

ProMariner™

2020

MARINE
EMERGENCY VEHICLE
INDUSTRIAL
RV



Inverter / Chargers

Inverters

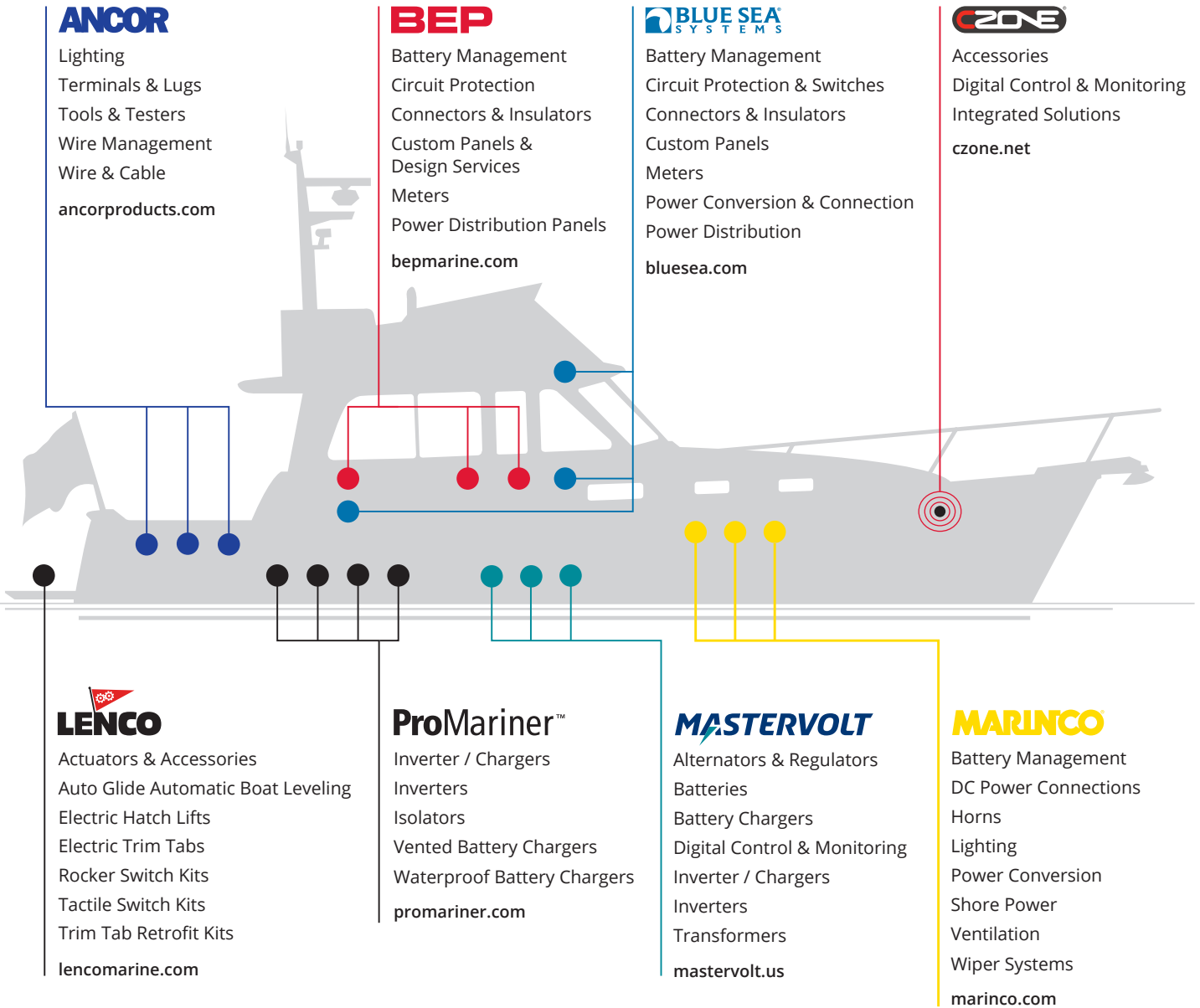
Isolators

Vented Battery Chargers

Waterproof Battery Chargers

For decades Ancor, BEP, Blue Sea Systems, CZone, Lenco, Marincó, Mastervolt and ProMariner have worked independently to provide innovative electrical products. Now the eight companies are working together to offer comprehensive electrical solutions for marine and mobile applications.

Providing more than products. Providing Solutions.





What makes ProMariner different:

I Founder's Vision

ProMariner™ was founded in 1979 with one premise: to make boating more enjoyable. ProMariner pioneered a complete line of fully automatic on-board marine battery chargers, and continues to bring innovation to marine battery chargers today. ProMariner offers performance based solutions for all boats whether it's recreational boating, open water cruising, sailing, or fishing. The passion and dedication to quality is what has made ProMariner the market leader in on board marine battery chargers.

I Innovation & Engineering

ProMariner designs and engineers a complete range of high performance, state-of-the-art marine battery chargers and accessories. Exclusive technologies, such as Distributed on Demand™ ensure that ProMariner chargers will deliver the fastest charge and protect your battery investment.

I Selection

With the broadest range of on board charging products in the industry, ProMariner offers performance based solutions for all boats. Whether it is a waterproof charger for your fishing boat, or a vented charger for your cruise, ProMariner has a charger to fit your needs.

I Worldwide Access to Product

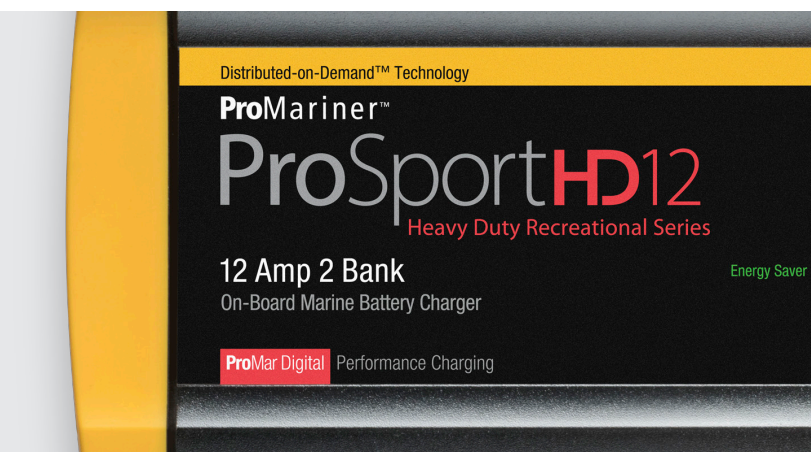
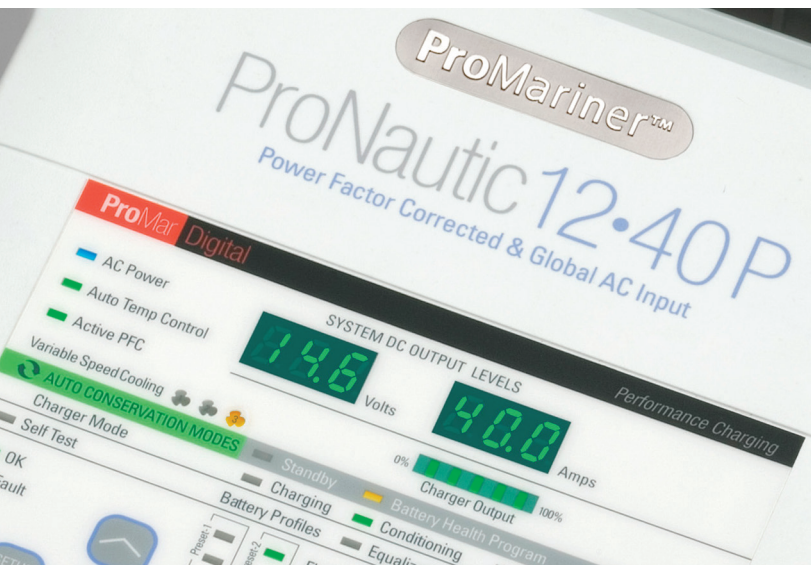
A global distribution network provides easy access to products when they are needed.

I Industry Standards

Industry involvement ensures products meet UL1236, ABYC, NMMA, and USCG standards.

I Quality

Product quality is extremely important at ProMariner. We manage product quality in a manner consistent with international standards to ensure all ProMariner products exceed expectations.



2020 **NEW** Products



12 and 14

ProSportHD Series—USA & Global

The new ProSportHD features a lightweight, tri-surface heatsink design. This delivers significantly faster charging through optimal cooling, while delivering true rated constant current charging amps during charge mode. Fully automatic multi-stage charging enhances battery performance while extending battery life.

USA		Global	
Part # 44006	6 amp	Part # 44023	6 amp
Part # 44008	8 amp	Part # 44026	12 amp
Part # 44012	12 amp	Part # 44028	20 amp
Part # 44020	20 amp	Part # 44029	20 amp (plus)
Part # 44021	20 amp (plus)		



16

ProMar1 DS Series

The new ProMar1 DS takes charger performance to the next level. Integrated digital technology provides fully automatic 4-stage charging that has been proven to deliver efficient performance and extend battery life. The Auto-Maintain mode makes the ProMar1 DS safe for short or long-term storage periods.

Part # 31505	5 amp
Part # 31510	10 amp
Part # 31515	15 amp



26

TruePower Plus 1000PS OE

The new TruePower Plus 1000PS OE features all the same functionality of the existing TruPower Plus inverters. It is pre-wired with 6' AC input NEMA 5-15P power cord and 6' AC output cable, terminated with three push-in style wire connectors for simple OEM installation.

Part # 07101

40

Universal AC Plug Holder+

No need to cut, strip or splice wires!
Mount in an easy-to-reach location for safe AC power cord connection.
Available in black or white.

Part # 51300	Black
Part # 51310	White
OEM # 51301	Black
OEM # 51311	White



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Charger DC Cable Extenders

Universal design for all marine chargers with ring terminal cables. No cutting, stripping or splicing required.

Part # 51805	5 ft
Part # 51815	15 ft



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WATERPROOF BATTERY CHARGERS

ProTournament Elite Series

10



The fastest battery charger with the most features in its class. Specifically designed to deliver maximum charging performance and extend battery life. Get on the water first and stay there longer with tournament winning technology.

ProSportHD Series

12

NEW



ProSportHD On-Board Marine Battery Chargers incorporate all-digital microprocessor control. Like no other, the ProSportHD Series provides automatic installation feedback with its "System Check OK" and individual dual mode "Battery Status" LED indicators.



WATERPROOF BATTERY CHARGERS

ProMar1 DS Series

16



ProMar1 DS incorporates solid state and fully automatic technology that eliminates the need to use portable battery chargers for charging each battery on-board one at a time. Our compact design is lightweight and pre-wired for quick and easy installation.

1.5 Amp Battery Maintainer

17



ProSport 1.5 Amp fully automatic maintainer is an innovative multi-use charger designed for maximum utility. Concealed mounting holes allow the ProSport 1.5 to be installed on-board or to be used as a portable, with rear die cut foam resting pad. Ring terminal and DC clamp quick connect cable assemblies included.



Waterproof Battery Chargers

ProTournament Elite Series

Fastest Charge Times

Fastest Charge Time

- Distributed-On-Demand ensures the max amps being delivered
- Max amps per bank—4 to 8 hr charge time
- Charges flooded, AGM and HP AGM batteries

Most Precise Charging

- Selectable battery types for optimize charge profiles

System Feedback

- Integrated LEDs tell you charge status at all times

FASTEST
4 to 8 HR
CHARGE TIME



ProSportHD Series **NEW**

Increased Power and Performance

Faster Charge Time

- Distributed-On-Demand ensures the max amps being delivered
- Max amps per bank—8 to 10 hr charge time
- Charges flooded, Gel, AGM and HP AGM* batteries

Most Precise Charging

- Selectable battery types for optimize charge profiles

System Feedback

- Integrated LEDs tell you charge status at all times

*HP AGM profile only available in the ProSportHD 20 Dual.

