12	1	Black	$2.08
HSDW-1/4B-48	48	1	Black	$6.31
HSDW-1/4B-4PK	12	4	Black	$6.31
HSDW-1/4BU-12	12	1	Blue	$1.96
HSDW-1/4C-12	12	1	Clear	$1.58
HSDW-1/4G-12	12	1	Green	$1.96
HSDW-1/4R-12	12	1	Red	$1.58
HSDW-1/4R-48	48	1	Red	$6.31
HSDW-1/4R-4PK	12	4	Red	$6.31
HSDW-1/4W-12	12	1	White	$1.96

List pricing in catalog is subject to change without notice.

Dual Wall (Continued)

Item Number	Length in "	Packaged Amount	Color	Price
1/8" Diameter				
HSDW-1/8B-12	12	1	Black	$1.49
HSDW-1/8B-48	48	1	Black	$5.97
HSDW-1/8B-4PK	12	4	Black	$5.98
HSDW-1/8C-12	12	1	Clear	$1.80
HSDW-1/8R-12	12	1	Red	$1.49
HSDW-1/8R-48	48	1	Red	$5.97
HSDW-1/8R-4PK	12	4	Red	$5.97
1" Diameter				
HSDW-1B-12	12	1	Black	$5.33
HSDW-1B-48	48	1	Black	$21.33
HSDW-1BU-12	12	1	Blue	$9.65
HSDW-1G-12	12	1	Green	$9.66
HSDW-1R-12	12	1	Red	$5.33
HSDW-1R-48	48	1	Red	$21.33
HSDW-1W-12	12	1	White	$9.66
HSDW-1Y-12	12	1	Yellow	$9.66
3/16" Diameter				
HSDW-3/16B-12	12	1	Black	$1.55
HSDW-3/16B-48	48	1	Black	$6.19
HSDW-3/16B-4PK	12	4	Black	$6.19
HSDW-3/16BU-12	12	1	Blue	$1.88
HSDW-3/16G-12	12	1	Green	$1.88
HSDW-3/16R-12	12	1	Red	$1.55
HSDW-3/16R-48	48	1	Red	$6.19
HSDW-3/16R-4PK	12	4	Black	$6.19
HSDW-3/16W-12	12	1	White	$1.88
3/4" Diameter				
HSDW-3/4B-12	12	1	Black	$3.56
HSDW-3/4B-48	48	1	Black	$14.24
HSDW-3/4B-4PK	12	4	Black	$14.24
HSDW-3/4BL-12	12	1	Blue	$4.56
HSDW-3/4C-12	12	1	Clear	$3.56
HSDW-3/4G-12	12	1	Green	$4.56
HSDW-3/4R-12	12	1	Red	$3.56
HSDW-3/4R-48	48	1	Red	$14.24
HSDW-3/4R-4PK	12	4	Red	$14.24
HSDW-3/4W-12	12	1	White	$4.56
3/8" Diameter				
HSDW-3/4Y-12	12	1	Yellow	$4.56
HSDW-3/8B-12	12	1	Black	$1.88
HSDW-3/8B-48	48	1	Black	$7.51
HSDW-3/8B-4PK	12	4	Black	$7.51
HSDW-3/8BL-12	12	1	Blue	$2.44

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Terminals and Devices

Dual Wall (Continued)

Item Number	Length in "	Packaged Amount	Color	Price
HSDW-3/8C-12	12	1	Clear	$1.88
HSDW-3/8G-12	12	1	Green	$2.44
HSDW-3/8R-12	12	1	Red	$1.88
HSDW-3/8R-48	48	1	Red	$7.51
HSDW-3/8R-4PK	12	4	Red	$7.51
HSDW-3/8W-12	12	1	White	$1.88
HSDW-3/8Y-12	12	1	Yellow	$2.44

Item Number	Description	Price
	Kit	
HSDW-KIT	110 Piece kit 6"	$80.36
301506	Multiple pieces from 3/16- 3/4"	$17.98

Heavy Wall

- Shrink ratio 3 to 1
- Sturdy heavy wall tubing with excellent insulating, abrasion resisting, and strain relieving properties
- Thermo plastic adhesive provides superior environmental protection
- Direct burial, underwater environments
- Meets UL 486D

HEAVY WALL

ASST-HST-5025

Item Number	Size in "	Color	Price
HSHW-3/8B-12	0.375	Black	$7.86
HSHW-3/4B-12	0.75	Black	$7.87
HSHW-1.1B-12	1.1	Black	$9.83
HSHW-3/8R-12	0.375	Red	$7.86
HSHW-3/4R-12	0.375	Red	$7.87
HSHW-1.1R-12	1.1	Red	$10.00
HSHW-1.5(X)-12	1.50	B	$15.72
HSHW-2B-12	2.00	B	$21.34
HSHW-3B-12	3.00	B	$30.99

Item Number	Description	Price
	Kit	
ASST-HST-5025	Heavy wall heat shrink tubing	$55.45

End Caps

- Shrink ratio 3 to 1
- Dual wall end cap with internal wall of hot melt adhesive provides excellent bonding to plastic and metals
- Shrink temperature 120ºC-135ºC
- Continuous use temperature of up to 110ºC

END CAPS

Item Number	Size in "	AWG	Price
HSC-1/2	.16-.39	8-4	$4.00
HSC-3/4	.31-.79	4-3/0	$5.93
HSC-1	1	2-4/0	$5.60
HSC-1.5	.59-1.57	4/0>	$6.25

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Pen Meters

- Senses the steady state electrostatic field produced by a voltage through insulation without requiring contact to the bare conductor

- Upon detection, tip glows and beeper sounds
- High density red LED light

3115

Item Number	Description	Price
3115	Pen style voltage detector light	$21.95

- Quickly and accurately locate the correct circuit breaker in a panel corresponding to the circuit to which an electrical outlet or fixture is connected
- Tester consists of two parts: a Transmitter, connected to the electrical outlet or fixture and a Receiver, used to scan the panel to locate the correct breaker
- Receiver delivers clear visual and audible indications when the correct breaker has been located
- Operates on 90-120V AC circuits
- Transmitter incorporates a GFCI outlet tester to inspect the wiring condition at the electrical outlet and test GFCI devices
- Transmitter docks in the Receiver for convenient storage as a single item when tester is not is use
- Transmitter incorporates a three-pin plug for connecting to North-American-style grounded electrical outlets.
- The transmitter may be connected to other electrical fixtures using optional accessories which are sold separately.

- Receiver powers off automatically after approximately three minutes of non-use to conserve battery life
- Transmitter is powered by the circuit when connected to the electrical outlet or fixture
- Low battery indicator
- Easily accessible battery compartment. Uses one 9V battery in receiver only; Transmitter does not require a battery
- Built to withstand a 6.6-Foot (2 m) drop
- CAT II 120V safety rating
- Measurement Category II is applicable to test and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage mains installation
- Includes Transmitter, Receiver, user manual, and 9V battery (for Receiver)

ET310

Item Number	Description	Price
ET310	Digital Circuit Breaker Finder with GFCI Outlet Tester	$69.98

- Designed specifically for HVAC applications. Provides non-contact determination of AC voltage in cables, cords, circuit breakers, switches, outlets and wires, as well as AC voltage in security, entertainment, communications, environmental control, and irrigation systems
- Detects AC voltage from 12 to 1000V with visual and audible indicators
- 4:1 distance-to-spot ratio IR thermometer with user selectable degrees Fahrenheit or degrees Celcius from -22 to 482 °F (-30 to 250°C)

- Convenient laser pointer to target measurement area for temperature measurement
- Backlit LCD display with 0.1-Degree resolution
- Auto power-off conserves and extends battery life. Screw-thread battery cap with O-ring ensures dust and water resistance. Lightweight, compact tool with pocket clip provides easy storage and quick access

NCVT-4IR

Item Number	Description	Price
NCVT-4IR	Non-Contact Voltage Tester w/Infrared Thermometer	$65.34

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Tools

Multimeters

- A full-featured, precision multimeter for troubleshooting electrical and electronic systems
- Delivers accurate true-RMS AC current and voltage plus frequency, capacitance, resistance, continuity and diode measurements

- Increases productivity with manual and automatic ranging, Display Hold, Auto Hold, and Min/Max-average recording
- Includes a built-in thermometer to measure temperature without having to carry a separate instrument

179

Item Number	Description	Price
Includes test leads		
179	True RMS digital multimeters, with built in thermometer	$349.99

- High accuracy industrial multimeter to measure current, voltage and frequency on complex variable frequency drive (VFD) signals
- Offers true-RMS AC voltage and current for measuring non-linear signals
- Captures intermittents as short as 250 µS
- Safety rated CAT III 1000 V, CAT IV 600 V
- Includes a built-in thermometer and temperature probe

87-5

Item Number	Description	Price
Includes test leads		
87-5	Industrial digital multimeter	$429.99

- Easy-to-use multimeter with integrated VoltAlert™ technology for non-contact voltage detection
- Features AutoVolt automatic AC/DC voltage selection
- Provides low input impedance to help prevent false readings due to ghost voltage

- Presents a large white LED backlight for working in poorly lit areas
- Features True RMS capabilities for accurate measurements on non-linear loads

FLUKE 117

Item Number	Description	Price
Includes test leads		
FLUKE117	Electrician's multimeter with non contact voltage and true RMS	$214.99

List pricing in catalog is subject to change without notice.

Multimeters (continued)

- True RMS Digital Multimeter with detachable display
- Measures up to 1000 VAC and DC
- Measures up to 10 A (20 A for 30 seconds)
- Provides a 10,000 μF capacitance range
- Measures frequency to 50 kHz
- Includes a built-in thermometer to measure temperature without a separate instrument

FLUKE 233

Item Number	Description	Price
Includes test leads		
FLUKE233	DMM Meter with remote display	$349.99

Clamp Meters

- Measure voltage to 1000 VAC through the open fork, without test leads.
- No need to open covers or remove wire nuts.
- Simultaneously measure voltage and current.
- 17.8 mm open fork is widest in the industry; measure up to 200 A on 4/0 wires (120 mm2).
- Go beyond simple detection. Actually measure AC voltage and current values without test leads.

T6-1000

Item Number	Description	Price
Includes test leads		
T6-1000	Electrical Tester, FieldSense Technology	$279.99

- Battery powered Hall-effect probe measures 1A to 400A, AC or DC
- 1 mV/ amp output guarantees easy reading on your meter
- Takes accurate current readings without breaking the circuit

- Maximum conductor Ø 32 mm (1.18")
- Cat III 600 volt safety rating
- 1 year manufacturer warranty

I410

Item Number	Description	Price
I410	Accessory AC/DC Current Clamp	$279.99

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Tools

Clamp Meters (continued)

- Wireless technology allows the display to be carried up to 30 ft. away from the point of measurement for added flexibility without interference with measurement accuracy
- The removable magnetic display can be conveniently mounted
- iFlex® Flexible Current Probe expands the measurement range to 2500A AC
- CAT IV 600 volt, CAT III 1000 volt

- Integrated low pass filter and signal processing allows for use in noisy electrical environments while providing stable readings
- Radio transmitter automatically sets the correct measurement range so you do not need to change the switch positions while taking a measurement
- 3 year manufacturer warranty
- Soft carrying case

FLUKE 381

Item Number	Description	Price
FLUKE381	Remote Display True RMS AC/DC Clamp Meter with iFlex®	$624.99

- 200A AC and DC current measurement with detachable jaw
- 600V AC and DC voltage measurement
- Detachable jaw makes accessing wires and viewing the display easier
- Built in flashlight/torch allows for easy illumination and identification of wires

- CAT III 600V
- State of the art signal processing allows for use in noisy electrical environments while providing stable readings
- Large, easy to read, backlight display
- 3 year manufacturer warranty
- Soft carrying case

FLUKE 365

Item Number	Description	Price
FLUKE365	Detachable Jaw True RMS AC/DC Clamp Meter	$269.99

- Compatible with TPAK magnetic hanging strap
- Integrated VFD low pass filter for accurate motor drive measurements
- CAT IV 600 V, CAT III 1000 V safety rating
- Resistance measurement to 60 kΩ with continuity detection
- 3 year manufacturer warranty
- Soft carrying case

- High performance clamp meter that measures very low voltage and high resistance
- Transmits measurements to your smartphone via Fluke Connect® so you can view them at a safer distance
- Measures AC and DC current to 600 A, and AC and DC voltage to 1000 V
- Measures AC current to 2500 A AC with optional iFlex flexible current probe

FLUKE-375FC

Item Number	Description	Price
FLUKE-375 FC	True RMS AD/DC Clampa Meter, 600A/1000V	$429.99
FLUKE-376 FC	True RMS AC/DC Clamp Meter with iFlex, 1000A/1000V	$479.99

List pricing in catalog is subject to change without notice.

Clamp Meters (continued)

ACDC-52NAV

- True-RMS technology improves accuracy in noisy environments
- Measures AC/DC voltage to 1000V, AC/DC current to 600A, plus resistance, frequency, capacitance, power and power factor, total harmonic distortion (THD), and individual harmonics from 1 to 25
- Includes inrush current measurement and phase rotation indication for 3-phase motors
- Non-contact voltage detection enhances safety
- Low pass filter enables measuring voltage and frequency on variable frequency drives
- Continuity beeper quickly identifies shorts and opens

- Large backlit digital display with analog bargraph presents the full picture: min, max, and smart data hold
- In-jaw flashlight automatically lights when jaws open to illuminate dark panels and junction boxes
- Auto power off conserves battery life
- Maximum jaw opening accommodates up to 1.45" (37mm)
- Rubber overmold body absorbs shocks. Unit is drop proof to 4 feet (1.2m)
- CAT IV-rated AC/DC current clamp meter
- Includes test leads, batteries (installed), deluxe carrying case, and user's manual

ACDC-52NAV

Item Number	Description	Price
ACDC-52NAV	True-RMS navigator™ Clamp Meter	$329.21

Clampmeter 9325

- True RMS measurements
- Temperature from -4° to 1400° F
- CAT III 600 volt
- Capacitance ranges from 40° to 4000°F
- Duty cycle test
- AC/DC current measurement to 1000A
- Frequency measurement from 10 Hz to 10 kHz

- Diode & continuity test
- AC/DC voltage measurement to 600V with visual notification
- Backlit display
- Shock absorbing case with overload protection and double insulation
- Battery life approximately 300 hours

9325

Item Number	Description	Price
9325	True RMS digital clamp-on meter with a backlit LCD	$137.14

Clampmeter 8110

- True RMS AC measurement is accurate for normal sine wave and modified sine wave inverter output
- Simplify operation with auto range. The best range that fits the data is automatically selected.
- Compact size for comfortable one-hand operation, portability, and access to confined areas

8110

Item Number	AC Amps	AC Volts	DC Amps	DC Volts	Price
8110	.01-600	.001-600	.01-400	.001-600	$196.99

Images are representative of products listed and may not be actual product.

Tools

Modular Clips and Probes

- Slide-on alligator clips (red, black)
- Compatible with TL71, TL75, TL175 and TP175
- Insulated alligator clip jaws provide an 8 mm opening with flexible boots
- CAT III 1000 V, CAT IV 600 V, 10 A rating.
- One year warranty.

AC175

Item Number	Description	Price
AC175	Alligator Clip Set	$32.99

- Multi-purpose tooth pattern grips anything from fine gauge wire to a 3/4" nut
- Nickel plated steel jaws
- CAT III 1000 volt, CAT IV 600V, 10A

- One pair (red, black) of large alligator clips with nickel-plated steel jaws
- Recommended for use with TL222 and TL224 test leads

AC285

Item Number	Description	Price
AC285	SureGrip Alligator Clips	$27.99

- CAT III 1000 volt, CAT IV 600V, 3A
- One pair (red, black) of nickel plated clips
- Profile narrows to 5.6 mm at tip. Hook opening 6.4mm at front, 2 mm at base
- Recommended for use with TL222 and TL224 test leads

AC280

Item Number	Description	Price
AC280	SureGrip Hook Clips	$39.99

- One pair (red, black) of small, insulated, nickel plated jaws
- Blunt tip grabs round screw heads up to 9.5 mm
- Recommended for use with TL222 and TL224 test leads
- CAT IV 600 V, CAT III 1000 V, 10 A rating. CSA listed
- One year warranty

AC220

Item Number	Description	Price
AC220	SureGrip Alligator Clips	$49.99

Test Leads

- Extremely hard alloy tips resist wear
- Distinctive comfort grip probes
- CAT III 1000V, CAT IV 600V, 10A

TL75

Item Number	Description	Price
TL75	Hard Point Test Lead Set	$27.99

List pricing in catalog is subject to change without notice.

