

2023 Power Catalog

DC Power Onboard

Battery Chargers | Inverters | DC Converters
DC Power Conditioners | DC Power Solutions
Power Supplies | Electrical Panels | Accessories



About Newmar

Company Profile

Newmar is an American success story founded on the principle of providing reliable power solutions where quality and responsiveness matter. Newmar has been the leading manufacturer of electronic power products for over 50 years. Offering an extensive line of DC and AC Power Products with an earned reputation of high reliability and quality, Newmar powers essential equipment in marine, telecommunications, network, land mobile, and automation IOT industries.

Newmar is a brand of Mission Critical Electronics (MCE) under the Marine Power Division alongside its sister brands ASEA Power Systems and Xantrex.



MCE MARINE POWER

NEWMAR xantrex™

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Battery Chargers

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Meters

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Accessories

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Newmar Product Range

Commercial Vessel

INSTALLATION ACCESSORIES

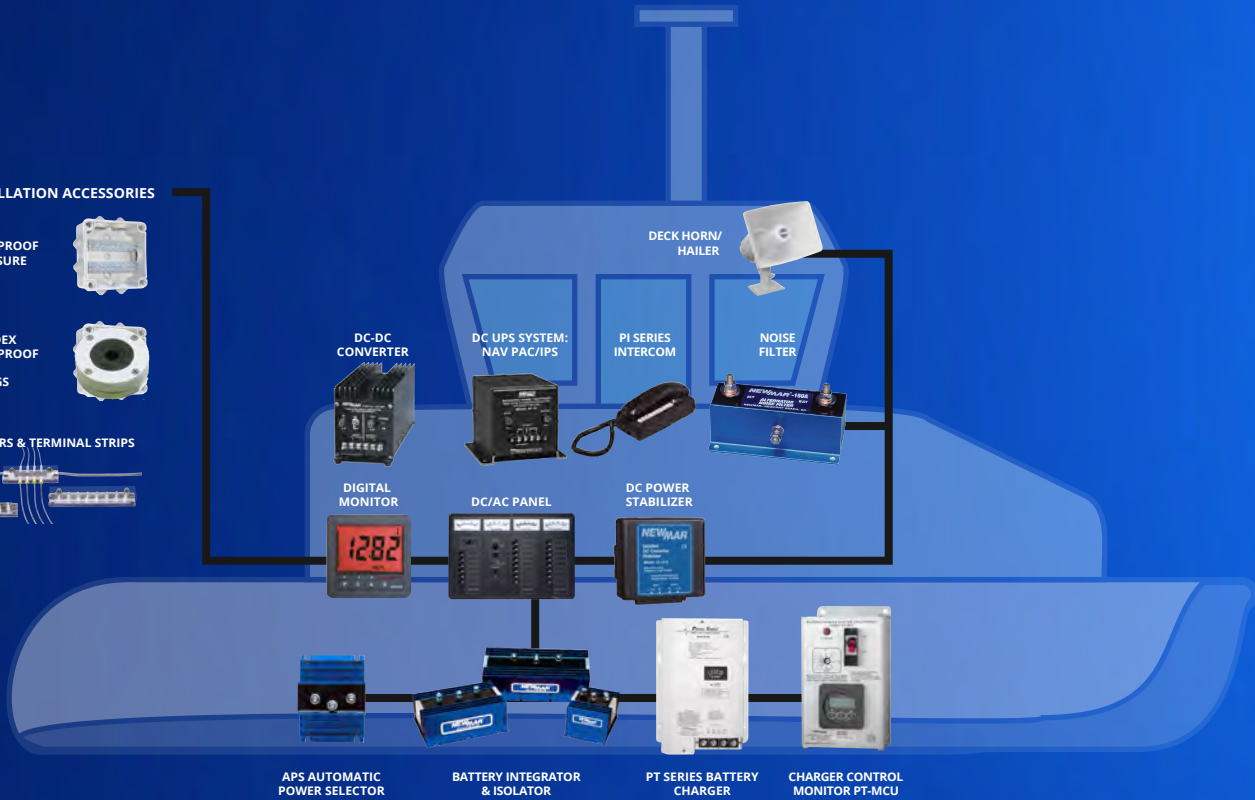
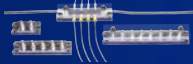
WATERPROOF ENCLOSURE



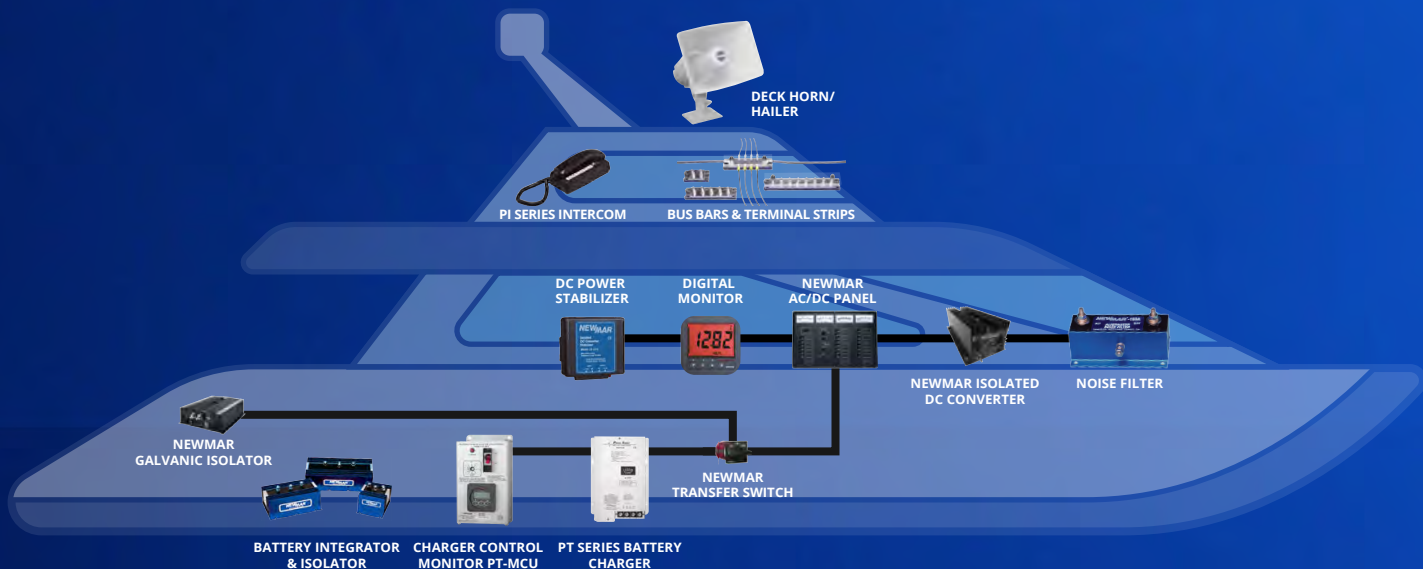
THRU-DEX WATERPROOF CABLE FITTINGS



BUS BARS & TERMINAL STRIPS



Pleasurecraft



Battery Chargers

Phase Three Series

12 Volt

24 Volt

“Smart” battery charging technology for 12 Volt and 24 Volt systems aboard work boats, military vessels, commercial vessels, and recreational craft.

These chargers interact with batteries providing the optimum three stage charge process for fast recovery and conditioning, maximizing performance and extending battery life.

Features

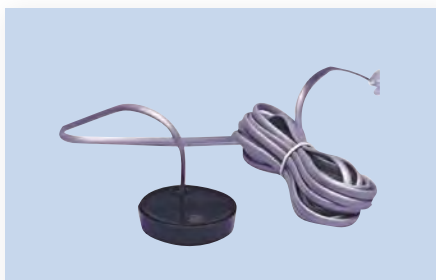
- “Smart” circuitry provides three stage charging: bulk, absorption, float
- Gel-Cell/Flooded Lead-Acid/AGM battery type switch selects optimum charge/float voltages
- Optional sensor adjusts output voltage based on battery temperature (except PT-7)
- Current limiting prevents damage from overloading
- Use as a power supply - can power loads without a battery in-line
- ABS Type Approved battery charger and power supply
- PT-MCU Control/Monitor optional

OPTION ACCESSORIES



Remote Panel, model RP
applicable to most models

LED's indicate charger output stage



Battery Temperature Compensation Sensor
applicable to most models
Charger model: TCS-12/24 o TP



PT-MCU Control/Monitor
AC input breaker output voltage adjust

Digital DC volt meter with alarm

12 Volt

	PT-7	PT-14W	PT-25W	PT-40U	PT-80
Input VAC	88-132/176-264	85-264	90-132/180-264	90-264	90-264
Max Output Amps	7	14	25	40	80
Output Banks	2	3	3	3	3
Battery Cap. (Amp-Hours)	14-70	28-140	50-250	80-400	160-800
Case Size Ref	A-1	A-2	A-2	A-3	A-5
Weight: Lbs./Kg.	3.2/1.5	8/4	8.2/4	11/6	15.2/7
Temp. Sensor Type	N/A	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24
Remote Panel Model	N/A	RP	RP	EVM	RP

24 Volt

	PT-24-8W	PT-24-13W	PT-24-20U	PT-24-45U	PT-24-60W	PT-24-95U
Input VAC	85-264	90-132/180-264	90-264	90-264	90-264	90-264
Max Output Amps	8	13	20	45	60	95
Output Banks	3	3	3	3	3	3
Battery Cap. (Amp-Hours)	16-80	26-130	40-200	90-450	120-600	180-950
Case Size Ref	A-2	A-2	A-3	A-5	A-5	A-6
Weight: Lbs./Kg.	8/4	8.2/4	11/6	12.2/6	24.5/11	24.5/11
Temp. Sensor Type	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24
Remote Panel Model	RP	RP	N/A	RP	RP	RP

Case Size References

	H*	W	D*	H*	W	D*
REF	INCHES			CENTIMETERS		
A-1	10.5	5	2.8	26.7	12.7	7.1
A-2	11.2A	7.7	4.75A	31.8A	19.6	12.1A
A-3	13.85B	9.5	4.8B	35.2B	24.1	12.2B
A-5	16.8C	9.6	6.1C	42.7C	24.4	15.5C

*With Dripshield Installed:

- A Add 1.1" (2.8 cm) to height and .92" (2.3 cm) to depth
- B Add .75" (1.9 cm) to height and 1.35" (3.4 cm) to depth
- C Add 1" (2.54 cm) to height and .5" (1.27 cm) to depth

Phase Three Modular Series

The PTMS charger provides a significant improvement in DC system reliability by utilizing multiple independent charger modules that plug into the bulkhead mounted case, and should a fault occur in one module, the system continues to operate, thus is considered "fault" tolerant.

The system consists of a wall mount case which serves as connection point to AC input and 24V, 3 battery bank output and contains three front-facing power bays, each accommodating a 22.5 amp charger module which slides and locks in place creating a 24V, 67 amp charger. If a module fault occurs, a front panel indicator and alarm relay is activated and the system continues operating on the other modules.

A fourth bay houses the "smart" controller circuit that provides 3 step charging, battery type selector switch, temperature compensation, system status LED's, alarm contacts and indicators. Should the controller suffer a fault, the charger will still operate at full power at float voltage mode. The controller module is also configured for easy plug-in replacement in the field.

Vessel operators appreciate this system approach to reliability and serviceability whereby a fault in one of the modules is easily identified and it can be quickly replaced with an on-hand spare or an exchange unit from the factory, all the while the charging system and the vessel continue to operate.



24 Volt | PTMS-24-67



24 Volt | PTM-24-22



System Specifications

Input Voltage/Frequency	90-264 VAC, 47-63 Hz
Battery Type Selector	Lead Acid/AGM/Gel-cell
Battery Banks	3
Temperature Compensation Sensor (Optional)	Model: TCS-12/24
Status Indicators	Output OK No Output Check System Battery Too Hot Total Output Bar Graph
Remote Monitor Outputs (Form C)	AC Fail/ Module Fail/ Low Voltage
Temperature Rating	0-60 C; derate linearly from 100% output @ 50 C to 80% output @ 60 C
Mechanical	Case Material: Powder coated Stainless Steel Cooling: Forced air per module
Compliances	ABS type approved redundant power system for essential services and as a battery charger, CE Mark, UL Recognized Power Modules

Model	Modules Installed	Max Output Amps @ 24V	Max Input Amps @ 115/230 VAC	Size in inches (H x W x D)	Weight Lbs.
PTMS-24-67	3	67	18/9	20.9 x 10.9 x 8.8	35



Articulated tug barges utilize PTMS Chargers to maintain batteries and supply power to essential services



Engine room installation

Phase Three - Monitor/Control Unit

Designed for installation in conjunction with most models of PT Battery Chargers, this unit provides additional functionality in monitoring, control, and alarms. It contains a 3 battery banks: Digital DC volt meter, a PT charger float voltage adjustment, and AC Master circuit breaker for control and protection of charger input power.

A 10 foot wiring harness is provided for AC input and DC monitor wiring to the charger. The unit carries ABS type approval for Charging Systems, thus providing full compatibility when paired with PT chargers which are also ABS Type approved.



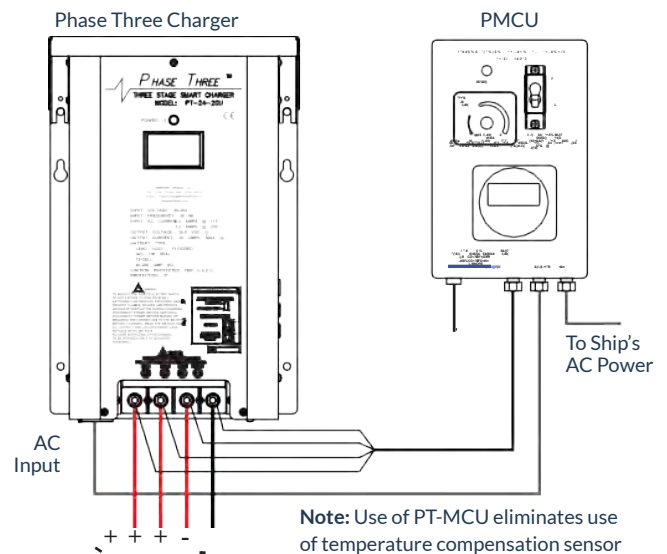
24 Volt | PTM-24-22

Features

- Digital readout of 3 battery bank voltages to 1/10th volt
- DC high/low voltage alarm with adjustable set-points
- Output float voltage adjustment pot; permits fine tuning from -4% to +5%
- AC failure Form C contact (120/240V AC)
- AC circuit breaker (30A, double pole) provides overcurrent protection and manual disconnect
- AC power ON indicator light
- 10' wiring harness for easy connection of PT Series Charger
- Compatible with: PT-14W, PT-25W, PT-40U, PT-80, PT-24-8W, PT-24-13W, PT-24-20U, PT-24-45U, PT-24-95U, and PTMS-24-67

Options

- Remote relay for Hi/Low voltage alarms (model DIR)
- Wires harness to length



Model	Size in inches (H x W x D)	Weight Lbs.
PT-MCU	8.7 x 4.6 x 5.5	5.5 Lbs.