FASTER
8 to 10 HR
CHARGE TIME



ProMar1 DS **NEW**

Industry Standard Power Ratings

Fast Charge Time

- Fully automatic 4-stage charging with Auto Maintain/Energy saver mode
- Max amps per bank—10 to 12 hr charge time
- Charges flooded and Gel batteries

System Feedback

- Integrated LEDs tell you charge status at all times

FAST
10 to 12 HR
CHARGE TIME



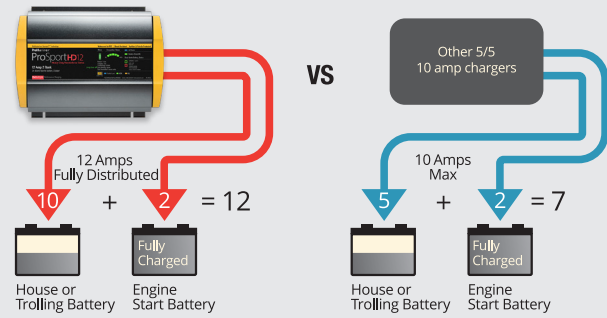
Choosing a Waterproof
Battery Charger
on page 43

How Distributed-On-Demand™ Technology Works

(ProTournament and ProSportHD Models)

Distributed-On-Demand™ Charging Technology ensures 100% of the available charging amps are fully utilized to meet the demand of each battery on-board. For example, if your engine start battery only needs 2 amps from your ProSportHD 12 (6/6 two bank charger), the unused 4 amps will be automatically Distributed-On-Demand™ to your house or trolling motor battery, providing a total of 10 amps for faster charging versus only 5 amps that the conventional 5/5 charger would provide. The competitive 5/5 charger has a 5 amp limit per bank.

Illustration reflects typical battery usage after a day of fishing. Trolling motor batteries are 50% discharged and not usable. Engine start battery is 90% charged from the engine charging system.



System Check Info

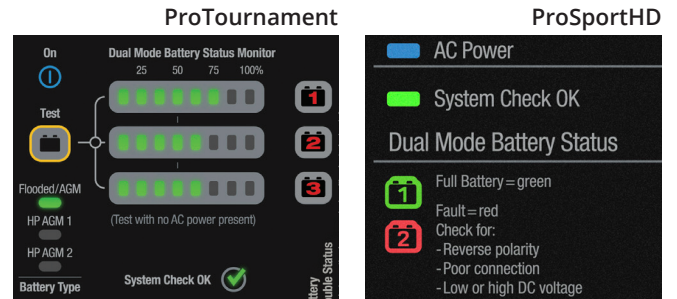
(ProTournament and ProSportHD Models)

System OK Status Indicators

After applying AC power, the charger will self test and analyze the battery connections and batteries.

Battery Bank Trouble Status Indicators

Advanced technology eliminates time consuming troubleshooting by clearly indicating system and battery connections are OK or if a fault is present on a specific battery bank.



Selectable Performance

ProTournament and ProSportHD provide different charge profiles to match multiple battery chemistries.



ProTournament Elite Series On-Board Waterproof Battery Charger

The fastest battery charger with the most features in its class.

Specifically designed to deliver maximum charging performance and extend battery life. Get on the water first and stay there longer with tournament winning technology.

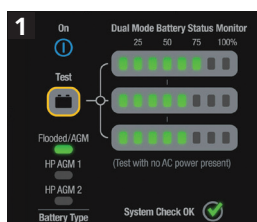
- Tournament Winning Technology**
 100% charge upon completion of multi-stage charging process. 100% charging output with AC power as low as 90V AC. 50% lighter and 2 to 3 times faster than traditional chargers.
- Distributed-On-Demand™ Technology**
 Automatically charges and maintains your engine crank battery while distributing all remaining charging amps to trolling motor or house battery(s). *ProMariner™ Exclusive.* See page 9 for details.
- Digital LED Display with Dual Mode Battery Status Monitor 1**
 Intuitive LED display with charge mode indicators and real time charge level status with an on-the-water push-to-test feature for percent of battery power remaining.
- 3 Selectable Performance Matched Charge Profiles 2**
 Profiles include: Standard Flooded/AGM batteries, HP AGM 1 for pure lead AGM batteries like OPTIMA Blue Top Marine Batteries, HP AGM 2 for pure lead AGM Batteries like Odyssey Marine Batteries.
- Waterproof Connector Port for Optional Charge Status Remote 3**
 Optional tri-color LED charge mode status remote can be placed up to 12' away from the charger.
- Digital 5-Stage Charging 4**
 Analyzes connections and the ability for a battery to accept a charge, advance high fill rate charging, conditioning, auto maintain (energy saving mode) and automatic once a month storage recondition mode. Automatically monitors ambient temperatures and adjusts its charging output.
- Forced Induction Cooling**
 Concealed waterproof fan provides forced air cooling for cooler operation & fastest charge times. (360 Elite models only)
- Built-in Safety & Pre-Wired for Easy Installation**
 Shock resistant, space saving extruded aluminum design, dual in-line DC safety fuses for trolling motor and house batteries, over-voltage, overload, over-temperature, reverse polarity and ignition protection.
- Battery Type: Group 24-31 Flooded, AGM, HP AGM batteries**
- 3 Year Warranty**



240 Elite



360 Elite



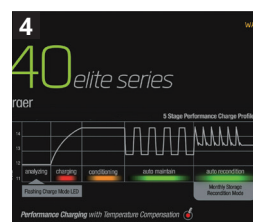
Digital LED Display with Dual Mode Battery Status Monitor



3 Selectable Performance Matched Charge Profiles



Waterproof Connector Port for Optional Charge Status Remote



Digital 5-Stage Charging



Choosing a Waterproof Battery Charger on page 43



Conforms to:
 Marine UL 1236 SB
 CSA C22.2 No. 107.2
 FCC Class A
 CEC Listed

Designed and Constructed to:

ABYC
 Setting Standards for Safer Boating

Related Products








AC Plug Holder
page 40



Cable Extender
page 40

ProTournament Elite Series Selection

					
Model	ProTournament 240 Elite Dual	ProTournament 240 Elite Triple	ProTournament 360 Elite Dual	ProTournament 360 Elite Triple	ProTournament 360 Elite Quad
Part #	52024	52026	52032	52036	52038
Voltage	12/24	12/24/36	12/24	12/24/36	12/24/36/48
Amps	24	24	36	36	36
Banks	2	3	2	3	4
Cable Length	6'/6'	6'/6'/6'	6'/6'	6'/6'/6'	6'/6'/6'/6'
Size	13"x7.125"x2.75"	13"x7.125"x2.75"	13.5"x9.375"x4"	13.5"x9.375"x4"	13.5"x9.375"x4"
Weight	7 lbs	8 lbs	12.5 lbs	13.5 lbs	14.5 lbs
AC In	90-135V 50/60Hz	90-135V 50/60Hz	90-135V 50/60Hz	90-135V 50/60Hz	90-135V 50/60Hz




For Group 24 to 31 12V Flooded (Lead-Acid), STD AGM & high performance AGM batteries.
 For Group 4D or 8D batteries, please see ProMariner's ProNauticP Series on page 20.

Optional Tri-Color Charge Status Remote

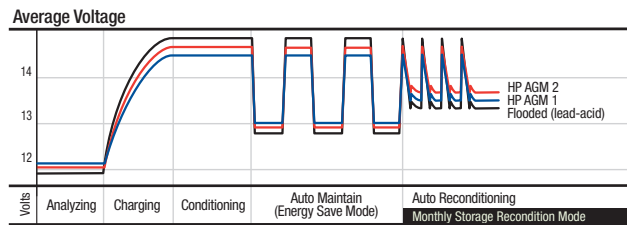
- LED halo indicates charge status quickly and easily
- Red is charging, yellow is conditioning and green is auto maintaining
- 12 foot cable

Part # 52060



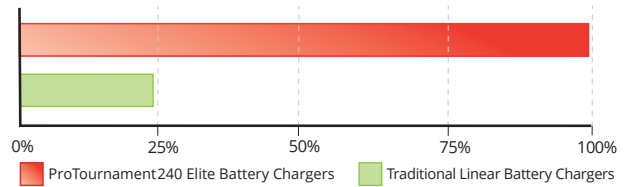
	Red= Charging
	Yellow= Conditioning
	Green= Auto Maintaining

5 Stage Performance Charge Profile






Charger Output Performance at Low AC Voltage*

Percentage of charger output at 90V AC



*When using a 25' to 100' extension cord at the dock, lodging site or at home with 90 VAC.

	Color	Battery Type	Charge Profile
PROGRAMMING CAP		Flooded (Lead-acid) / STD AGM	14.8V DC Absorption 12.8–13.4V DC Maintenance
		High Performance (HP) AGM 1	14.6V DC Absorption 13.0–13.6V DC Maintenance
		High Performance (HP) AGM 2	14.7V DC Absorption 12.9–13.5V DC Maintenance

ProSportHD Series **NEW** On-Board Waterproof Battery Charger

ProSportHD Generation 4 boasts a new tri-surface heatsink design. This new heavy-duty lightweight design delivers significantly faster charging through optimal cooling, while delivering true rated amp output during charge mode.

ProSportHD's enhanced microprocessor and software provides new digital features including: fuel gauge style Charge Completion Monitor, Charge Mode, individual Fault indicators and three digitally selectable performance charge profiles for Flooded (lead acid), AGM and GEL batteries. HP AGM profile on ProSportHD 20 Dual only. **2**

Fully automatic 5-stage charging enhances battery performance while extending battery life. System Check OK and Battery Status indicators provide real time installation and battery fault status.

Designed for use in harsh environments with our industrial grade jacketed DC and AC power cables which include new molded strain reliefs and wire splitters.

- **ProMar Digital Technology**
Microprocessor and software controlled charging technology for fast, precise charging.
- **Distributed-On-Demand™ Technology**
100% of all available charging amps are utilized by distributing unused charging amps to any one or combination of all batteries as needed.
- **Heavy Duty Tri-Surface Extruded Heat Sink Design **1****
Upper, lower and rear facing heat sink design for optimal cooling while delivering true rated constant current charging amps during its two charge mode.
- **Expanded LED Display with Completion Status Gauge **2****
LED fuel gauge style completion status. Four color multi-stage mode LED status bar. Multi-stage Charge Mode, System Check OK, individual Battery Status and Battery Type indication.
- **Lightweight Design**
Up to 40% lighter compared to an epoxy filled charger.
- **Auto-Maintain Energy Saver Mode**
Monitor and auto maintain batteries only when needed to maintain full state of charge. This significantly reduces AC power consumption.
- **Fully Automatic 5-Stage Digital Performance Charging**
5 Stages: Analyzes, charges, conditions, auto maintains and reconditions batteries once a month during storage periods. Fully charges and extends battery life.
- **Built-in Quality and Safety**
Dual inline waterproof fuses, reverse polarity, over-temperature, over-current, over-voltage and ignition protection. Certified to Marine UL 1236. CEC and DOE listed. FCC Class B.
- **Easy Installation and Operation**
Pre-wired with 6' AC and DC cables.
- **Battery Type: Group 24-31 Flooded, AGM, HP AGM*, & GEL batteries**
- **3 Year Warranty**



44008



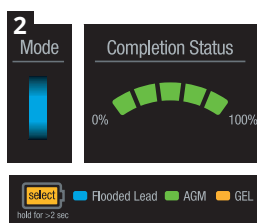
44020



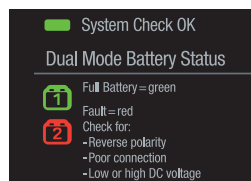
Molded Strain Reliefs



Tri-surface Heat Sink Design



Charge Mode & Completion Guide
Red indicator for low battery and transitions to green during charging process.