Test Leads (continued)

- Patented TwistGuard™ extendable tip
- New WearGuard™ lead wire wear indication
- Each test lead is covered by two layers of silicone insulation; inner contrasting color is exposed when the leads are nicked, scuffed, or otherwise damaged and in need of replacement
- Double insulated silicone leads
- Can withstand high temperatures and remain flexible in cold temperatures
- Extra-heavy duty strain relief on both probe-end and plug-end, tested beyond 30,000 bends without failure

- Universal input plugs are compatible with all instruments that accept standard 4mm shrouded banana plugs
- CAT II 1000V, CAT III 1000V, CAT IV 600V
- 10A max
- Environmental ratings: -20°C to 55°C (-4°F to 131°F), altitude: 2000 m (6,562 ft)
- Conforms to EN61010-031
- 1 year manufacturer warranty

TL175

Item Number	Description	Price
TL175	Twist Guard Test Leads	$34.99

- Recommended for use with AC220, AC280, and AC283 test clips
- Superior strain relief
- CAT III 1000V, CAT IV 600V, 10A max

TL222

Item Number	Description	Price
TL222	SureGrip Silicone Insulated Test Leads	$32.99

- Retractable, insulated, sharp probe tip
- CAT II 300V, 2A max

TL40

Item Number	Description	Price
TL40	Retractable Probe Assembly	$49.99

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Tools

Test Leads (continued)

- Large, solid copper alligator clips with .5" opening
- Flexible silicone insulated leads are heat and cold resistant
- CAT I 30V, 10A max

TL28A

Item Number	Description	Price
TL28A	Automotive Test Lead Set	$54.99

- DMM test leads (red, black) with safety shrouded, standard diameter banana plugs
- Right angle connector on one end and straight connector on the other
- 1.5 mm silicone-insulated wire resists heat & cold
- CAT III 1000V, CAT IV 600V, 10A max
- Superior strain relief

TL224

Item Number	Description	Price
TL224	SureGrip Insulated Test Leads	$32.99

Accessories

TPAK

C25

Item Number	Description	Price
	Accessories	
TPAK	Magnetic meter hanging strap	$46.99
C25	Soft zippered carrying case (8.5 x 4.9 x 2.5 in.)	$44.99

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Fox and Hound

- Tone generator includes overload protection (120 volt AC line), overload warning beeper, high output tracer tone, selectable tracer tones, red/green telephone line polarity LED (also indicates AC/RING Signal)
- Hound 3 is an inductive probe tracer that features a streamlined design for better access in hard to reach areas and a bandpass filter for suppressing 60Hz and high-frequency noise.

- Includes conductive duck bill tip and metal tips, LED indicator light gets brighter as the signal gets stronger
- *Note: The Fox & Hound series is not intended for use on powered wires or cables (all wires or cables must be non-powered, non-grounded, and non-connected)

TRIP-3399

Item Number	Description	Price
TRIP-3399	Fox and Hound kit includes: Fox 2 Deluxe Tone Generator with "True Trace" and Hound 3 Probe Inductive Tracer	$108.83

Plug Bug

- Detects the most common wiring faults in standard, AFCI, and GFCI electrical outlets
- Test AFCI devices by simulating arc fault conditions
- Test GFCI devices by simulating ground fault conditions

- Capable of detecting a dual-open wiring fault with simultaneous open neutral and open ground wires (patent pending technology)
- Tester delivers clear visual indication of the wiring condition at the electrical outlet

9610

Item Number	Description	Price
9610	Plug-Bug2 GFCI / Polarity receptacle tester	$10.67

Klein

- Designed to test North American-style grounded electrical outlets in 120V AC circuits (incorporates a three-pin plug)
- Electrical plug is on a 10-Inch (254 mm) flexible electrical cord to access electrical outlets in difficult to reach locations
- Low battery indicator and easily accessible battery compartment; Uses 3 x 1.5V AAA alkaline batteries (included)
- Powers off automatically after approximately 2 minutes of non-use to conserve battery life

- Built to withstand a 6.6-Foot (2 m) drop
- CATIII 135V safety rating
- Measurement category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation
- The RT310 features a patent pending AFCI test method that is unique to Klein Tools

RT310

Item Number	Description	Price
RT310	AFCI /GFCI Outlet Tester	$69.98

Images are representative of products listed and may not be actual product.

Tools

Inspection Cameras

- 2.4" TFT LCD Screen
- 72" removable/replaceable snake camera; can be bent to access hidden locations
- Image can rotate 180°
- Camera is 7/16" (11.1mm) in diameter with 2 adjustable white LEDs for illumination
- Camera is waterproof

COBRACAM

- WiFi borescope transmits and displays video and images directly to your smartphone up to 30 Feet (9 m) away
- Waterproof 3/8" (9mm) camera has 6 on-board, adjustable LED lights and outputs high-quality 640 x 480 images
- Tough, armored 6-Foot (1.8 m) waterproof camera gooseneck maneuvers around obstacles while maintaining rigidity
- Battery status indicator tracks the charge level of the lithium-ion battery
- Increase and decrease camera LED output either on the borescope or in the app
- The app not only acts as a display, but stores and shares images and videos via text or email
- Includes convenient pocket clip, USB charging cable, hook attachment, carrying case, and instructions
- The Klein borescope app is available free at the App Store® for iPhone® users and Google Play® for Android® users

ET20

Item Number	Description	Price
COBRACAM	Portable Inspection Camera	$166.67
ET20	Klein WiFi Borescope	$125.98

List pricing in catalog is subject to change without notice.

Klein

- Optical Resolution (Distance-to-spot) is 12:1
- Features include dual-laser targeting; auto-scan; max/min/avg/diff; high/low alarm; backlit display; auto power-off
- Drop protection to 6.6-feet (2 m)
- Measurement Range: -22 to 752 °F (-30 to 400 °C)
- Uses one 9V battery, with battery life expectancy of 10 hours continuous use with laser and backlight on

- Includes custom pouch and batteries
- Adjustable emissivity
- Soft-touch, over-mold housing
- For ambient temperatures above freezing, the accuracy is +/- 4 °F or +/- 2%; Accuracy below freezing is +/- 4 °F plus 0.2 degrees per degree below 32 °F
- Certified to IEC EN 61326-1.2006, EN608251.1994+A2.2001+A1.2002

IR5

Item Number	Description	Price
IR5	Dual Laser Infrared Thermometer	$77.06

Corrosion Testing

- Meter: 0 to 1.5 volt full scale
- 1% full scale accuracy
- Impendence 20,000 Ω to 30,000 Ω total
- Reference cell is silver-silver chloride type silver screen with deposited silver chloride
- Half cell insulated cable length 75ft.

33419-3

Item Number	Description	Price
33419-3	Portable Hull Potential Meter	$2,930.00

- Determines effectiveness of cathodic protection
- Checks bonding system integrity
- Checks for AC shoreline interference
- Troubleshoots AC and DC electrical system
- Kit Includes: Fluke model 110 digital multimeter with test leads, zinc reference probe with 20' of test lead wire, 25' test lead extension, hardened steel test probe

902TI

Item Number	Description	Price
902TI	Corrosion Test Instrument Kit	$539.00

Images are representative of products listed and may not be actual product.

Tools

Heat Guns

PH-1100

- ProHeat heat gun: compact, lightweight, easy to use
- Two settings: 430 ˚F(221 ˚C) & 840 ˚F(449 ˚C)
- 15 CFM airflow
- Built-in stand

HG-801D-01

- Master heat guns: professional, heavy duty, industrial quality, multiple use heat gun
- High temperature rating 1000 ˚F(540 ˚C)
- 23 CFM at 3000 FPM airflow
- Adjustable non slip stand
- Sturdy die cast housing

PH-1100

HG-801D-01

Item Number	Volt	Hz.	Amps	Watts	Price
PH-1100	120	60	6 & 11	656 & 1300	$129.22
HG-801D-01	120	60	14.5	1740	$179.00

Torches and Irons

Industrial Torch

- Piezo electric ignition
- Self-contained metal fuel tank
- Adjustable temperature up to 2500 ºF(1300 ºC)
- Safety lock prevents unintentional ignition
- Approximate run time 30 minutes

Power Torch

- Brass and steel construction
- Gas and air adjustments for optimum flame control
- Up to 2500ºF(1300ºC)
- Safety lock feature
- Removable base for hands free operation in both vertical and horizontal position
- Approximate run time of up to 220 minutes on one tank

Soldering Iron

- Kit contains: unit, solder tip, heat tip, heat shrink attachment, tip wrenches, sponge, and stand
- Metal storage carrying case
- Built in fuel filter for consistent fuel ignition
- Built in window indicates fuel level
- 10.3" (260mm) long
- Operating time: 120 minutes on 1 fl. oz tank
- Solder tip temperature: 482ºF(250ºC) to 932ºF(500ºC)
- Heat tip temperature: 1202ºF(650ºC)

Micro Torch

- Spring Loaded Cap
- Electronic Ignitor w/ piezoelectric Ignition
- LED Work Light
- Adjustable Flame

GT-70

94600

UT-100SIK

ML100

Item Number	Description	Dimensions in " (mm) LxWxH	Price
GT-70	General Industrial Torch	6.5(165.1) x 5(127) x 1.8(45.72)	$57.00
94600	Butane Power Torch	3.9(100) x 1.4(36) x 5.4(138)	$117.32
UT-100SIK	Ultratorch professional soldering tool kit		$142.00
ML100	Micro Torch		$20.40

List pricing in catalog is subject to change without notice.

Ultratorch Accessories

- Iron tips feature leading edge combustion chamber exhaust port design
- Copper based iron tips are manufactured using patented process which produces a uniform iron and chrome plating thickness
- All tips are pre-tinned

70-01-52

70-01-02

70-01-16

70-01-05

70-01-08

Item Number	Description	Price
70-01-02	3.3mm diameter chisel soldering tip (standard)	$17.70
70-01-05	.5mm diameter tapered needle soldering tip	$17.70
70-01-08	2mm diameter 35˚ spade soldering tip	$17.70
70-01-52	5.7 O.D/ 4.9 I.D mm heat tip (standard)	$17.70
70-01-16	Hot knife tip	$23.66

- Triple refined formula reduces clogging of filters
- Special vapor pressure promotes consistent ignition
- Contains no CFC's
- Recommended refill for all Ultratorch & Master butane powered products

80-04U

BUTANE

Item Number	Description	Price
	Butane	
Both sizes include canister with universal tip adapter		
51773	Ultratane butane .937 oz.	$5.88
11799	Ultratane butane 3.343 oz.	$5.51
10448	Ultratane butane 5.125 oz	$5.18
	Replacement Burners	
80-04U	Burner for UT 100 & UT100SI, Older style torches only: SN2491709 and below	$33.81
90-07UNS	Burner and ejector for UT100 & UT100SI, New style torches only: SN2491710 and above	$57.82

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Tools

Solder and Soldering Kits

Top-of-the-line professional grade tool is rapidly becoming the standard by which other soldering tools are judged. This versatile multi-function tool kit offers the following features:

- Automatic ignition for a quick and convenient start every time
- Rapid heat-up: fewer delays, improved efficiency
- Multi-function 35W-120W soldering iron, 2400°F torch with hot knife, and hot air blower options
- Large fuel tank with visible fuel level: never run out of fuel while in the field
- Accessories include interchangeable tips, cleaning sponge, and a coil of solder

94901K

51406

604032/1

Item Number	Description	Price
94901K	Processional Soldering Kit	$128.20
51406	Kwik-Draw Solder	$9.40
604032/1	Rosin Core Solder, Dia 0.031 In, 1lb	$74.88
604062/1	Rosin Core Solder, Dia 0.062 In, 1lb	$63.26

List pricing in catalog is subject to change without notice.

Heat Shrink Terminal Crimpers

- Crimping pliers for cable lugs and connectors
- They unlock as soon as the die separation distance is reached, thereby ensuring the correct pressure is applied to the terminal

- The color-coded dies clearly indicate the correct corresponding terminal
- Pawl release lever

1212722

94230

Item Number	Description	Price
1212722	Phoenix Ratcheting Crimpers for Heat Shrink Terminals	$304.74
94230	Ratcheting Crimpers for Heat Shrink Terminals	$78.41

- 4 dies: 8 AWG, 12-10 AWG, 16-14 AWG, and 22-18 AWG
- Mating mechanism prevents the jaws from slipping or misaligning

- Long handles make it easier to crimp
- Easy to use pawl release
- Ergonomic design

T-R-50

Item Number	Description	Price
T-R-50	Terminal crimper, 22-8 AWG range	$60.05

Terminal Crimpers

- Die range: 12-10 AWG, 16-14 AWG, and 22-18 AWG"
- For use with insulated terminals and splices

58433-3

Item Number	Description	Price
58433-3	Pro-crimper	$145.70

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Tools

Terminal Crimpers (Continued)

- Two rotating dies can be configured for uninsulated terminals ranging from 8 AWG to 4/0 AWG

600850

Item Number	Description	Price
600850	Large roto crimp	$1,607.63

- Two rotating crimping dies held together with spring loaded indexing pins
- Used to crimp SOLISTRAND and CABLE MARKER terminals onto stranded copper wire
- Do not use these tools for aircraft applications or for aluminum wire applications
- Die range 8 AWG to 1/0 AWG

601075

Item Number	Description	Price
601075	Bantam roto crimp	$1,757.84

- Heavy-duty cable crimping tool with hand held precision
- Perfect for maintenance and lower volume crimping
- 3 interchangeable die inserts, which are stored in the handle and cover a wide range of wire sizes
- Long handles provide maximum mechanical advantage, which reduces operator fatigue

0192840034

Item Number	Description	Price
0192840034	Hand Crimp Tool	$137.31

- Compact crimping pliers, for symmetrical insulated cable lugs
- 22-10AWG (red, blue, yellow)
- Three marked die stations
- Pawl release lever, lateral entry

1212730

Item Number	Description	Price
1212730	Phoenix CRIMPFOX-RCI 6-M	$184.90

- Heavy duty construction
- Double slide support for rigidity
- Extra clearance for flanged or odd configuration terminals
- Easy to read scale on sides of punch prevents under-crimping
- Wide base for stability

94840

Item Number	Description	Price
94840	Hammer Type Crimp Tool 6AWG-4/0	$85.17

List pricing in catalog is subject to change without notice.

Terminal Crimpers (Continued)

- Crimping dies are marked for insulated and non-insulated solderless terminals and connectors
- Tapered-nose design for working in confined spaces
- Specially hardened wire cutter in nose
- Hot-riveted joint for smooth action and no handle wobble
- Crimps 10-22 AWG
- Overall length 9-3/4" (248 mm)

1005

Item Number	Description	Price
1005	Crimping/Cutting tool non-insulated/ insulated terminals	$42.50

- Designed for crimping non-insulated solderless terminals and connectors
- Specially hardened wire cutter in nose
- Tapered nose for working in confined spaces
- Plastic dipped cushioned handles for comfort
- Crimps 10-22 AWG
- Overall length 9-3/4" (248mm)

1006

Item Number	Description	Price
1006	Crimping/Cutting tool non-insulated terminals	$47.06

Ferrule Crimpers

- Crimping tool with ratchet mechanism
- Insulated and uninsulated ferrules: 22 AWG to 10 AWG
- Twin wire ferrules: 2 x 22 AWG to 2 x 14 AWG

FD2410N

Item Number	Description	Price
FD2410N	Trapezoidal Ferrule crimper	$88.00

- Crimping tool with ratcheting mechanism
- Insulated and uninsulated ferrules: 26 AWG to 10 AWG
- Twin wire ferrules: 2 x 22 AWG to 2 x 14 AWG

FD2810SQ

Item Number	Description	Price
FD2810SQ	Square Ferrule Crimper	$118.00

Images are representative of products listed and may not be actual product.

Tools

Deutsch Crimpers

- Crimps a wide range of connector sizes with no need to change out dies or locators
- Provides symmetrical four indent crimp
- Compact and easy to use for field service

HDT-48-00

CT4-8

Item Number	Description	Price
HDT-48-00	Hand crimping tool for Deutsch connectors	$305.33
CT4-8	Hand crimping tool for Deutsch connectors 14, 16, 18 AWG	$104.00

Cable Cutters

- Shear type hook jaws grab and hold cable while shear cutting action makes clean cuts
- Beveled tips for positive mating
- Hinge bolt with pin set nut for proper blade tension
- 350 MCM max cable size
- 16-3/4" (425mm)

63035

Item Number	Description	Price
63035	Utility cable cutter	$123.32

- Precise, one hand shearing action cuts copper and aluminum multi strand cable and wire
- Special shear angle cuts cleanly without compression of cable geometry for telecom work
- Heat treated high carbon steel shearing edges for long life
- Not designed for cutting steel or ACSR

63055

Item Number	Description	Price
63055	Compact cable cutter	$59.44

List pricing in catalog is subject to change without notice.

