

Combi Series

- Charges two individual battery banks
- Powerboost from battery when shore power is limited
- Parallel function, with shore generator
- Maintenance free vario fans
- 32°F to 77°F, 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(496) x 12.5(318) x 6.1(156)	24.3(11)	\$2614.36
37012505	Mass Combi 12/2500-100	2500 W	100A @ 14.25V	120V/ 45-65Hz.	120V, 60Hz.	19.5(496) x 12.5(318) x 6.1(156)	24.3(11)	\$2986.00
24V								
37022505	Mass Combi 24/2500-60	2500 W	60A @ 28.5V	120V/ 45-65Hz.	120V, 60Hz.	19.5(496) x 12.5(318) x 6.1(156)	24.3(11)	\$3192.00
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 6.9(175)	35(15.3)	\$4102.00
37024005	Mass Combi 24/4000-100	3750 W	100A @ 28.5V	120V/ 45-65Hz.	120V, 60Hz.	19.5(496) x 12.5(318) x 11(279)	46.3(21)	\$4527.00

Remote Options

Masterlink

- Monitors: voltage, current, AH, time remaining and remaining capacity in percentage terms for the main battery
- LED indicators for remote monitoring of battery level
- LCD screen displays direct online date
- Multi language support
- 3 (service, starter, and bowthruster) Battery outlets
- Max AH. capacity: 9999
- Supply voltage 9-35
- Volt measurement range: 7-35
- Voltage resolution .01
- Shunt specification 500 amp/ 50mA (service set)
- Current measurement range: 0-500 amp (optional 1000 amp 50mV)
- Master link dimensions: 4.7"(120mm) x 2.6"(65mm) x 2.2"(55mm)
- MICC remote panel dimensions: 4.75"(120.65mm) x 2.5"(63.50mm)



MASTERLINK

Masterview

- Single button ON/OFF
- Touch screen for all operations: quick system overview, product overview, product configuration
- All levels include customization options for individualization of systems
- Includes masterbus powering capabilities
- IP21 ignition protected
- Dimensions: 4.3"(109.22mm) x 4.3"(109.22mm) x .8"(20.32mm)



MASTERVIEW

Item Number	Series	Description	Price
70403105	Masterlink/ MICC Battery Meter	Battery monitor (2 batteries) 12/24V DC with LCD readout and Mass inverter, charger, combi remote control	\$694.00
77010305	Masterview Easy Touch Screen Panel	Touch screen panel for monitoring and control for Masterbus network 4.3"(110mm) x 4.3"(110mm)	\$375.00

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

Power Conversion Equipment

OUTBACK INVERTERS & OPTIONS/ACCESSORIES

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(33) x 8.25(21) x 16.25(41)	62(29)	\$2,369.00
FX2524MT	Sealed	2500 VA	55A DC	21.0 to 34.0	120VAC/ 60 Hz.	13(33) x 8.25(21) x 16.25(41)	62(29)	\$2,369.00
FX2532MT	Sealed	2500 VA	35A DC	28.0 to 45.3	120VAC/ 60 Hz.	13(33) x 8.25(21) x 16.25(41)	62(29)	\$2,369.00
VFX2812M	Vented	2800 VA	125A DC	10.5 to 17.0	120VAC/ 60 Hz.	13(33) x 8.25(21) x 16.25(41)	61(28)	\$2,569.00
VFX3524M	Vented	3500 VA	82A DC	21.0 to 34.0	120VAC/ 60 Hz.	13(33) x 8.25(21) x 16.25(41)	61(28)	\$2,569.00

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)

Mate3

- 4.0" x 1.2" full graphical display
- 5 system operation hot keys, 1 user programmable hot key
- 5 navigational keys
- Ethernet PC interface
- Indoor type 1 (IP 30)
- SD memory card slot
- Up to 1 year of data logging



MATE 2



MATE 3

Item Number	Description	Price
MATE2	Complete management tool for OutBack mobile power conversion systems	\$295.00
MATE3	Advanced System Display and Controller	\$595.00

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	\$29.00

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Power Conversion Equipment

VICTRON INVERTERS & ACCESSORIES

Multi Plus

- 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
CMP122020100	2000	80A	9.5-17V DC	120V AC/ 60 Hz.	20.5(520) x 10(255) x 5(125)	25(12)	\$1,698.00
PMP123021102	3000	120A	9.5-17V DC	120V AC/ 60 Hz.	14.3(362) x 10.2(258) x 8.6(218)	40(19)	\$2,097.00
PMP243021102	3000	70A	19-33V DC	120V AC/ 60 Hz.	14.3(362) x 10.2(258) x 8.6(218)	40(19)	\$2,097.00