System Check OK and Dual Mode Battery Status
Red fault indication during installation for user wiring or battery attention. Green indication as each battery becomes fully charged and is monitored off line.



Pre-wired with Waterproof Inline DC Fuses
Industrial grade jacketed DC cables, SJTOW outdoor rated AC power cable for maximum wiring protection. Dual inline safety fuses.



Conforms to:
Marine UL 1236 SB
CSA C22.2 No. 107.2
FCC Class B, CEC and
DOE Listed

Designed and
Constructed to:



ABYC A-31

Setting Standards for Safer Boating

*HP AGM profile only available in the ProSportHD 20 Dual.

ProSportHD Series Selection



Model	ProSportHD 6	ProSportHD 8	ProSportHD 12	ProSportHD 20	ProSportHD 20 Plus
Part #	44006	44008	44012	44020	44021
DC Voltage Systems	12	12/24	12/24	12/24	12/24/36
Amps	6	8	12	20	20
No. of Batteries	1	2	2	2	3
AC & DC Cable Length	6'	6'/6'	6'/6'	6'/6'	6'/6'/6'
Size	7.9"x7.7"x2.9"	7.9"x8.9"x2.9"	7.9"x10.5"x2.9"	7.9"x12.8"x2.9"	7.9"x12.8"x2.9"
Weight	3.8 lbs	5.2 lbs	6.0 lbs	7.2 lbs	7.8 lbs
AC In	120V AC ±10% 50/60Hz	120V AC ±10% 50/60Hz	120V AC ±10% 50/60Hz	120V AC ±10% 50/60Hz	120V AC ±10% 50/60Hz
AC Plug	NEMA 5-15	NEMA 5-15	NEMA 5-15	NEMA 5-15	NEMA 5-15

Factory Set for Flooded/Lead-Acid Batteries

Stage 1 - Analyze & System Check OK

During this stage the ProSportHD Mode LED will pulse blue indicating it is analyzing all battery connections and ensuring each battery is capable of being charged. When completed successfully, the "System Check OK" indicator will illuminate green. This takes approximately 1 minute.

Stage 2 - Charge

During this stage the ProSportHD Mode LED will be solid red and the ProSportHD will use all of its available charging amps (as controlled by temperature) until the battery voltage is raised to the selected absorption voltage.

Stage 3 - Condition

During this stage the ProSportHD Mode LED will be solid amber. During this mode batteries will be held at the selected absorption voltage to complete charging while conditioning each battery connected for up to 3 hours as needed.

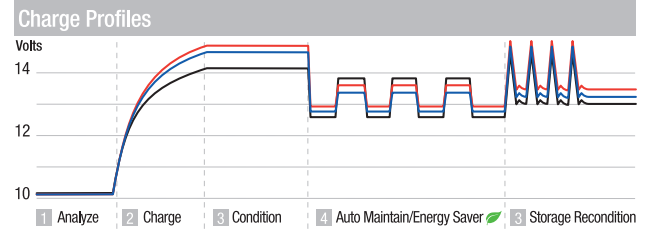
Stage 4 - Auto Maintain (Energy Saver Mode)

During this stage the Mode indicator will be solid green, indicating it is monitoring and auto maintaining your batteries as needed to maintain a full state of charge. At this time, the blue Power LED, green System OK and green Mode LEDs will remain on letting you know your batteries are ready when you are.

Stage 5 - Storage Recondition

During this stage the ProSportHD will enter into its once a month Storage Recondition mode. The green Mode LED will pulse indicating that while your batteries / boat are in storage, the ProSportHD is reconditioning all batteries for up to 3 hours once a month to extend battery life and provide maximum reserve power performance on the water.

5 Stage Performance Charging Overview



— Flooded (Lead Acid)	14.6V DC Conditioning / AutoMaintain 13.4V DC
— AGM and HP AGM*	14.7V DC Conditioning / AutoMaintain 13.6V DC
— GEL	14.1V DC Conditioning / AutoMaintain 13.8V DC

*HP (High Power) AGM with ProSportHD 20 Dual only



Choosing a Waterproof Battery Charger on page 43

Related Products



AC Plug Holder page 40



Cable Extender page 40

ProSportHD Series—Global **NEW** On-Board Waterproof Battery Charger

ProSportHD Generation 4 boasts a new tri-surface heatsink design. This new heavy-duty lightweight design delivers significantly faster charging through optimal cooling, while delivering true rated amp output during charge mode.

ProSportHD's enhanced microprocessor and software provides new digital features including: fuel gauge style Charge Completion Monitor, Charge Mode, individual Fault indicators and three digitally selectable performance charge profiles for Flooded (lead acid), AGM and GEL batteries. HP AGM profile on ProSportHD 20 Dual only. **2**

Fully automatic 5-stage charging enhances battery performance while extending battery life. System Check OK and Battery Status indicators provide real time installation and battery fault status.

Designed for use in harsh environments with our industrial grade jacketed DC and AC power cables which include new molded strain reliefs and wire splitters.

- **ProMar Digital Technology**
Microprocessor and software controlled charging technology for fast, precise charging.
- **Distributed-On-Demand™ Technology**
100% of all available charging amps are utilized by distributing unused charging amps to any one or combination of all batteries as needed.
- **Heavy Duty Tri-Surface Extruded Heat Sink Design **1****
Upper, lower and rear facing heat sink design for optimal cooling while delivering true rated constant current charging amps during its two charge mode.
- **Expanded LED Display with Completion Status Gauge **2****
LED fuel gauge style completion status. Four color multi-stage mode LED status bar. Multi-stage Charge Mode, System Check OK, individual Battery Status and Battery Type indication.
- **Lightweight Design**
Up to 40% lighter compared to an epoxy filled charger.
- **Auto-Maintain Energy Saver Mode**
Monitor and auto maintain batteries only when needed to maintain full state of charge. This significantly reduces AC power consumption.
- **Fully Automatic 5-Stage Digital Performance Charging**
5 Stages: Analyzes, charges, conditions, auto maintains and reconditions batteries once a month during storage periods. Fully charges and extends battery life.
- **Built-in Quality and Safety**
Dual inline waterproof fuses, reverse polarity, over-temperature, over-current, over-voltage and ignition protection. Certified to Marine UL 1236. CEC and DOE listed. FCC Class B.
- **Easy Installation and Operation**
Pre-wired with 6' AC and DC cables.
- **Battery Type: Group 24-31 Flooded, AGM, HP AGM*, & GEL batteries**
- **3 Year Warranty**



44023



44026



100-260 VAC 50/60 Hz



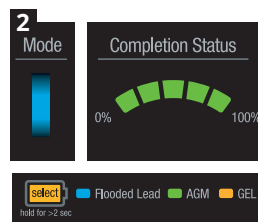
Waterproof



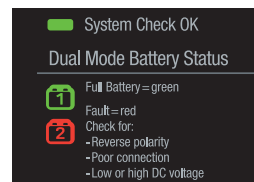
Molded Strain Reliefs



Tri-surface Heat Sink Design



Charge Mode & Completion Guide
Red indicator for low battery and transitions to green during charging process.



System Check OK and Dual Mode Battery Status
Red fault indication during analyze mode for user wiring or battery attention. Green indication as each battery becomes fully charged and is monitored off line.



Pre-wired with Waterproof Inline DC Fuses
Industrial grade jacketed DC cables, SJTOW outdoor rated AC power cable for maximum wiring protection. Dual inline safety fuses.



Conforms to:
Marine UL 1236 SB
Certified to CE and RCM standards, CSA C22.2 No. 107.2, FCC Class B, CEC and DOE Listed
Meets EN60335-1/2-29, EN60335-2-29, EN61000-3-2, EN61000-3-3, EN61000-302:2000+A2:2005

Designed and Constructed to:
ABYC A-31
Setting Standards for Safer Boating®

*HP AGM profile only available in the ProSportHD 20 Dual.

ProSportHD Series—Global Selection



Model	ProSportHD 6	ProSportHD 12	ProSportHD 20	ProSportHD 20 Plus
Part #	44023	44026	44028	44029
DC Voltage Systems	12	12/24	12/24	12/24/36
Amps	6	12	20	20
No. of Batteries	1	2	2	3
AC & DC Cable Length	6'	6'6'	6'6'	6'6'/6'
Size	7.9"x7.7"x2.9"	7.9"x11.3"x2.9"	7.9"x13.6"x2.9"	7.9"x13.6"x2.9"
Weight	3.8 lbs	6.4 lbs	8.2 lbs	8.8 lbs
AC In	100-240V AC 50/60Hz	100-240V AC 50/60Hz	100-240V AC 50/60Hz	100-240V AC 50/60Hz
AC Plug	IEC c14	IEC c14	IEC c14	IEC c14



Universal IEC c14 power cord

c13 plug adapters

ProSportHD Global IEC 6 foot power cord is compatible with available c13 plug adapters as shown (not included)



Factory Set for Flooded/Lead-Acid Batteries

Stage 1 - Analyze & System Check OK

During this stage the ProSportHD Mode LED will pulse blue indicating it is analyzing all battery connections and ensuring each battery is capable of being charged. When completed successfully, the "System Check OK" indicator will illuminate green. This takes approximately 1 minute.

Stage 2 - Charge

During this stage the ProSportHD Mode LED will be solid red and the ProSportHD will use all of its available charging amps (as controlled by temperature) until the battery voltage is raised to the selected absorption voltage.

Stage 3 - Condition

During this stage the ProSportHD Mode LED will be solid amber. During this mode batteries will be held at the selected absorption voltage to complete charging while conditioning each battery connected for up to 3 hours as needed.

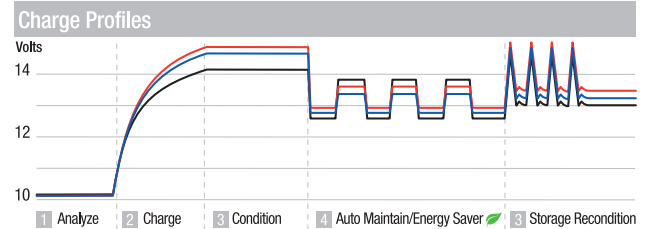
Stage 4 - Auto Maintain (Energy Saver Mode)

During this stage the Mode indicator will be solid green, indicating it is monitoring and auto maintaining your batteries as needed to maintain a full state of charge. At this time, the blue Power LED, green System OK and green Mode LEDs will remain on letting you know your batteries are ready when you are.

Stage 5 - Storage Recondition

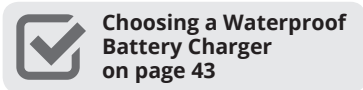
During this stage the ProSportHD will enter into its once a month Storage Recondition mode. The green Mode LED will pulse indicating that while your batteries / boat are in storage, the ProSportHD is reconditioning all batteries for up to 3 hours once a month to extend battery life and provide maximum reserve power performance on the water.