ABC Series Battery Charger

The ABC 12-6 charger produces 3 step output (bulk, absorption, and float) to 2 isolated battery banks providing fast recovery and ideal cell conditioning which maximizes battery performance and life. Its rugged heat sink case utilizes convection rather than forced air cooling, thus dust and moisture are not introduced inside the unit making it ideal for hostile environments (For battery systems which require high continuous output, see our Phase Three Chargers 12V or 24 and 32V).

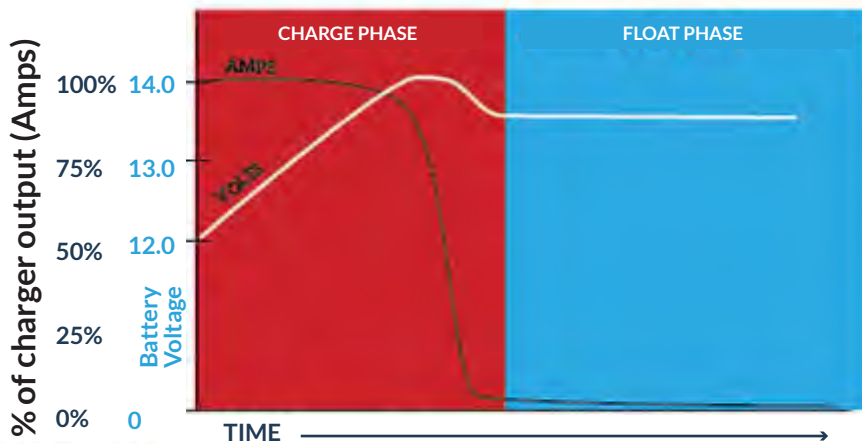


Features

- Total output ammeter
- Dual output banks
- On-off switch and power “on” indicator light
- Vibration absorbing mounting grommets
- Powder coat aluminum case
- 115/230 VAC input selector switch
- Auto-reset thermal overload protection
- Conformal coating of circuit board
- Convection cooled case, no fans. Ideal for high moisture environments

Specifications

Model	ABC 12-6
Input	5/2.5
Amps @ F.L.	90-130 VAC or 180-264 VAC, 50-60Hz
Output Volts	12
Output Banks	2
Output Amps	6



Typical Charge Curves for ABC Series

Duty Cycle Ratings
Rated charging output 20 min.,
derate to 50% for continuous output

Operating Temperature
0 - 40° C

Float Voltage
13.4 VDC

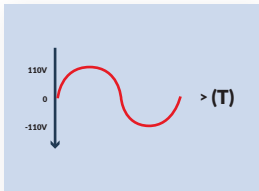
Inverters

PS Series

The PS Series inverters produce high efficient, pure sine wave output from 12 or 24 volt battery input with high surge power for motor start. A power saving mode, with user friendly adjustable set points, conserves batteries when not in use. A remote control/display panel and front panel indicator lights allow for easy system monitoring and control.

Features

- 1000, 1500, 2000W models
- Pure sine wave 115V output
- High efficiency ~ 90%
- Power saving mode helps conserve battery when not in use with user adjustable set points
- AC duplex outlet on front panel
- Rugged and compact aluminum case, ideal for marine applications
- Meets UL458
- Front panel status indicator lights:
 - Input voltage
 - Output power level
 - Power mode
 - Fault status
 - Remote control included
- Protection:
 - Low input voltage
 - Overload
 - Short circuit
 - Over temp



Pure Sine Wave output for interference free operation



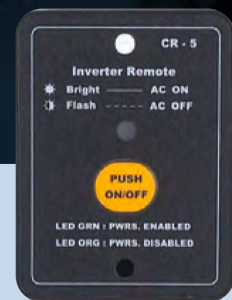
Power entertainment systems without running generator



Make a pot of coffee when AC power is not available

Description	Input	AC Output		Dimensions HxWxD in inches	Weight
		Continuous	Surge		

12-1500A- PS	12V	1500W	3000W	3.46x7.52x16.34	10.5
12-2000A- PS	12V	2000W	4000W	6.53x8.22x14.5	12.2
24-1000A- PS	24V	1000W	2000W	3.46x7.17x15.1	8.8



Remote Panel Included

Inverter Chargers

Torque Series

TQ Inverter-Chargers deliver pure, sinusoidal AC for flawless operation of all appliances and sensitive electronics. These units are ideal for entertainment systems, and computers and other microprocessor based equipment which are intolerant to AC wave distortion. They provide peak power for motor starting, and high continuous duty ratings.

Whenever shore or generator AC power is available, a built-in automatic transfer switch activates the multi-stage, temperature compensated battery charger providing rapid and safe replenishment of the inverter battery bank. AC input current limit in charging mode can be programmed to match available shore power, thus preventing tripping the dock breaker. A front panel Diagnostic monitor panel provides system status, and an optional LCD remote display is available.

Features

- Built-in high output, 3 stage charger for rapid battery bank replenishment - programmable for gel-cell, flooded lead-acid or AGM battery type with automatic temperature compensation sensor
- Pure sine wave provides distortion free AC output
- Programmable AC input power limiting avoids nuisance tripping of shore power breakers when limited power is available
- Rugged heavy duty case and power components
- UL listed
- Optional: Remote LCD Monitor & Control Panel Model: TQ-DSP-12/24



Pure Sine Inverter/Charger



Optional Remote LCD Monitor & Control Indicator Panel

Model

	1000TQ-12	1500TQ-12	2000TQ-12	3000TQ-12
Inverter Sine Wave Output				
Watt (Surge)	1500	2500	4500	5500
Watts (Continuous)	1000	1500	2000	3000
Inverter Input				
VDC	10.5-17	10.5-17	10.5-17	10.5-17
Max. Amps	104	147	204	315
Charger Input: 95 - 135V AC, 60 Hz.				
Max. Amps	8	12	16	22
Charger Output				
Max Amps @ V	60A@12V	75A@12V	125A@12V	150A@12V
Case (H x W x H) Inches				
Case Size Ref.	12 x 14 x 6	12 x 14 x 6	14 x 14 x 6	15 x 16 x 8
Weight (Lbs.)	40	40	40	68

DC UPS

Electronics require a clean and reliable source of DC power for proper operation, they are highly vulnerable to shut down / reboot / data corruption caused by power drop out during engine start and low voltage from over worked batteries. RF Interference generated by alternators and motors also impedes proper operation. A DC UPS is the remedy to these issues.

Protection During Engine Start



StartGuard

This unit has an internal battery that supplies supplemental power to electronics during the engine cranking cycle when there is an abrupt voltage drop caused by the high amperage draw of the starter motor. A sense wire connected to the start switch brings the battery online whenever the engine is cranked. This prevents reboot, memory dump, and loss of data in GPS, sounders, and radios.

Model NS-12-20

Input	Output	Size (HxWxD)	Weight	Back-up
12V	12V 20A	8.25 x 4.9 x 3.5 inches	5.5 lbs.	20 Amps for 1 min.

Redundant Power Source Integration



Automatic Power Selector (APS)

The APS enables integration of a redundant power source to critical electronic loads. It automatically selects the higher voltage of two independent DC power sources and routes that source to the load. Should one source falter or fail, the other will automatically supply the load with no transfer delay, thus operation continues uninterrupted.

Model

Model	Max Loads	Size (HxWxD)	Weight
APS-70	70 Amps	3.25 x 4.5 x 3.1 inches	2 lbs.
APS-160	160 Amps	9 x 4.5 x 3.1 inches	5 lbs.

Continuous Protection

Nav-Pac and MDP contain an internal battery that supports electronics when primary input power falters or altogether fails.



Nav-Pac

- Internal 5AH battery
- Recharges directly from primary voltage source
- Filters electronic interference
- Absorbs line voltage spikes
- Available in 12 volt, 20 amp and 24 volt, 15 amp models

Model

Model	Input	Output	Size in inches (H x W x D)	Weight
NP-12	12V	12V 20A	5.25 x 6.2 x 7.5	6 lbs.
NP-24	24V	24V 15A	6 x 6.75 x 7.5	8 lbs.

Battery Backup

12V	8A for 15 min.	12A for 8 min.	18A for 2 min.	20A for 1 min.
24V	8A for 15 min.	12A for 8 min.	15A for 2 min.	



Mobile Data Power

- Internal 7AH battery
- Internal 3 stage charger maintains battery in peak condition
- Filters electronic interference absorbs line voltage spikes
- Low voltage output signal interfaces with Motorola work stations and video recorders initiating orderly shutdown.
- Programmable timer disconnects load from battery at specified time after ignition shut off
- 25 amp load rating

Model

Model	Input	Output	Size in inches (H x W x D)	Weight
MDP-25.0	12V	12V 25A	5.75 x 6 x 8.5	10 lbs.

Battery Backup

12V	25A for 8 min.	10A for 20 min.	5A for 60 min.
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Integrated Power System

The Integrated Power System (IPS) is a unique multifunction power supply which incorporates built-in battery back-up and numerous power accessories within a rackmount chassis.



All models with batteries | Size 3.5 (H) x 17 (W) x 18 (D) | Weight 33 lbs.

Features

- Precision regulated power supply maintains batteries at peak charge and supplies system load
- Built-in batteries instantly power load during AC failure - no switch-over delay. Input terminals provided for integrating additional external batteries for increased back-up capacity (except IPS-12-40)
- Automatic low voltage and manual battery disconnect
- Numerous front panel monitors—L.E.D. status indicators and digital ammeter/voltmeter
- Form C summary failure alarm contacts
- 19" or 23" rack mount, flush or 6" forward mounting
- Input 115/230V AC, 50-60 Hz

Model	VDC	Adjustment Range	Amps Continuous	Supplemental Input Ports	Internal Battery Capacity	Ground Reference
IPS 12-40	13.6	10 - 15V DC	40	N/A	20 A-H	Negative
IPS 48-11	54.4	40 - 60V DC	11	40 Amps	5 A-H	Positive



Power-Pac

The 12 volt supply features built-in back-up batteries which are charged during normal operation and then continue to power radios when AC power is lost.

- Power Supply Output: 13.6V, 10 amps intermittent, 5amps continuous
- Low battery alarm and disconnect
- Aux. input terminals for integrating additional external batteries
- 115/230V AC input

Model	Max Loads	Size (HxWxD)	Weight
PP-7	7 Ah	5.3 x 9 x 10.5 inches	18 lbs.
PP-14	14 Ah	5.3 x 9 x 10.5 inches	24 lbs.

Battery Isolators

These heavy duty isolators allow charging multiple batteries automatically from one or two alternators, and prevent discharge or ‘dumping’ of one battery into another. Each battery is charged according to its need without overcharging, rated for 12, 24, or 36 volt, negative ground DC systems. Feature conservatively rated diodes and a rustproof anodized aluminum heat sink case. Models are available for 70, 120 and 165 amp alternators.



Features

- Heavy duty construction
- Rated for systems up to 48 volts DC, negative ground
- Rust-proof anodized aluminum case
- Stainless steel mounting hardware provided
- Protective covers provided for terminals

Specifications

- Operating Temperature: -40 to +80°
- Duty Cycle: Continuous rating to 50° C Derate linearly to 70% @ 80° C
- Temp. Rise: 5° C at full rated current
- Voltage Drop: 0.7V @ 50% load, 0.9V @ full load

Model	Alternator Sources	Battery Bank	Max. Amp.	Stud Terminal Size in mm	Size in inches (L x W x H)	Weight Lbs.
1-2-70	1	2	70	6 mm	3.25 x 4.5 x 3.1	2
1-3-70	1	3	70	6 mm	3.25 x 4.5 x 3.1	2
2-3-70	2	3	70	6 mm	6.5 x 4.5 x 3.1	4
1-2-120	1	2	120	6 mm	6.5 x 4.5 x 3.1	3
1-3-120	1	3	120	6 mm	6.5 x 4.5 x 3.1	3
2-3-120	2	3	120	6 mm	12.5 x 4.5 x 3.1	5
1-3-165	1	3	165	6 mm	9 x 4.5 x 3.1	5

Note: These battery isolators are not compatible with self-exciting alternators. The alternator must have an external excitation lead. Please consult the manufacturer of your alternator if you are unsure of your configuration

Battery Integrators

Charging multiple battery banks without use of diode isolators dictates that the batteries be connected or “integrated” only whenever a charge voltage is present so that they may be charged simultaneously, then disconnected or “isolated” when charge voltage is no longer present to allow for selective discharge and avoid having the secondary or standby battery drain into the primary battery.