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: -40°C to 50°C
- 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 @ 40°C	Input Volts	Output Volts	Dimensions in " (mm) HxWxD	Weight lbs.(kg)	Price
PHO24/350	350	250W	21-31	120V AC/ 60 Hz.	2.8(72) x 6.1(155) x 9.3(237)	2.7(5.4)	\$179.00
PHO24/800	800	700W	21-31	120V AC/ 60 Hz.	4.1(104) x 7.6(194) x 12.0(305)	6.5(14.3)	\$448.00

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
QUATRO24/5000	5000	120A	19-33V DC	120V AC/ 60Hz.	17.5(444) x 13.0(328) x 9.6(240)	66(30)	\$3,735.00

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Power Conversion Equipment

VICTRON INVERTERS & ACCESSORIES

Accessories

Interface MK2-USB Ve. Bus to USB

- Programs VE.Bus to products through PC
- Allows communication from SINUSMax Phoenix inverters to a PCs
- All Victron Energy products equipped with RS-485 data port can be integrated in a computerized monitoring and control system



VE. BUS INTERFACE

Blue Power Panel-2

- Provides intuitive control for all devices connected the VE.Net network
- Can be used to view and configure the full range of setting on Ve.Net devices
- Customizable overview screens
- VE.Net to VE.Bus converter allows you to combine the control of the VE configure software with the simple interface of the BPP
- Front mounting with exposed mounting holes



BLUE POWER PANEL 2



BLUE POWER PANEL GX

Blue Power Panel 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

Digital Multi Control

- Remote monitoring includes: rotary knob to set power control and power assist levels

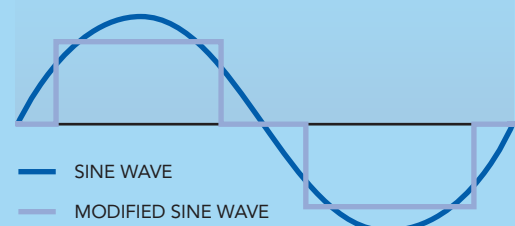


DIGITAL MULTI CONTROL

Item Number	Descriptions	Price
ASS030130000	Interface MK2-USB Ve. Bus to USB	\$89.00
BPP00020000	Blue Power Panel 2	\$341.00
BPP000200100	Blue Power Panel GX	\$341.00
REC020005000	Digital Multi Control 200/200H	\$178.00
ASS030065000	RJ 45 UTP Patch Lead 5M	\$19.00
ASS030065010	RJ 45 UTP Patch Lead 10M	\$23.00
ASS030065020	RJ 45 UTP Patch Lead 15M	\$31.00
VBC000300000	Ve. Net Battery Controller (includes 500A/50mV shunt and connection kit)	\$270.00

Modern marine power inverters produce voltage (and power) for your 120 VAC equipment in the form of either a true sine wave or a modified sine wave (sinusoidal waveform to be precise). A true sine wave is the smoothly rising and falling waveform (looks like a roller coaster) typically supplied by public utilities. It is also what engineers expect when designing 120 or 240 VAC equipment.

The modified sine wave is a choppy looking sum of square waves (looks like a rising and falling staircase) designed to approximate the effects of a true sine wave. Modified sine wave inverters operate more efficiently and are less expensive to manufacture than true sine wave devices but the “choppiness” could adversely affect the performance of some equipment (example: television pictures may be distorted and motors may run hotter).



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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	85-264V AC 90-350V DC	10-15V DC	8/6.6	2.657(67.5) x 3.897(99) x 4.21(107)	\$341.19

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	85-264V AC	22.5-29.5V DC	5	1.58(40) X 5.12(130) x 4.52(115)	\$269.12
TRIO-PS-24-10	85-264V AC	22.5-29.5V DC	10	2.36(60) X 5.12(130) x 6.00(152.4)	\$384.47
TRIO-PS-24-20	85-264V AC	22.5-29.5V DC	20	4.52(115) X 5.12(130) x 6.00(152.4)	\$600.35