5 Stage Performance Charging Overview



— Flooded (Lead Acid) 14.6V DC Conditioning / AutoMaintain 13.4V DC
 — AGM and HP AGM* 14.7V DC Conditioning / AutoMaintain 13.6V DC
 — GEL 14.1V DC Conditioning / AutoMaintain 13.8V DC

*HP (High Power) AGM with ProSportHD 20 Dual only



Related Products



Cable Extender page 40

ProMar1 DS Series **NEW** Recreational Marine & Industrial Grade On-Board Battery Chargers

The new ProMar1 DS takes charging performance to the next level. It sets new standards in efficiency with all-digital integrated technology. The fully Automatic 4-Stage Charging algorithm, which includes sequential modes of Analyzing, Charging, Conditioning and built-in Auto Maintain, has been proven to prolong battery life. ProMar1 DS is safe for short and long-term storage periods.

Intended for harsh environments, ProMar1 DS is built with industrial grade jacketed DC cables, JTOW rated AC cables, and enclosed in a fully encapsulated IP68 waterproof and shock-proof housing. Integrated LED lights provide at-a-glance indication of charge status and wiring conditions for each individual output.

ProMar1 DS is designed and certified to UL Marine 1236, the new energy efficient CEC (California Energy Commission) and DOE (Department of Energy) requirements to ensure reliability and low-emission operation.

- **Fully automatic 4-stage charging**
Analyzing, charging, conditioning and built-in auto maintain mode
- **Single preset charging profile**
Use with Flooded (Lead-Acid) or Gel batteries
- **Integrated LEDs** for battery status and fault detection
- **Auto maintain / energy saver modes** extends battery life
- Pre-wired with waterproof inline DC fuses and nickel-plated copper ring terminals **1**
- **Built-in safety features**
Dual inline DC safety fuses for all multi-bank models, reverse polarity, over-temperature, over-current, over-voltage and ignition protection
- **Meets US FCC emissions requirements and CEC compliance**
- **3 Year Warranty**



31505

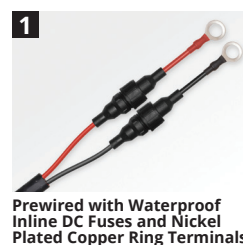


31515

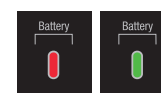


Model	ProMar1 DS 5	ProMar1 DS 10	ProMar1 DS 15
Part #	31505	31510	31515
Volts DC	12	12/24	12/24/36
DC Amps	5	10	15
Max No. of Batteries	1	2	3
Charging	up to 14.1V DC	up to 14.1V DC	up to 14.1V DC
Auto Maintain	12.8-13.5V DC	12.8-13.5V DC	12.8-13.5V DC
DC Cable Length	6'	6'/6'	6'/6'/6'
Size	6.4"x4.1"x2.4"	9.2"x5.7"x2.4"	10.5"x6.5"x3.0"
Weight	4 lbs	7 lbs	11 lbs
AC In	110-120V DC, 50/60Hz	110-120V DC, 50/60Hz	110-120V DC, 50/60Hz
AC Plug	NEMA 5-15	NEMA 5-15	NEMA 5-15
Operating Temperature	-4°F to 122°F (-20°C to 50°C)*	-4°F to 122°F (-20°C to 50°C)*	-4°F to 122°F (-20°C to 50°C)*
Storage Temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)

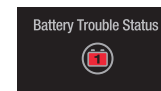
*output derates at 122°F (50°C)



1
Prewired with Waterproof
Inline DC Fuses and Nickel
Plated Copper Ring Terminals



**Dual Mode Charge
LED Indicator**
Red: Charging Green:
Auto Maintain/Energy Saver



**Battery & Wiring
Fault Detection**



**Choosing a Waterproof
Battery Charger
on page 43**

Related Products



AC Plug Holder
page 40



Cable Extender
page 40

ProSport 1.5 Amp Fully Automatic Battery Maintainer & Charger

Ideal for personal watercraft, recreational ski and wake boats, ATV's, tractors and more.

Our newest generation ProSport 1.5 Amp fully automatic maintainer is an innovative multi-use charger designed for maximum utility. Concealed mounting holes allow the ProSport 1.5 to be installed on-board or to be used as a portable, with rear die cut foam resting pad. Ring terminal and DC clamp quick connect cable assemblies included.

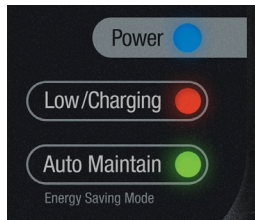
Our marine grade design is weatherproof, water resistant to IP65 and can be used in all fresh and salt water outdoor and indoor applications as needed.

Designed to keep 12 volt batteries fully charged during short or long term storage periods, ProSport's Energy Saver mode will monitor and auto maintain a battery when needed to maintain a full state of charge. This energy saving mode will significantly reduce AC Power consumption, lower operating costs and maximizes reserve power performance.

- Fully automatic energy saving design
- Multi-use design, easily configures for on-board or portable use
- Concealed mounting holes & die cut foam resting pad for portable use
- Expanded LED display for Power, Charging and Auto Maintain status
- Maintain 12 volt lead acid (sealed & vented) batteries up to 150 amp hours
- Quick connect DC clamp & ring terminal assemblies
- Weatherproof and water resistant to IP65
- Built-in safety with reverse polarity, short circuit, temperature and ignition protection
- Pre-wired for easy installation
- 3 year warranty



Concealed Mounting



Expanded LED Status Center



Portable Foam Resting Pad



Included DC Cable Assemblies

Model	ProSport 1.5 Maintainer
Part #	44001
Battery Type	12V lead acid (sealed & vented)
Volts	12V DC
Amps	1.5
Banks	1
Auto Maintain	Monitored float range 12.9V DC to 13.4V DC
AC In	120V AC 50/60Hz
Cable Length	6'
AC Plug	3-wire, NMEA 5-15P
Size	5.0"x5.75"x1.97"
Weight	2.3 lbs

Related Products



AC Plug Holder
page 40



Conforms to:
Marine UL 1236 SB
CSA C22.2 No. 107.2
FCC Class A

Designed and
Constructed to:
ABYC A-31
ABYC
Setting Standards for Safer Boating

VENTED BATTERY CHARGERS



VENTED BATTERY CHARGERS

ProNauticP Series

20



ProNauticP's Generation 3 ProMar Digital Performance Charging Platform combines digital control and software-based power conversion technology with global energy management features.

Digital Mobile Charge

22



Digital Mobile Charge is a breakthrough in battery to battery, on-the-water charging technology. Simply connect to the engine crank battery and your house electronic battery, allowing for up to 40 amps per hour to be transferred to your house battery bank.



ProNauticP Series ProMar Digital Performance Charging

All Digital Electronic Charging...

Winner of the IBEX Innovation Award, ProNauticP's Generation 3 ProMar Digital Performance Charging Platform combines digital control and software-based power conversion technology with global energy management features.

ProNauticP is designed for the growing demand for more 12-volt electronics on board today's power, sail, cruising and sport fishing boats. Highlighting twelve digitally-controlled performance charging profiles and a full digital display **1** ProNauticP offers features not seen on competitive chargers including: Self Test Diagnostics, real time system voltage and amperage, discreet fault indication and once-a-month storage reconditioning modes to extend the life of your batteries.

ProNauticP is designed to provide more time on the water enjoying what you like most... boating, sailing and fishing.

- **Distributed-On-Demand™ Technology**

Automatically senses and distributes up to full capacity to any one bank or combination of all banks.

- **ProMar Digital Charging Performance - 12 Selectable Profiles **2****

Up to 12 performance & precision 4-stage charging profiles: Charge, Condition, Auto Maintain and Recondition. Automatic dockside power mode for 12 Volt DC lighting and appliances. Factory set for sealed batteries. Flooded (Lead Acid), AGM, GEL selectable.

- **Power Factor Correction - Global AC Input**

Auto-ranging (100-250V AC/50-60Hz) global AC input with reduced harmonic distortion. ProNauticP consumes less power so more AC power is available on board.

- **Conservation Energy Saver Mode **3****

After fully charging and conditioning batteries, ProNauticP's Energy Saver Mode will monitor and Auto Maintain batteries only when needed, maintaining a full state of charge. This significantly reduces AC power consumption while lowering operating costs and maximizing reserve power performance.

- **Digital Self-Calculating Absorption and Battery Health Reconditioning Mode**

Automatically programs conditioning time based on discharge state of batteries. Automatically reconditions batteries after 21 days in the Auto Maintain Mode, improving reserve power performance and extending battery life.

- **Service and Fault Mode LED Indicators**

Real time indication of wiring faults or adverse conditions that may impact the operation of a boat's charging system.

- **Automatic Fan Speed Control**

Quiet operation. Innovative front exhaust prevents restriction of air flow and cooling.

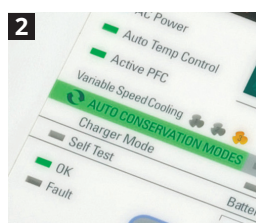
- **Automatic Temperature Compensation and Built-in Safety**

Remote temperature probe included - Ignition protected and current limiting. Designed and constructed to: Marine ULc 1236, CE, CTick, FCC Class B and CEC.

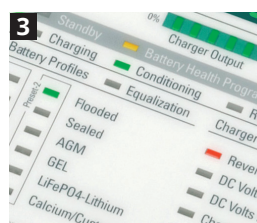
- **5 Year Warranty**



1
Dual Digital Displays and Power Output Bar



2
Battery Type and EZ View Service Indicators



3
Auto Conservation and Self Test Modes



Choosing a ProNauticP Battery Charger on page 44

Safety Certified by:












To Standards:
UL 1236 SB
CSA C22.2-107.2



Setting Standards for Safer Boating

ProNauticP Series Selection

									
Model	ProNautic 1210P	ProNautic 1215P	ProNautic 1220P	ProNautic 1230P	ProNautic 1240P	ProNautic 1250P	ProNautic 1260P	ProNautic 2420P	ProNautic 2430P
Part #	63110	63115	63120	63130	63140	63150	63160	63170	63180
Volts	12	12	12	12	12	12	12	24	24
Amps	10 Amp	15 Amp	20 Amp	30 Amp	40 Amp	50 Amp	60 Amp	20 Amp	30 Amp
Banks	2 Bank	3 Bank	3 Bank	3 Bank	3 Bank	3 Bank	3 Bank	3 Bank	3 Bank
AC Input Voltage	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging	100-260 Autoranging
AC Amperage at 100/240V AC	< 3.0 / < 1.5	< 4.0 / < 2.0	< 5.0 / < 2.5	< 6.0 / < 3.0	< 7.0 / < 3.5	< 10.0 / < 5.0	< 11.0 / < 5.5	< 7.0 / < 3.5	< 11.0 / < 5.5
Cycle	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Size (LxWxH)	10.25"x8.5"x 3.5"	10.25"x8.5" x3.5"	10.25"x8.5" x3.5"	10.25"x8.5" x3.5"	10.25"x8.5" x3.5"	12.25"x8.5" x3.5"	12.25"x8.5" x3.5"	10.25"x8.5" x3.5"	12.25"x8.5" x3.5"
Weight	5 lbs	5 lbs	5 lbs	5 lbs	5 lbs	7 lbs	7 lbs	5 lbs	7 lbs

Digitally Controlled Charge Profiles

Battery Type	12 Volt Models				24 Volt Models			
	Preset 1		Preset 2		Preset 1		Preset 2	
	Conditioning V DC	Auto Maintain V DC Range	Conditioning V DC	Auto Maintain V DC Range	Conditioning V DC	Auto Maintain V DC Range	Conditioning V DC	Auto Maintain V DC Range
Flooded	14.8V DC	12.8-13.6V DC	14.7V DC	12.8-13.4V DC	29.6V DC	25.6-27.2V DC	29.4V DC	25.6-26.8V DC
Sealed	14.4V DC	12.8-13.6V DC	14.6V DC*	12.8-13.4V DC*	28.8V DC	25.6-27.2V DC	29.2V DC*	25.6-26.8V DC*
AGM	14.4V DC	13.0-13.4V DC	14.6V DC	13.0-13.6V DC	28.8V DC	26.0-26.8V DC	29.2V DC	26.0-27.2V DC
GEL	14.0V DC	13.2-13.7V DC	14.4V DC	13.2-13.8V DC	28.0V DC	26.4-27.4V DC	28.8V DC	26.4-27.6V DC
LiFePO4 - Lithium	13.8V DC	13.2-13.8V DC	14.6V DC	13.2-14.6V DC	27.6V DC	26.4-27.6V DC	29.2V DC	26.4-29.2V DC
Calcium/Prgm Custom	15.1V DC	13.2-13.6V DC	PrgmV DC**	PrgmV DC**	30.2V DC	26.4-27.2V DC	PrgmV DC***	PrgmV DC***
Equalization	15.5V DC	15.5V DC	15.5V DC	15.5V DC	31.0V DC	31.0V DC	31.0V DC	31.0V DC

* Factory setting **Default : Conditioning = 13.6V DC, Auto Maintain = 13.2-13.6V DC ***Default: Conditioning = 27.2V DC, Auto Maintain = 26.4-27.2V DC



Remote Temperature Sensor Probe (included)

The ProNauticP comes standard with a temperature probe that is plug and play. Once the temperature sensor is connected the charger will adjust its charge based on the batteries temperature.