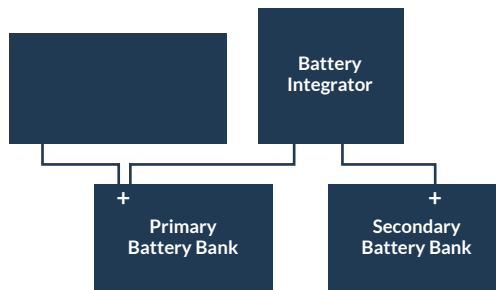
Features

- 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 to 100 amps or 200 amp depending on model
- Voltage sense circuit, epoxy encapsulated and heavy duty continuous rated solenoid are all designed for use in marine environments
- 12 volt, 100 amp model has ignition protection rating
- 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
- Optional internal connection can be wired though key starter or manual over ride switch, tying battery banks together for extra boost during engine start

Specifications

Operating Temperature:
 Control: -40 to +85° C
 Solenoid: -28 to +48° C
 Terminals: Battery Connections: 5/16” copper alloy stud
 Dimensions (H x W x D)/Weight:
 100 Amp Models: 3” x 3.25” x 2.5” / 1Lb.
 200 Amp Model: 4” x 3.3” x 4.1” / 2 Lbs.
 Approvals: CE Marked

Typical Installation



Model	Voltage	Battery Integration Point	Battery Disconnect Point	Max. Continuous Current	Peak Maximum Current
BI-100*	12 VDC	13.2 VDC	12.8 VDC	100 Amps	400 Amps
BI-200	12 VDC	13.2 VDC	12.8 VDC	200 Amps	600 Amps
BI-24-100	24 VDC	26.4 VDC	25.6 VDC	100 Amps	400 Amps

*Ignition Protected

Noise Filters

The interference or electronic “noise” generated by alternators, ignition systems, motors, etc., can render a vehicle or vessel’s radio or other electronic equipment virtually useless. This interference takes the form of popping or static on radios or audio gear and garbled images or “hash” on video displays.

These specialized filters can be used singly or in combination to attenuate conducted line noise, either at the affected equipment or at the noise source.

Features

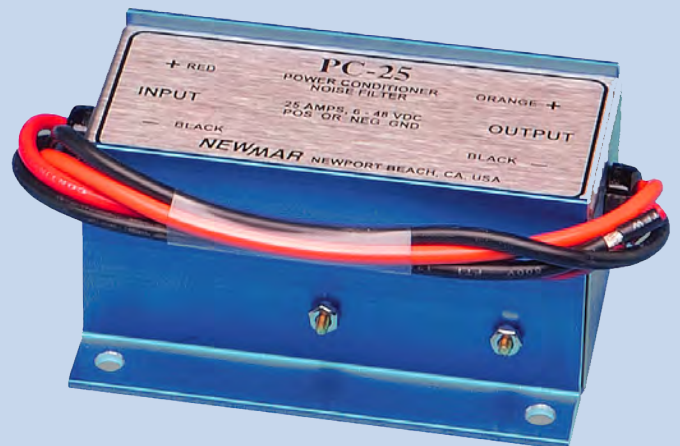
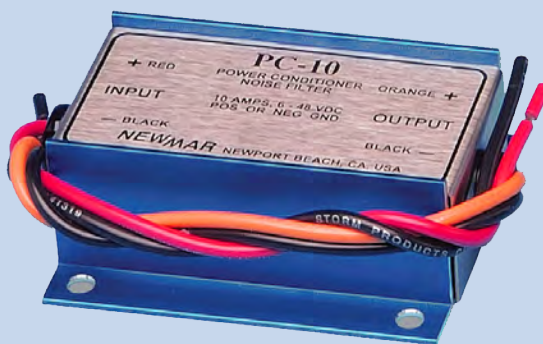
- Heavy duty aluminum construction
- Operate on 6-48 VDC systems
- **Feature** integral mounting flanges for secure installation
- Nickel plated, brass stud connectors on alternator filters accommodate high current cables and terminals
- Color coded wire leads on PC models make in-line installation easy



Filtered Frequencies

- Model 150A: 70 kHz – 100 MHz
- Models PC-10 and PC-25: Audio – 200 MHz

Model	Rating	Installation Location	Size (inches) (H x W x D)	Weight in lbs.
150-A	150 Amp	At alternator	3.25 x 5.7 x 3.25	3
PC-10	10 Amp	At affected equipment in “+” and “-” leads	1.25 x 4.25 x 3	1
PC-25	25 Amp	At affected equipment in “+” and “-” leads	2 x 4.25 x 3.25	2



Heavy Duty Power Supplies

These super-rugged DC power supplies are ideal for powering 12 and 24 volt communication/navigation equipment onboard commercial vessels where reliability is essential. The proven linear circuit design provides pure noise free output and long service life



Features

- Excellent Regulation and Ripple Spec: Output voltage maintained within 1% under all rated line and load line and load conditions
- Provides solid power source for electronics
- Polyurethane conformal coated PC board and corrosion resistant heavy duty aluminum case with integral shock mounts assures survival in hostile environments
- Heat generated by semi-conductors is extracted and dissipated by large heat sink fins for cool operation
- Protection: over-voltage, current limit; (set @ 105% of intermittent rating), thermal overload and input/output fusing
- Thermally activated cooling fan on "CD" units
- 115/230V AC, 50-60 Hz. input

Options

- Modify for use as a Battery Charger
- Output voltage adjust
- Transfer relay for back-up battery in event of power failure (ERC option)

Model	Output Voltage	Output Amps Inter.	Amps Cont.	Size (inches) (H x W x D)	Weight Lbs.
12 Volt					
115-12-8	13.6V DC	8	5	6 X 4.6 X 8.5	10
115-12-20A	13.6V DC	20	8	5.7 X 4.8 X 16.3	20
115-12-35CD	13.6V DC	35	35	6.5 x 9.5 x 14	32
24 Volt					
115-24-10	24.5V DC	10	4	5.7 X 4.8 X 16.3	20
115-24-18CD	24.5V DC	18	18	6.5 x 9.5 x 14	32
115-24-35CD	24.5V DC	35	35	6.5 x 13 x 18.75	60

*Intermittent: 20 minutes max on time, 20% duty, Continuous: 24 Hours/Day 100% Duty

DC Converter Standard Series

Convert 20-50 VDC input to 12 or 24 VDC negative ground output for powering communication/navigation equipment, on negative ground systems. Ideal for powering voice, data and navigation electronics in marine applications

Features

- Excellent Regulation: Output voltage maintained within 1% under all line and load conditions
- Heat generated by semi-conductors is extracted and dissipated by large heat sink fins that maximize air contact for cool operation and long life of components
- Conformal coating on PC boards and corrosion-resistant powder coated aluminum case with heavy duty shock mounts assure survival in hostile environments
- Current limiting
- Automatic thermal shutdown
- Short circuit proof
- Reverse polarity and overvoltage protection



Model No.
32-12-25



Model No.
32-12-35

Options

- Operation as a battery charger or parallel redundant operation (contact factory)
- 24V output

Model	Input Voltage	Output Voltage	Output Inter.	Amps Cont.	Size in inches (H x W x D)	Weight Lbs.
24-12-3	17-32	13.6	3A	3A	4 x 4 x 2	1
32-12-6	20-50	13.6	6A	6A	3 x 5 x 11	3
32-12-10	20-50	13.6	10A	10A	5 x 6 x 11	5
32-12-15	20-50	13.6	15A	15A	5 x 6 x 11	5
32-12-25	20-50	13.6	25A	20A	6 x 5 x 14	8
32-12-35	20-50	13.6	35A	30A	6 x 5 x 16	12
32-12-50	20-50	13.6	50A	40A	7 x 7 x 19	16

DC Converter Isolated Series

The Isolated Series provides voltage from conversion as well as input/output isolation, allowing use of negative ground gear with positive or floating ground battery systems, or vice versa. 12 or 24 volt stabilizers may also be used for electronics that are highly sensitive to input voltage fluctuation.

Using an Isolated Converter as a voltage stabilizer on 12 or 24 volt systems can solve conducted noise and interference problems on sensitive DC powered devices for communication, navigation systems and DC micro-processor based electronics.

Features

- Wide range of input voltage
- Precise output voltage regulation
- Reverse polarity protection
- Total input/output isolation, pos. or neg. ground
- Current limiting, short circuit proof output
- Automatic re-setting thermal shutdown
- High/low input voltage shutdown
- Polyurethane conformal coating on PC board
- Rugged case designed for high vibration applications



Options

- Operation as a battery charger or parallel redundant operation (contact factory)
- 24V output (contact factory)

Model	Input Voltage	Input Amps	Output Voltage	Output Amps		Size in inches (H x W x D)	Weight (Lbs.)
				Intermittent	Continuous		
12-12-35I	10 - 16*	56	13.6	35	20	6 x 6.8 x 16.5	12
12-24-18I	10 - 16*	56	24.5	18	10	6 x 6.8 x 16.5	12
48-12-6I	20 - 56	4.8	13.6	6	6	4.25 x 5.9 x 7.7	7
48-24-3I	20 - 56	4.8	24.6	3	3	4.25 x 5.9 x 7.7	7
48-12-18I	20 - 56	14.4	13.6	18	10	4.25 x 5.9 x 14	8
48-24-9I	20 - 56	14.4	24.5	9	5	4.25 x 5.9 x 14	8
48-12-35I	20 - 56	28	13.6	35	20	6 x 6.8 x 16.5	12
48-24-18I	20 - 56	28	24.5	18	10	6 x 6.8 x 16.5	12

*11.5 VDC minimum start-up voltage, then operates @ 10-16 VDC from 1 Amp minimum to full load

Step-up Converters & DC Power Stabilizers

Step-up Series

These "UP" converters produce 24 volts from 12 volt systems and are ideal for managing dual voltage applications without having to install a 24 volt battery and dedicated charging system. Choose from two types depending on your application. Standard, non-isolated where input and output share common ground reference, and isolated where input and output are galvanically separated.

Standard, Non-isolated Series

- Intended for use on negative ground systems
- 10 -15V DC input range
- Available in 7, 16 and 25 amp outputs
- Current limited, voltage spike suppression, automatic thermal shutdown and recovery

Isolated Series

- Allows positive/negative ground compatibility between 12V battery and 24V accessories
- Input/output isolation 250V DC



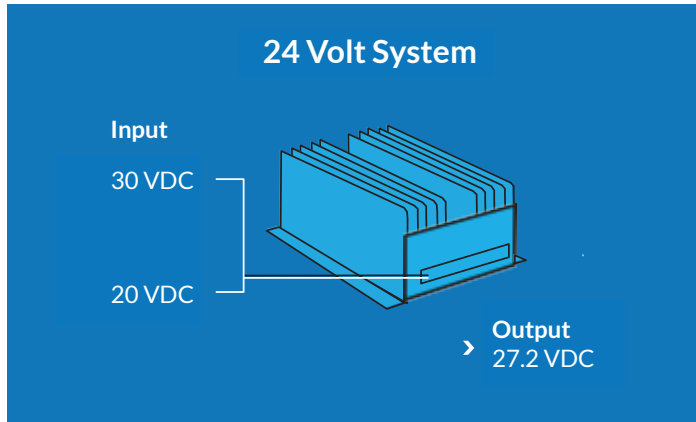
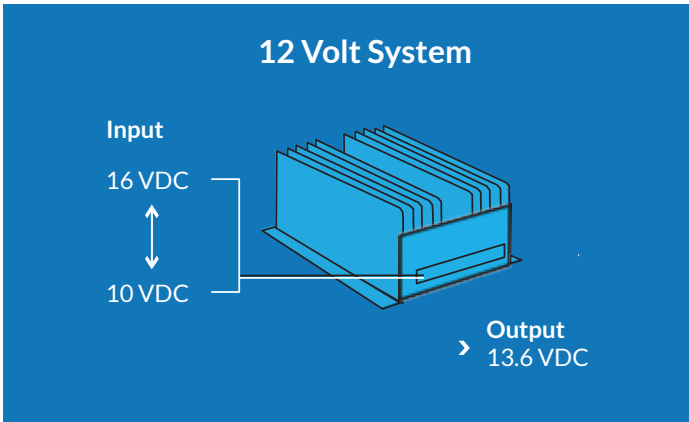
Model: 12-24-16

Model

Model	Input Voltage	Output Voltage	Output Amps	Size in inches (H x W x D)	Weight Lbs.
Standard - Non-isolated					
12-24-7	10 - 15	27.2	7	4 x 4 x 2	1.4
12-24-16	10 - 15	27.2	16	8 x 13 x 24	3.35
12-24-25	10 - 15	27.2	25	6 x 7 x 17	4.1
Isolated					
12-24-18I	10 - 16	24.5	18	6 x 7 x 17	12

DC Power Stabilizers

Feed sensitive electronics with clean and proper voltage regardless of battery condition. These stabilizing converters provide continuous, precisely regulated output free of conducted noise over the entire range of a battery's usable voltage, thus eliminating fluctuating input voltage and noise which can cause shutdown, diminish performance and possibly damage sensitive circuitry.

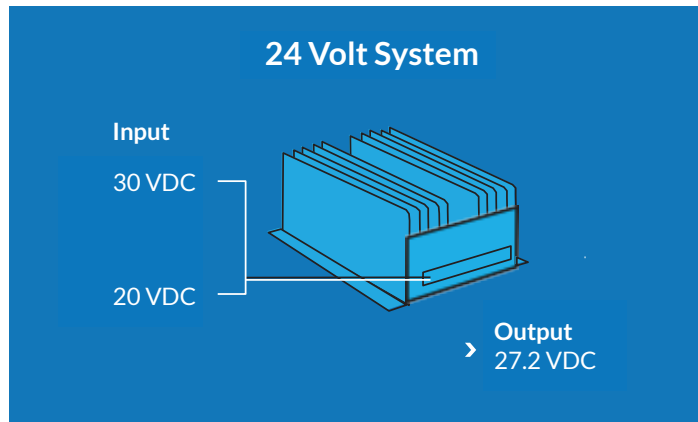
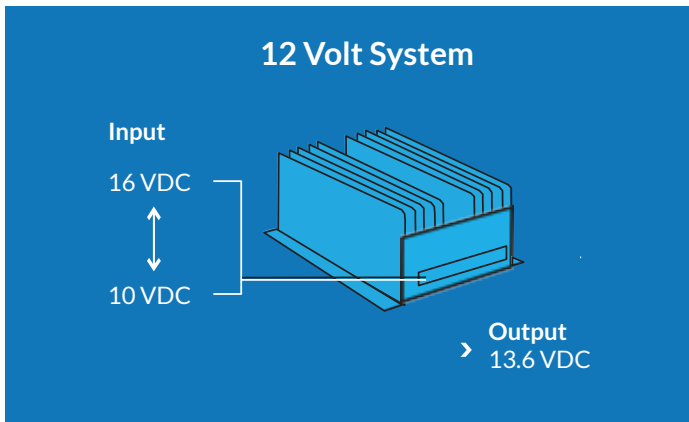


Model	Input Voltage	Input Amps	Output Voltage	Output Amps Intermittent Continuous	Size in inches (H x W x D)	Weight (Lbs.)
12-12-3I	10 - 16*	4	13.6	3 3	3.5 x 3.5 x 1.75	1
12-12-6I	10 - 16*	8	13.6	6 6	6.5 x 4 x 1.75	2
12-12-35I	10 - 16*	56	13.6	35 20	6 x 6.8 x 16.5	12
24-24-3I	20 - 32	3.7	27.2	3 3	3.5 x 3.5 x 1.75	1
24-24-7I	20 - 32	8.7	27.2	7 7	6.5 x 4 x 1.75	2

*11.5 VDC minimum start-up voltage, then operates @ 10-16 VDC from 1 Amp minimum to full load

DC Power Stabilizers

Feed sensitive electronics with clean and proper voltage regardless of battery condition. These stabilizing converters provide continuous, precisely regulated output free of conducted noise over the entire range of a battery's usable voltage, thus eliminating fluctuating input voltage and noise which can cause shutdown, diminish performance and possibly damage sensitive circuitry.