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	85-264V AC	12V DC +/-1%	4.6	3.5(90) x 1.3(35) x 3.3(84)	\$91.11
UNO-PS-24-30W	85-264V AC	24V DC +/-1%	1.25	3.5(90) x .88(22.5) x 3.3(84)	\$66.26
UNO-PS-24-60W	85-264V AC	24V DC +/-1%	2.5	3.5(90) x 1.3(35) x 3.3(84)	\$81.44
UNO-PS-24-100W	85-264V AC	24V DC +/-1%	4.2	3.5(90) x 2.2(55) x 3.3(84)	\$131.14

Power Conversion Equipment

PHOENIX POWER SUPPLY + TRIPPLITE POWER SUPPLY

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 characteristics curve
- Input voltage range: 100 volt AC to 240 volt AC
- Frequency range: 45Hz. - 65Hz.
- UL approved



STEPPERPOWER

Item Number	Input Volts	Output Current	Output Volts	Dimensions in " (mm) HxWxD	Price
STEP-PS-12-1.5	85-264V AC	1.5 A	12V DC +/- 1%	1.41(36) x 3.54(90) x 1.7(43)	\$80.55
STEP-PS-12-3	85-264V AC	3 A	10-16.5V DC	2.12(54) x 3.54(90) x 2.4(61)	\$115.69

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(95.25) x 6.5(165.10) x 7.5(190.5)	7(3.17)	\$123.44
PR-10		10	7.5	4.5(114.3) x 6.75(171.45) x 7.75(196.85)	10(4.53)	\$176.90
PR-15		15	12	4.5(114.3) x 6(152.40) x 10(254)	13(5.89)	\$244.82

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Power Conversion Equipment

NEWMAR POWER SUPPLY + ASEA REGULATORS

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	0-50°C	6.0(15.2) x 4.6(11.7) x 8.5(21.6)	10(4.5)	\$369.00
115-12-20	20	8	0-50°C	5.7(14.5) x 4.8(12.2) x 16.3(41.4)	20(9.1)	\$790.00
115-12-35CD	35	35	0-65°C	6.5(16.5) x 9.5(24.1) x 14.0(35.6)	32(14.6)	\$1,160.00

ASEA

- Solid state line voltage regulator which provides complete input/output isolation as well as protection from most common dock power problems: brownouts, spikes, sags, surges, load crosstalk
- Ward's Marine carries an extensive selection of repair and replacement parts in stock
- Single phase
- 120/240 VRMS
- Output voltage regulation less than 1%
- 0-95% non-condensing



VOLTAGE REGULATOR

Item Number	kVA	Hz.	Input VRMS	Price
LVR12	12	57-63	90-135	\$12,250.00
LVR15	15	47-53	175-280	\$13,830.00
LVR24	24	57-63	175-250, 400-560V	\$17,500.00

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Power Conversion Equipment

ASEA FREQUENCY CONVERTERS

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)

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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
AC25, AC30, AC36	O (Control)	24.00"	24.00"	24.00"	Dual Shore Cords/Split Cabinet
	F	41.00"	18.00"	30.25"	Top Display
	L	57.675"	18.00"	21.00"	Front Display
AC25, AC30	O (xmfr)	16.00"	19.00"	24.00"	Split Cabinets
	O (Control)	24.00"	24.00"	24.00"	Split Cabinets
	M1	25.00"	37.25"	23.875"	Side Display
AC25, AC30	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
AC55, AC63, AC75	N	53.00"	59.875"	10.00"	Front Display
	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
LC: AC55, AC63, AC75, AC90	J	62.125"	25.00"	20.00"	Front Display
	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 FREQUENCY CONVERTERS

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 25.3"D	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

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



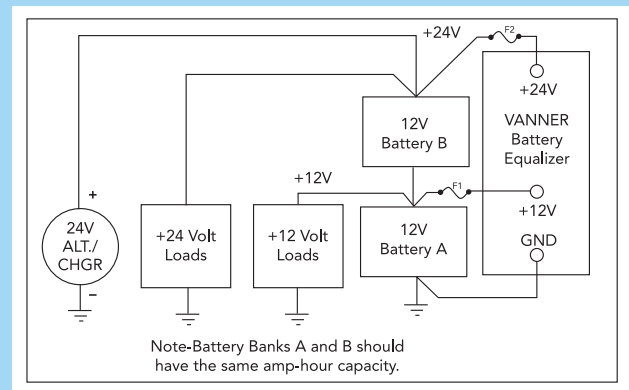
EQUALIZER

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(238) x 8.5(216) x 3.20(81)	5.0(27)	\$465.00
66-60	60 A	18-32	32	9.8(249) x 8.5(216) x 2.47(63)	6.3(2.96)	\$644.00
66-80	80 A	18-32	43	9.8(249) x 8.5(216) x 2.47(63)	6.9(3.24)	\$725.00
66-100	100 A	18-32	53	9.8(249) x 8.5(216) x 2.47(63)	6.9(3.24)	\$938.00

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.