Cable Cutters (continued)

- Cleanly cuts copper up to 400 MCM, aluminum and multi conductor cables up to 600 MCM
- Unique ratchet action holds cable tight and allows rapid, straight cuts with minimum effort
- Hold action spring speeds cutting action
- Not designed for cutting steel or ACSR

63060

Item Number	Description	Price
63060	Ratchet cable cutter	$349.32

- Cuts up to 4/0 AWG aluminum (no ACSR), 2/0 AWG soft copper, and 100-pair 24 AWG communications cable
- High leverage for greater cutting power
- Precision, one hand shearing action
- Overall length: 9-9/16"(243mm)
- Not designed for cutting steel or ACSR

J63050

Item Number	Description	Price
J63050	High leverage cutting pliers standard	$55.28

- Cable cutter, angled, for copper and aluminum up to 1/0 AWG

CUTFOX 18

Item Number	Description	Price
CUTFOX 18	Phoenix Cable Cutting Tool	$62.48

- 1000 V Rated for safety on the job. VDE Certified
- Cuts up to 4/0 AWG aluminum (not ACSR), 2/0 AWG soft copper, and 100-pair 24 AWG communication cable
- Unique three-part insulation with white: underlayer provides warning sign that insulation may be compromised
- Multi-color, sleek design with small thumb guards for ease of handling and storage

63050-EINS

Item Number	Description	Price
63050-EINS	Electricians Insulated Cable Cutter	$102.10

Images are representative of products listed and may not be actual product.

Tools

Pliers

- Induction hardened cutting knives for long life.
- Hot riveted joint ensures smooth action and no handle wobble

- Short jaws and beveled cutting edges permit close cutting of wire
- Overall length: 6-1/8"(156mm), jaw length: 13/16"(21mm)
- Semi flush cutting knives

D202-6

Item Number	Description	Price
D202-6	Standard diagonal, with tapered nose	$42.00

- Sharp pointed nose for precise tip cutting and trimming
- Spring loaded for self-opening action
- Jaw length: 11/16" (17mm), jaw width 9/16" (14mm)

- Overall length: 5-1/16" (128mm)
- Semi flush cutting knives
- Plastic dipped handle

D209-5C

Item Number	Description	Price
D209-5C	5" Electronics midget diagonal cutting pliers	$46.34

- Precisely cuts injection mold sprues, gates, and other plastics
- Adjustable 1/16" (1.5mm) hollow head screw keeps knife edge from damaging each other (not for use on metal)

- Spring loaded self opening action
- Overall length: 7-11/16"(195mm), jaw length: 1"(25mm)
- Flush cutting knives
- Great for Ty-Wraps

D227-7C

Item Number	Description	Price
D227-7C	Plastic cutting pliers	$73.96

- Electronic diagonal cutter
- Tapered head, without chamfer, with opening spring

- Non-reflective phosphate-treated surface
- Punched version

1212487

Item Number	Description	Price
1212487	Phoenix Diagonal cutter - MICROFOX-SP-1	$21.99

List pricing in catalog is subject to change without notice.

Pliers (continued)

- Rivet is closer to the cutting edge for 36% greater cutting and gripping power than other plier designs
- Short jaws and beveled cutting edges permit close cutting of wire
- Induction hardened cutting knives for long life

- Hot riveted joint ensures smooth action and no handle wobble
- Overall length 8-1/8"(206mm), jaw length: 13/16"(21mm)

J2000-28

Item Number	Description	Price
J2000-28	High leverage diagonal cutting pliers	$58.80

- Angled head design for easy work in confined spaces
- High leverage design. Rivet is closer to the cutting edge for 36% greater cutting and gripping power
- Short jaws and beveled cutting edge permit close cutting of wire

- Induction hardened cutting knives
- Hot riveted joint ensures smooth action and no handle wobble
- Overall length: 8-1/8"(206mm), jaw length: 13/16"(21mm)

J2000-48

Item Number	Description	Price
J2000-48	High leverage diagonal cutting pliers with angled head	$60.58

- 5"(127mm) lightweight flush cutter
- Shears wire up to 18 AWG producing a flat, flush cut
- Shear cutting greatly reduces cutting effort and minimizes fly-off

- Cushioned grips and steel return spring for increased comfort during repetitive cutting
- Ultra slim profile increases access in confined areas
- Heat treated for increased durability

D275-5

Item Number	Description	Price
D275-5	5" Lightweight Flush Cutter	$14.12

Images are representative of products listed and may not be actual product.

Tools

Strippers

- Wire looping and bending holes
- Precision ground stripping holes
- Black oxide finish resists corrosion
- Easy to read wire gauge marking on both sides

- Do not use for cutting steel wire or bolts
- Overall length: 6-1/4"(159mm)
- Strips and cuts 8-18 AWG solid wire

11049

Item Number	Description	Price
11049	Klein Standard Wire Stripper/Cutter	$21.02

- Precision shear type blades for clean cuts on solid and stranded copper wire
- Easy to read markings on both sides
- Precision ground stripping holes

- Screw shearing holes
- Overall length: 7-1/8"(181mm)
- Can cut wire 10-18 AWG solid & 12-20 AWG stranded

11055

Item Number	Description	Price
11055	Klein Kurve® Wire Stripper/Cutter	$29.78

- Form ground hardened knife type blades
- Built in wire cutter & wire looping holes
- Laser etched wire gauge markings

- Corrosion resistant, black oxide finish
- Can strip 14-24 AWG solid wire & 16-26 AWG stranded wire

45-121

Item Number	Description	Price
45-121	T Stripper Wire Stripper	$21.48

- Wire gripper holds wire centered in stripping hole
- Cleanly strips wire up to full 7/8" (.22mm)

- Eliminates nicking, cutting, and fraying of commercial wire
- Can strip 10-22 AWG

45-292

Item Number	Description	Price
45-292	Stripmaster Wire Stripper	$65.02

List pricing in catalog is subject to change without notice.

Strippers (continued)

- Stripping tool, for cables and conductors (especially for cables protected against short circuits and ground leakages)
- 16-10AWG
- Self-adjusting

- Stripping length of up to 3/4"
- Cutting capacity of up to 8AWG stranded/16AWG solid
- Replaceable stripping blade

1212158

Item Number	Description	Price
1212158	Phoenix Stripping tool - WIREFOX 6SC	$192.46

- Stripping tool, for stripping cables of 10AWG-1AWG
- Insulation thickness of up to 5/32"

- Pivoting blade for round, lengthwise and spiral cuts

1212158

Item Number	Description	Price
1212161	Phoenix Stripping tool - WIREFOX-D 40	$102.30

- Robust forged steel makes this 4 times stronger than traditional Klein wire strippers
- Precision ground stripping holes for 8-16 AWG solid and 10-18 AWG stranded wire
- Knurled jaw for twisting, grabbing and looping up to three wires at a time
- 6-32 and 8-32 screw shearing

- Induction hardened cutting knives for long life
- Hot-riveted joint ensures smooth action and no handle wobble
- Coil spring provides fast, self-opening action

K12055

Item Number	Description	Price
K12055	Klein-Kurve® Heavy-Duty Wire Stripper 8-18 AWG	$53.18

Images are representative of products listed and may not be actual product.

Tools

Extraction Tools

- For use with Deutsch Terminals and Devices

DEUTSCH

Item Number	Description	Price
Deutsch		
0411-240-2005	Removal tool size 20 red	$4.65
0411-291-1405	Removal tool size 14 green	$4.65
0411-310-1605	Removal tool size 16 blue	$4.65
114008	Removal tool size 8 green	$9.60
114009	Removal tool size 4 white	$13.08
114010	Removal tool size 12 yellow	$7.08

Multi Tools

- Crimp 10-22 AWG insulated and non insulated terminals and coaxial connectors
- Cut and strip 8-22 AWG solid and 10-24 AWG stranded wire
- Cut and rethread 4-40, 5-40, 6-32, 8-32, 10-24, 10-32 screws
- Stainless steel blade resists corrosion and nicking
- Precision ground plier nose

701009

Item Number	Description	Price
701009	Stainless Steel Cut/Strip/Crimp Tool	$35.10

List pricing in catalog is subject to change without notice.

Multi Tools (Continued)

- Two wire cutters-one at tip a second one halfway back near stripping holes
- Cleanly shears bolts size: 4-40, 6-32, 8-32, 10-24, 10-32
- Crimping dies color coded for easy identification
- Crimps 7-8 mm insulated and non-insulated terminals, lugs, and splices

- Pivot nut adjusts tension
- Wire cutter in nose and below pivot
- Strips and cuts 10-26 AWG stranded & 8-22 AWG solid
- Overall length: 8-1/2"(216mm)

1001

Item Number	Description	Price
1001	Klein Multi Purpose Electrician's Tool	$37.62

- Klein all purpose pliers with crimper
- Strips cuts, loops, crimps and shears
- Strips 10-18 AWG Solid and 12-20 AWG stranded wire
- 6-32 and 8-32 screw shearing crimps non-insulated connectors, lugs and terminals

- Dual material journeyman handles provide better grip
- Long nose for extended reach, grabbing and looping wire
- Forged steel for maximum durability

J206-8C

Item Number	Description	Price
J207-8CR	Klein all purpose pliers with crimper	$65.80

- Strips and cuts 8-16 AWG solid and 10-18 AWG stranded wire
- Long nose for extended reach, grabbing and looping wire
- 6-32 and 8-32 screw shearing. Induction-hardened cutting knives for hard wire
- Hot-riveted joint ensures smooth action with no handle wobble

- Forged steel for maximum durability
- Spring-loaded for self-opening action
- Dual material journeyman handles provide better grip
- Overall length 8-5/8"(219.07mm)

J206-8C

Item Number	Description	Price
J206-8C	Klien spring loaded all purpose pliers	$60.38

Cable Tie Tools

- Consistent, positive tension
- Flush cut-off leaves no projections to damage nearby wires or components

FD600A

Item Number	Description	Price
FD600A	Standard Economy Model	$38.00

- Used with standard, light-heavy, heavy and extra-heavy cross section Pan-Steel type MLT ties, type MLTC/MLTFC coated ties, and type MLTDH double wrapped ties
- Cable tie side entry for immediate positioning of tie
- One hand operation, lightweight

- Tool tension is controlled by installer, twist action cutters
- Rugged, lightweight, easy to operate pliers type tool

ST2MT

Item Number	Description	Price
ST2MT	Stainless Steel Model	$285.20

Images are representative of products listed and may not be actual product.

Tools

Klein

- Precision machined tip provides exact fit for terminal block screws
- Tip is up to 19% stronger than average
- Tip provides 76% higher torque value than the required ASME B107 Standard
- Cushion-Grip handle offers greater torque comfort
- Overall length 7.75"(196.85mm)

612-4

Item Number	Description	Price
612-4	Terminal Block Screwdriver	$11.62

- Precision machined tip designed for combination head screws
- Custom heat-treated for long life
- Cushion-Grip handle for maximum comfort and torque
- Made in the USA
- Overall length 4"(102mm)

7314

Item Number	Description	Price
7314	Fixed Blade #1 Combo Tip Driver	$14.30

- Patented Tip-Indent quickly identifies the type of screwdriver and screwdriver tip orientation
- Premium chrome plated
- Internal flanges inside handle provide solid, twist resistant blade anchor
- Integrated screwdriver/nut driver shaft holds 8 popular tips and converts to 3 nut driver sizes.
- Interchangeable blade for quick and easy switch out
- Industrial strength, heat tread bits

32500

Item Number	Description	Price
32500	11-in-1 Screwdriver/Nut Driver	$25.84

Screwdrivers

- 1000 volt rated
- Durable, two-layer, molded insulation to meet or exceed all ASTM and IEC standards for insulated tools
- Cushion grip handle for greater torque and comfort for easy access
- Custom US made tool steel
- Made in the USA
- Meets IEC60900 and ASTM F1505

603-7-INS

602-7-INS

33532-INS

Item Number	Tip Type	Length In "	Hand Style	Price
		Screwdrivers		
603-7-INS	#2 Phillips	7	Round Shank	$33.02
602-7-INS	5/16" Cabinet	7	Round Shank	$34.02
33532-INS	1/4" Cabinet & #2 Phillips	4	Round Shank	$60.36

List pricing in catalog is subject to change without notice.

Klein (Continued)

- General-purpose selection of the most frequently used screwdrivers
- Includes: three cabinet-tip, two Phillips-tip and two keystone-tip styles
- Cushion-Grip handle for greater torque and comfort
- Premium chrome-plated for smooth feel and corrosion resistance
- Internal flanges inside handle provide solid, twist-resistant blade anchor
- Special heat-treated shafts

85076

Item Number	Description	Price
85076	Screwdriver Set, Slotted and Phillips, 7-Piece	$84.10

- Ratcheting mechanism allows user to work faster and with more efficiency
- Four different screwdriver bits including #1 and #2 Square, #2 Phillips and 3/16"
- Slotted tips
- Includes ¼" and 5/16" nut drivers
- Cushion-Grip handle for maximum torque and comfort
- Overall length 3.5"(63.5mm)

32594

Item Number	Description	Price
32594	6-in-1 Stubby Screwdriver Square Recess	$23.04

- Also suitable for use as a Phillips screwdriver
- .6 x 3.5 x 100 mm HxWxL
- Two-component grip with non-slip texture

SZF-1

Item Number	Description	Price
SZF-1	Acuation tool for ST terminal blocks	$12.36

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Tools

Klein (Continued)

- Patented tip-indent quickly identifies the type of screwdriver and tip orientation
- Precision tip for an exact fit
- Premium chrome plated shafts for corrosion resistance
- Set includes three cabinet sizes, and one Phillips size

85484

Item Number	Description	Price
85484	4 piece mini cushion grip set	$35.60

- Includes #0 and #00 Phillips plus 1/8" and 3/32" slotted tips
- Rotating cap for optimum and precise control
- Cushion-Grip handles for maximum comfort when working on small equipment
- Heat treated precision ground tip for greater strength
- Overall length 6.5"(165.1mm)

32581

Item Number	Description	Price
32581	4-in-1 Electronics Screwdriver Rotating	$13.96

- 1/4-Inch and 5/16-Inch six-point hex nut drivers
- Powerful magnets for maximum fastener-retention
- Solid build quality - feels like a conventional nut driver
- Color coded bands for easy identification
- Wrench assist to help remove stubborn fasteners

65064

Item Number	Description	Price
65064	Hex Head 2-in-1 Nut Driver, 1/4-Inch, 5/16-Inch	$22.68

List pricing in catalog is subject to change without notice.

Klein (Continued)

- Includes interchangeable 3/16", 1/4", 5/16", 3/8", 7/16", and 9/16" sizes
- Heavy duty handle and shaft exceed the torque performance of regular nut drivers
- Wrench assist feature for torque when needed
- Cushion-Grip handle for maximum torque and comfort
- Overall length 9.5"(241mm)

32800

Item Number	Description	Price
32800	6-in-1 Heavy duty multi nut driver	$39.08

- Through-handle, full-hollow shaft for torquing hex nuts onto threaded rod of any length
- Color coding for easy identification of different sizes
- Wrench-assist for additional torque
- Rare-earth magnetic tip holds nut in place while fastening
- Heavy duty handles and shafts exceed the torque performance of regular nut drivers
- Includes 1/4", 5/16", 3/8" and 7/16" hex sizes
- Overall length 4"(102mm)

635-4

Item Number	Description	Price
635-4	4 Piece Heavy Duty Nut Driver Set	$80.50

- Metal control cabinet key, for all common types of control cabinet latches

12 03 14 9

Item Number	Description	Price
12 03 14 9	Phoenix Control cabinet key - USS 4	$26.48

Images are representative of products listed and may not be actual product.

Tools

Unibit Step-Drill Bits

- Two flutes cut faster and keep bit cooler
- Fast-starting, non-walking drill tip
- High-visibility silver step targets for primary hole sizes
- Thick 3/8" hex shank provides a firm, positive grip and won't spin out in the drill

KTSB03 KTSB11 KTSB14 KTSB15

Item Number	No. of steps	Step Increment, in Inches	Size Range (Hole Diameter in")	Pilot Hole Required	Max. step depth	Price
KTSB03	9	1/16"	1/4" to 3/4"	yes, 1/2" or larger	1/8"	$41.16
KTSB11t	2	3/4"	7/8" to 1-1/8"	no	1/8"	$62.70
KTSB14	12	1/16"	3/16" to 7/8"	yes, 3/4" or larger	1/8"	$47.78
KTSB15	3	3/4"	7/8" to 1-3/8"	no	1/8"	$77.94

Fish Tape

- Multiple grooves molded into the fish tape provides less friction in conduit with or without wires for smoother tape feeding
- Non-conductive fish tape and eyelet tip offer added protection against shock from energized sources
- The 13" case diameter means you can reel in 15% more tape in a single revolution vs. a standard 12" case
- Raised fingergrips help transfer 100% of the winding power from your hand and fingers
- Sloped handle optimizes the position of your hand for quick hand-over-hand rewinds and allows a more level payout of tape on the back swing while feeding conduit
- Made in the USA

56057

Item Number	Description	Price
56057	Grooved Fiberglass Fish Tape 50 Foot	$127.86

List pricing in catalog is subject to change without notice.