Model	Input Voltage	Input Amps	Output Voltage	Output Amps Intermittent Continuous		Size in inches (H x W x D)	Weight (Lbs.)
12-12-3I	10 - 16*	4	13.6	3	3	3.5 x 3.5 x 1.75	1
12-12-6I	10 - 16*	8	13.6	6	6	6.5 x 4 x 1.75	2
12-12-35I	10 - 16*	56	13.6	35	20	6 x 6.8 x 16.5	12
24-24-3I	20 - 32	3.7	27.2	3	3	3.5 x 3.5 x 1.75	1
24-24-7I	20 - 32	8.7	27.2	7	7	6.5 x 4 x 1.75	2

*11.5 VDC minimum start-up voltage, then operates @ 10-16 VDC from 1 Amp minimum to full load

Electrical Panels

PRODUCT CATALOG



Accessory DC/AC Panels

These versatile panels are ideal when only a limited number of electrical circuits are needed, or for larger systems where their modular design makes for an easy and attractive expansion of existing system capacity.

All panels are provided with a circuit identification label set of 22 common on-board electrical functions is provided. Other more extensive label sets (up to 206 functions) are also available separately, see page 20.



5.25" x 7.5"

ACCY-IX

8 breaker capacity, 5 installed standard; 2-5A, 1-10A, 1-15A, 1-20A or specify. 8 DC circuit "ON" indicator lights installed standard, AC indicator lights installed on special order basis. LS-1 Label Set included.

ACCY-IBX:

Blank version of ACCY-IX. No breakers or indicator lights provided. Label set, indicator light and breaker mounting hardware provided.



5.25" x 3.75"

ACCY-III:

Half-height version of ACCY-IX (above), 3 breaker capacity, 3 installed standard: 1-5A, 1-10A 1-15A or specify. With DC "ON" indicator lights installed on special order basis.

AC Master Panels

Essential control/protection whenever AC from shorepower or generators is on board. A double pole master breaker with power on indicator light protects both hot and neutral legs of the AC circuit. A reverse polarity light provides clear warning when wiring is reversed and poses a shock hazard.

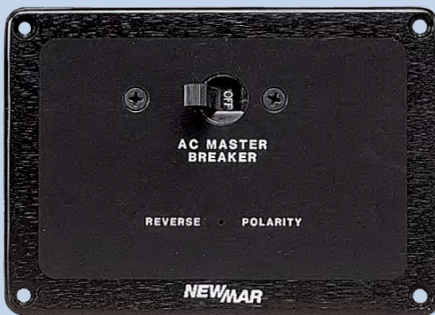
Single pole branch circuit breakers (Model AC-IX) and individual “ON” indicator lights provide control and protection of various AC loads. For 115/230 VAC applications – contact a sales representative. A label set of common on-board circuits is provided.



5.25" x 7.5"

AC-IX:

30 amp master breaker (15A or 50A* optional), with reverse polarity warning light, 5 branch circuit capacity, 5 installed AC “ON” indicator lights, and 4 installed standard: 1-10A, 2-15A, 1-20A, or specify. LS-I Label set included.



5.25" x 3.75"

AC-II:

30 amp master breaker (15A or 50A* optional) with reverse polarity warning light.

Elite Series Panels



ES-1 DC Master Panel

Features

- Analog DC volt and ammeter, back illuminated with dimmer
- 12 volt standard, 24 volt optional
- 4 battery bank test switch
- DC master breaker (100amp standard; 50 or 75 amp optional)
- 22 branch circuit capacity, 20 installed standard; 3-5A, 5-10A, 6-15A, 6-20A or specify
- Weight: 8 lbs., (3.6 Kg.)

Because of their exact height match and style compatibility, the panels below are ideal companions for expanding circuit capacity of the ES-1 or ES-5, or they may be used as stand-alone load centers.

ES-6 DC Load Center



Features

- Accommodates one meter; analog standard. (DC 0-50A ammeter standard), or DC 12 volts or 24 volts optional
- Master breaker (DC-75 amp standard; 50 or 100 amp optional, single pole)
- 10 branch circuit capacity, 8 installed standard: 1-5A, 2-10A, 4-15A, 1- 20A

5.25"W X 15"H X 4"D
10 Breaker Capacity

ES-7 AC or DC Accessory Panel



Features

- AC (120/240V) or DC (12/24V) master breaker (double pole AC 50 amp* standard, 30 amp optional, or DC 100 single pole amp standard; 50 or 75 amp optional)
- 16 branch circuit capacity, 12 installed standard: ES-7A: 2-10A, 5-15A, 5-20A ES-7D: 2-5A, 3-10A, 5-15A, 2-20A
- Weight: 7 lbs., (3.2 Kg.)

5.25"W x 15"H x 4"D
16 Breaker Capacity

**Note 50 amp master OK for use on 230 VAC line-to-line systems. For 230 VAC line-to-neutral systems 30 amp is maximum master breaker value.*

Elite Series Panels

ES-3 Compact AC/DC Load Center

- Locating all AC and DC functions on one panel provides a vessel with a central load distribution and monitoring center.
- Complete metering of voltage and current on AC and DC systems. Back-lit analog meters
- AC master breaker(s) with reverse polarity warning light
- Power "on" indicator lights on all circuits
- Four battery bank voltage test switch
- Deluxe label set (LS-III) included, 206 functions
- 115 VAC standard/230 VAC optional
- 12 VDC standard/24 VDC optional



13.7"W X 10"H X 4"D
6 AC and 16 DC Breaker Capacity

Installation Dimensions

Model	Panel Size		Cut Out	
	(W x H) Inches	(W x H) Centimeters	(W x H) Inches	(W x H) Centimeters
ES-1	10 x 15	25.4 x 38.1	14 x 9	35.6 x 22.9
ES-3	13.7 x 10	34.8 x 25.4	8.8 x 13	22.4 x 33
ES-4	17 x 12	43.2 x 30.5	10.8 x 16.8	27.4 x 42.7
ES-5	20 x 15	50.8 x 38.1	13 x 19	33 x 48.3
ES-6D	5.25 x 15	13.3 x 38.1	13 x 4.5	33 x 11.4
ES-7A & 7D	5.25 x 15	13.3 x 38.1	13.8 x 4	35.1 x 10.2

Elite Series Specifications

Installation Dimensions

Model	DC Circuits	AC Circuits
ES-1	100A master plus 22 single pole breaker capacity, 20 installed standard, 3-5A, 5-10A, 6-15A, 6-20A	
ES-3	16 Breaker capacity, 12 Installed standard; 2-5A, 3-10A, 4-15A, 3-20A or specify	30 amp master standard 50 amp optional, plus 6 S.P. branch capacity, 5 installed standard; 1-10A, 15A, 2-20A or specify
ES-4	20 Breaker capacity, 16 Installed standard; 3-5A, 3-10A, 5-15A, 5-20A or specify	50 amp master standard plus 8S.P. branch capacity, 6 installed standard; 1-10A, 3-15A, 2-20A or specify
ES-4SS	Same as above with 7.5 kW, three position (Shore-Off-Gen) ship shore selector switch installed. Special Order Only.	
ES-5	Master plus 24 breaker capacity, 20 installed standard; 3-5A, 4-10A, 7-15A, 6-20A or specify	Two load groups each consisting of: Master breaker (D.P.) 50 amp* standard plus 10 S.P. branch capacity, 8 installed standard; 2-10A, 3-15A, 3-20A or specify
ES-6D	75A master plus 10 single pole breaker capacity, 8 installed standard, 1-5A, 2-10A, 4-15A, 1-20A	
ES-7A		50A double pole master plus 16 single pole breaker capacity, 12 installed standard, 2-10A, 5-15A, 5-20A
ES-7D	100A master plus 16 single pole breaker capacity, 12 installed standard, 2-5A, 3-10A, 5-15A, 2-20A	

Meters

Standard voltmeters are for 12 VDC or 115 VAC applications. (Ammeter range depends on master breaker value.)

Voltmeters can be installed for 24 VDC or 230 VAC applications. Contact the factory for a complete list of metering options.

Alternate Circuit Breaker Configurations

To change circuit breaker value mix or location, advise us the breaker arrangement. (Order forms listing all options are available - see "Download PDF Order form" link below each product description.) Allow 3-5 days additional lead time to complete the modification.

Note: There is a mod. fee for special configurations. Contact factory.

Custom Panel Capabilities

Send your sketch or spec. We'll do the rest!

- Any Size, Shape, Graphics, Lettering
- Meters, Breakers, Switches, Alarms, and Custom Components
- UL 489 Breakers
- Fiber Optic Back Lighting Option
- Pre-Wired and Ready for Installation

Custom Panel Process Rapid Delivery!



Submit Your Concept



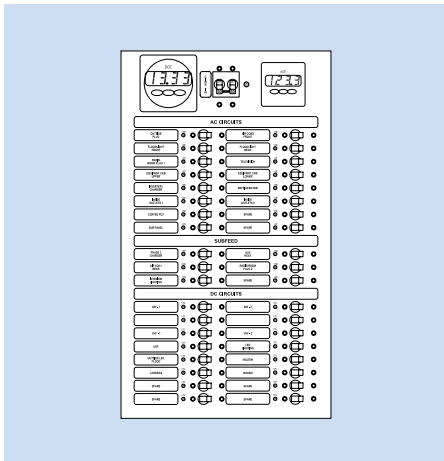
CAD Drawing Prepared For Your Approval



Fab and Assembly



Pre-Wired, Tested & Ready for Installation

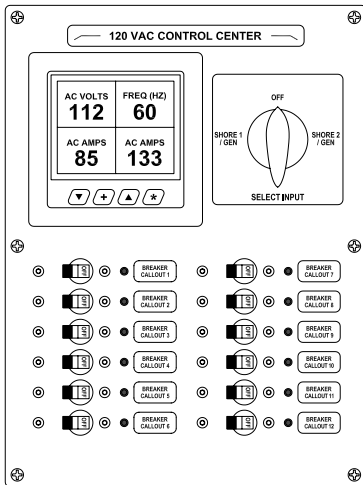


Available mounted in or on NEMA Enclosures

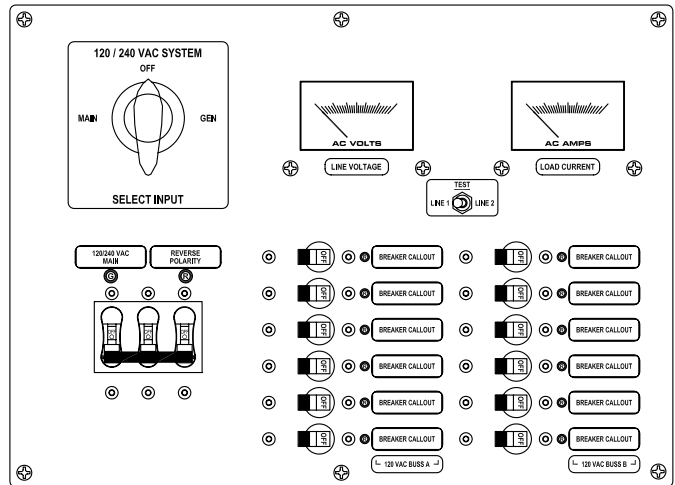
See following pages for sample templates, or view entire template library online.
www.DCPowerOnboard.com/CustomPanels

Custom Panel Templates - AC

Built As Shown or Customized to Your Specification.

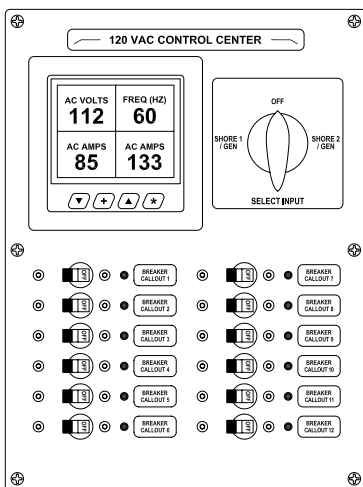


120/240V AC #A10
Source Selector Switch
Digital Volt, Amp, Frequency Meter
12 Single Pole
Dimensions: 8.5" x 11.25"

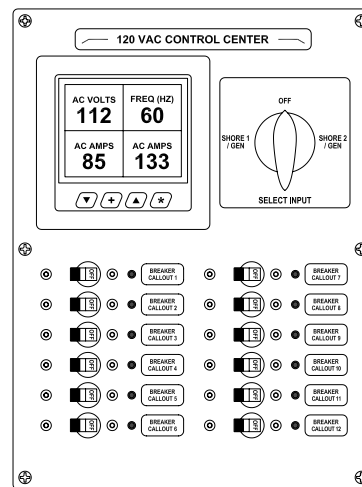


120/240V AC #A10
Source Selector Switch
Digital Volt, Amp, Frequency Meter
12 Single Pole
Dimensions: 8.5" x 11.25"

View complete specifications and order forms online! Visit newmarpower.com, click on custom panel link.