Power Conversion Equipment

MASTERVOLT CONVERTERS

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 0°C to 60°C (de-rating above +40°C, 5% per °C)



MASTER VOLT CONVERTER

Item Number	Maximum Amps	Input Volts	Output Volts	Dimensions in " (mm)	Weight lbs(kgs)	Price
81200100*	20	20-32V DC	10-15V DC	7.5(190) x 5.1(130) x 2.4(61)	2.2(1)	\$343.00
81300100	20	19-32V DC	10-15V DC	8.9(227) x 6.1(154) x 3.2(81)	4(1.8)	\$484.00
81300200	20	19-32V DC	20-28.5V DC	8.9(227) x 6.1(154) x 3.2(81)	4(1.8)	\$484.00
81300400	20	11-16V DC	10-15V DC	8.9(227) x 6.1(154) x 3.2(81)	4(1.8)	\$484.00

Accessories



PC LINK



MASTERVIEW

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
77010305	Masterview Easy	3.5 inch touchscreen panel for reading status, dimmer function setting	\$375.00

List pricing in catalog is subject to change without notice.

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(65) x 3.5(88) x 6.3(160)	1.5(0.7)	\$98.00
ORI24/12-40	40/55	12	18-35	2.6(65) x 3.5(88) x 7.7(195)	2.0(0.9)	\$139.00
ORI24/12-70	70/85	10-15	18-35	2.6(65) x 3.5(88) x 7.7(195)	2.0(0.9)	\$221.00
Standard - 24 Volts						
ORI12/24-8	8/20	20-30	9-18	1.8(46) x 3.5(88) x 4.5(114)	0.8(0.3)	\$80.92
ORI12/24-10	10/20	20-30	9-18	1.8(46) x 3.5(88) x 4.5(114)	0.9(0.4)	\$98.00
Isolated - 12 Volts						
ORI12/12-200	16	12.5	9-18	1.9(49) x 3.5(88) x 7.2(183)	1.3(0.6)	\$146.00
ORI24/12-200W	16	12.5	20-35	1.9(49) x 3.5(88) x 7.0(178)	1.3(0.6)	\$146.00
Isolated - 24 Volts						
ORI12/24-100	4	24	9-18	1.9(49) x 3.5(88) x 6.0(152)	1.1(0.5)	\$138.36
ORI12/24-200	8	24	9-18	1.9(49) x 3.5(88) x 7.2(183)	1.3(0.6)	\$159.00
ORI24/24-200W	8	24	20-35	1.9(49) x 3.5(88) x 7.2(183)	1.3(0.6)	\$146.00

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(73) x 3.7(94) x 1.5(37)	0.44(0.20)	\$49.00
ORI-TR-24/12-5	5/7	12.7	18-35	2.1(53) x 2.0(51) x 1.1(27)	0.20(0.09)	\$31.00
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)	\$109.00
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)	\$109.00
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)	\$109.00

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

Power Conversion Equipment

NEWMAR CONVERTERS

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: 0-50°C, derate linearly from 100% at 40°C to 50% @ 50°C thermal shutdown at 70°C 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(7.1) x 4.2(10.7) x 10(26.4)	2.5(0.9)	\$295.00
32-12-10	10 Int/10 Cont	4.5(11.4) x 5.9(15.0) x 11(27.9)	4(1.8)	\$370.00
32-12-15C	15 Int/15 Cont	4.5(11.4) x 5.9(15.0) x 11(27.9)	5(2.3)	\$425.00
32-12-25A	25 Int/20 Cont	6(15.2) x 4.7(11.9) x 14(35.6)	7(3.4)	\$595.00
32-12-35A	35 Int/30 Cont	6(15.2) x 4.7(11.9) x 16(40.6)	12(5.5)	\$795.00
32-12-50	50 Int/40 Cont	6.2(15.7) x 6.8(17.3) x 18(46.0)	16 (7.3)	\$925.00