Miscellaneous

- Top button moves heavy-duty, razor-edged blade to any of three cutting positions
- Double-ended, reversible blade retracts fully for carrying
- Lightweight aluminum handle is shaped for comfort
- Accepts most standard blades
- Includes 3 standard blades, stored in handle
- Knife holders available (Cat. Nos. 5185, 5248)

44100

Item Number	Description	Price
44100	Klein Utility Knife with Retractable Blade	$11.90

- Black 440A stainless steel tanto-style blade for superior edge retention and ease of sharpening
- Rugged REALTREE XTRA™ camouflage handle with rubber finger grip holds up on the jobsite
- Half-serrated, half fine-edge blade allows for slicing and piercing types of cuts
- Lanyard hole allows knife to be tethered safely to prevent loss, or injury from dropped knife
- Dual thumb studs for ambidextrous, one-handed opening
- Liner lock secures blade in open position
- Deep-pocket/low-carry pocket clip allows the knife to fit completely and securely in a pocket
- 3-1/2-Inch blade length

44222

Item Number	Description	Price
44222	Klein Pocket Knife, REALTREE XTRA™ Camo, Tanto Blade	$45.34

- Includes: hybrid pliers, wire cutter, wire stripper, pocket knife, No. 2 Phillips screwdriver, slotted screwdriver, metal splinter remover
- Features a wide, knurled plier head to easily grab and twist wires
- Strips 10-14 AWG solid and 12-16 AWG stranded wire
- Both the slotted driver and No. 2 Phillips driver tuck neatly in the handle
- Liner lock keeps knife blade securely in the open position
- Metal splinter remover stores in the durable aluminum handle
- Seven (7) most used functions in one compact everyday-carry multi-tool

44216

Item Number	Description	Price
44216	Klein Electrician's Hybrid Plier Multi-Tool	$36.00

- LED penlight for up-close lighting in dim areas
- Laser pointer aids in pinpointing objects in out-of-reach locations
- Glow ring tip charges while the light is on and allows for easy retrieval in the dark
- Pocket clip for easy, convenient access
- Aluminum body with cushion-grip handle

56026

Item Number	Description	Price
56026	Klein Inspection Penlight with Laser	$35.00

- Bright, focused flashlight and broadcasting work light

56028

Item Number	Description	Price
56028	Klein Flashlight with Work Light.	$42.00

Images are representative of products listed and may not be actual product.

Tools

Miscellaneous

- Connects wirelessly via Bluetooth or a wired auxiliary input
- 32.8-foot (10 m) connectivity range (in open space)
- 10-Hour battery life
- Drop protected up to 6-½' (2 m)
- Powerful rear magnet holds speaker to metal surfaces (panels, ducts, etc.)
- Twist-lock flange mounts to Klein's Lighted Tool Bag (Cat. No. 55431)

- 1/4-20 threaded mount on bottom allows attachment to any standard tripod
- Rated IP45 water/dust resistant
- Able to answer calls hands-free with the built-in speakerphone
- Includes 1/8-Inch (3.5 mm) stereo auxiliary cable and micro USB-to-standard USB charging cable

AEPJS1

Item Number	Description	Price
AEPJS1	Klein Wireless Jobsite Speaker	$56.00

- Excellent all purpose lubricant for electrical and telecommunications and data applications
- Easy-to-apply gel clings instantly to the cable and allows for easy handling and application
- Compatible with most types of cable jackets, including polyethylene and semi-conducting jackets

- Superior "clingability" to coat wires and conduit evenly
- Clean, non-staining, slow drying formula

WL-QT

Item Number	Description	Price
WL-QT	Premium Synthetic Polymer 1 Quart Bottle	$11.18

- Worklight can easily clamp to a ladder or lift
- Head rotates a full 360 degrees and pivots up to 90 degrees directing light wherever you need it
- Unit can stand up by itself
- Includes 4 AA batteries

- Light projects in front of you, reducing shadows
- Easy to find glow head recharges when the light is on
- IP54 rating: dust and water resistant

56029

Item Number	Description	Price
56029	Clamping Worklight	$56.00

- Cushion-Grip handle resists slippage and provides the comfort needed for frequent use
- Bottle cap Tip-Ident®, allows for quick identification in tool pouches or crowded drawers
- Professionally designed and rigorously tested by an expert team to handle both foreign and domestic applications

98002-2

Item Number	Description	Price
98002-2	Bottle Opener	$11.12

List pricing in catalog is subject to change without notice.

Small Storage

- Heavy duty nylon zipper
- Convenient storage for pliers, wrenches, screwdrivers, nut drivers, and spare parts

5139

5139B

Item Number	Description	Price
5139	Canvas zipper bag, 12-1/2" length	$14.00
5139B	Ballistic nylon zipper bag, 12-1/2" length	$14.76

Tool Bags

- Dimension WxLxH in"(mm): 17.5(445) x7(178)x15.25(387)
- Separate compartment keeps laptop protected from other tools
- Storage for adapters and cables
- Zipper pocket for files and paperwork
- Organizer pocket for pens, phone, cables, and more

- 22 pockets for organized tool storage
- Orange interior to find tools faster
- Protective guards and water resistant material on bottom protects from the elements
- Shoulder strap and handle for easy carrying

55455M

Item Number	Description	Price
55455M	Tradesman Pro Tech Bag	$128.14

- Rugged 6-inch wheels easily handle rough terrain
- Dimension WxLxH in"(mm): 12.5(318)x 19(483)x14(356)
- 24 pockets for organized tool storage
- Orange interior for easy tool visibility
- Molded kick plate to protect from the elements

- Wide open interior easily accommodates large tools
- Reinforced metal frame stays open for easy loading/unloading
- Load tested up to 200 lbs. (90.7 kg)
- Heavy-duty telescoping handle
- 600D ballistic weave for durability

55452RTB

Item Number	Description	Price
55452RTB	Tradesman Pro Rolling Tool Bag	$272.70

Images are representative of products listed and may not be actual product.

Tools

Tool Bags (Continued)

- Dimension WxLxH in"(mm): 8(203)x 15.25(388)x14(356)
- Twist on/twist off removable LED light can be positioned to illuminate inside the bag or the workspace
- 31 pockets for organized tool storage
- Fully molded bottom protects from the elements

- Orange interior for easy tool visibility
- 1680D ballistic weave for durability
- Shoulder strap with extra padding and handles for easy carrying
- Light features swivel hook and magnet for hands free use

55431

Item Number	Description	Price
55431	Tradesman Pro Lighted Tool Bag	$151.42

- Dimension WxLxH in"(mm): 7.25(184.2)x 14.5(368.3)x20(508)
- 39 pockets for organized tool storage
- Hard, molded front pocket protects safety glasses
- Front zipper pocket for small parts and tools
- Taller bag and interior pockets allow for long screwdrivers

- Orange interior for easy tool visibility
- 1680D ballistic weave for durability
- Realtree®AP-Xtra camouflage design ©2012 by Jordan Outdoor Enterprises, Ltd., all rights reserved

55421BP-14CAMO

Item Number	Description	Price
55421BP-14CAMO	Tradesman Pro Camo Backpack	$166.30

- Dimension WxLxH in"(mm): 7.25(190)x 14.5(368)x20(508)
- 39 pockets for organized tool storage. front pocket protects safety glasses
- Hard molded
- Front zipper pocket for small parts and tools
- Taller bag and interior pockets allow for long screwdrivers

- Fully molded bottom protects from the elements
- Orange interior for easy tool visibility
- 1680D ballistic weave for durability
- Shoulder straps with extra padding and handles for easy carrying

55421BP-14

Item Number	Description	Price
55421BP-14	Tradesman Pro Backpack	$146.28

ACME

- Shielded for cleaner power
- Encapsulated and completely enclosed design electrical grade silica and resin compounds completely enclose the core and coil to seal out all moisture and air
- Quiet operation with sound levels well below NEMA standards
- UL Type 3R enclosure for indoor or outdoor service
- UL Listed, CSA Certified
- Meets or exceeds all listing criteria including NEMA, ANSI, and OSHA standards

Item Number	KVA	Dimensions inches" (cm) HxWxD	Weight in lbs. (kg)	Price
240 x 480 Primary Volts, 120/240 Secondary Volts, Four Windings, 1 Ø, 60 Hz.				
T-2-53007-S	.25	8.68(22) x 4.08(10.4) x 3.88(9.9)	10(4.5)	$161.85
T-2-53008-S	.50	9.06(23) x 4.37(11.1) x 4.20(10.7)	15(6.8)	$188.13
T-2-53009-S	.75	9.68(24.6) x 4.75(12.1) x 4.50(11.4)	19(8.6)	$234.75
T-2-53010-S	1	10.50(26.7) x 5.50(14) x 5.13(13)	24(10.9)	$284.35
T-2-53012-S	2	13.00(33) x 5.50(14) x 5.13(13)	38(17.2)	$428.70
T-2-53014-4S	5	14.38(36.5) x 10.31(26.2) x 7.13(18.1)	75(34)	$785.98
T-2-53515-3S	7.5	15.19(38.6) x 13.50(34.3) x 10.84(27.5)	115(52.2)	$1,099.45
T-2-53517-3S	15	16.94(43) x 14.12(35.9) x 11.59(29.4)	170(77.1)	$1,688.55
T-2-53518-3S	25	18.44(46.8) x 16.13(41) x 13.34(33.9)	250(113.4)	$2,083.20
190/208/220/240 x 380/416/440/480 Primary Volts, 120/240 Secondary Volts, 1 Ø, 50/60 Hz. **Export Model - Maximum exciting current 5% @50Hz.**				
TF-2-79260-S	1	10.50(26.7) x 5.50(14) x 5.13(13)	24(10.9)	$519.45
TF-2-79261-S	2	13.00(33) x 5.50(14) x 5.13(13)	38(17.2)	$798.65
TF-2-79263-S	5	14.38(36.5) x 10.31(26.2) x 7.13(18.1)	75(34)	$1,407.45
TF-2-79264-S	7.5	15.19(38.6) x 13.50(34.3) x 10.84(27.5)	115(52.2)	$2,045.28
TF-2-79266-S	15	16.94(43) x 14.12(35.9) x 11.59(29.4)	170(77.1)	$2,902.00
TF-2-79267-S	25	18.44(46.8) x 16.13(41) x 13.34(33.9)	300(136.1)	$4,093.38

ABYC CERTIFIED MARINE TECHNICIAN

MARINE ELECTRICAL
MARINE CORROSION

The following are guidelines from the American Boat and Yacht Council (ABYC) standard E-11.9 (Isolation of Galvanic Current): Ward's Marine Electric recommends installation to always be in accordance with the ABYC standards and to be performed by a certified marine electrician.

11.7.1. Isolation Transformers - If used, an isolation transformer shall be of the encapsulated type and shall meet the requirements of UL 1561, Dry Type General Purpose and Power Transformers and the following additional requirements.

11.7.1.4. The transformer case is to be metallic with a grounding terminal provided.

11.7.1.5. The transformer shall be tested and labeled by an independent laboratory to establish compliance with the requirements of ABYC E-11.7.1.

Call for detailed information on our Service Products or to schedule an appointment.

Images are representative of products listed and may not be actual product.

Transformers

ACME Buck-Boost

- Multiple input/output voltage combinations
- Small and compact
- UL 50L Listed
- Raise voltage from 5-20%
- Quiet operation

T-1 SERIES

Item Number	KVA	Dimensions inches" (cm) HxWxD	Weight in lbs. (kg)	Price
120 x 240 Primary Volts, 12/24 Secondary Volts				
50/60Hz.				
T-1-81047	.05	6.38(16.2) x 3.19(8.1) x 3.00(7.6)	4(1.8)	$112.13
T-1-81048	.10	6.62(16.8) x 3.75(9.5) x 3.62(9.2)	5(2.3)	$130.58
T-1-81049	.15	7.12(18.1) x 3.75(9.5) x 3.62(9.2)	7(3.2)	$139.53
T-1-81050	.25	8.68(22.0) x 4.08(10.4) x 3.88(9.9)	10(4.5)	$159.60
T-1-81051	.50	9.06(23.0) x 4.37(11.1) x 4.20(10.7)	15(6.8)	$199.45
T-1-81052	.75	9.68(24.6) x 4.75(12.1) x 4.51(11.5)	19(8.6)	$283.28
60 Hz.				
T-1-11683	1	10.5(26.7) x 5.5(14) x 5.13(13)	24(10.9)	$332.20
T-1-11684	1.5	11.62(29.5) x 5.5(14) x 5.13(13)	30(13.6)	$399.18
T-1-11685	2	13(33) x 5.5(14) x 5.13(13)	38(17.2)	$521.05
T-1-11686	3	11.50(29.2) x 10.31(26.2) x 7.13(18.1)	55(24.9)	$790.85

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Ward's Marine Electric

The WME Portable Boost Transformers are safe, powerful, and can protect your 115/230 volt AC equipment from many harmful low dock voltage conditions. Both the 100 ampere and 50 ampere versions are equipped with durable carrying handles and can be conveniently set next to your dockside power pedestal. When connected, a static 10% voltage boost is delivered to provide safer and more effective power to your boat. There are no manual overrides on these units, so the voltage will be boosted 10% regardless of input voltage.

Not suitable for marinas where erratic voltage fluctuations occur.

- 10% Fixed boost
- Portable
- Compact design
- 208/230 primary volt
- Single phase

Item Number	Amps	Price
Portable Boost		
BB208/230-50	50	$1,885.00
BB208/230-100	100	$3,844.25

Electronic: Halogen/Zenon

- UL Listed & CSA Certified
- Auto reset thermal cut off 125˚C
- Aluminum casing
- Dimmable
- Waterproof potting
- Designed to power low voltage (12V or 24V) halogen or xenon lamps

LET75

Item Number	Dimensions inches" (mm) LxHxW	Weight in oz. (g)	Max Load	Output V, kHz.	Price
Input Volts 120, 60 Hz.					
LET75	2.10(53.34) x 0.79(20.06) x 1.30(33.02)	3(93)	75W	11.75, 40	$24.00
LET75-24V	2.10(53.34) x 0.79(20.06) x 1.30(33.02)	3.5(109)	75W	23.2, 40	$28.40
LET105	3.11(78.99) x 0.85(21.59) x 1.30(33.02)	4.92(153)	105W	11.5, 36	$33.00
LET151	3.11(78.99) x 0.85(21.59) x 1.30(33.02)	4.92(153)	150W	11.5, 36	$52.00
LET151-24V	3.37(83.82) x 1.06(26.92) x 1.37(34.79)	6(187)	150W	23.4, 30	$56.00

Images are representative of products listed and may not be actual product.

Transformers

Hubbell Marine Isolation Transformers

- Compact size and weight
- 12.5% taps
- Two full current-carrying shields
- Vibration Resistant
- Exceeds ABYC's 4000 Volt HIPOT test
- Full capacity taps (1:1 Voltage ratio)

- Easy access wiring chamber
- Virtually eliminates potential for in-water stray current
- Eliminates the need for Galvanic Isolation or Polarity Alarms

Item Number	KVA	Dimensions inches" (mm) HxWxD	Weight in lbs. (kg)	Color/Materials	Price
Isolation Transformers 50/60 Hz					
HBL32AITW	15	16.94(430.27) x 14.12(358.65) x 11.59(294.38)	170 (77.11)	White Powder Coated Steel	$2,384.89
HBL32AITSS	15	16.94(430.27) x 14.12(358.65) x 11.59(294.38)	170 (77.11)	#316 Stainless Steel	$2,852.35
HBL63AITW	25	18.44(468.38) x 16.13(409.7) x 13.34(338.84)	250 (113.4)	White Powder Coated Steel	$2,861.89
HBL63AITSS	25	18.44(468.38) x 16.13(409.7) x 13.34(338.84)	250 (113.4)	#316 Stainless Steel	$3,577.39
Isolation Transformers 60 Hz					
HBL50AITW	15	16.94(430.27) x 14.12(358.65) x 11.59(294.38)	170 (77.11)	White Powder Coated Steel	$2,146.39
HBL50AITSS	15	16.94(430.27) x 14.12(358.65) x 11.59(294.38)	170 (77.11)	#316 Stainless Steel	$2,623.39
HBL100AITW	25	18.44(468.38) x 16.13(409.7) x 13.34(338.84)	250 (113.4)	White Powder Coated Steel	$2,613.85
HBL100AITSS	25	18.44(468.38) x 16.13(409.7) x 13.34(338.84)	250 (113.4)	#316 Stainless Steel	$3,338.89

Hubbell Marine Isolation Boost Transformers

- Remote control unit provided with 32 feet cord, allows you to select "Auto" for dynamic mode or "Man" for manual or static mode (units are factory programmed in auto mode)
- Auto-boost of 12.5% will engage if voltage reading at the dock falls between 195 – 220 Volts
- AC Voltage monitored and displayed on remote control Manual Mode allows monitoring voltage and can be manually adjusted "Auto" mode automatically boosts voltage by 12.5% if low voltage is detected

- Main module cleanly mounted in easy access wiring chamber
- High-quality terminal block for wire management
- Sand-filled and epoxy topped
- Auto-boost/Remote cable receptacle

Item Number	KVA	Dimensions inches" (mm) HxWxD	Weight in lbs. (kg)	Color/Materials	Price
Isolation Transformers 50/60 Hz					
HBL32AITSSB	15	16.94(430.27) x 14.12(358.65) x 11.59(294.38)	175(79.4)	#316 Stainless Steel	$8338.30
HBL63AITSSB	25	18.44(468.38) x 16.13(409.7) x 13.34(338.84)	255(115.7)	#316 Stainless Steel	$10,732.39
Isolation Transformers 60 Hz					
HBL50AITSSB	15	16.94(430.27) x 14.12(358.65) x 11.59(294.38)	175(79.4)	#316 Stainless Steel	$7,393.39
HBL100AITSSB	25	18.44(468.38) x 16.13(409.7) x 13.34(338.84)	255(115.7)	#316 Stainless Steel	$9,778.39

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ASEA Marine Smart Isolation Boost Transformers

- Auto-Restart from shore brownout or blackout
- Auto-Restart from overload
- Fault shield for bonded, galvanic bridged/ isolated ground
- Modbus (RS-485) remote diagnostics

- kWh meter
- Advanced power monitoring (input/ output parameters)
- Microprocessor based over and under voltage/current protection

Model	Dimensions in" (mm) HxWxD	Weight in lbs. (kg)	Price
DBT12	12.8(325.12) x 13(330.2) x 18(457.2)	127(57.6)	$6,230.00
DBT15	12.8(325.12) x 13(330.2) x 18(457.2)	127(57.6)	Call for pricing
DBT24	16.1(408.94) x 19.6(497.84) x 24.5(622.3)	TBD	Call for pricing

Input/ Output Information

Model	Frequency	Voltage	Phase	Auto-Restart	AMP	Shore Cord
Input						
DBT12	57-63Hz	167-270V	Single	Standard	50A	Single
DBT15	50Hz	230V	Single	Standard	63A	Single
—	60Hz	240V	Single	Standard	50A	Single
DBT24	50Hz/60Hz	230V,400V,480V	Single	Standard	100A,58A,50A	Single
—	60Hz	240V,480V	Single	Standard	100A,50A	Single

Model	Frequency	Nominal Voltage	Phase	Amp	Base Power Level	Paralleled Power *See Trident System
Output						
DBT12	60Hz	120/240V	Single/Split	50A	12kVA	24kVA
DBT15	50Hz	115/230V	Single/Split	63A	15kVA	30kVA
—	60Hz	115/230V	Single/Split	50A	12kVA	24kVA
DBT24	50Hz	115/230V	Single/Split	100A	23kVA	46kVA
—	60Hz	115/230V	Single/Split	100A	24kVA	46kVA

Images are representative of products listed and may not be actual product.