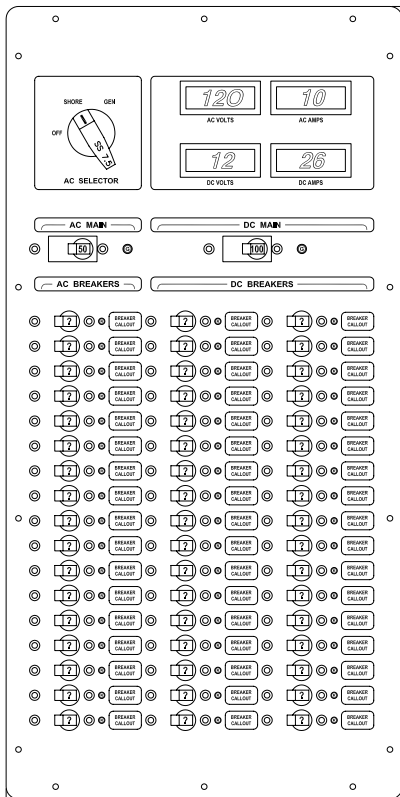
120/240V AC #A10
Source Selector Switch
Digital Volt, Amp, Frequency Meter
12 Single Pole
Dimensions: 8.5" x 11.25"



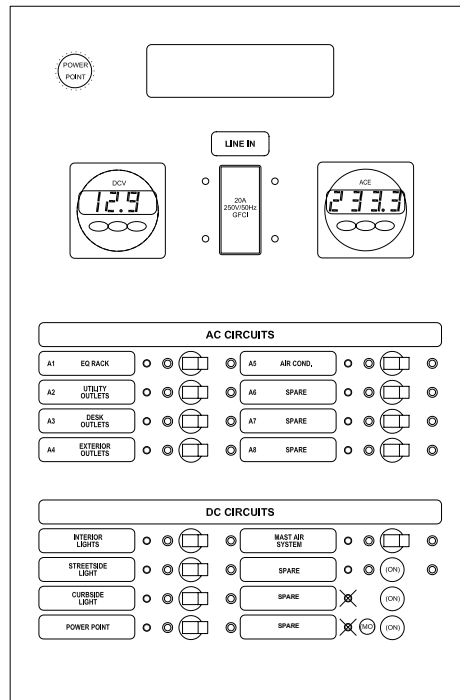
120/240V AC #A10
Source Selector Switch
Digital Volt, Amp, Frequency Meter
12 Single Pole
Dimensions: 8.5" x 11.25"

Custom Panel Templates - AC/DC

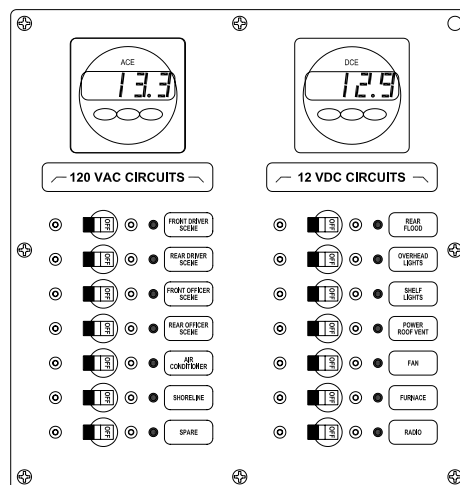
Built As Shown or Customized to Your Specification.



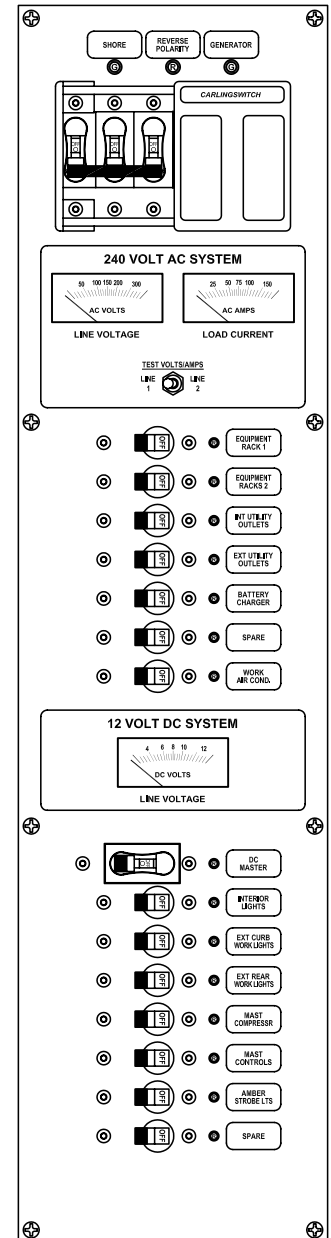
120V AC - 12V DC #AD16
 AC Master, Source Selector Switch
 Digital Volt & Amp Meters
 17 Single Pole
 DC Master
 Digital Volt & Amp Meter
 34 Single Pole
 Dimensions: 12" x 24"



120V AC - 12V DC #AD18
 AC Master
 Digital Volt-Amp-Freq-Hour Meter
 8 Single Pole
 DC Master
 Digital Volt Meter
 8 Single Pole
 Dimensions: 12" x 24"



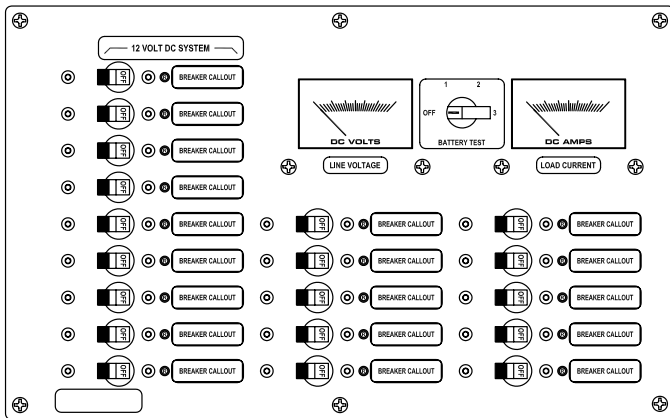
120V AC - 12V DC #AD22
 AC Single Pole
 DC Master
 Digital Volt & Amp Meter
 7 Single Pole
 Digital Volt Meter
 7 Single Pole
 Dimensions: 10" x 10.5"



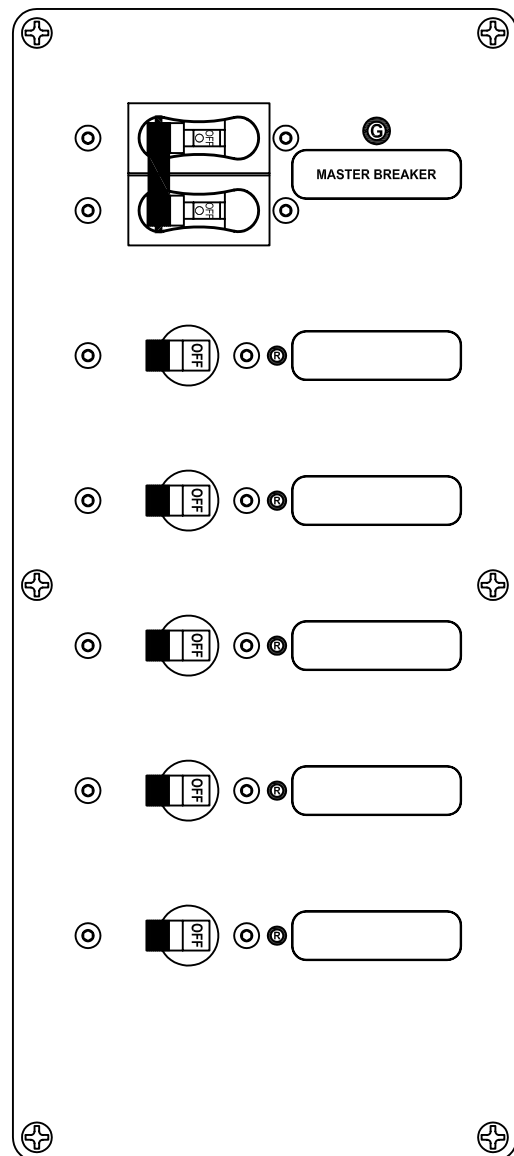
120V AC - 12V DC #AD20
 AC Master/Source Selector
 Analog AC Volt & Amp Meters
 Branch Breakers
 DC Master
 Analog DC Volt Meter
 7 Single Pole
 Dimensions: 5.7" x 23" 28

Custom Panel Templates - DC

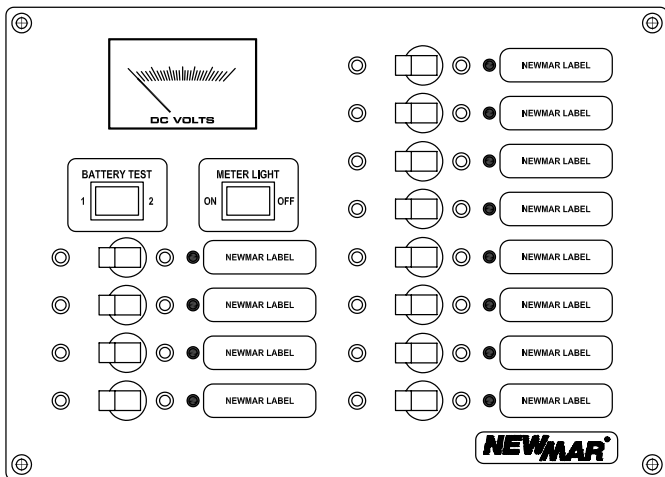
Built As Shown or Customized to Your Specification.



12/24V DC #D10
 19 Single Pole Branch Circuits
 Analog DC Volt & Ammeters
 3 Battery Test Switch
 Dimensions: 8.5" x 13.75"



12/24V DC #D14
 Double Pole Master
 5 Double Pole Branch Circuits
 Dimensions: 14.5" x 9.5"



12V DC #D12
 Analog DC Volt Meter
 12 Single Pole
 Dimensions: 10.5" x 7.5"

Digital Instruments



DCV: DC Voltmeter

Monitors three battery banks, 12 and/or 24 volt systems. Reads to the nearest 1/10 volt. Features a programmable high/low voltage alarm circuit for each bank. NMEA 0183 compatible for PC interface. Only available in 2-1/2" version.



DCE: DC Energy Monitor

Displays volts, amps, energy used and remaining for 12 or 24 volt systems up to 500 amps and up to 3,000 amp-hour capacity. Makes DC energy management a breeze. Monitor voltage on up to three separate banks. House bank (or battery bank of choice) may be also be programmed for the following functions: 1) Monitor charge/-discharge amperage. 2) Total energy monitor can be set for amp-hours or percent-of-charge. 3) High/low voltage alarm, plus alarm set-point for low amhours remaining. 500 amp shunt included. NMEA 0183 compatible output for data logging. Available in 2-1/2" or 4-1/4" square face.



ACE: AC Energy Monitor

For 115/230 volt systems. Reads: 90-300 VAC (True RMS), 0-150 amps, frequency from 40-70 Hz and power from 0-45 kW. Features alarm circuits for high/low voltage and high/low frequency. Can be programmed to provide automatic generator shutdown (see Remote Alarm Option on the following page) in the event that voltage or frequency exceed predetermined range. Current and voltage transformers are included. 12 or 24 volt source required to power meter. Available in 2-1/2" face.



Remote Alarm Relay Option - All Models

All instruments shown have programmable alarms. A relay is available that activates remote indicators from the instrument alarm signal output terminal allowing remote activation and/or connection to the vessel's 12 or 24 volt alarm panel.

DIR: Digital Instrument Relay | **Input Signal:** 5 VDC (from instrument)
Relay Rating: 12/24 VDC, 10 amps | **Size:** 2.4" x 1.4" x 1.5"

Panel Meters - Analog



Assemble an electrical monitoring system using these analog, panel mount meters. Meters are available with 2-1/2" and 3-1/2" face sizes. Easy to read graphics with unit divisions give precise readouts at a glance. Designed for front panel mounting.

AC Meters

- AC Volt 0-150
- AC Volt 0-300
- AC Amp 0-50 with current transformer
- AC Amp 0-100 with current transformer

DC Meters

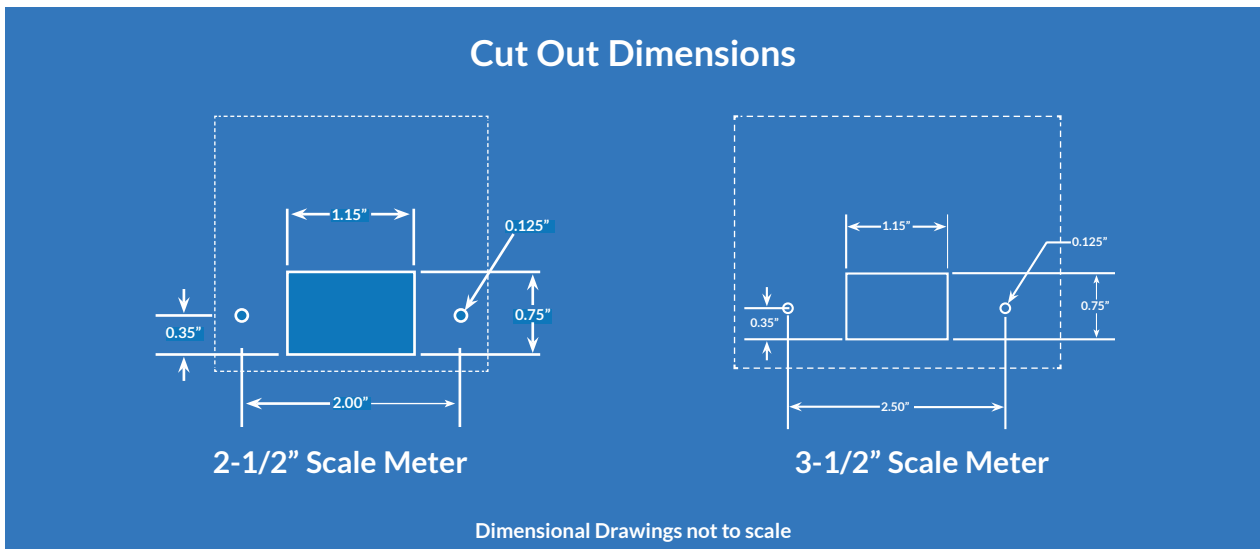
- DC Volt 8-16
- DC Volt 16-32
- DC Amp 0-50 with shunt
- DC Amp 0-100 with shunt

Replacement Shunts/Current Transformers

- Shunt for 0-50 DC ammeter, P/N: 573-0502-9
- Shunt for 0-100 DC ammeter, P/N: 575-100-0
- Current transformer for 0-50 AC ammeter, P/N: 575-9030-0
- Current transformer for 0-100 AC ammeter, P/N: 575-9030-0

Meter Face Measurements

- **3.5" scale:** 3-3/4" W x 2-7/8" H (9.5 X 7.3 cm)
- **2.5" scale:** 2-1/2" W x 2-3/8" H (6.3 X 6.0 cm)



AC Selector Switch

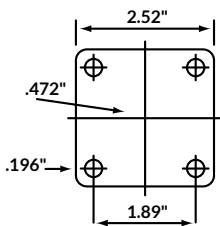
An AC source selector switch is an essential item for any vessel with an on-board AC generator and/or inverter. By isolating power source inputs, the switch eliminates the safety hazard and/or damage that can occur if two AC sources are applied to the same circuit simultaneously.