Part # 63106



Digital Display and Control Remote (optional)

ProNauticP optional remote available for interactive remote port for digital display and control.

Part # 63100

Related Products



ProlSoCharge Series page 34

Digital Mobile Charge Advanced Electronic Battery Charging

DC to DC 4-Stage Charging...

Digital Mobile Charge 40 is a breakthrough in battery to battery, on-the-water charging technology. Simply connect to the engine crank battery and your house electronic battery, allowing for up to 40 amps per hour to be transferred to your house battery bank. Protects your engine battery while charging and conditioning your house battery bank, using its all-digital C3 boost-mode-charging technology.

Digital Mobile Charge 130 alternator to battery on-the-water charging system provides a significant increase in charging capacity of up to 130 amps. Simply connect your alternator to the Digital Mobile Charge130, then connect Digital Mobile Charge130 to your engine crank battery and house electronic battery bank. Digital Mobile Charge130 will provide up to 130 amps per hour to your house battery bank while protecting your engine battery and charging/conditioning your house battery bank with its all-digital C3 boost mode charging technology.

- **In-Transit C3 Software Controlled, Multi-Stage Charging**
Optimal fast charge, conditioning & maintenance. 4th stage provides on-demand fast charge mode when needed.
- **C3 Software - Engine Battery Management**
Intelligently monitors & manages the health of the engine battery while providing maximum charge capacity to the auxiliary battery or bank.
- **C3 Intelligent Self-Calculating Absorption/Conditioning Mode**
Automatic programming of charge/ absorption time based on discharge state of auxiliary battery or bank resulting in a 100% charge while desulfating battery plates and extending battery life.
- **On-Board C3 Digital Dash Includes Hi-Vis LEDs**
Battery type, charge modes, temperature and fault conditions.
- **User Programmable Battery Type Selector**
Select Flooded (lead-acid), AGM and GEL batteries.
- **Remote Temperature Probe Included**
- **Built in Safety**
Ignition protection, over temperature and over voltage protection. Intelligent alternator & battery over temperature protection. Meets a boat's demand for on-the-water power and charging for 12 or 24 Volt DC systems, allowing for radar, lighting, live wells and other DC systems to operate while managing and charging batteries when running your engine.
- **2 Year Warranty**



Model	12V to 12V Battery to Battery	12V to 24V Battery to Battery	24V to 12V Battery to Battery	24V to 24V Battery to Battery	12V Alternator to Battery	24V Alternator to Battery
Part #	05504	05505	05503	05502	05513	05514
DC Input (Volts/Amps)	12 Volts / 40 Amps	12 Volts / 40 Amps	24 Volts / 20 Amps	24 Volts / 20 Amps	12 Volts	24 Volts
Max DC Amps	12 Volts / 40 Amps	24 Volts / 20 Amps	12 Volts / 40 Amps	24 Volts / 20 Amps	12 Volts / Up to 130 Amps (varies w/ ALT size)	24 Volts / Up to 130 Amps (varies w/ ALT size)
Size (LxWxH)	11"x9.75"x2.5"	11"x9.75"x2.5"	11"x9.75"x2.5"	11"x9.75"x2.5"	11"x9.75"x2.5"	11"x9.75"x2.5"
Weight	8 lbs.	8 lbs.	8 lbs.	8 lbs.	8 lbs.	8 lbs.

Use Digital Mobile Charge chargers for a variety of applications:

Marine



Tractor Trailer



Box Trucks



INVERTERS



INVERTERS

TruePower Plus Series

26



Our next generation of TruePower Plus Inverters are available in both Modified Sine Wave (MS) and Pure Sine Wave (PS) models. Designed to convert 12V DC battery power to 115V AC and will automatically pass through AC Inlet power when present.

ProSport Power Inverter

27



Perfect for the on-board or on-the-road active user who needs to convert 12 Volt battery power to 110V AC. While on the water or in your car, provide instant AC power for laptops, cell phone chargers, radios, portable TV's, lighting, small power tools and more.



TruePower Plus Series

Heavy Duty Marine, Mobile and Industrial Grade Inverters

Our next generation of TruePower Plus Inverters are available in both Modified Sine Wave (MS) and Pure Sine Wave (PS) models. Designed to convert 12V DC battery power to 115V AC and will automatically pass through AC Inlet power when present. TruePower Plus is rich with features including; Innovative dual color digital LCD message center, dual color gauges for AC power output and battery DC input, USB power port, GFCI convenience outlets, DC cable covers, and separate on/off remote. Our integrated AC cable strain reliefs and front screw connection terminal blocks allow for quick and easy installation without the added need for ring terminals for AC power connections.

Designed with soft start noise filtered technology and 2x surge capability for powering demanding loads. Shock resistant construction with internal conformal coated electronics for protection in harsh environments.

The TruePower Plus PS Series has all the features of our MS series but provides a Pure Sine 115V AC output ideal for high fidelity audio visual systems in addition to appliances with hysteresis and variable motor speed controls like washing machines and refrigeration etc.

- Intuitive dual color digital LCD message center
- Dual color gauges for AC power output and battery DC input
- Internal 30 amp AC transfer switch will automatically pass through AC inlet power when present
- USB power port and GFCI convenience outlets
- Compact and lightweight design
- Soft start noise filtered technology with 2x surge capability
- On/Off remote with 9 foot cable and DC cable covers included
- Integrated AC power cable strain reliefs for ease of installation
- Built-in safety with overload, over temperature, short circuit and reverse polarity protection
- Audible alarm and shut down for low and high DC voltage, overload and over temperature conditions
- Shock resistant construction with internal conformal coated electronics
- 2 year warranty



 Pure Sine Wave
TECHNOLOGY



 Modified Sine Wave
TECHNOLOGY

LEARN MORE
TruePower Plus
Inverters Video



Visit ProMariner
on YouTube.com



Intuitive Dual Color Display and LCD Message Center



USB 5V DC/2.1 Amp Port GFCI
Protected Outlets



Integrated AC Power Strain
Reliefs with Front Screws



DC Cable Covers
Black (-) and Red (+)



TruePower Plus Display Functions

DC to AC Output Gauge—Indicates percentage of AC power being used versus output rating. The scale turns red when output demand exceeds output rating.

Input Power—Indicates if power is coming from DC (batteries) or AC inlet power.

DC Input Level Gauge—Indicates the battery DC voltage level. The scale turns red when battery voltage drops below 11.0 volts.

System Status—Dual color LCD with full system normal and fault condition messaging (no codes).

Check—Illuminates when a fault condition is present with LCD message.



Conforms to:
UL STD. 485
CSA STD. C22.2 No. 107.2
FCC Class B

Designed and
Constructed to: **ABYC**
ABYC-A-31 *Setting Standards for Safer Boating*

TruePower Plus Series Selection

Model	TruePower Plus 1000ps	TruePower Plus 2000ps	TruePower Plus 1200ms	TruePower Plus 1500ms	TruePower Plus 2000ms
Part #	07100	07200	06120	06150	06200
Wattage	1000 Watts	2000 Watts	1200 Watts	1500 Watts	2000 Watts
Surge Rating	2000 Watts	4000 Watts	2400 Watts	3000 Watts	4000 Watts
Sine Wave	Pure	Pure	Modified	Modified	Modified
Efficiency (optimum)	>90%	>90%	>90%	>90%	>90%
AC Output	115V AC 60Hz	115V AC 60Hz	115V AC 60Hz	115V AC 60Hz	115V AC 60Hz
Internal AC Transfer Switch	30 Amps	30 Amps	30 Amps	30 Amps	30 Amps
AC Crossover Time	<30 ms	<30 ms	<30 ms	<30 ms	<30 ms
DC Input	11-15V DC	11-15V DC	11-15V DC	11-15V DC	11-15V DC
Inverter Off DC Amp Draw	4 mA	4 mA	4 mA	4 mA	4 mA
Size	4" x 9.9" x 11.5"	4.5" x 10.6" x 11.5"	4" x 9.9" x 11.5"	4" x 9.9" x 11.5"	4.5" x 10.6" x 11.5"
Weight	7.3 lbs	9.0 lbs	7.3 lbs	7.3 lbs	9.0 lbs



TruePower Plus Remote (included)

- On/Off control
- Input power source LED indicators
- Check fault LED indicator
- Remote mounting screws and 9 ft. cable included

Replacement Part # 07211

TruePower Plus 1000PS OE **NEW**

Designed exclusively for OEM.

- Pre-wired with 6' AC input NEMA 5-15P power cord and 6' AC output cable terminated with three push-in style wire connectors
- No GFCI



Model	TruePower Plus 1000ps OE
Part #	07101
Wattage	1000 Watts
Surge Rating	2000 Watts
Sine Wave	Pure
Efficiency (optimum)	>90%
AC Output	115V AC ±10%
Internal AC Transfer Switch	15 Amps
AC Crossover Time	30 ms
DC Input	11-15V DC
Inverter Off DC Amp Draw	4 mA
Size	4" x 9.9" x 11.5"
Weight	7.3 lbs



Pre-wired AC cables with over-molded strain relief



Push-in style connectors for 12 to 14 AWG stranded or solid copper wire

ProSport Power Inverter Converts 12 Volt Power to 110V AC up to 150 Watts

Perfect for the on-board or on-the-road user to convert 12 volt battery power to 110V AC.

- Recharge and power portable electronics—Power devices from your car, RV, camper and more
- On the road power—Use with laptops, game consoles, portable DVD players, TVs and more
- Extruded aluminum case
- Universal cup holder design
- High surge capacity
- Power / status LED indicators
- Standard 110V AC receptacle
- Output short & input polarity protection
- Low Battery Shutdown
- Over temperature and overload protection

Model	Part #	Surge Capability	Input	Output	Frequency	Size (LxWxH)	Cable Length
ProSport Power Inverter	79018	250 W	12V DC	110V AC	60 Hz	2.625"x 2.625"x6"	3 ft



INVERTER/CHARGERS



INVERTER/CHARGERS

TruePower CombiPS

30



The TruePower PS Pure Sine Wave Combination Inverter/Charger, provides all the benefits and features of our QS series but yields a Pure Sine Wave AC output which is equal to the quality of AC power enjoyed at home.