Transformers

ASEA Trident System

The ASEA Trident System allows two 50A shore cords to be combined to a single 100A output. The pair of DBT12s provide three levels of boost to keep your ship powered even when input voltages sag by 35%, and the paralleling box ensures that current is shared equally between the shore cords, which allows you to maximize the amount of power you can draw from even the worst shore cord conditions. The three piece system is a direct replacement for the popular and discontinued Charles PM3TM.

- Combining of shore cord inputs to create a single output
- Auto-Restart from shore brownout, blackout, or overload
- Shore cord leveling keeps both cords at the same current to prevent imbalance and tripping
- Fault shield for bonded, galvanic bridged/isolated ground
- Modbus (RS-485) remote diagnostics
- Reverse Phase detection and correction: if hot and neutral are swapped on one pedestal, the combiner flips it
- Advanced power monitoring (input/output parameters)
- Microprocessor based over and under voltage/current protection

A/SEA TRIDENT SYSTEM

Model	Dimensions in" (mm)HxWxD	Weight lbs.(kg)	Price
Trident 24 System			
Master Paralleling Box	12.1(317.34) x 13.2(335.28) x 16.9(429.26)	40(18.14)	Call for pricing
DBT12s	12.1(307.34) x 15.5(393.7) x 18.7(474.98)	127(57.60)	Call for pricing

Input

Model	Frequency	Voltage	Phase	Amps	Auto Start	Shore Cord	Price
Trident 24	60Hz	240VAC	Single	(2)x 50A	Standard	Dual	Call for pricing
Coming Soon							
Trident 30							Call for pricing
Coming Soon							
Trident 48							Call for pricing

Output

Model	Frequency	Nominal Voltage	Phase	Amps	Power	Price
Trident 24	60Hz	120/240VAC	Single/split	100A	24kVa	Call for pricing
Coming Soon						
Trident 30						Call for pricing
Coming Soon						
Trident 48						Call for pricing

List pricing in catalog is subject to change without notice.

Quick

- Round water heater that produces water from an incoloy electric heating element that is fitted with an adjustable safety bi-thermostat
- Equipped with a heat exchanger composed of AISI 316L stainless steel
- Interior: 1.5 mm gauge AISI 316 stainless steel welded with Argon shielding gas which enables it to be highly resistant to corrosive agents
- Exterior: highly durable plastic composite material
- Thermal insulation composed of high density polyurethane foam
- Adjustable metal brackets which provide more flexibility for mounting when dealing with tight spaces

WATER TANKS

THERMOSTATIC MIXING VALVE

BI THERMOSTAT

BOILER ELEMENT

PRESSURE RELIEF VALVE

Item Number	Tank Capacity Ltr/Gal.	Dimension In "	Voltage	Price
		Tanks		
NAUTIC B3 40L	40/10.5	14.19 x 24.44	220	$1,080.00
NAUTIC B3 60L	60/15.8	15.75 x 28.38	220	$1,400.00

Item Number	Description	Price
	Replacement Parts & Accessories	
FVSLANMG1820A00	OSP Magnesium anode 200mm	$26.00
KMX	Thermostatic mixing valve	$176.00
OSP BI-THERMO	BI-Thermostat 15A 270mm boiler	$47.00
OSP ELEMENT	Electric element boiler kit: 1200W, 110V	$125.00
OSP ELEMENT 220	Electric element boiler kit: 1200W, 220V	$125.00
OSP PRV	Pressure valve kit: 1/2", 6.0B R8P	$47.00

Images are representative of products listed and may not be actual product.

Windlass

Imtra

- Windlass control box: watertight and prewired, dual solenoid
- Deck switch: handles full windlass loads without external solenoid or control box, 4" diameter

SPA-10500   SPA-10502   SPA-10504   LWP812P   LWP812   SPA-10696

Item Number	Ring Color	Amps	Price
Deck Switch			
SPA-10500	Chrome	200	$90.00
SPA-10502	Black	200	$69.00
SPA-10504	White	200	$69.00

Item Number	Description	Price
Sockets and Plugs		
LWP812	Socket with Cap	$60.00
LWP812P	4 pin deck plug	$60.00
SPA-10576	4 pin deck plug	$60.00

Item Number	Volts	Wires	Watts	Price
Control Box				
SPA-10696	24	2 to 4	500-1300	$205.00
SPA-10697	12	2 to 4	500-1300	$185.00

Ideal

- Hands free
- Waterproof
- Versatile application
- Chrome with black rubber

IDEAL FSB

Item Number	Description	Price
FSB	Step Switch with Cover and Ring Assembly	$150.86
Replacement Parts		
FSA1	Rubber Cover for FSB Step Switch	$33.15
FSA3	Chrome Ring for FSB Step Switch	$36.95

List pricing in catalog is subject to change without notice.

Remotes and Chain Counters

- Multipurpose hand held watertight remote devices
- Designed to control: cranes, gangways, windlasses, sea ladders, etc.
- Constructed with rubber inserts to ensure high strength and durability

CHC1102M   KCS   HRC-1002   HRC-1004   HRC-1006   HRC-1008   BRACKET

Item Number	Description	Price
CHC1102M	Handheld chain counter	$685.00
KCS	Chain counter sensor	$46.00
HRC-1002	UP/DOWN handheld remote	$150.00
HRC1002L	4 Function handheld remote	$220.00
HRC-1004	6 Function handheld remote	$230.00
HRC-1006	8 Function handheld remote	$305.00
HRC-1008	8 Function handheld remote with LED	$415.00
HRC-1008L	8 Function handheld remote with LED	$475.00
FVSPSTHRC000A00	1102m support bracket HRC-CHC	$26.25

*See page 322 for Deck Sockets.

Radio Remote Controls

- Transmitters are FCC Part 15, subpart C compliant
- Receivers are FCC Part 15, subpart 4 compliant
- Full supply rant from (10.5 to 31 volt DC)
- Micro controller operated functions
- Protection against polarity inversion and discharge of battery
- Programmable digital filter
- Two functions can be activated at the same time
- Carrier frequency 913.7 Mhz
- Operating temperatures +5°F - +158°F (-15°C - +70°C)
- LED backlit function keys)

RRC H902   RRC H904   RRC P902   RRC P904   RECEIVERS

Item Number	Number of Keys	IP Rating	Type	Power Supply	Price
			Transmitter		
RRC H902	2	67	Handheld	3 AAA alkaline batteries	$210.00
RRC H904	4	67	Handheld	3 AAA alkaline batteries	$230.00
RRC P902	2	N/A	Pocket	CR2450 3V lithium battery	$150.00
RRC P904	4	N/A	Pocket	CR2450 3V lithium battery	$160.00

Images are representative of products listed and may not be actual product.

Windlass

Radio Remote Controls (Continued)

Item Number	Relays #	IP Rating	Power Supply	Price
		Receivers		
15 amp intermittent use contact rating				
RRC R902	2	55	10.5 - 31 VDC	$440.00
RRC R904	4	55	10.5 - 31 VDC	$500.00

Deck Socket and Connectors

- High current rating due to low contact resistance
- Uniform distribution of current on the contact
- Long contact life

SOCKET

CONNECTOR

Item Number	Description	Price
7103PC	Socket for new style HEC1002	$31.50
7105PC	Socket for new style HRC1004	$42.00
FC7103000000A00	Connector socket 7103, 3 contacts	$39.00
FC7105000000A00	Connector socket 7105, 5 contacts	$43.00
FC7106000000A00	Connector socket 7106, 6 contacts	$48.00
FC7107000000A00	Connector socket 7107, 7 contacts	$53.00
FC7108000000A00	Connector socket 7108, 8 contacts	$58.00
FC7109000000A00	Connector socket 7109, 9 contacts	$22.05
FC7110000000A00	Connector socket 7110, 10 contacts	$68.00
FC7112000000A00	Connector socket 7112, 12 contacts	$74.00
FVSCC71XX000A00	OSP cap HRC connector	$16.00
FVSPPCCHC1BA00	OSP kit wired socket CHC1102MB00	$79.00
FVSPPCHRC2LDA00	OSP kit wired socket HRC1002L	$47.00
FVSPSCHRC200A00	OSP kit wired socket HRC1002	$63.00
FVSPPCHRC400A00	OSP kit wired socket HRC1004	$42.00
FVSPPCHRC400A00	OSP kit wired socket HRC10040	$42.00
FVSPPCHRC600A00	OSP kit wired HRC1006	$58.00
FVSPSCCHC1BCA00	OSP kit wired CC1102M BOO/COO	$132.00
FVSPSCHRC200A00	OSP kit wired plug HRC1002	$63.00

List pricing in catalog is subject to change without notice.

Control Boxes

- Non-reversing contactor that is able to operate electric motors for windlasses and capstans
- Due to the external connections, this unit is very easy to install
- IP66 waterproof

CONTROL BOX

Item Number	Voltage	Wires	Watts Max	Price
T6315-12	12	3	2500	$170.00
T6315-24	24	3	3500	$170.00
T6415-12	12	4	2500	$200.00
T6415-24	24	4	3500	$230.00

Replacement Parts

Item Number	Description	Price
FVSSBLBBDN00A00	OSP kit gypsy locker AL3/DN4	$74.00
FVSSCKTMT10SA00	OSP kit brushless motor 1KW	$180.00
FVSSCPSCAL00A00	OSP kit inspection Lid AL3	$58.00
FVSSKTTR1012A00	OSP kit reversing contact HC3 12V	$280.00
FVSSM0512000A00	OSP windlass motor only: 500W, 12V	$485.00
FVSSM0712000A00	OSP windlass motor only: 700W, 12V	$670.00
FVSSM1012000A00	OSP windlass motor only: 1000W, 12V	$680.00
FVSSM1512000A00	OSP windlass motor only: 1500W, 12V	$880.00
FVSSM1712000A00	OSP windlass motor only: 1700W, 12V	$900.00
FVSSMR05TG40A00	OSP gearbox: 300-500W, TG40	$580.00
FVSSMR10TG50A00	OSP gearbox: 700-1000W, TG50	$735.00
FVSSMR15TG70A00	OSP gearbox: 1500W	$1,180.00
FVSSTCAL0000A00	OSP kit pressure lever AL3	$58.00
FVSSTCASC000A00	OSP kit pressure lever Aster/Crystal	$35.00
FVSSTCDP2000A00	OSP kit pressure lever DP2	$18.00
FVSSTCDP3000A00	OSP kit pressure lever DP3	$20.00
FVSSTCG00000A00	OSP kit pressure lever Genius	$47.00
SAPVLVSDN000	Nylon straight clutch handle	$47.00

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Windlass

Panel and Foot Switches

- Deck switches equipped with safety cover to prevent accidental push button operation
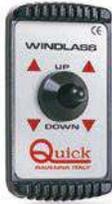
| 800CB | 900/DB | 900/DW | 900/HAW | 900/HAX |

Item Number	Style	Color	Function	Price
800CB	Panel	Black	UP/DOWN	$29.50
900/DB	Deck/Foot	Black	DOWN	$29.00
900/DW	Deck/Foot	White	DOWN	$29.00
900/UB	Deck/Foot	Black	UP	$29.00
900/UW	Deck/Foot	White	UP	$29.00
900/HAW	Deck/Foot	White/Black	HI AMP UP/DOWN	$83.00
900/HAX	Deck/Foot	SS / Black	HI AMP UP/DOWN	$165.00

List pricing in catalog is subject to change without notice.

Primary Cable

- Under 6AWG meets UL 1015-1230
- Over 6 AWG meets UL 1426 & BC-5W2
- 221°F (105°C) dry and 167°F(75°C) wet
- 600 volt rating
- Class K 30 gauge tinned copper conductors

BK = BLACK   BN = BROWN   BU = BLUE   GN = GREEN   GY = GRAY   OR = ORANGE   LBU = LIGHT BLUE   PK = PINK   PU = PURPLE   RD = RED   WH = WHITE   YL = YELLOW

Item Number	OD in	Cable Lbs/MFT	18'	25'	35'	100'	250'	500'	1000'
XX = Color Coded Description, 00 = Units of Measurement, Call for Current Pricing									
118P-(XX)-(00)	.111	11			BK, OR, RD, WH, YL	BK, BN, BU, GN, OR, RD, WH, YL		BK, RD, WH, YL	
116P-(XX)-(00)	.123	15		BK, GN, GY PU, RD, YL		BK, BN, BU, GN, GY, OR, PK PU, RD, WH, YL		BK, BN, RD WH, YL	BK, RD
114P-(XX)-(00)	.141	22	BK, BN, BU RD, WH, YL			BK, BN, BU, GN, GY, LBU, OR, PK PU, RD, WH, YL, TN		BK, BN, BU GN, RD, WH, YL, GY	BK, RD
112P-(XX)-(00	.156	32				BK, BN, BU, GN, GY, LBU, OR, PK PU, RD, WH, YL		BK, BU, RD, WH	BK, RD
110P-(XX)-(00)	.185	46		BK, RD		BK, GN, RD, WH, YL	BK, RD	BK, GN, RD, WH, YL	
108P-(XX)-(00)	.261	79				BK, GN, RD, WH, YL	BK, GN, RD	BK, GN, RD	
106P-(XX)-(00)	.342	136				GN, RD, WH, YL, BK	RD, BK, WH GN, YL	BK, GN, RD, YL	
104P-(XX)-(00)	.466	189				BK, GN, RD, WH, YL	RD, BK, GN, YL	BK, RD	
102P-(XX)-(00)		292				BK, GN, RD, WH, YL	RD, BK, GN, WH	BK, RD, YL	BK, RD
101P-(XX)-(00)	.520	351				BK, RD, YL	BK, RD	BK, RD	
1/0BC-(XX)-(00)	.745	450				BK, RD, YL	BK, RD	BK, RD	
2/0BC-(XX)-(00)	.685	551				BK, RD, YL	BK, RD, YL	BK, RD	
3/0BC-(XX)-(00)	.610	672				BK, RD	BK, RD		
4/0BC-(XX)-(00)	.575	.575				BK, RD, YL	BK, RD, YL	BK, RD	

Images are representative of products listed and may not be actual product.