The switches carry cUL approval, are CE marked, and feature heavy duty contacts and a positive step cam mechanism for low resistance contact closure. May be rear mounted in panel with thickness up to 1/4".



Model	Amperage @ 115/230V	Number of Poles	Switch Positions	Standard Plate Markings	Depth Dimensions
SS-3.0	30	2	2 + "OFF"	SHIP-OFF-SHORE	2-1/8"
SS-7.5	63	2	2 + "OFF"	SHIP-OFF-SHORE	2-3/8"
SS-7.5 INV [†]	63	2	2 + "OFF"	OFF-GEN-INV-SHORE	3-1/2"
SS-15*	SS-15*	2	2 + "OFF"	SHIP-OFF-SHORE	4"

* May be configured as a 63 amp, 4 pole switch or 126 amp, 2 pole switch. † For vessels with onboard generator and inverter.



Mounting Flange
Dimensions
All standard switches

High Current Fuses/Fuseblocks

Essential safety item for all inverter installations and other high amperage DC circuit over-current protection.

Features:

- Heavy duty 500 amp, insulated, compact fuse block with corrosion-resistant 5/16" studs
- Secures to surface with two #10 flat head screws or bolts (not included)
- Clear lexan cover insulates conductive parts, per ABYC/USCG requirements
- Accepts industry standard ANL tin-plated copper fuses. Purchase separately.
- See-through mica element for easy identification of blown fuse



Model	Size (H x W x D)
AFB-500	3" x 6.25" x 1.95

Fuse Models (numeral indicates amperage): ANL-50, ANL-100, ANL-150, ANL-200, ANL-250, ANL-300, ANL-350, ANL-400, ANL-500 (All rated to 80 VDC)

Label Sets



Ideal for custom labeling of switch or circuit breaker positions on any NEWMAR or similarly constructed electrical panel. White lettering on black peel-and-stic mylar. Label size: 1.75" W x .5" H. See website for a full list of labels.

Indicator Lights

Use as "circuit on" or service indicator light on AC or DC systems. Snap-in panel mount in 5/16" hole. 6", 18 AWG leads.

Model	Model
115/230 VAC Amber*	12/24 VDC Red*
115/230 VAC Red	12/24 VDC Green
115/230 VAC Green	



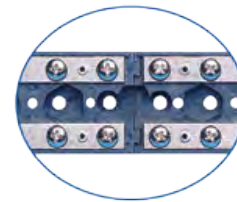
Panel Back Enclosures

Secure to the rear of many common electrical panels to protect crew against injury or panel against damage from accidental contact. Heavy duty ABS plastic. May be cut or drilled to suit wiring needs. (Intermediate mounting surface between panel and enclosure required).

Model	Fits these Newmar Panels	Size (H x W x D)
BE-855	ACCY-IX, ACCY-IBX, AC-IX	8" x 5" x 5"

Terminal Strips & Bus Bars

- Use as a common negative/neutral bus for AC or DC systems. Dual terminal strips in 4 or 8 screw positions on 3/4" centers are secured to an insulated base. No conductive parts in the base are exposed to the mounting surface. All hardware, bus material and fasteners are nickel-plated brass.
- Interlocking bases allow use of multiple terminal strips and bus bars (described below) to produce secure and neat wiring assemblies. The terminal strip bases have provisions for either #8 or #10 mounting screws.
- Clear protective covering provided
- # 8 screw terminals; rated to 100 amps



Interlocking Feature

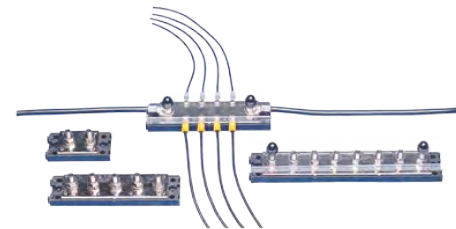
Model	Total # of Base Terminals	Size
TS-2x4	8	3-1/16" x 1-1/2"
TS-2x8	16	6-1/16" x 1-1/2"

Bus Bars

Ideal as a DC ground tie point or positive bus, these heavy duty, 500 amp rated bus bar assemblies feature 5/16" studs on 1" center in 1/4" thick copper bar for common connection/distribution of large wire gauges and accommodate 5/16" ring terminals.

- Insulated base resin with clear protective cover

Model	Qty. of 5/16" Studs	Size
BB-2	2	1/16" x 1 1/2"
BB-2/8	2 plus 8 - #8 screws	6-1/16" x 1-1/2"
BB-5	5	6-1/16" x 1-1/2"
BB-8	8	9-1/16" x 1-1/2"



Connector Strips

Model	# of Terminal Pairs	Max Wire Gauge	Max Amps*	Size (L X W X H)
CS-1	12	16	6	3.75" x .675" x .5"
CS-2	12	14	10	4.5" x .75" x .75"
CS-3	12	12	16	5.5" x .875" x .8"

Molded nylon encases 6 or 12 pairs of connectors that use screw compression to secure wires without use of lugs - ideal for electronic installations. Brass barrels capture wires and are held in place with a stainless steel "finger" compressed by a screw. The screw does not make contact with the wires, protecting the copper strands from cuts and breakage. Same connector strip used in BX Series boxes, see page 16.

- 3 Sizes: ranging from 6 to 16 gauge strips are easily cut to meet wiring requirements and space limitations.

Panel Accessories - Circuit Breakers

Standard Series: Single and Double Pole - “A” Frame

Fit all Newmar electrical panels, as well as most other brands

- Feature magnetic-hydraulic “trip-free” mechanism
- 5-30 amp rated to 65 VDC or 277 VAC; 40 and 50 amp rated to 32 VDC or 120 VAC (See rating note below)
- Mounting screws not provided order separately
- #10 screw terminals on rear for wiring
- Black toggle handles
- Single pole values: 5, 10, 15, 20, 25, 30, 40 or 50 amp
- Double pole values: 15, 20, 30 or 50 amp

All circuit breakers offered by Newmar are UL recognized (1077) and CSA listed for AC and DC systems.

Important Circuit Breaker Rating Note: Standard series breakers shown on this page which are rated higher than 30 amps are acceptable for use in 230 VAC Line-to-Line systems (where each leg is 115 VAC - to - neutral), but are not rated for 230 VAC line-to-neutral systems.



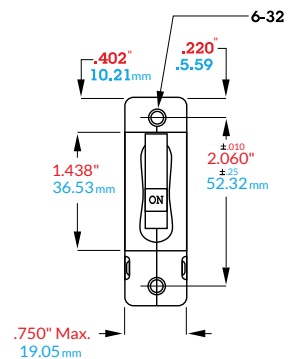
High Amperage Series: Single Pole - “C” Frame

Rated for up to 65 VDC or 120/240 VAC service

- Feature auxiliary contacts for optional remote monitoring of circuit breaker status (Form C)
- 1/4” studs on rear for wiring

Options

- Current rating of 75 or 100 amps
- Black toggle handle
- Two 6-32 screws required for mounting; not included – order separately



High Amperage Series - Double Pole “C” Frame

- 30, 50, or 100 amp
- Black toggle handle



Electrical Enclosures & Cable Entries

EX Series: Electrical Enclosures

These enclosures provide functional and professional protective cases for wire connectors, terminal blocks, relays, solenoids, fuses, etc. The corrosion-resistant polycarbonate cases are ideal for marine applications, and the deep cavity design leaves room for securing wiring and components and making connections. In addition, instruments, switches and panels can be surface mounted to the cover, as there is ample space for rear projection and wiring. DC Power Onboard by Newmar provides Electrical Enclosures and Cable Entries. EX Series Electrical Enclosures provide functional and professional protective cases for wire connectors, terminal blocks, relays, solenoids, fuses, etc. Cable Entries have many models to choose from with waterproof or splash-proof enclosure cable entries in various sizes.

The enclosures have gasketed covers with captured non-corrosive securing screws and offer various levels of water resistant integrity per installer option, depending on type of cable entry used (see below). Waterproof entries provide IP68 protection while the splash-proof entries are rated at IP54. Two Splash-proof entries are (model SPF-1) included with the enclosures.

Enclosure mounting points are located in the bottom of the box and caps for waterproof sealing of the mounting holes are provided. Also supplied is an internal base plate with stand-off mounts for securing components inside the enclosure.

Knock-outs in numerous sizes are positioned on all four sides of the enclosures, giving the installer many options on cable entry type and location for convenient, professional wiring. (See choices of Cable Entries below.)



**Application Example- EX-474
Shown with digital instruments
mounted in cover**

Model	Size L x W x D (in)	Knock-Outs
EX-373	7.09 x 3.7 x 3.19	PG-16
EX-474	7.09 x 4.33 x 4.37	PG-21
EX-1074	7.09 x 10.0 x 4.37	PG-29

Waterproof Fittings

For complete waterproof assembly (IP68) use these compression fittings. Retaining nut secures fitting to enclosures, compression hub creates waterproof seal around wires. Various sizes are available in a wide range of cable diameters.



WPF-3

WPF-2

WPF-1

Model	Cable Diameter Range	Mounting Hole Diameter	EX Enclosure Knock-Out Size Ref.
WPF-1	.2" - .47"	.91" (22.5 mm)	PG-16
WPF-2	.35" - .71"	1.14" (29.0 mm)	PG-21
WPF-3	.55" - .98"	1.48" (37.5 mm)	PG-29

Junction Boxes

PX Series: Waterproof Junction Boxes

- Ideal for making wiring connections above or below decks, even in areas subject to occasional spray
- Similar to BX Series junction boxes, but made from rugged, non-corrosive, high impact polypropylene
- Snap-on cover provides watertight seal
- “Universal” cut-to-fit (see diagram) graduated diameter cable entries accommodate wide cable range
- Multiple position connector strips with “captive” screw compression wire terminals installed, see matrix below for connector strip specifications per box
- Multiple knockouts provided for conduit access (in addition to cable entries)
- IEC Waterproof Rating: IP55 – “Water projected in jets against the enclosure from any direction shall have no harmful effects.”

Model	PX-1	PX-2	PX-3
Number of Connector Strips	1	2	2
Positions per Strip	6	6	9
Max Wire Gauge	16	16	16
Number of Cable Entry Ports	5	7	7
Number of Cable Entries Installed	3	7	7
Spare Cable Entries Provided	2	0	0
Cable Diameter Range (inches)	.14 - .81	.14 - .81	.14 - .99
Cable Diameter Range (mm)	3.5 - 20.5	3.5 - 20.5	3.5 - 25.5
Box Size (inches)	2.95 x 2.95 x 1.66	3.35 x 3.35 x 1.66	4.45 x 4.45 x 2.29
Box Size (cm)	7.5 x 7.5 x 4.2	8.5 x 8.5 x 4.2	11.3 x 11.3 x 5.8



- Provides for secure, protected wiring connections in wheel house or below decks and engine rooms. IP rating 54 - “Splashproof”
- Rugged cast aluminum box with white enamel finish
- Metal box reduces electrical interference
- Easy wiring access through multiple grommeted cable entries
- Supplied with high quality connector strips - secure wires with compression fittings – no terminals required, see matrix for connector strips’ specifications per box

Model	BX-1	BX-2	BX-3
Number of Connector Strips	1	1	2
Positions per Strip	6	12	11
Max Wire Gauge	16	16	14
Max Amps (per position)	6	6	10
Cable Entries	2	8	2
Cable Diameter	.25”	.37”	.59”
Box Size (inches)	2 x 2 x 1.2	4.4 x 2.4 x 1.2	4.7 x 3.7 x 1.3
Box Size (cm)	5.1 x 5.1 x 3.1	11.2 x 6.1 x 3.1	11.9 x 9.4 x 3.3



Meters

SECTION 6



Digital Meters - Generators & Engine



Generator Power Monitor

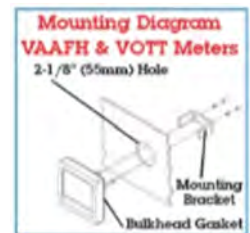
This versatile and compact (4" x 4") color LED display instrument provides simultaneous read out of generator and shore power data: AC Voltage, Frequency, Amperage of two 120V legs of 240V circuit. Programmable alarm settings on each function produces 85 db audio alert as well as visual red blinking display. In addition, the Generator Monitor logs cumulative generator operation hours with programmable service interval hour settings and notification.

AC Volt-Amps-Frequency-Hour Meter

Features

- Large 1/2" high LED digits in high visibility green
- 4 functions, all display simultaneously on one screen: Volts, Amps, Frequency
- Hour meter displays when generator is off
- Easy function and alarm programming via 4 button key pad, with on screen menu settings. 4 level adjustable LCD brightness settings Programmable alarms: HIGH/LOW for volts and frequency and HIGH alarm for amps (2 lines). Alarm modes: Red warning color visual indication, plus built in 85 db audible, with output signal for external alarm relay
- User programmable service hour interval settings and notification (password protected)
- 150 amp Current transformers (2 X) provided DC powered 9-33 VDC, with low power consumption sleep mode (<20 ma) to conserve batteries
- Low profile and compact display. Size: 4" x 4"
- Panel mount: 2-1/8" hole
- Waterproof instrument face

Model	Operating Volts	Sense Voltage	Max. Power	Dimensions	Weight
VAAFH	9 - 33V DC	120/240V AC	36 kW	4"x4"x2.7"	2 lbs



Engine Function Monitor

The Engine Monitor is a compact 4" x 4" color LED display that provides simultaneous read out of vital engine data including: DC Voltage, Oil Pressure, Temperature, and Tachometer from J1939 CAN bus. Programmable alarm settings on each function produces 85 db audio alert as well as visual red blinking display.