TruePower CombiQS

30



TruePower QS Modified Sine Wave Combination Inverter/Charger handles most electrical/electronic devices well.

TruePower CombiPS & CombiQS Combination Inverter/Charger

Convert DC Battery Power to Filtered AC Household Power

Designed specifically for the most rugged marine applications. Seamless conversion of DC battery power to filtered low noise AC household power. AC Switch automatically selects AC or DC power inputs (depending on which source is available), ensuring AC household power is available at all times. Whether on the water or on the road, TruePower QS Series is ideal for large AC load applications such as air conditioners, refrigerators, microwaves, hair dryers, office equipment, power tools and more. Select the model that's right for you!

The TruePower CombiPS Pure Sine Wave Inverter/Charger, provides all the benefits and features of our QS series but yields a Pure Sine Wave AC output which is equal to the quality of AC power enjoyed at home. Pure Sine Wave Technology is perfect for mobile or on the water audio/visual systems with plasma or LCD flat screen technology in addition to large appliances with hysteresis motor control as used in household appliances like washing machines.

- **2.8x Surge Rating with 1.0 Power Factor**
- **7 Selectable 3-Stage Battery Charge Profiles**
- **Compact, Robust Design**
Easy-to-install, space saving design.
- **Fully Automatic Inverter/Charger**
Instant AC transfer switch passes AC shore/station power. Charges batteries when shore / station power is present or switches safely into DC to AC inverter mode, making AC household power available on the water or on the road.
- **Charger Mode: Integrated, Automatic True 3-Stage Marine Grade Battery Charger**
Built-in digital control technology provides seven user-selectable charge profiles for today's various battery chemistries.
- **Inverter Mode: Efficient, Quiet Conversion from DC Power to AC Power**
Perfect for mobile or on the water audio/visual systems and large appliances with hysteresis motor control. Inverter delivers 2.8 times surge capacity for demanding applications such as air conditioners, microwaves, refrigerators and more. Pure Sine Wave passes through while connected to AC shore/station power.
- **Built-in Safety: Overload, Over Temperature, High and Low Battery Voltage Protection and Ignition Protection**
Designed and constructed to FCC Class A, Marine UL 1236, UL 458, and CE ABYC-A 31 Marine compliant.
- **2 Year Warranty**



 Pure Sine Wave
TECHNOLOGY



 Modified Sine Wave
TECHNOLOGY



Quickly and easily connect the AC input and output leads



DC and remote connections easily connect to the combi

TruePower CombiPS & CombiQS Selection



Model	TruePower2000PS 110V AC / 12V DC	TruePower2000PS 110V AC / 24V DC	TruePower1500QS 12V DC	TruePower2500QS 12V DC	TruePower2500QS 24V DC
Part #	02012	02024	01512	02412	02424
Size (LxWxH)	17"x9"x7"	17"x9"x7"	17"x9"x7"	17"x9"x7"	17"x9"x7"
Weight	44 lbs	44 lbs	40 lbs	44 lbs	44 lbs
Auto AC Transfer Switch Rating	30A	30A	30A	30A	30A
Inverter					
Sine Wave	Pure	Pure	Quasi (Modified) Sine	Quasi (Modified) Sine	Quasi (Modified) Sine
DC Voltage (range)	10.5-15V DC	21.5-29.5V DC	10.5-15V DC	10.5-15V DC	21.5-29.5V DC
DC Amps (max continuous)	Up to 200A	Up to 100A	Up to 150A	Up to 250A	Up to 125A
AC Voltage (range/Hz)	110-120V AC / 60 Hz	110-120V AC / 60 Hz	110-120V AC / 60 Hz	110-120V AC / 60 Hz	110-120V AC / 60 Hz
AC Amps (max continuous)	Up to 18.2A	Up to 18.2A	Up to 13.6A	Up to 22.7A	Up to 22.7A
Power Rating (continuous/peak watts)	2000 / 6000	2000 / 6000	1500 / 4500	2500 / 7200	2500 / 7200
Electric Motor Start Capability	1 HP @ 10.5V DC	1 HP @ 21.5V DC	1 HP @ 10.5V DC	1 HP @ 10.5V DC	1 HP @ 21.5V DC
3 Stage Battery Charger					
AC Voltage (range/Hz)	95-127V AC 50/60 Hz	95-127V AC 50/60 Hz	95-127V AC 50/60 Hz	95-127V AC 50/60 Hz	95-127V AC 50/60 Hz
AC Input Breaker Rating	30A	30A	20A	30A	30A
Charging Voltage (select profile)	14.0-15.1V DC	28.0-30.2V DC	14.0-15.1V DC	14.0-15.1V DC	28.0-30.2V DC
Float Voltage (selectable profile)	13.3-13.8V DC	26.6-27.4V DC	13.3-13.8V DC	13.3-13.8V DC	26.6-27.4V DC
Nominal Output Charger Amperage	Up to 70 Amps DC	Up to 35 Amps DC	Up to 40 Amps DC	Up to 50 Amps DC	Up to 25 Amps DC

TruePower CombiPS & CombiQS Application Guide

35W	Smartphone/Tablet	<div style="background-color: #e91e63; color: white; padding: 5px; text-align: center; margin-bottom: 5px;">TruePower2000PS</div> <div style="background-color: #e91e63; color: white; padding: 5px; text-align: center; margin-bottom: 5px;">TruePower1000QS</div> <div style="background-color: #e91e63; color: white; padding: 5px; text-align: center; margin-bottom: 5px;">TruePower1500QS</div> <div style="background-color: #e91e63; color: white; padding: 5px; text-align: center;">TruePower2500QS</div>
100W	Can Opener/Coffee Grinder	
150W	32"-55" Flat Screen TV	
175W	Laptop Computer	
300W	Portable Ice Maker	
500W	Vacuum	
550W	Washing Machine	
600W	Blender/Food Processor	
700W	Portable Dishwasher	
750W	Full Size Fridge & Freezer	
800W	Small Coffee Maker	
900W	Toaster	
1000W	Small Microwave	
1200W	Coffee Maker	
1500W	Electric Grill	
1800W	Toaster Oven	
2000W	Large Air Conditioner	



Removable Deluxe Remote (included)

On/Off/Standby power modes and high visibility LED indicators for Charger, Inverter and Fault modes. Includes connector plate and interface cable.

The items listed above are intended for reference only. Appliance specifications may vary. Certain appliances and tools require a higher surge power in order to start up. To compute the actual wattage of a device, determine the amperage rating, and multiply by the AC voltage (A x V = W). For example: 10 Amps x 110 Volts = 1100 Watts.

ISOLATORS

ProIsoCharge Series

34



ProIsoCharge delivers digitally controlled alternator output distribution while protecting the health of engine start batteries, isolating and charging up to 3 other independent battery banks off of a single alternator (model specific).

Battery Isolators

35



ProMariner™ Battery Isolators with gold-plated terminals (select models) and improved efficiency, provide enhanced charging.

ISOLATORS

ProSafeFS Series

36



The ProSafe FS Series of FailSafe 30 and 60 Amp Galvanic Isolators will interrupt galvanic current flow with other boats at a marina when installed on a boat which is connected to AC Shore Power.

Portable Analog Corrosion Test Meter

37



Measures voltage difference between metals in seawater to help diagnose corrosion problems ensure the most common metals used on boats - aluminum, bronze and steel are properly protected on your vessel.



ProlsoCharge Series Intelligent Alternator Power Distribution System

Significantly Smarter...

ProlsoCharge delivers digitally controlled alternator output distribution while protecting the health of engine start batteries, isolating and charging up to 3 other independent battery banks off of a single alternator (model specific). For dual engine applications, ProlsoCharge offers an exclusive 2 alternator input model with up to 4 battery banks. Save space and time by eliminating traditional diode based isolators and ancillary voltage sensitive relays or solenoids, isolating and charging multiple battery banks simultaneously. Eliminate typical alternator voltage loss of up to .6V DC that is commonly associated with traditional diode based isolators. Intelligent zero volt loss isolation insures fully charged batteries and faster charge times. Installed with the ProNauticP Series, a boat owner can enjoy the full benefit of shore power and on the water charging. Designed to provide more time on the water enjoying what you like most...boating.

- ProMar Digital Performance Zero Volt Loss Isolation and Charging**
 All digital design delivers active battery status and automatic engine battery health priority while digitally distributing the full output of your engine's alternators.
- Intelligent Isolation and Charging Software Control**
 ProlsoCharge's intelligent software control provides priority charging to a battery bank that is under load (i.e house bank or power inverter bank) by taking fully charged batteries off line and priority charging discharged battery banks, while insuring the health of the engine batteries.
- Real Time LED Status Indicators**
 Highly visible LEDs to indicate alternator power is present and battery bank charging status. Fault LEDs include: high and low alternator output, over-voltage protection and high voltage conditions that may be present on any one of the battery banks connected (that are also connected to other charging sources gen set combi etc).
- Ignition Controlled**
 Distributed On Demand™ battery bank management will only activate with ignition power on.
- Advance Regulator Ready**
 Advance regulator remote sense connection provided for precision alternator algorithm control for alternators equipped with an advanced regulator.
- Easy Installation**
 Modular design for easy install. Includes all terminal stud insulator boots and protective snap on safety cover.
- Built-in Safety**
 Ignition protected
- 5 Year Warranty**



Model	ProlsoCharge120 1•2	ProlsoCharge180 1•2	ProlsoCharge120 1•3	ProlsoCharge250 1•2	ProlsoCharge180 1•3	ProlsoCharge250 1•3	ProlsoCharge130 2•4
Part#	23121	23122	23124	23123	23125	23126	23127
Volts	12V	12V	12V	12V	12V	12V	12V
Max DC Amps	120 Amp	180 Amp	120 Amp	250 Amp	180 Amp	250 Amp	130 Amp
Alternator Input	1	1	1	1	1	1	2
Battery Outputs	2	2	3	2	3	3	4
Size (LxWxH)	5.35"x5.875"x3.125"	6.15"x5.875"x3.125"	6.15"x5.875"x3.125"	6.95"x5.875"x3.125"	7.55"x5.875"x3.125"	8.875"x5.875"x3.125"	12.05"x5.875"x3.125"
Weight	2 lbs	3 lbs	3 lbs	4 lbs	5 lbs	6 lbs	7 lbs

Battery Isolators

ProMariner™ Battery Isolators with gold-plated terminals* and improved efficiency, provide enhanced charging

- Rated for use with DC devices ranging from 10 amps to 130 amps
- One or two alternators can be connected multiple battery banks
- Allows electric current to flow in one direction only
- Batteries will not discharge into undercharged batteries



Model	1-70-2*	1-70-3*	2-70-2	2-70-3	1-130-2*	1-130-3*	2-130-2	2-130-3
Part#	01-70-2	01-70-3	02-70-2	02-70-3	1-130-2	1-130-3	2-130-2	2-130-3
Configuration	1 alternator, 2 battery	1 alternator, 3 battery	2 alternator, 2 battery	2 alternator, 3 battery	1 alternator, 2 battery	1 alternator, 3 battery	2 alternator, 2 battery	2 alternator, 3 battery
Max Current	70 amp	70 amp	70 amp	70 amp	130 amp	130 amp	130 amp	130 amp



ProSafeFS Series Galvanic Isolator

Protecting your Boat's Outdrive, Props and Metal Fittings while Maximizing Zinc Life...