Wire and Cable

Round & Flat

- UL1426 & UL BC 5W2 Listed
- 600 volt rating
- 221°F(105°C) dry and 167°F(75°C) wet
- Class K 30 gauge tinned copper conductors
- Meets or exceeds ABYC, UL, Coast Guard, and ABS requirements

ROUND

FLAT

Item Number	AWG	Conductor	OD in "	Measurements Sold
XX = Unit of Measurement, Call for Current Pricing				
		Round		
16-2BCR-(XX)	16	2	.030	PER FT, 100', 250', 500'
16-3BCR-(XX)	16	3	.333	PER FT, 100', 250', 500'
16-4BCR-(XX)	16	4	.366	PER FT, 100', 250', 500'
14-2BCR-(XX)	14	2	.349	PER FT, 100', 250', 500', 1000'
14-3BCR-(XX)	14	3	.393	PER FT, 100', 250', 500', 1000'
14-4BCR-(XX)	14	4	.408	PER FT, 100', 250', 500'
14-5BCR-(XX)	14	5	.458	PER FT, 100', 250'
14-9BCR-(XX)	14	9	.645	PER FT, 100', 250'
12-2BCR-(XX)	12	2	.409	PER FT, 100', 250', 500'
12-3BCR-(XX)	12	3	.434	PER FT, 100', 250', 500'
12-4BCR-(XX)	12	4	.476	PER FT, 100', 250'
10-2BCR-(XX)	10	2	.467	PER FT, 100', 250', 500'
10-3BCR-(XX)	10	3	.497	PER FT, 100', 250', 500'
10-4BCR-(XX)	10	4	.555	PER FT, 100', 250', 500'
8-3BCR-(XX)	8	3	.625	PER FT, 100', 250', 500'
8-4BCR-(XX)	8	4	.768	PER FT, 100', 250'
6-3BCR-(XX)	6	3	.813	PER FT, 100', 250', 500'
6-4BCR-(XX)	6	4	.975	PER FT, 100', 250', 500'
XX = Unit of Measurement, DC=Red/Yellow, Call for Current Pricing				
		Flat		
16-2BC-(XX)	16	2	.192 x .319	PER FT, 100', 250', 500', 1000'
16-2BC-DC-(XX)	16	2	.192 x .319	PER FT, 100', 250', 500'
16-3BC-(XX)	16	3	.187 x .433	PER FT, 100', 250', 500', 1000'
14-2BC-(XX)	14	2	.215 x .350	PER FT, 100', 250', 500', 1000'
14-2BC-DC-(XX)	14	2	.215 x .350	PER FT, 100', 500'
14-3BC-(XX)	14	3	.223 x .500	PER FT, 100', 250', 500', 1000'
12-2BC-(XX)	12	2	.230 x .381	PER FT, 100', 250', 500', 1000'
12-2BC-DC-(XX)	12	2	.230 x .381	PER FT, 100', 250', 500', 1000'
12-3BC-(XX)	12	3	.230 x .528	PER FT, 100', 250, 500'
10-2BC- (XX)	10	2	.250 x .430	PER FT, 100', 250', 500'
10-3BC-(XX)	10	3	.270 x .620	PER FT, 100', 250', 500'
8-2BC-(XX)	8	2	.362 x .607	PER FT, 100', 250', 500'
8-3BC-(XX)	8	3	.363 x .885	PER FT, 100', 250'
6-2BC-(XX)	6	2	.436 x .772	PER FT, 100', 250', 500'
6-3BC-(XX)	6	3	.450 x 1.08	PER FT, 100', 250'

List pricing in catalog is subject to change without notice.

Power & Control

- Finely stranded annealed copper
- Jacket: LSFLEX® R-30
- 600/1000 volt rating
- -40°F(-40°C) to 194°F(90°C) temperature rating
- USCG, ABS, LR, DNV, GL and Transport Canada Marine safety approved
- Low smoke
- Zero halogen

Item Number	AWG	OD in " (mm)	Conductor
XX= Unit of Measurement, Call for Current Pricing			
Single Conductor			
118P-SIS	18	.100(2.54)	1
116P-SIS	16	.110(2.80)	1
114P-SIS	14	.130(3.30)	1
112P-LSZH	12	.160(4.06)	1
110P-LSZH	10	.250(6.35)	1
108P-LSZH	8	.295(7.49)	1
106P-LSZH	6	.345(8.76)	1
104P-LSZH	4	.400(10.16)	1
102P-LSZH	2	.455(11.55)	1
1/0P-LSZH	1/0	.525(13.33)	1
2/0P-LSZH	2/0	.595(15.11)	1
4/0P-LSZH	4/0	.815(20.15)	1
Multi Conductor			
16-2-LSZH	16	.305(7.74)	2
16-3-LSZH	16	.325(8.25)	3
16-4-LSZH	16	.355(9.01)	4
16-7-LSZH	16	.430(10.92)	7
14-2-LSZH	14	.345(8.76)	2
14-3-LSZH	14	.370(9.39)	3
14-4-LSZH	14	.405(10.28)	4
12-2-LSZH	12	.390(9.90)	2
12-3-LSZH	12	.415(10.54)	3
12-4-LSZH	12	.455(11.55)	4
10-2-LSZH	10	.435(11.04)	2
10-3-LSZH	10	.460(11.68)	3
10-4-LSZH	10	.510(12.95)	4
8-2-LSZH	8	.525(13.33)	2
8-3-LSZH	8	.560(14.22)	3
8-4-LSZH	8	.615(15.62)	4
6-3-LSZH	6	.660(16.76)	3
6-4-LSZH	6	.725(18.41)	4
4-3-LSZH	4	.785(19.93)	3
2-3-LSZH	2	.900(20.57)	3
2-4-LSZH	2	.995(25.27)	4
1/0-3-LSZH	1/0	1.05(26.67)	3
4/0-3-LSZH	4/0	1.66(41.00)	3

Images are representative of products listed and may not be actual product.

Wire and Cable

Shielded

- USCG, ABS, LR, DNV, BV and GL Listed
- Finely stranded annealed copper conductors
- LSFLEX R-30 insulation
- Splash resistant to oil, Skydrol, gasoline, acid, sea water, ozone, and UV
- 300 volt rating
- -40°F(-40°C) to 230°F(110°C) temperature rating
- Low smoke
- Zero halogen

Item Number	AWG/ Metric	Conductors	OD in " Max
Sold Per Ft. Only, Call for Current Pricing			
18-1P-OAS	18/.75	1 PAIR	.35
18-TRI-OAS	18/.75	1 TRIAD	.37
18-2P-OAS	18/.75	2 PAIR	.39
18-4P-OAS	18/.75	4 PAIR	.45
16-2P-OAS	16/1.5	2 PAIR	.40

AMERICAN WIRE GAUGE (AWG) TO METRIC CONVERSION CHART

AWG	mm2	AWG	mm2	AWG	mm2
30	0.05	16	1.5	2/0	70
28	0.08	14	2.5	3/0	95
26	0.14	12	4	4/0	120
24	0.25	10	6	300MCM	150
22	0.34	8	10	350MCM	185
21	0.38	6	16	500MCM	240
20	0.50	4	25	600MCM	300
18	0.75	2	35	750MCM	400
18 (UL)	1.0	1	50	1000MCM	500
17	1.0				

List pricing in catalog is subject to change without notice.

NMEA 2000

Bulk Cable

- Meets and exceeds NMEA 2000 specs for highest reliability
- Used with field attachable connectors to build exact length cables on site
- Can be used as a drop cable or trunk line depending on network power requirements
- MICRO power pair: 18.1 Ohms/1000ft., 6 amp, 2x22 AWG
- MICRO data pair: Impedance 120 Ohms, Capacitance 11.3pf/ft, 2x22 AWG
- MID cable is optimized for voltage drop sensitive networks (long runs) because power pair wires have half the resistance of MICRO cables
- MID power pair: 4.1 Ohms/1000ft max, 14 amp, 2x16 Awg
- MID data pair: Impedance 120 Ohms, Capacitance 10.75 pf/ft, 2x20 AWG
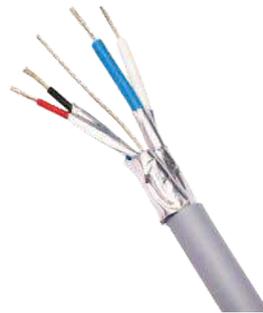
MICRO BULK CABLE

MID BULK CABLE

Item Number	Type	Color	Length
Call for Current Pricing			
Bulk Cable			
CG1	MICRO	Gray	Per Meter
CG1-100	MICRO	Gray	100M
DB1	MID	Blue	Per Meter
DB1-100	MID	Blue	100M

Images are representative of products listed and may not be actual product.

Wire and Cable

NMEA 2000 (Continued)

Connectors

- Color coded screw terminals for error free installations
- Rugged housing designed to withstand harsh marine environments
- Field attachable
- MICRO Tees have gold contacts for greatest reliability with keyed connectors
- Powertap tee connects to network backbone to provide bus power. Tee provides two inputs permitting double power provisions. IP67
- MICRO terminator resistors are used to terminate both ends of the trunk line and have screw terminal connectors for positive connections, IP68

Cordsets

- Double ended for trunk or drop lines
- Keyed for error free connection
- Waterproof for continued operation even while submerged in the bilge
- MID cordsets are optimized for voltage drop sensitive networks (long runs) because power pair wires have half the resistance of MICRO cables
- IP68 rated

90° ELBOW

MICRO TEE

MICRO TERMINATION RESISTORS

MICRO/MID FIELD ATTACHABLE CONNECTORS

MICRO/MID POWERTAP TEE

MULTIPORT BOX

MICRO DOUBLE-ENDED CORDSETS

MID DOUBLE-ENDED CORDSETS

Item Number	Description	Color	Ratings	Volts
Call for Current Pricing				
Connectors				
CABLE STARTER KIT	Includes: Powertap, two male terminators, two tees, two 2m and one 10m micro cables	Powertap: Yellow Connectors: Gray	—	—
CF-SPWR05-CF	MICRO/MID Powertap Tee: female (left))/5 meter yellow 4 wire power drop(bottom)/ female(right)	Yellow	4 amp	250VDC
CM-CF-CF	MICRO tee-male(left)/ female(bottom)/ female(right)	Gray	4 amp	60VDC
CM-CF-4	Multiport box (MICRO-MID male homerun, MICRO-MID female drops)	Gray	4 amp	250VDC
FA-CF-ST	MICRO/MID straight female	Gray	4 amp	30VAC/ 36VDC
FA-CM-ST	MICRO/MID straight male	Gray	4 amp	30VAC/ 36VDC
IT-CM-CF	MICRO inline terminator	Gray	121 Ohms (1/4W)	10-30VDC
ELB-CM-CF	MICRO 90° male to female connector	Gray	4 amp	50V
TR-CF	MICRO female termination resistor	Gray	120 Ohms (1/2W)	10-30VDC
TR-CM	MICRO male termination resistor	Gray	120 Ohms (1/2W)	10-30VDC

Item Number	Type	Ends	Color	Meters Sold
Call for Current Pricing - XX= Length (m)				
Cordsets				
CM-CG1-CF-XX	MICRO	Male to Female	Gray	0.5, 1, 3, 5, 8
DM-DB1-DF-XX	MID	Male to Female	Blue	0.5, 1, 2, 3, 4, 5

List pricing in catalog is subject to change without notice.

NMEA 2000 (Continued)

MICRO TEE

55.0 [2.17]

M12x1

M12x1

M12x1

23.5 [0.92]

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
1. Bare (Shield)
5. Blue (Net-L)
2. Red (Net-S)

MICRO TERMINATION RESISTORS

55.2 [2.17]

Ø15.0 [0.59]

M12x1

Ø16.2 [0.64]

MALE

48.5 [1.91]

Ø15.0 [0.59]

M12x1

FEMALE

56.0 [2.20]

Ø15.0 [0.59]

M12x1

M12x1

[0.59]
Ø15.0

Ø15.5 [0.61]

INLINE

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
1. Bare (Shield)
5. Blue (Net-L)
2. Red (Net-S)

MID DOUBLE-ENDED CORDSETS

55.2 [2.17]

Ø8.4 [0.33]

48.5 [1.91]

Ø15.0 [0.59]

M12x1

Ø15.0 [0.59]

M12x1

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
1. Bare (Shield)
5. Blue (Net-L)
2. Red (Net-S)

MICRO DOUBLE-ENDED CORDSETS

55.2 [2.17]

48.5 [1.91]

Ø15.0 [0.59]

M12x1

M12x1

Ø15.0 [0.59]

Ø7.2 [0.28]

ANTI-VIBRATION DETENT

ANTI-VIBRATION DETENT

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
1. Bare (Shield)
5. Blue (Net-L)
2. Red (Net-S)

MULTIPORT BOX

3.5 TYP
17.0
21.1
(119.0)
21.5 TYPICAL
5.5 TYP
(23.0)
30.0

MOUNTING HOLE
M3 SOCKET HEAD
12mm MINIMUM
LENGTH

(9x) REMOVABLE LABELS (INCLUDED)

Ø3.5 THRU

126.0

M12x1
M12x1
P1
J1
J3
J2
J4

(25.0)
(16.0)
4.5

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
1. Bare (Shield)
5. Blue (Net-L)
2. Red (Net-S)

P1

WIRING DIAGRAM

J1
J3
J2
J4

MICRO/MID POWERTAP TEE

49.5 [1.95]

Ø15.0 [0.59]

M12x1

M12x1

J1
J2

17.3 [0.68]

Ø15.0 [0.59]

33.3 [1.31]

15.5 [0.61]

Ø7.0 [0.28]

5.0 METERS

50.0 [1.97]

7.0 [0.28]

MICRO/MID FIELD-ATTACHABLE CONNECTORS (STRAIGHT)

MALE

60 mm
2.36"

M12x1

6-8mm
.27"
CABLE DIA.

Ø20.0

MALE END VIEW

4. White (Net-H)
1. Bare (Shield)
3. Black (Net-C)
2. Red (Net-S)
5. Blue (Net-L)

FEMALE END VIEW

3. Black (Net-C)
4. White (Net-H)
1. Bare (Shield)
5. Blue (Net-L)
2. Red (Net-S)

55 mm
2.17"

M12x1

6-8mm
.27"
CABLE DIA.

Ø20.0

FEMALE

Images are representative of products listed and may not be actual product.

Wire and Cable

Shielded

- UL Listed AWM style #2464 or type CM
- 100% aluminum/ polyester foil with a stranded tinned copper drain line
- Tinned copper conductors
- 300 volt rating
- Temperature rating 68°F(20°C) to 176°F(80°C)
- Acid, alkaline, abrasion, ozone, and flame resistant
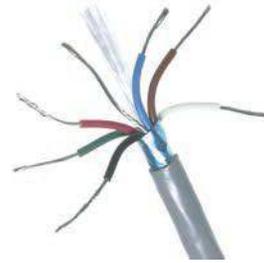
Item Number	AWG	Conductor	OD in "	Measurements Sold
XX = Unit of Measurement, Call for Current Pricing				
22-4MCS-(XX)	22	4	.190	100'
22-6MCS-(XX)	22	6	.219	100'
18-2MCS-(XX)	18	2	.227	100', 250', 500'
18-3MCS-(XX)	18	3	.238	100', 500'
18-4MCS-(XX)	18	4	.245	100', 500'
18-6MCS-(XX)	18	6	.310	100'
18-8MCS-(XX)	18	8	.330	100'
16-2MCS-(XX)	16	2	.243	100', 500'
16-4MCS-(XX)	16	4	.290	100'
14-2MCS-(XX)	14	2	.290	100'

Non-Shielded

- UL Listed AWM style #246K or type CM
- Tinned copper conductors
- 300 volt rating
- Temperature rating 68°F(20°C) to 176°F(80°C)
- Acid, alkaline, abrasion, ozone, and flame resistant
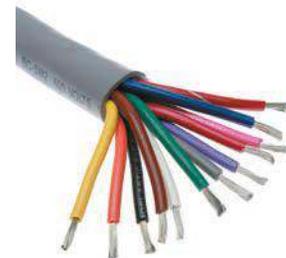
Item Number	AWG	Conductor	OD in "	Measurements Sold
XX = Unit Of Measurement, Call for Current Pricing				
22-4MC-(XX)	22	4	.190	100', 250', 500'
18-2MCS-(XX)	18	2	.227	100', 250', 500'
18-3MC-(XX)	18	3	.238	100', 250', 500'
18-4MC-(XX)	18	4	.257	100', 250', 500'
18-7MC-(XX)	18	7	.257	100', 250'
18-9MC-(XX)	18	9	.358	100', 250'
18-12MC-(XX)	18	12	.401	100', 250'

List pricing in catalog is subject to change without notice.

Coaxial Cable

- Created for marine environment
- White PVC jacket
- Tinned copper braiding

Item Number	Cond./ AWG	OD in "	Nominal Independence	OHM	Measurements Sold
XX = Unit of Measurement, Call for Current Pricing					
RG6U-XX	18 Copper Clad Steel	0.27	75	75	100', 500'
RG8X-XX	16 (19 x 28) Tinned Copper	0.242	50	50	100', 500'

Audio Cable

- Clear PVC insulation
- Finely stranded tinned and bare copper conductors
- -4°F(-200°C) to 176°F(80°C) temperature rating
- 90 volt rating
- Polarity is distinguished by one tinned copper conductor and one bare

Item Number	AWG	OD in "	Conductor	Measurements Sold
XX = Unit of Measurement, Call for Current Pricing				
16-2SPK	26	.113 x .210	26/.0100	100', 250', 500'

SJTOW

- UL Listed and CSA approved 600V STOW cable to NEC article 400
- Meets federal specification #JC-580B
- Yellow PVC jacket rated -4°F(-20°C) to 140°F(60°C)
- Excellent abrasion, ozone, chemical, and oil resistant

Item Number	AWG	Conductor	OD in "	Measurements Sold
XX = Unit of Measurement, Call for Current Pricing				
14-3SJT- (XX)	14	3	.365	PER FT, 250'
12-3SJT- (XX)	12	3	.435	PER FT, 250'

Images are representative of products listed and may not be actual product.