AC Volt-Amps-Frequency-Hour Meter

- Large 4" x 4" LED display provides simultaneous read-out of vital engine operation data
- 4 level adjustment brightness settings
- Programmable alarm set points for oil, temp and voltage, and RPM
- Alarm programming via 4 button key pad
- Internal audio alarm with remote alarm output signal
- Waterproof meter face
- Input signal wire assembly with waterproof Deutsch connector
- Panel mount: 2-1/8" hole

Model	Operating Volts	Input Signal	Dimensions	Weight
VOTT	9 - 33V DC	J 1939	4"x4"x2.7"	2 lbs



Accessories

SECTION 7



Splashproof Boxes

BX Series

- Provides for secure, protected wiring connections in wheel house or below decks and engine rooms. IP rating 54 - "Splashproof"
- Rugged cast aluminum box with white enamel finish
- Metal box reduces electrical interference
- Easy wiring access through multiple grommeted cable entries
- Supplied with high quality connector strips- secure wires with compression fittings-no terminals required - see matrix below for connector strips specifications per box



Model	BX-1	BX-2	BX-3
Number of Connector Strips	1	1	2
Position per Strip	6	12	11
Max Wire Gauge	16	16	14
Max Amps (per position)	6	6	10
Cable Entries	2	8	2
Cable Diameter	0.25"	0.37"	0.59"
Box Size (inches)	2 x 2 x 1.2	4.4 x 2.4 x 1.2	4.7 x 3.7 x 1.3
Box Size (cm)	5.1 x 5.1 x 3.1	11.2 x 6.1 x 3.1	11.9 x 9.4 x 3.3

Connector Strips Installed in Boxes



Molded nylon encases pairs of connectors that use screw compression to secure wires without use of lugs. Ideal for electronic installations. Brass barrels capture wires and are held in place with a stainless steel "finger" compressed by a screw. The screw does not make contact with the wires, protecting the copper strands from cuts and breakage - meets ABYC standards.

Galvanic Isolators - Fail Safe

30A & 60A

Installing the Galvanic Isolator between the AC safety ground and DC bonding system (see page 2) blocks most of the low voltage currents and corrosive action seen on the vital metallic components in the saltwater. With the low voltage current blocked, the galvanic corrosion effect on the sacrificial zincs is significantly reduced (while the integrity of the critical safety ground path is maintained). This means a significant saving in boat haul-out fees and zinc replacement costs. For additional safety, all units feature a large capacitor, providing a secondary low- impedance path for sending AC current to the ground.

Newmar's latest galvanic isolator meets the latest ABYC A-28 2019 including being failsafe. This new design can meet the strictest temperature and current tests to create a robust solution for galvanic protection.

Two models are offered; rated for 30 or 60 amp shore-power

KEY FEATURES

- Commonly installed on cruisers, sailboats, and yachts
- Protects against corrosion
- Maintains a safe environment
- Certified to UL1500 standard for Ignition Protection
- Tested to 50°C ambient temperature
- The fail-safe feature ensures ground maintenance connection in the event of isolator failure



Model	Shore Power VAC, Hz	Maximum Short Circuit	Stray Current Protection	Size (mm) (H x W x D)
GI-30-FS	115-230V	5000 Amps	Up to 1.4 Vdc	200 x 175 x 65

Model	Shore Power VAC, Hz	Maximum Short Circuit	Stray Current Protection	Size (mm) (H x W x D)
GI-60-FS	115-230V	5000 Amps	Up to 1.4 Vdc	230 x 175 x 65

Antenna/Cable Accessories

Waterproof Fittings

- Create a 100% waterproof seal when routing cables through decks and bulkhead
- Allow installation and/or removal of cable with connector still attached
- Accommodate wide range of cables
- Rugged, weatherproof glass-filled nylon
- Available in two series:

CCX Series

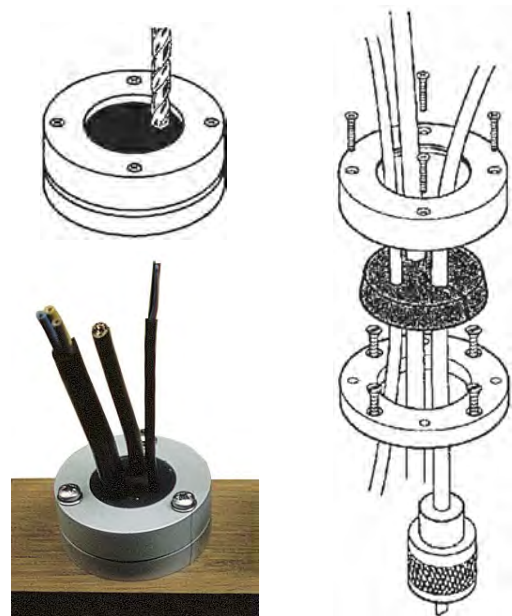
Entry hole pre-drilled in seal with slit to edge allowing feed thru of cable with factory-installed connector attached; multiple glands cover a wide range of cable sizes; one CCX fitting required for each cable.



Model	Cable Diameter Range	Max Connector Diameter	Typical Connector
CCX-R	.47"-.59"	1.57"	Large Radar Plug
CCX-S	.35"-.55"	.83"	Small Radar Plugs
CCX-T	.18"-.35"	.83"	PL-259, BNC, Wind Instrument Plugs

DX Series

Drill holes and slit cable gland as required to accommodate cable with or without factory-installed connector. Multiple cables may be passed through a single fitting.



Model	Drill Thru Aperture	Max Connector Diameter
DX-2	1.18" Diameter	1.18"
DX-3	1.57" Diameter	1.57"
DX-5*	1.9" Diameter	1.9"

Hailer Horns

Phase Three Series Modular

Clear, distortion free, waterproof deck horns are ideal for shipboard paging, hailing, fog horn and alarm systems. High impact plastic construction and assembled with stainless steel hardware. 8 Ohm.

Model	Output Nominal/ Peak	Weight in lbs.
PA-8W	8 watts / 12 watts	1 lb.
PA-30/20	30 watts / 20 watts	3 lbs.
PA-40/30	40 watts / 30 watts	5 lbs.
PA-60/40	60 watts / 40 watts	8 lbs.

Note: Model PA-60/40 is a commercial grade horn which also features excellent sensitivity as a microphone for use in talk-back systems.



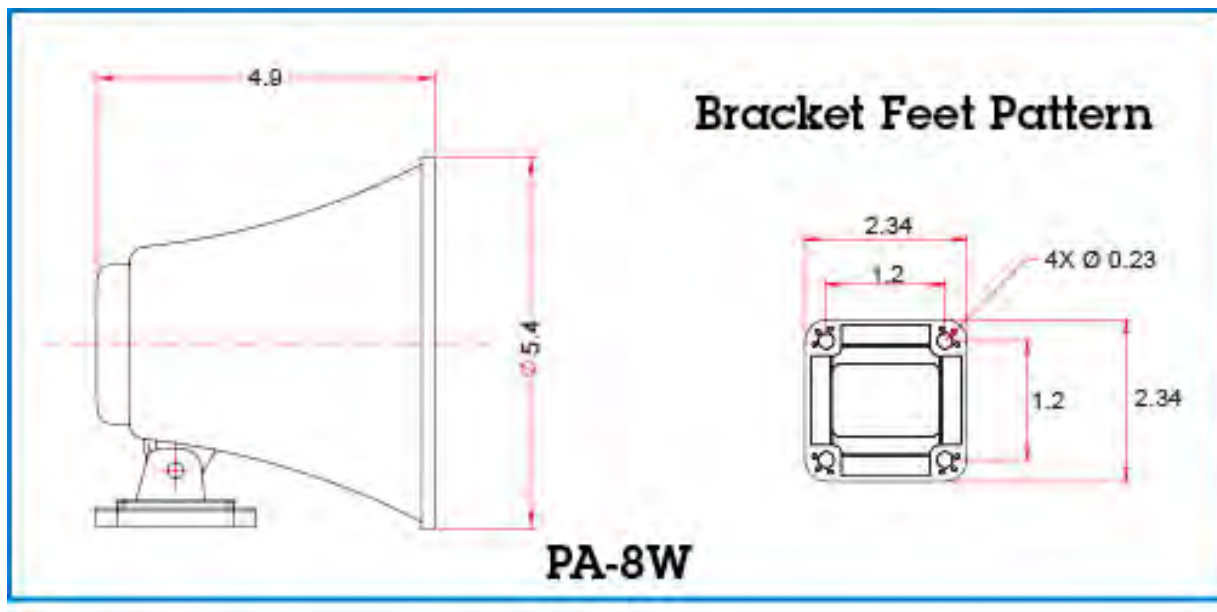
Model: PA-60/40

PA-40/30

PA-30/20

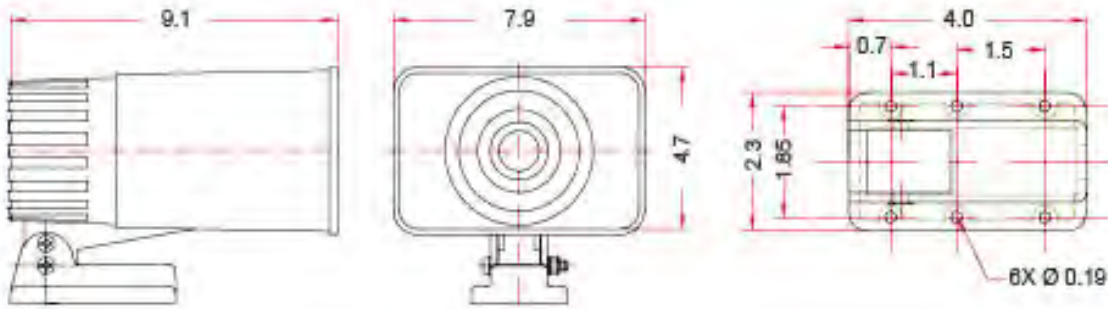
PA-8W

Mounting Dimensional Drawings



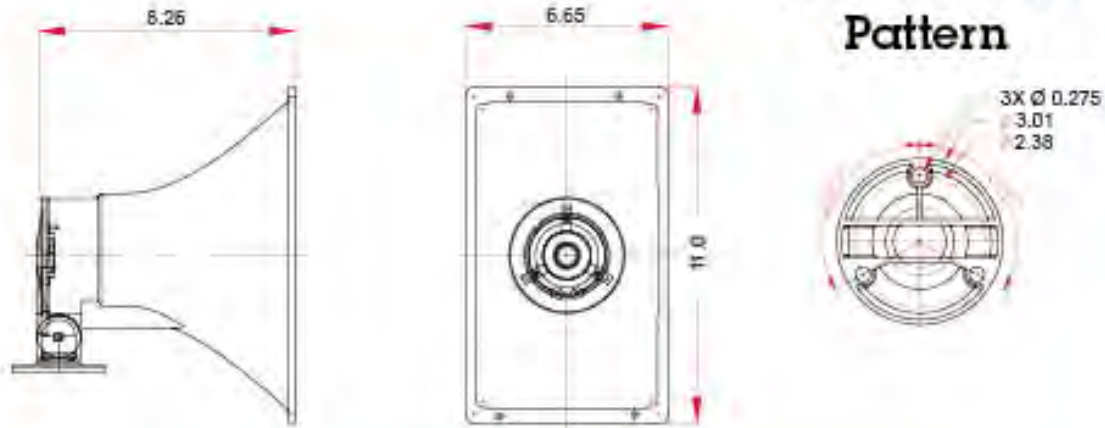
PA-8W

Bracket Feet Pattern



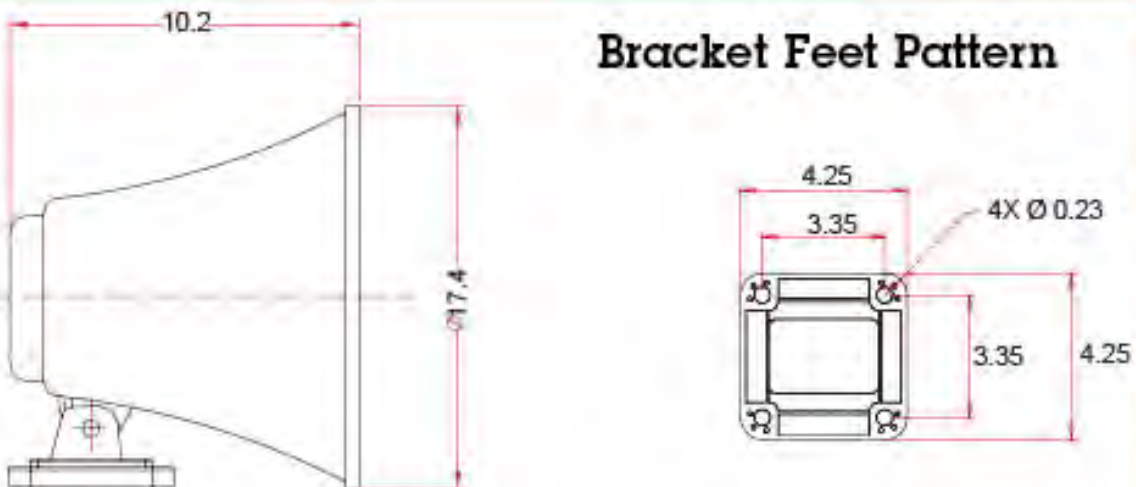
PA-30/20

Bracket Feet Pattern



PA-40/30

Bracket Feet Pattern



PA-60/40

Waterproof Circuit Breakers

Waterproof, High Amperage Surface Mount Circuit Breakers.

Features

- Combines switching and circuit breaker function in one unit
- Compact size and surface mount configuration protects high amperage circuits at virtually any location: ideal for windlass, bow thrusters, high power feeds to distribution panels in boat and trucks
- Trip delay curve accommodates high surge amperage for motor start
- Push to disconnect button de-energizes circuit for maintenance
- Latch arm resets breaker after overload, but cannot be held in "ON" position if short remains on circuit
- 1/4" terminal studs with protective covers secure wiring
- Waterproof - ideal for marine and truck applications
- Ignition protected for safe use in gasoline powered applications
- Available in clam shell retail display pack, or bulk packed 12 per case lot



Electrical Specifications

Voltage	To 42 VDC max.
Amperage Ratings	50-80-100-120-150
Trip Sensing	Thermal
Max Interrupt Current	3000 amps

Mechanical

- High impact plastic molded case
- Ignition Protected
- Water Proof
- 1/4" termination studs with protective covers
- **Case Size:**
 - 1-7/8"W x 2-7/8"D x 1-3/4"H
- **Mounting:**
 - 2 ea. 1/4" holes. Mounting hardware not provided
- **Weight:**
 - 2lbs

DC Power Accessories

Low Voltage Disconnect - LVD

Discharging batteries beyond a critical low voltage can damage the batteries and/or load, and require a longer recharge interval. A low voltage disconnect prevents this condition.