The ProSafe FS Series of FailSafe 30 and 60 Amp Galvanic Isolators will interrupt galvanic current flow with other boats at a marina when installed on a boat which is connected to AC Shore Power. This technology maintains AC safety ground and solves the most common forms of corrosion and premature zinc loss within a boat's bonding system. The ProSafe FS Series is UL Certified to meet the parameters of the ABYC A-28 recommendation. ProSafe FS installs easily and does not require a dedicated monitor to verify the operational status of the galvanic isolator as required by non FailSafe Certified galvanic isolators. Both the ProSafe 30 and 60 Amp models are built on robust Flat Pack Semiconductor platforms, ensuring that in the event of a failure, the failure is safe by not compromising the ground continuity on-board when connected to AC Shore Power.

- **ABYC A-28 July '08 Compliant and Fail Safe Certified**

Certified by Underwriters Laboratories (UL). Insures shore power safety ground wire is maintained through the isolator.

- **Flat Pack High Power Semiconductors**

Robust high power diodes allow the FS Series to meet the new FailSafe criteria for conducting inrush currents 3,000 and 5,000 amps (FS30 and FS60 respectively) for the required duration period.

- **Innovative Design**

The FS60 will cool itself in the event it must conduct current insuring cooler operation in this mode.

- **Ignition Protected**

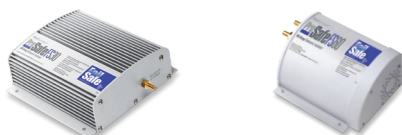
Meets ISO 8846 and either model can be mounted within an engine compartment.

- **Gold Plated Terminations**

Simply install in your on board green safety ground wire (between your AC inlet and your AC Panel) to separate your D.C. Bonding System from your Shore A.C Green wire.

- ProSafe FS30 for 30 Amp Shore Cord Applications. ProSafe FS60 for (1) 50 Amp or (2) 30 Amp Shore Cord Applications

- **5 Year Warranty**



Model	ProSafeFS30	ProSafeFS60
Part #	22034	22074
Shore Cord Inlet Compatibility	Single 15, 16, 20 or 30	Single 50 or Dual 15's, 16's, 20's or 30's
Ratings V AC / AMPS / Hz	120/240V AC / 41A / 50 or 60 Hz	120/240V AC / 82A / 50 or 60 Hz
Max Temp.	50° C	50° C
Size	6.75"x7"x2.5"	7.25"x6.5"x3.75"
Weight	3 lbs	3.7 lbs



Unprotected Outdrives



Unprotected and premature transom & outdrive zinc loss



Unprotected sail drive

Analog Corrosion Test Meters

Measures voltage difference between metals in seawater to help diagnose corrosion problems and ensure the most common metals used on boats – aluminum, bronze and steel are properly protected on your vessel. Scale is color coated to easily read whether your boat metal is freely eroding, protected, or over protected.



20006-1

Portable Analog Corrosion Test Meter

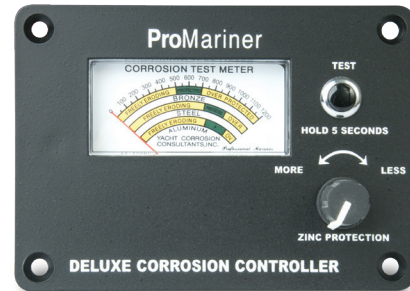
- Includes 10 foot cable with alligator clip and 20 ft cable with silver/ silver chloride half cell

Part # 20006-1 Portable Corrosion Test Meter

Part # 20008 20 foot cable with silver/silver chloride half cell for 20006-1



20008



20020

Deluxe Analog Corrosion Controller Meter

- Includes mountable meter and Through Hull Kit (part # 20056-1)

Part # 20020 Deluxe Corrosion Controller

Through Hull Kit (Part # 20056-1)

- For use with 20020 Deluxe corrosion meter
- Includes sensor and silver/silver chloride half cell
- For use on fiberglass and metal hulls only



20056-1



Shaft Brushes

- Provides connections for prop shafts, rudder shafts and other rotating shafts with ships bonding system
- Can help eliminate radio frequency noise from rotating shafts and machinery
- Long wearing metallic graphite brush on phosphor bronze strap

Part # 20035-1 Standard Shaft Brush

Part # 20036-1 Heavy Duty Shaft Brush

ACCESSORIES

Universal AC Plug Holder+

40

NEW

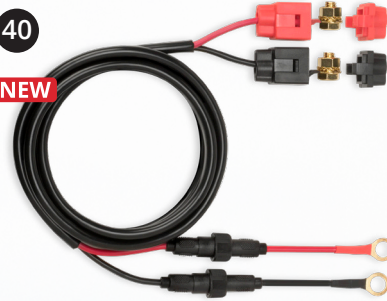


No cutting, stripping, or splicing wires. Mount in an easy-to-reach location for safe AC power cord connection.

Charger DC Cable Extenders

40

NEW



Universal design for all marine chargers with ring terminal cables. No cutting, stripping or splicing required.



ACCESSORIES

Remote Battery Bank Status Indicator

41



Remote Push-To-Test status indicator for up to 3 batteries. Universal flush or surface mount capable.

Hand Held Digital Multimeter

41



Accurate and durable Hand-Held Digital Multi-Meter with a large digital LCD display to easily see the readout.

Marine Binoculars

42



ProMariner™ binoculars have been designed with boaters in mind. They are water resistant, have a center focus, and have Bak 4 prisms. Recreational and Consumer grade options are available.



Universal AC Plug Holder+ **NEW**

Universal design for all standard 120V AC plugs

- Plug clamp insert included
- Converts plug holder to an AC inlet for ProMariner engineered chargers
- No cutting, stripping or rewiring of AC power cord
- Watertight and UV resistant cover
- Easy to reach safe AC power cord connections
- Stainless steel mounting screws included
- Easy installation

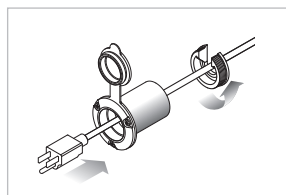
Part #	51300	Black
Part #	51310	White
OEM #	51301	Black
OEM #	51311	White



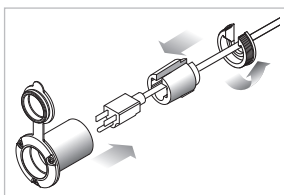
Plug Clamp Insert

Available in black or white

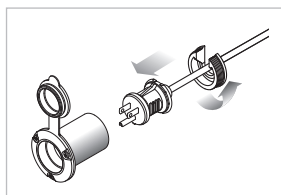
AC Plug Holder Configurations—Multi-Use Design



Universal Plug Holder
Fits marine chargers with 120V plugs.



With Plug Clamp Insert
For all ProMariner chargers, Bass Pro shops, Cabela's and Guest chargers.



ConnectCharge™ Plug
Guest and Marincó ConnectCharge plug



Charger DC Cable Extenders **NEW**

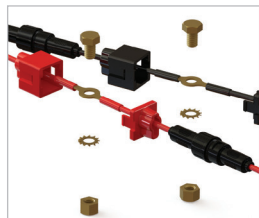
Universal design for all marine chargers with ring terminal cables

- Rated up to 30 amps
- Color coded for quick and easy installation
- Waterproof dual in-line fuses
- No cutting, stripping or splicing required
- Slide & snap fully insulated connection covers
- Corrosion resistant tinned 12 AWG copper wire and gold plated hardware
- Dual inline waterproof fuses for maximum wire protection
- Available in 5 ft or 15 ft cable lengths
- Use with all on-board marine battery chargers when standard battery charger cables do not reach your bow, center mount or stern battery compartment locations

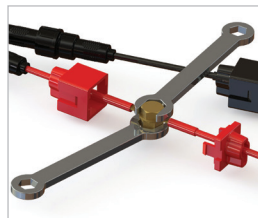
Part #	51815	15 ft
Part #	51805	5 ft



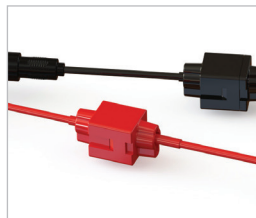
Easy to extend charger cables with two 1/2" wrenches



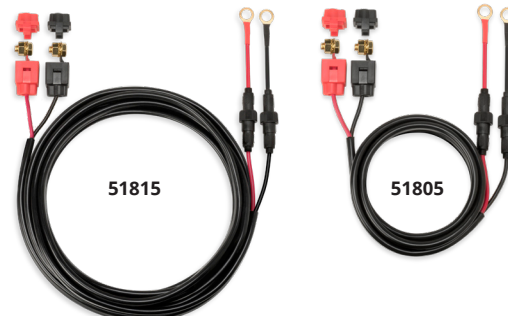
Step 1:
Align charger red and black wires and assemble hardware as shown



Step 2:
Tighten all hardware to approximately 12 ft. lbs.



Step 3:
Slide and snap connection cover



Remote Battery Bank Status Indicator

- Remote "Push to Test" status indicators for up to 3 batteries with easy-to-read LED indicators
- Display is universal flush or surface mount capable

Part # 51060



Hand-Held DC System Tester

- At-a-glance testing of batteries, on-board charger, alternator/ regulator output
- 6 Easy-to-read LED indicators
- Compact, lightweight design

Part # 87710



Hand Held Digital Multimeter

- Large digital LCD display
- Back light feature
- Test leads included
- Measurement hold feature
- Built in EZ stand
- Continuity tone alert

Part # 87730



Marine Binoculars

Recreational Grade

WaterSport Waterproof Marine Optics

WaterSport 7 x 50 Marine Binoculars

- Waterproof & Nitrogen Filled
- Float without Strap
- Center Focus
- Bak 4 Prisms
- Retained Lens Caps
- Enhanced Green Coated Lens

Part # 11755



Consumer's Choice

Water Resistant Marine Optics High Seas Marine Binoculars

Weekender Marine Binoculars

- Water Resistant
- Center Focus
- 7 x 50, Bak 4 Prisms
- Retained Lens Caps

Part # 11752



Choosing a Waterproof Charger

With our Power of 3 offering, selecting the right charger has never been easier.

Choose your charger in 3 steps:

1. Select the grade of battery charger that best suits your usage...
2. Select the recovery time that best suits your needs...
3. Select the number of batteries you wish to charge & condition

Our advanced line of waterproof chargers is designed for any combination of group 24-31 batteries. Each charger bank cable is for a dedicated 12V battery, even if it is configured for a 12, 24 or 36 Volt trolling motor or system application.

If your application is for 4D, 8D or 6 volt batteries in series, please refer to ProMariner's ProNauticP Series (page 20) or call ProMariner™ for assistance at 1-800-824-0524.