Wire and Cable

STOW

- UL Listed, CSA & NEC article 400
- Color-coded PVC
- Bare Copper Conductors
- 600 volt max rating
- Jacket temperature 105° except for part number 10-3STO is 60° and 30256 is 90°
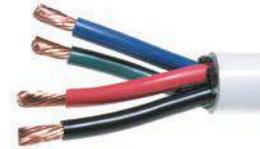
Item Number	AWG	Stranding	Color Code	Conductor	OD in "	Measurements Sold
XX = Unit of Measurement, Call for Current Pricing, BK- Black, RD-Red, WH-White, GN-Green, BU-Blue. * Tinned Strand						
10-3STO- (XX)	10	104	BK,WH, GN	3	.66	PER FT, 250'
6-4STO- (XX) *	6	7 x 37/30	BK, RD, WH, GN	4	1.074	PER FT, 500'
6-4STO-WHT (XX) *	6	7 x 37/30	BK, RD, WH, GN	4	1.074	PER FT, 500'
6-3STO- (XX) *	6	7 x 37/30	BK, WH, GN	3	.985	PER FT, 500'
21700- (XX)	2	19 x 35/30	BK, RD, GN	3	1.309	PER FT, 500'
21701- (XX)	2	19 x 35/30	BK, RD, WH, GN	4	1.456	PER FT, 500'
21702- (XX)	2	19 x 35/30	BK, RD, BU, GN	4	1.456	PER FT, 500'
21712- (XX)	2	19 x 35/30	BK, RD, BU, GN	4	1.456	PER FT, 500'
20043- (XX)	2	19 x 35/30	BK, RD, BU, GN, WH	5	1.578	PER FT, 500'
30256- (XX)	1/0	19 x 35/30	BK, RD, BU, GN	4	1.780	PER FT, 500'

Battery / Starter Cable

BATTERY CABLE LOAD CHARTS

Length to Load

These charts will show length in feet. SAE Wire Gauge Size and Amperage for a DC Voltage System allowing a 20% voltage drop.

12 VOLTS DC — AMPS

GAUGE	100	300	500	700	900
6	30	10	6		
4	48	16	10	7	
2	76	25	15	11	
1	97	32	19	14	11
1/0	122	41	24	17	14
2/0	154	51	31	22	17
3/0	194	65	39	28	22
4/0	245	82	49	35	27

24 VOLTS DC — AMPS

GAUGE	100	300	500	700	900
6	60	20	12		
4	96	32	19	14	
2	152	51	30	22	17
1	194	65	39	28	22
1/0	244	81	49	35	27
2/0	308	103	62	44	34
3/0	388	129	78	55	43
4/0	490	163	98	70	54

36 VOLTS DC — AMPS

GAUGE	100	300	500	700	900
6	90	30	18		
4	144	48	29	21	
2	228	76	46	33	25
1	291	97	58	42	32
1/0	366	122	73	52	41
2/0	462	154	92	66	51
3/0	582	194	116	83	65
4/0	735	245	147	105	82

48 VOLTS DC — AMPS

GAUGE	100	300	500	700	900
6	120	40	24		
4	192	64	38	27	
2	304	101	61	43	
1	388	129	78	55	43
1/0	488	163	98	70	54
2/0	616	205	123	88	68
3/0	776	259	155	111	86
4/0	980	327	196	140	109

60 VOLTS DC — AMPS

GAUGE	100	300	500	700	900
6	150	50	30		
4	240	80	48	34	
2	380	127	76	54	
1	485	162	97	69	54
1/0	610	203	122	87	68
2/0	770	257	154	110	86
3/0	970	323	194	139	108
4/0	1225	408	245	175	136

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DT Series

- Offers the designer the ability to use multiple size 16 contacts, each with 13 amp continuous capacity within a single shell
- 14-20 AWG
- In line, flange, or PCB mount
- Rectangular, thermoplastic housing
- Wedgelock assures contact alignment and retention, **must be ordered to complete connector**

DT SERIES

Item Number	Pin Config.	Price
Pins		
Ref. Chart for Pin Configuration		
DT04-12PA	12	$10.96
DT04-08PA	8	$7.56
DT04-6P	6	$5.16
DT04-4P	4	$3.32
DT04-3P	3	$2.52
DT04-2P	2	$1.48
Sockets		
DT06-12S	12	$12.36
DT06-08SA	8	$7.76
DT06-6S	6	$5.24
DT06-4S	4	$3.64
DT06-3S	3	$2.84
DT06-2S	2	$2.72

Item Number	Pin Config.	Price
Pin Wedgelock		
W12P	12	$0.80
W8P	8	$0.68
W6P	6	$0.52
W4P	4	$0.40
W3P	3	$0.28
W2P	2	$0.28
Socket Wedgelock		
W12S	12	$0.80
W8S	8	$0.68
W6S	6	$0.52
W4S	4	$0.40
W3S	3	$0.28
W2S	2	$0.28

DT & DT BUSSED SERIES 16 CONTACTS
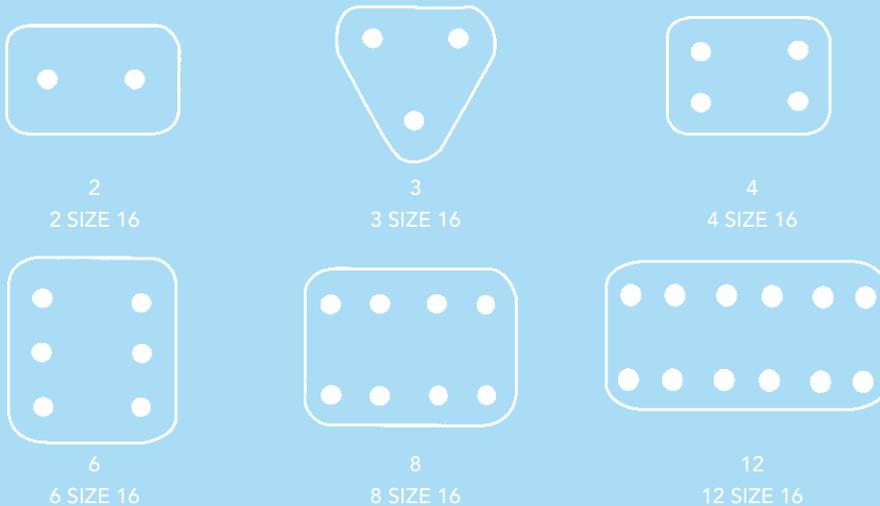
2
2 SIZE 16

3
3 SIZE 16

4
4 SIZE 16

6
6 SIZE 16

8
8 SIZE 16

12
12 SIZE 16

Images are representative of products listed and may not be actual product.

Wiring Devices

DTP Series

- Offers the designer the ability to use multiple size 12 contacts, each with a 25 amp continuous capacity within a single shell
- 10-14 AWG
- In line, flange, or PCB mount
- Rectangular, thermoplastic housing
- Wedgelock assures contact alignment and retention, **must be ordered to complete connector**

DTP SERIES

Item Number	Pin Config.	Price
Ref. Chart for Pin Configuration		
Pins		
DTP04-2P	2	$5.56
DTP04-4P	4	$11.20
Sockets		
DTP06-2S	2	$5.12
DTP06-4S	4	$9.00
Pin Wedgelock		
WP-2P	2	$0.64
WP-4P	4	$0.80
Socket Wedgelock		
WP-2S	2	$0.44
WP-4S	4	$1.24

DTP SERIES SIZE 12 CONTACTS
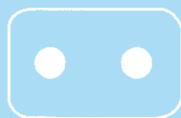
2
2 SIZE 12
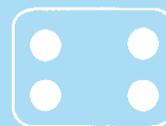
4
4 SIZE 12

Common Contacts

- Nickel plated
- Solid pins and sockets
- Multiple AWG available

COMMON CONTACTS

Item Number	AWG	Size	Current Ratings Amp	Price
Pins				
0460-202-16141	16-20	16	13	$1.45
0460-215-16141	14	16	13	$2.00
0460-204-12141	12-14	12	25	$1.00
Sockets				
0462-201-16141	16-20	16	13	$0.92
0462-209-16141	14	16	13	$2.00
0462-203-12141	12-14	12	25	$1.80

Tools

Multi Tool

- Multi use tool with a small hook on one end to remove the wedgelock and a small screwdriver on the other end to push back the locking fingers and release the contact

Crimper

- No need to change dies or locators
- Provides symmetrical four indent crimp
- Compact and easy to use for field service
- Sturdy and reliable for low volume production

REMOVAL TOOL

HDT-48-00

Item Number	Description	Price
Hand Tools		
DT/RT1	DT/DTP Removal Tool	$32.64
HDT-48-00	Crimp tool for contacts: 14,16,18	$305.33
CT4-8	Crimp tool for contacts: 14,16,18	$104.00

Item number	Size	Color	Price
Pin Removal Tool			
0411-240-2005	20	Red	$4.65
0411-310-1605	16	Blue	$4.65
0411-291-1405	14	Green	$4.65
114010	12	Yellow	$7.08
114008	8	Green	$9.60
114009	4	White	$13.08

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Wiring Devices

Hella

- Chrome assembly screw terminal mounting options
- Plastic assembly 2,3,4 pin screw terminal mounting
- For exterior or interior installation
- IP67

PLUG AND SOCKET PLASTIC

PLUG AND SOCKET

Item Number	Max Load	Pins	Price
Plastic plug assembly, silver plated contacts			
62871	16@12V/ 8@24V	2	$48.89
62872	16@12V/ 8@24V	3	$53.33
62873	16@12V/ 8@24V	4	$55.56
62874	10@12V/ 5@24V	7	$55.56
Chrome brass plug assembly, brass contacts			
62876	22@ 12V	2	$39.44
62879	22@ 12V	3	$31.11
62882	22@ 12V	4	$31.11

Hubbell

- UL Listed
- CSA Certified
- Strain relief
- Made from corrosion resistant materials

HBL52CM69C

HBL53CM69C

Item Number	Ratings	Description	NEMA	Cord Diameter	IP	Price
		15 Amp				
HBL1547	15A 125V	Straight blade female connector body, Elasto-Grip dust tight, 2- pole 3-wire grounding, yellow	5-15R	.30" - .65"	20/55	$41.59
HBL52CM69C	15A 125V	Straight blade female connector body, corrosion resistant, 2-pole 3-wire grounding, yellow	5-15R	.23" - .72"	20	$40.94
		20 Amp				
HBL53CM69C	20A 125V	Straight blade female connector body, corrosion resistant, 2-pole 3-wire grounding, yellow	5-20R	.23" - .72"	20	$57.37

List pricing in catalog is subject to change without notice.

Hubbell

- UL Listed
- CSA Certified
- Strain relief
- Corrosion resistant

FISHING REEL

30 AMP

Item Number	Rating	Description	NEMA	Cord Diameter	IP	Price
30 Amp						
HBL2623	30A 250V	Insulgrip black and white nylon, connector	L6-30R	.36" - .93"	20	$112.01
HBL2713	30A 125/250V	Insulgrip black and white nylon, plug	L14-30R	.35" - 1.15"	20	$153.86
HBL2723	30A 3Ø 250V	Insulgrip black and white nylon, connector	L15-30R	.35" - 1.15"	20	$152.18

Item Number	Rating	Description	Price
30 Amp Fishing Reel			
HBL328DCR	30A 28^{VDC}	Yellow locking single receptacle with abuse resistant face	$50.50
HBL328DCP	30A 28^{VDC}	Yellow locking plug has rugged nylon housing and rear dust seal	$41.73
HBL328DCC	30A 28^{VDC}	Yellow locking connector body has rugged, nylon housing and rear dust seal	$82.48

Hubbell

- UL Listed
- CSA Certified
- IP20 Stability
- Will accept both 15 amp 125 volt and 20 amp 125 volt

HBL61CM64

Item Number	Color	Description	Rating	Price
HBL61CM64	Gray	Compact nylon panel mount inlet ideal for bass boat battery charging connection. Has gasketed spring-loaded lift cover for weatherproofing front and neoprene boot for weatherproofing rear, 2 pole, 3 wire	15A 125V	$66.65

Marinco

- Low profile cap won't catch fishing line
- Mounts easily to fiberglass and aluminum hulls
- Perma-Lock terminals and color coded wire entrance holes
- UV resistant housing/cap

150BBI

Item Number	Color	Description	Rating	Price
150BBI	Black	Hard wired charger inlet	15A/20A, 125V	$29.83

Images are representative of products listed and may not be actual product.

Wiring Devices

Hubbell

- IP20 Stability
- UL Listed
- CSA Certified
- Optional accessories available
- Twist lock devices

HBL1447

HBL5266CA

HBL53CM66

Item Number	Description	Cord Diameter	Voltage	NEMA	Price
		15 Amp			
HBL1447	Yellow elastomar, dust tight, IP20	.300" - .655"	125	5-15P	$24.08
HBL5266CA	Insulgrip 8 position angle, black and white nylon	.325"- .655"	125	5-15P	$33.99
HBL5666C	Insulgrip, black and white nylon	.230" - .720"	250	6-15P	$31.67
Item Number	Description	Cord Diameter	Voltage	NEMA	Price
		20 Amp			
HBL53CM66	Corrosion resistant yellow nylon	.230" - .720"	125	5-20P	$35.15

Hubbell

- IP20 Stability
- UL Listed
- CSA Certified
- Self grounding
- Additional shroud kits available

INSULGRIP BLACK AND WHITE

INSULGRIP YELLOW

Item Number	Description	Cord Diameter	Voltage	NEMA	Price
		20 Amp			
HBL2411	Twist-Lock®, industrial, male plug, 3-pole 4-wire grounding, screw terminal, black and white	.35"- 1.15"	125/250	L14-20P	$54.46
HBL2421	Twist-Lock®, industrial, male Insulgrip® plug, 3-phase, 3-pole 4-wire grounding, screw terminal, black and white nylon.	.35"- 1.15"	250	L15-20P	$58.20
HBL23CM11	Twist-Lock®, marine grade, male plug, 2-pole 3-wire grounding, screw terminal, yellow	.360"- .930"	125	L5-20P	$34.13
		30 Amp			
HBL2621	Industrial, male plug, 2-pole 3-wire grounding, screw terminal, black and white	.360"- .930"	250	L6-30P	$56.26
HBL2711	Insulgrip black and white nylon	.35"- 1.15"	125/250	L14-30P	$74.29
HBL2721	Industrial, male plug, 3-pole 4-wire grounding, screw terminal, black and white	.35-1.15"	3Ø 250	L14-30P	$74.55

Pass & Seymour

PS5266-X

PS5269X

Item Number	Description	Cord Size	NEMA	Price
PS5266-X	Industrial grade standard Straight blade connector, black/white	.230- .690in.	5-15R	$8.13
PS5269X	15 Amp Industrial Grade Standard Straight Blade Connector, black/white	.230- .690in.	5-15R	$15.00

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Decora

- UL Listed
- CSA Certified
- High impact nylon face
- Resist breaking, chipping, and cracking
- Smooth high gloss finish

WHITE DECORA

Item Number	Color	NEMA	Description	Type	Price
15 Amp 125 Volt					
DR15WHI	White	15-20R	Style line high impact nylon face Note: will accept locking fork terminal to comply with ABYC standard	Duplex	$8.50

Hubbell

- UL Listed
- CSA Certified
- RoHS Compliant
- CR Series may follow ABYC standards

CR15 AND CR20

HBL61CM64

HBL53CM61

HBL61CM65

HBL53CM62 &
HBL52CM62

Item Number	Color	NEMA	Description	Type	Price
15 Amp 125 Volt					
CR15GRY	Grey	5-15R	Receptacle commercial grade 2 pole, 3 wire grounding	Duplex	$3.25
HBL52CM62	Yellow	5-15R	Extra heavy duty flush nylon face weather resistant, back and side wired multiple drive screws	Duplex	$44.45
HBL61CM64	Grey	5-15P	Male inlets, weatherproofed, marine, 2-pole 3-wire grounding, IP44	Inlet	$66.65
20 Amp 125 Volt					
HBL53CM61	Yellow	5-20R	Receptacles, marine grade, 2-pole 3-wire grounding, Chem-Marine	Single	$42.18
HBL61CM65	Gray	5-20R	Outlet, flanged, marine, 2-pole 3-wire grounding IP44	Single	$67.68
HBL53CM62	Yellow	5-20R	Receptacle, marine grade, 2-pole 3-wire grounding, Chem-Marine	Duplex	$58.58
CR20GRY	Grey	5-20R	Receptacle commercial grade 2 pole, 3 wire grounding	Duplex	$4.02
CR20WHI	White	5-20R	Receptacle commercial grade 2 pole, 3 wire grounding	Duplex	$4.02

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Wiring Devices

Hubbell

- IP20 Stability
- UL Listed
- CSA Certified
- Locking Devices
- Twist-Lock®

HBL23CM10

HBL2710

Item Number	Color	Description	Volt	NEMA	Type	Price
		20 Amp				
HBL23CM10	Yellow	Corrosion resistant flush mount receptacle, 2 pole, 3 wire grounding	125	L5-20R	Single	$44.90
		30 Amp				
HBL2620	Black	Flush nylon face, back and side wired	250	L6-30R	Single	$70.30
HBL2710	Black	Flush nylon face, back and side wired	125/250	L14-30R	Single	$101.59