The LVD contains a sense and control circuit housed in a compact, rugged, vinyl-clad aluminum case. It is installed in-line between the battery and the load. The unit continually monitors battery voltage and if it falls below a preset voltage threshold, the load is automatically disconnected. When batteries are recharged past another pre-set voltage the load is reconnected. Connect and disconnect points are user adjustable.

Models

LVD 12-30, LVD 12-75 (Neg. Ground)

LVD 24-50 (Neg. Ground)

LVD 48-30 (Pos. Ground)

*Not ignition protected

Specifications

	12 VOLT	24 VOLT	48 VOLT
Disconnect	10.4 VDC	21.0 VDC	42.0VDC
Connect	12.2 VDC	24.5 VDC	49.0VDC

Voltage and Contact Current Ratings:

Indicated By Model Number (i.e., LVD 12-30 = 12 Volts, 30 Amps Continuous)

Dimensions

5.25" H x 5.25" W x 3.5" D (Mounted vertically, all models)

Weight:

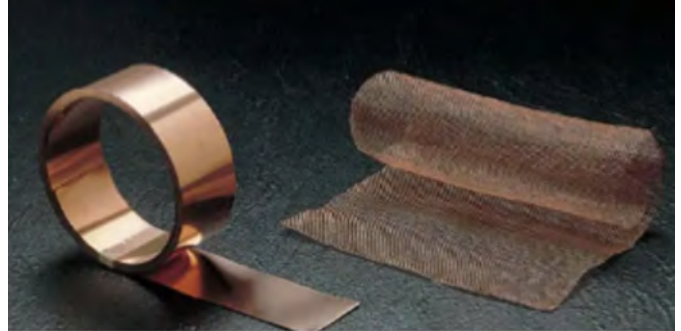
(All models): 1 LB.



RF Ground & Antenna Accessories

Copper Strap

- Ideal conductor for RF grounding of SSB radios and other noise sensitive transceivers or for bonding of thru-hulls, etc.
- Flexible - easily conforms to vessel contours
- .01 (25mm) thick - see matrix for available lengths and widths



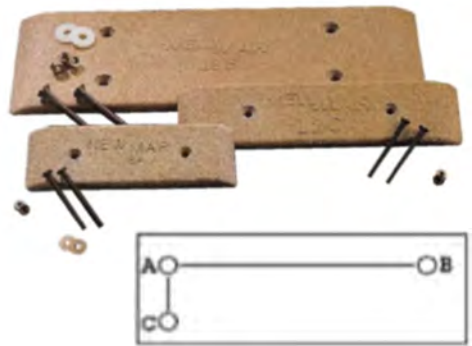
Copper Screen

- Tight copper mesh
- (.05 x .01 wire spacing) ideal for creating a ground plane in hull. Length: 25'; Width: 4'
- May be placed into electronics enclosures to provide an RF barrier.

Model	Width	Length	Weight
GS-2-25	2"/5.1cm	25'/8m	3lbs/1.4kg
GS-2-50	2"/5.1cm	50'/17m	5lbs/2.3kg
GS-2-100	2"/5.1cm	100'/33m	8lbs/3.6kg
GS-4-100	4"/5.1cm	100'/33m	16lbs/7.3kg
Screen-25	4"/1.2m	25'/8m	16lbs/7.3kg

Ground Shoes

- Provide an excellent noise-free RF ground by making direct contact with water outside hull.
- Porous sintered bronze construction magnifies contact area- see matrix for surface area equivalent
- Silicon bronze hardware provided (Not intended for lightning protection)



Mounting Hole Dimentions

Model	Dimensions - Inches	Dimensions - Centimeters	Center to Center A-B	Center to Center A-C	Hole Diameter	Ground Area Equivalent	Weight Lbs/Kg
8A	8.4 x 2.7 x 5	21.3 x 6.9 x 1.3	4-1/2"	N/A	1/4"	20 sq. ft	3/1.4
12C	11.8 x 3.1 x 5	30 x 7.9 x 1.3	6"	N/A	5/16"	40 sq. ft	4/1.8
18E	17.6 x 6.1 x 5	44.7 x 15.5 x 1.3	10"	3"	5/16"	100 sq. ft	11/5

Waterproof Fittings - Thru-Dex Series

RA Series Right Angle Waterproof Feed-Thru Fittings

Route cables at 90° through vertical and horizontal surfaces with wall hugging low profile design that keeps cable secured close to the surface reducing intrusion with personnel or other equipment /cables. Molded of nylon, the sculpted shape has no sharp edges and provides smooth 90° radius feed-thru bend in cables without kinks.

Easy installation: slide silicone compression rings on cable, mount base piece with waterproof gasket then attach sealing end cap to create an IP 65 waterproof seal. Note cable must be routed without end connector attached.



Three models to accommodate wide range of cable diameters.

Model	Cable Diameter Range (In)	Dimensions (In)
RA-1	0.1 - 0.25	2.17 x 1.65 x 0.63
RA-2	0.27 - 0.35	3.23 x 2.44 x 0.95
RA-3	0.39 - 0.47	3.23 x 2.44 x 0.95

CCX Series Waterproof Feed-Thru Fittings

The entry hole is pre-drilled in seal with slit edge allowing feed through of cable with factory installed connector attached: multiple glands cover a wide range of cable sizes. One CCX fitting is required for each cable.

- Create a 100% waterproof seal when routing cables through decks and bulkheads
- Entry hole predrilled in seal with slit to edge
- Allowing installation/removal with connector still attached
- Rugged weatherproof nylon housing with neoprene seal



Model	Cable Diameter Range (In)	Max Connector Diameter (In)
CCX-R	0.47 - 0.59	1.57"
CCX-S	0.35 - 0.55	0.83"
CCX-T	0.18 - 0.35	0.83"

DX Series Feed-Thru Waterproof Fittings

Provided with solid neoprene cable gland, installer drills holes and slits as required to accommodate cable with or without factory installed connector. Multiple cables may be passed through a single fitting.

- Similar to CCX Series except installer drills holes accommodate cable(s)
- Multiple cables may be routed through a single fitting

Model	Drill-Thru Aperture	Max. Connector Diameter
DX-2	1.2"	1.57"
DX-3	1.65"	0.83"
DX-5*	2.0"	0.83"



Phone-Com Systems



The Phone-Com intercom system provides direct, wired, point-to-point communication. Voice contact to any phone in the system is as easy as lifting the receiver and pressing the call button. Phone Com operates on 12 VDC. They are constructed of high-impact plastic and are available in either bright white or traditional black. Bulkhead mounting bracket is provided. Two versions are available:

PI-2: Designed for communication between only two points. A single call button sounds a buzzer and illuminates an indicator lamp on the companion phone. Available singly or as a set with 40' of interconnect wire, fuse, terminal lugs and mounting hardware.

PI-10: For multiple station calling capability. Up to 10 phones may be interconnected, and each phone has 10 call buttons. Sold individually.

Phone-Com Wiring: Color-coded multi-conductor interconnect wire (22 AWG) is available from NEWMAR at any length desired with 5, 10 or 15 conductors. For PI-2, use 5 conductor wire. For PI-10, add 3 to the total number of stations to determine minimum number of conductors required. Note: Phones are not waterproof and should be installed in a protected location.

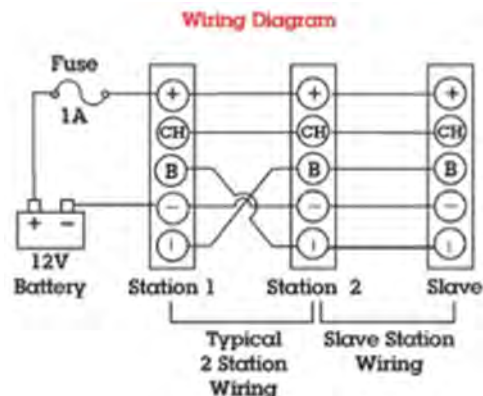
PI-2: Two station phone with single call button: sold individually: 2 lbs. (Specify White or Black when ordering)

PI-2 SET: Two station phone set, 40 foot interconnect wire, fuse, lugs, mounting hardware; 5 lbs. (Specify White or Black when ordering)

PI-10: Multi-station phone with 10 call buttons, sold individually: 2 lbs. (Specify White or Black when ordering)

22 AWG Wire: 5, 10 or 15 conductor: sold per foot.

BUZZER: Optional external buzzer for use in high noise areas.



Portable Radio & Phone Covers

AQ Series Waterproof Radio Covers

When the AQ Series waterproof cover is used for protection, hand-held radios can be taken anywhere without being damaged by water, dust or sand. Even total immersion will not harm the radio. These covers are certified waterproof to a depth of 33 feet.

The case is made of super-tough, UV resistant TPU (thermoplastic polyurethane), which is engineered with enough flexibility to facilitate easy operation of knobs and keypads. Transparent design allows easy reading of digital displays. Sound is virtually unimpeded and RF transmission is unaffected.

A quick release clip allows easy insertion and removal of the radio and a handy lanyard provides extra security when hands are wet. But if the radio falls into deep water, no problem! Safely inside the AQ case, it will float!

A new model, the AQ-PRO is designed for public safety professionals, life guards, and mountain rescue teams. A 3-way harness is provided for convenient and comfortable radio front pack. Antenna portion is case doubles as convenient emergency grab and carry handle.



Models

AQ-10L/R:

For compact hand-held radios. Reversible design accommodates both left and right hand antennas

AQ-20L/R:

For standard size hand-helds. Reversible design accommodates both left and right hand antennas

AQ-PRO:

For public safety use, front pack harness provided, accommodates both left and right hand antennas

Dimensions in Inches

- A** Overall height of radio/phone with antenna extended
- B** Height of radio/phone body
- C** Circumference of radio/phone

Model	A	B	C	Weight
AQ-10L/R	13.3"	7"	7.6"	1 lb
AQ-20L/R	15.7"	8.7"	8.7"	1 lb
AQ-PRO	4.87"	7.2"	8.5"	1 lb



About Mission Critical Electronics

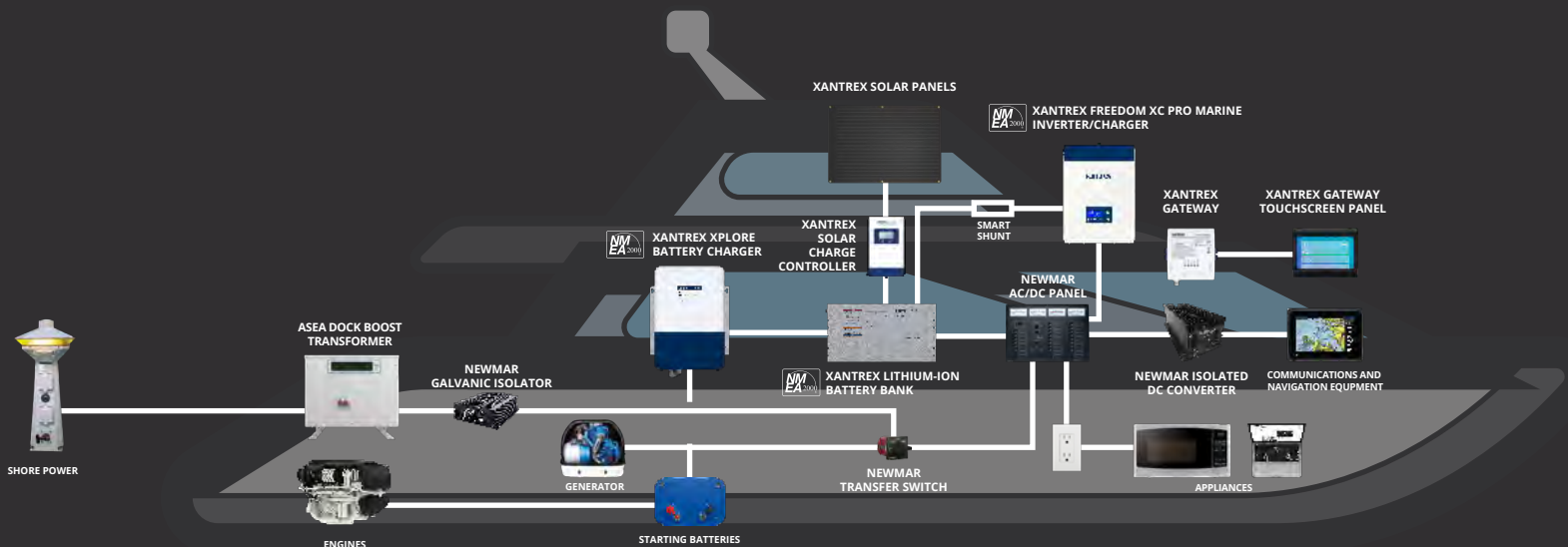
Mission Critical Electronics (MCE) is the parent of industry leading brands such as American Battery Charging, ASEA Power Systems, DuraComm, Kussmaul Electronics, Newmar, Power Products, Purkeys, Xantrex, and ZeroRPM. Headquartered in Costa Mesa, California, MCE is a leader in the development of innovative solutions for power conversion, energy storage, power generation and shore power connectivity for a wide variety of applications in vehicle, marine, industrial and network markets. MCE takes great pride in translating its customers' needs into the highest quality products and solutions available in the markets it serves. MCE delivers its products and solutions with an unmatched level of responsiveness.

MCE serves its customers in North America through nine offices and a third-party warehousing facility while maintaining manufacturing facilities in the US employing over 300 people. MCE continues to invest in advanced and innovative technologies for the electrification of power systems in vehicle and marine applications.

The introduction of FREEDOM eGEN, ZeroRPM and SAFEX power systems are a testament to MCE's commitment of offering clean, green, environmentally friendly power solutions for both recreational and commercial applications.

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MCE MARINE POWER