ProTournament Elite Series

FASTEST

Model	Part #	DC Voltage Systems	Amps	No. of Batteries	12V						Battery Type
					12V	12V	12V	12V	12V	12V	
ProTournament240 Elite Dual	52024	12/24	24 Amps	2 Bank		✓					Flooded, AGM, HP AGM
ProTournament240 Elite Triple	52026	12/24/36	24 Amps	3 Bank			✓				Flooded, AGM, HP AGM
ProTournament360 Elite Dual	52032	12/24	36 Amps	2 Bank		✓					Flooded, AGM, HP AGM
ProTournament360 Elite Triple	52036	12/24/36	36 Amps	3 Bank			✓				Flooded, AGM, HP AGM
ProTournament360 Elite Quad	52038	12/24/36/48	36 Amps	4 Bank					✓		Flooded, AGM, HP AGM



ProSportHD Series

FASTER

Model	Part #	DC Voltage Systems	Amps	No. of Batteries	12V						Battery Type
					12V	12V	12V	12V	12V	12V	
ProSportHD 6	44006	12	6 Amps	1 Bank	✓						Flooded, Gel, AGM
ProSportHD 8	44008	12/24	8 Amps	2 Bank		✓					Flooded, Gel, AGM
ProSportHD 12	44012	12/24	12 Amps	2 Bank		✓					Flooded, Gel, AGM
ProSportHD 20*	44020	12/24	20 Amps	2 Bank		✓					Flooded, Gel, HP AGM
ProSportHD 20 Plus	44021	12/24/36	20 Amps	3 Bank			✓				Flooded, Gel, AGM

*3rd High Performance HP AGM profile



ProMar1 DS Series

FAST

Model	Part #	DC Voltage Systems	Amps	No. of Batteries	12V						Battery Type
					12V	12V	12V	12V	12V	12V	
ProMar1 DS 5	31505	12	5 Amps	1 Bank	✓						Flooded, Gel
ProMar1 DS 10	31510	12/24	10 Amps	2 Bank		✓					Flooded, Gel
ProMar1 DS 15**	31515	12/24/36	15 Amps	3 Bank			✓				Flooded, Gel

**3 bank consists of one engine start and two trolling motor or system batteries.

Choosing a ProNauticP Charger

ProNauticP Series chargers are designed for cuddies, cruisers, sailboats, yachts and commercial / larger fishing boats. Boats in this class typically have a common ground and are set up for shore power AC and sometimes include the use of a generator and/or an inverter on board. A 12V DC common ground system is typical for most boats, however larger boats and commercial boats may be utilizing a 24V, 32V or 36V common ground DC system.

Method 1 (preferred):

When choosing a dry mount charger, the following information will aid in the proper selection:

1. How many low voltage lights are on-board and total estimated amperage required when they are all on?
(Good rule of thumb is 1 amp per bulb)
2. How is the boat used? If there is a lot of use while at the dock, what is the total estimated DC amp draw if at the dock with all lights and DC appliances on?
3. What is the DC voltage system onboard?
(12V DC or 24V DC or 32V DC or 36V DC)
4. Is there an inverter being used? If yes what is the wattage rating and DC input amps required?
5. What is the number of batteries and group size of each battery?
For example: After answering the above you find you have 12V DC system with 18 DC lights on board and a VHF radio you like to leave on with a satellite TV for entertaining, you would find your DC amp load would be approximately 20 amps. Add an additional 10 amps for charging capacity and select a 30 amp charger. This would be a Pronautic1230P as shown in the chart below.



ProNauticP Series

Model	Part #	Volts	Charger Output	No. of Batteries	Cycles	Total number of All Battery Amp Hours On-board					Size (LxWxH)	Weight	AC In
						100-199	200-299	300-399	400-599	600-799			
ProNautic 1210P	63110	12	10 Amps	2 Bank	50/60	9 Hrs					10.25"x8.5"x3.5"	5 lbs	100-260
ProNautic 1215P	63115	12	15 Amps	3 Bank	50/60	6 Hrs	9 Hrs				10.25"x8.5"x3.5"	5 lbs	100-260
ProNautic 1220P	63120	12	20 Amps	3 Bank	50/60	5 Hrs	7 Hrs	10 Hrs			10.25"x8.5"x3.5"	5 lbs	100-260
ProNautic 1230P	63130	12	30 Amps	3 Bank	50/60		6 Hrs	8 Hrs	10 Hrs		10.25"x8.5"x3.5"	5 lbs	100-260
ProNautic 1240P	63140	12	40 Amps	3 Bank	50/60		5 Hrs	6 Hrs	8 Hrs	11 Hrs	10.25"x8.5"x3.5"	5 lbs	100-260
ProNautic 1250P	63150	12	50 Amps	3 Bank	50/60			6 Hrs	7 Hrs	9 Hrs	12.25"x8.5"x3.5"	7 lbs	100-260
ProNautic 1260P	63160	12	60 Amps	3 Bank	50/60			5 Hrs	6 Hrs	8 Hrs	12.25"x8.5"x3.5"	7 lbs	100-260
ProNautic 2420P	63170	24	20 Amps	3 Bank	50/60	5 Hrs	7 Hrs	10 Hrs			10.25"x8.5"x3.5"	5 lbs	100-260
ProNautic 2430P	63180	24	30 Amps	3 Bank	50/60		6 Hrs	8 Hrs	10 Hrs		12.25"x8.5"x3.5"	7 lbs	100-260

The Battery Charger Selector Guide is meant to be used as a guide to help determine the right charger for your needs. All charge times given are using the longest time it would take to charge a dead (50% discharged) set of batteries. In most cases, your set of batteries will recharge much faster. See battery group size table below.

Method 2:

If you are not able to answer all the questions listed in method 1, you may make a selection by simply understanding the number and sizes of each battery on board and compare it to the battery group size list on the right. Select a recovery time that is suitable for your needs. Batteries are categorized into "Group" size designations and each group size has an average number of amp hours (AH) available in each battery classification. The combined total of all batteries to be charged provides your total amp hours.

Example: Two group 27 batteries (100 AH each) and One group 8D (225 AH) totals 3 batteries with a combined total of 425 AH (100 + 100 + 225 = 425).

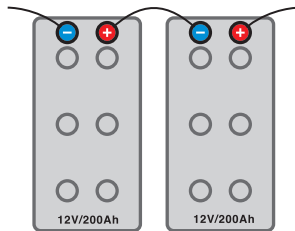
Battery Group Size

GROUP 24	Average of 85 Amp Hours
GROUP 27	Average of 100 Amp Hours
GROUP 31	Average of 115 Amp Hours
GROUP 4D	Average of 165 Amp Hours
GROUP 8D	Average of 225 Amp Hours

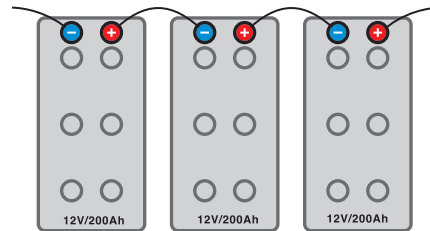
What is Series Connection and Parallel Connection for batteries?

Series Connection

A series connection is used to increase voltage, while keeping capacity at the same level. Two serially connected 12V/120 Ah batteries make a combined battery set of 24V/120 Ah. In a series connection, the positive pole of one battery is connected to the negative pole of the other, with the poles that remain at the ends being connected to the system. Batteries with different capacities and chemistry should never be linked in series.



Series connection 24V/200 Ah.

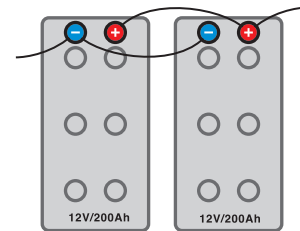


Series connection 36V/200 Ah.

Parallel Connection

Parallel connection is used when you need to increase your capacity, but keep the voltage the same. The positive leads are connected together, as are the negative leads.

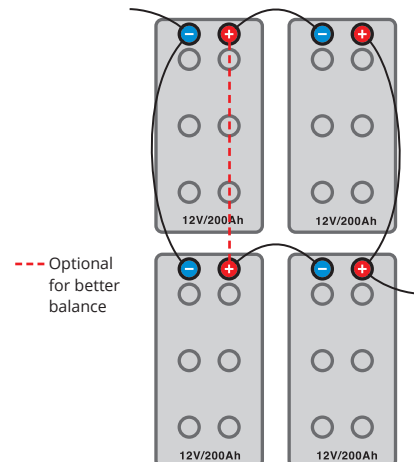
The cabling from the battery to the system should be: Positive from battery 1 and negative from battery 2 (or the last in the parallel connection).



Parallel connection
12V/400 Ah.

Series/parallel Connection

If you need a 24V battery set with a higher capacity, you can combine series and parallel connections. The cables from the battery to the system must be crossed: Positive from battery 1 and negative from battery 2 (or the last in the parallel connection).



Series/parallel connection
24V/400 Ah.

TECH tip™

Space when Installing Multiple Batteries

Make sure there is sufficient space between the batteries when installing multiple batteries: There should be a 'finger' of space between them to allow the heat to be diverted.

PN	Page	PN	Page
01-70-2	35	44008	13
01-70-3	35	44012	13
01512	31	44020	13
02-70-2	35	44021	13
02-70-3	35	44023	15
02012	31	44026	15
02024	31	44028	15
02412	31	44029	15
02424	31	51060	41
05502	22	51300	40
05503	22	51301	40
05504	22	51310	40
05505	22	51311	40
05513	22	51805	40
05514	22	51815	40
06120	27	52024	11
06150	27	52026	11
06200	27	52032	11
07100	27	52036	11
07101	27	52038	11
07200	27	52060	11
07211	27	63100	21
1-130-2	35	63106	21
1-130-3	35	63110	21
11752	42	63115	21
11755	42	63120	21
2-130-2	35	63130	21
2-130-3	35	63140	21
20006-1	37	63150	21
20008	37	63160	21
20020	37	63170	21
22034	36	63180	21
20035-1	37	79018	27
20036-1	37	87710	41
20056-1	37	87730	41
22074	36	90100	15
23121	34	90110	15
23122	34	90130	15
23123	34	90140	15
23124	34	90170	15
23125	34		
23126	34		
23127	34		
31505	16		
31510	16		
31515	16		
44001	17		
44006	13		

Ingress Protection (IP) Ratings Guide



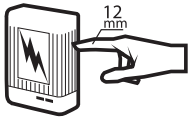



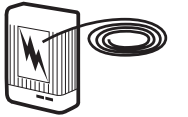





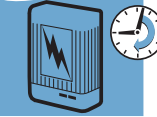

Example:

An IP65 rating can be determined using the adjacent table and example:

- The first number of the rating example, 6, in the gray column means the enclosure is dust tight
- The second number of the rating example, 5, in the blue column means the enclosure is protected against jets of water

The IP rating system was established by the International Electrotechnical Commission (IEC), an organization for international standards and conformity assessment. The IEC collaborates closely with the International Organization for Standardization (ISO). A complete description of the IP ratings and associated tests is found in IEC Publication 529. Although these ratings were initially developed as a way to classify enclosures, they now provide a convenient, practical way to compare levels of sealing. Many electrical products have an Ingress Protection (IP) rating which identifies the environmental factors needing consideration prior to the product's installation.

This is important when deciding when to mount products in a dry and clean environment versus a wet and/or dusty environment. The IP rating indicates the degree of protection provided. The numbers following IP represent levels of sealing and can range from no protection to full protection against dust and water. The table provides a description of the protection at each level.

SOLIDS		WATER	
1	 Protected against a solid object greater than 50 mm such as a hand.	1	 Protected against vertically falling drops of water. Limited ingress permitted.
2	 Protected against a solid object greater than 12 mm such as a finger.	2	 Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress permitted.
3	 Protected against a solid object greater than 2.5 mm such as a screwdriver.	3	 Protected against sprays of water up to 60 degrees from the vertical. Limited ingress permitted for three minutes.
4	 Protected against a solid object greater than 1 mm such as a wire.	4	 Protected against water splashed from all directions. Limited ingress permitted.
5	 Dust Protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.	5	 Protected against jets of water. Limited ingress permitted.
6	 Dust tight. No Ingress of dust. Two to eight hours.	6	 Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.
		7	 Protection against the effects of immersion in water between 15 cm and 1 m for 30 minutes.
		8	 Protection against the effects of immersion in water under pressure for long periods.

Rating Example:

IP65

INGRESS PROTECTION

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