Hubbell

- UL943 Listed
- Commercial grade
- Lock out capabilities
- GF and GFR series have LED indicator light

- NEC & ABYC compliant
- LED flashes when no ground fault protection is present
- Test button

GFBFST20I

GFRST20

Item Number	Color	Description	Ratings	NEMA	Type	Price
GFBFST20I	Ivory	Self test faceless GFCI, 2-pole 3-wire grounding	20A 125V	5-20R	Faceless	$40.58
GFBFST20W	White	Self test faceless GFCI, 2-pole 3-wire grounding	20A 125V	5-20R	Faceless	$45.71
GFRST20	Brown	Self test, GFCI 2-pole 3-wire grounding	20A 125V	5-20R	Duplex	$45.71
GFRST20I	Ivory	Self test, GFCI 2-pole 3-wire grounding	20A 125V	5-20R	Duplex	$45.71
GFRST20W	White	Self test, GFCI 2-pole 3-wire grounding	20A 125V	5-20R	Duplex	$45.71

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Blanks

- UL Listed
- CSA Certified
- HBL60CM88: marine grade components
- Fade resistant
- Includes matching screws

| HBL60CM88 | E980C | 240AL |

Item Number	Color	Gang	Price
HBL60CM88	Yellow	Valox for use with FS and FD types	$30.13
E980C	Gray	Weatherproof cover, single gang	$9.61
E980CW	White	Weatherproof cover, single gang	$7.91
240AL	Aluminium	Weatherproof cover, single gang	$3.81
E9802CN	Gray	Weatherpoof cover, double gang	$6.70

Weatherproof

- UL Listed (except when noted)
- CSA Certified (except when noted)

| HBL1795 | HBL17CM50 | E98TSC | CWP26CR | HBL52CM21 |

Item Number	Color	Gang	Price
Switch			
CWP26CR	Gray	Weatherproof covers, 1-gang, 1) GFCI opening, standard size	$45.03
CWP26CRW	White	Weatherproof covers, 1-gang, 1) GFCI opening, standard size	$45.03
HBL1795	Clear	Clear silicone rubber bubble plate for use with all AC toggle switches and PresSwitches *Note: Not CSA Certified*	$58.20
HBL17CM50	Yellow	Neoprene plate for use only with PresSwitches. *Note: Not UL listed*	$55.50
E98TSC	Gray	Toggle switch cover for single switch application, SG non-metallic	$16.89
E980TSCCMCAR	White	Toggle switch cover for single switch application, SG non-metallic	$20.05
Receptacle			
CWP26CR	Gray	Weatherproof covers, 1-gang, 1) GFCI opening, standard size	$45.06
CWP26CRW	White	Weatherproof covers, 1-gang, 1) GFCI opening, standard size	$43.75
HBL52CM21	Yellow	Valox spring loaded lift cover for weatherproofing duplex, receptacles stainless steel screws and neoprene gasket included for mounting to FS/FD type boxes	$65.00
HBL52CM21W	White	Valox spring loaded lift cover for weatherproofing duplex, receptacles stainless steel screws and neoprene gasket included for mounting to FS/FD type boxes	$65.00

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Wiring Devices

USB Chargers

- Two USB ports 5 amp, 5 volt DC type A, 2.0
- Tamper resistant decorator duplex
- Green LED indicator to show USB power available
- Impact and chemical resistant
- Back and side wire for solid or stranded wire

- Flush fit design
- Compatible with USB 1.1/2.0/3.0 devices, including Apple products
- UL498 and UL1310 Listed
- USB charger duplex receptacle, 15A 125V, 2-pole 3-wire grounding, 5-15R, AMPS 5

USB CHARGERS

Item Number	Color	Outlet Number	Amps	Price
USB15A5BK	Black	2	5/2.5 per USB	$54.60
USB15A5W	White	2	5/2.5 per USB	$54.60

IDEA

- 16 amp residual current breaker with over current protection
- Voltage 120-230 volt
- 3000 amp
- 2 modules

- 1P+N residual current breakers with overcurrent protection (RCBO)
- Breaking capacity 3000 A - 2 modules
- Depth: 38 mm

16511.16.6.B

16511.16.6

Item Number	Color	Volts	Protection	Price
16511.16.B	White	120/230, 50/60Hz	10mA	$274.55
16511.16.6.B	White	120/230, 50/60Hz	6mA	$428.40
16511.16	Grey	120/230, 50/60Hz	10mA	$274.55
16511.16.6	Grey	120/230, 50/60Hz	6mA	$428.40

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Vimar

- Balanced and noiseless rocking action
- LV Directive
- EN 60669-1
- Idea international series

IDEA

Item Number	Color	Pole	Way/Contact	Volts	Price
16001	Gray	1	1	250 V~	$11.40
16001.B	White	1	1	250 V~	$11.40
16005	Gray	1	2	250 V~	$13.80
16005.B	White	1	2	250 V~	$13.80
16016	Gray	2	1	250 V~	$20.65
16121	Gray	1	Two10A Independents	250 V~	$26.05
16121.B	White	1	Two10A Independents	250 V~	$26.05
16150	Gray	Two way	Directional Arrows	250 V~	$27.00
16150.B	White	Two way	Directional Arrows	250 V~	$27.00

Vimar

- Idea international series
- 2P+E
- Available in Gray or White only

16203   16245.B   16246

Item Number	Color	Description	Price
		IDEA Series	
16203	Gray	SICURY 2P+E Italian standard socket outlets 250 V~	$14.05
16245	Gray	Socket outlets 127 V~ - USA and Arabian standard	$13.33
16245.B	White	Socket outlets 127 V~ - USA and Arabian standard	$13.33
16246	Gray	Socket outlets 127 V~ Two 15 A, 3 module USA and Arabian Standard	$26.05

Images are representative of products listed and may not be actual product.

Wiring Devices

Vimar

- IDEA international series
- 125 volt, 20 amp GFCI
- Class A
- Trip indicator
- *NOT UL listed*

16296

16296B

Item Number	Color	Description	Price
16296	Gray	Double 2P+E 15 A 125 V~ socket outlet, American standard with GFCI, with built-in mounting frame, to complete with 3-module cover plate	$50.88
16296.B	White	Double 2P+E 15 A 125 V~ socket outlet, American standard with GFCI, with built-in mounting frame, to complete with 3-module cover plate	$50.88

Vimar

- Pushbutton dimmers use MASTER function & TRIAC technology
- Visible in darkness

ROTARY POTENTIOMETER

PUSHBUTTON

Item Number	Color	Description	Price
16557	Gray	Dimmer, 120 V~ 50-60 Hz, for: 30-500 W incandescent lamps, 30-300 VA ferromagnetic transformers, control and regulation by rotary potentiometer, visible in darkness	$71.88
16608	Gray	Dimmer, supply voltage 120-230 V~ 50-60 Hz for: 40-500/40-800 W incandescent lamps and 40-300/40-500 VA ferromagnetic transformers, control and regulation with built-in or from peripheral NO push buttons, MASTER function, TRIAC technology, visible in darkness	$109.93
16608.B	White	Dimmer, supply voltage 120-230 V~ 50-60 Hz for: 40-500/40-800 W incandescent lamps and 40-300/40-500 VA ferromagnetic transformers, control and regulation with built-in or from peripheral NO push buttons, MASTER function, TRIAC technology, visible in darkness	$109.93
16563	Gray	Dimmer 230 V~ 50-60 Hz for: 100-500 W incandescent lamps, control by push-push 2-way switch, regulation by rotary potentiometer, visible in darkness	$73.45

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Vimar

| 16292 | 16334 | 16336 | 16368 |

Item Number	Color	Description	Price
16292	Gray	5 V 1,5 A power supply unit for electronic devices, 1 USB port, supply voltage 120-230 V~ 50/60 Hz	$48.85
16334	Gray	Socket outlet with HDMI connector, Keystone fixing	$53.15
16334.B	White	Socket outlet with HDMI connector, Keystone fixing	$53.15
16336	Gray	RJ12 phone jack, 6-position 6-conductor (6/6), screw terminal	$37.45
16337	Gray	RJ45 phone jack, 8-position 8-conductor (8/8), screw terminal	$43.08
16337.B	White	RJ45 phone jack, 8-position 8-conductor (8/8), screw terminal	$43.08
16368	Gray	Socket outlet with USB connector, screw terminals	$31.20
16368.B	White	Socket outlet with USB connector, screw terminals	$31.20

Accessories

- Voltage Converter, 8-40VDC- 5VDC, 3A
- Converts USB Media Port to a 5V Charging Port

IL-CONV15WDC-DC

Item Number	Description	Price
IL-CONV15WDC-DC	Voltage Converter, 8-40VDC- 5VDC, 3A Converts USB Media Port to a 5V Charging Port	$30.00

Vimar

- Technopolymer highly resistant to impacts and deformation
- 20% increase inner space to ease accommodation of all equipment and necessary cables
- Knockouts can be opened without the use of a tool

| V71703 | V71701 | V71303.AU |

Item Number	Description	Price
	IDEA Series Flush Mounting Box	
V71303.AU	3-module flush mounting box, (Glow Wire 960 °C), for masonry walls, black	$2.61
V71304.AU	4-module flush mounting box, (Glow Wire 960 °C), for masonry walls, black	$6.60
V71701	Round mounting boxes (GW 850 °C) for hollow walls, light blue. Suitable only for mounting frames without screws	$6.34
V71703	3-module mounting frame (GW 850 °C) for hollow walls, light blue	$6.10
V71704	4-module mounting frame (GW 850 °C) for hollow walls, light blue	$7.72
V71706	6-module mounting frame (GW 850 °C) for hollow walls, light blue	$11.61

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Wiring Devices

Vimar (Continued)

SURFACE MOUNT-IP40

SURFACE MOUNT-IP55

FLUSH SURFACE MOUNT-IP55

Item Number	Description	Price
	IDEA Series Surface Mounting Box	
13021.A	IP40 surface enclosure for 1 8000 standard module, ivory	$7.50
13022.A	IP40 surface enclosure for 2 8000 standard module, ivory	$5.70
13023.A	IP40 surface enclosure for 3 8000 standard module, ivory	$5.28
13523	IP55 surface enclosure for 2 Idea modules or 2 8000 special modules, RAL 7035 gray. Provided with adaptors for 8000 standard module	$11.53
13533	IP55 surface enclosure for 3 Idea modules or 3 8000 special modules, RAL 7035 gray. Provided with adaptors for 8000 standard module	$16.45
13545	IP55 surface enclosure for 4 Idea modules or 4 8000 special modules, RAL 7035 gray. Provided with adaptors for 8000 standard module	$26.65
13731.S	IP55 3-module flush mounting box for covers 13731.Q, 13731.Q.A and 13733.Q, 13733.Q.A	$12.60
13733.Q	P55 cover for 3 Idea modules and 3 8000 special modules, RAL 7035 gray. Provided with adaptors for 8000 standard module. The IP55 protection degree is guaranteed with installation on waterproof smooth walls without grooves and IPX2 with open cover	$18.60
16716	6-module mounting frame, with screws, for 6/7-module mounting boxes, gray	$11.15

16713

17081

17082
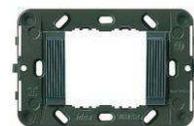
16722

Item Number	Description	Price
	IDEA Series Support Frames	
16713	3-module mounting frame, with screws, for 3-module mounting boxes, gray	$2.65
16714	4-module mounting frame, with screws, for 4-module mounting boxes, gray	$5.88
17081	1-module mounting frame, grooved front, with claws, for ø 60 mm round flush or 09971 surface mounting boxes, gray	$5.65
17082	2 reduced module mounting frame, with claws, for ø 60 mm round flush or 09971 surface mounting boxes	$5.65
16722	2-module mounting frame, grooved front, without screws, for 3-module and 60 mm fixing centres or 56x56 mm mounting boxes, gray	$7.68

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Vimar

16542.B

BLANK

COVERS

Item Number	Color	Material	Module	Price
IDEA Series				
16542.B	White	—	Blank	$2.15
16786.04	White	Metal	1	$6.73
17097.04	White	Metal	1 + 2	$7.93
16743.04	White	Technopolymer	3	$7.33
16744.04	White	Technopolymer	4	$10.55
16542	Gray	—	Blank	$2.15
16743.D.15	Gray	Silk	3	$14.05
17097.D.15	Gray	Silk	1	$14.75
17092.36	Chrome	Metal	1 + 2	$41.88
16733.36	Chrome	Metal	3	$38.15
16734.36	Chrome	Metal	4	$53.05
16736.36	Chrome	Metal	6	$74.75
17092.32	Gold	Metal	1 + 2	$51.35
16734.32	Gold	Metal	4	$53.05
16736.32	Gold	Metal	6	$94.20
16733.32	Gold	Polymer	3	$45.35
16734.32	Gold	Metal	4	$66.95
16786.15	Graphite	Technopolymer	1	$7.40
16744.15	Graphite Gray	Technopolymer	4	$10.55
16733.34	Brushed Nickel	Metal	3	$44.53
16734.34	Brushed Nickel	Metal	4	$66.48
16744.D.15	Silk	Silk	4	$21.00

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Our engraving department uses state-of-the-art CNC lasers and high-speed routers to cut, engrave and create custom panels, switchboards, tags, and labels. Our engraving team will work with designers, captains, or owners to deliver a finished product that meets the highest expectations. We have the ability to work with materials from plastic to aluminum and our equipment can accommodate materials up to 8 feet in length.

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- Laser Engraving of Stainless Steel
- Custom Logos
- Custom Backlighting
- Replicate Existing Panels
- Hundreds of Finishes
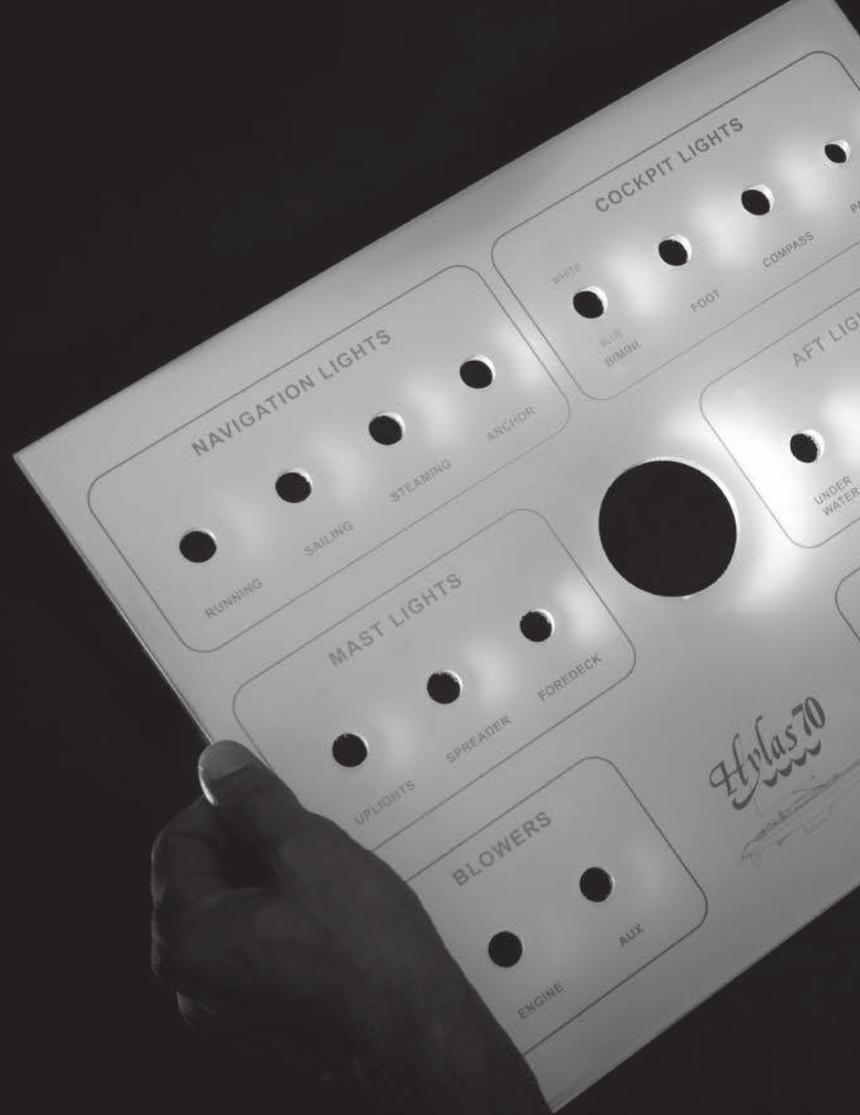
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We use a multi-step production method which ensures we meet all quality and government safety standards. We can match any color scheme and work with designers and owner to provide a satisfactory finish every time.

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Notes

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Notes

CELEBRATING

70+

YEARS

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WARD⁺S

MARINE ELECTRIC