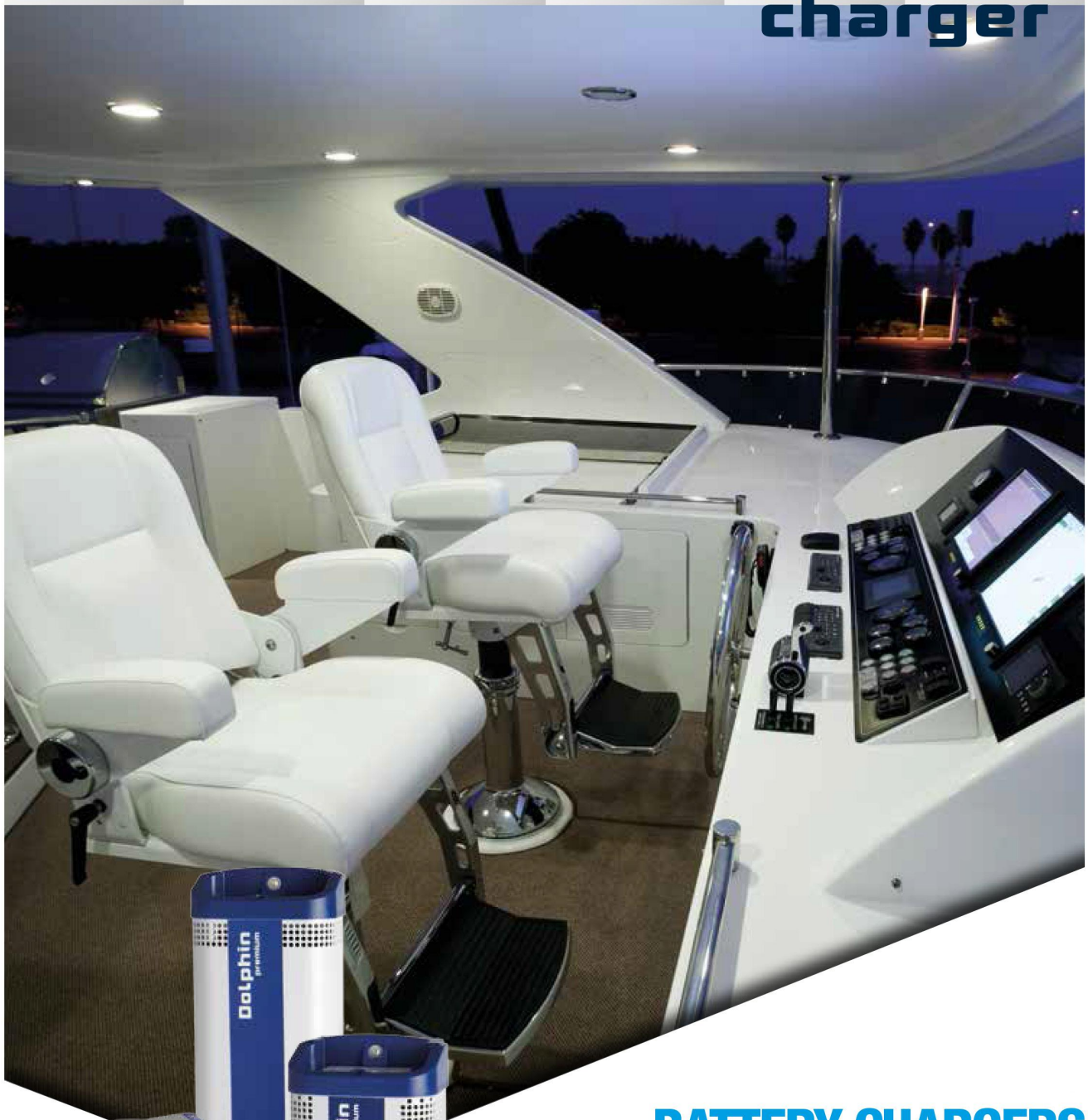


Dolphin

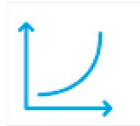
charger



**BATTERY CHARGERS
AND ACCESSORIES**



20 YEARS OF EXPERTISE IN POWER ELECTRONIC



100%
of specific
products



100%
accomplished
projects



100% of
products are
tested

In France, we are leading actor on the power electronics segment with Cats Power Design. The company designs electronic systems on specifications.

All products are made in France.

Project management organization according to ISO 9001 around the following key functions :

Through its productions in France and «low cost» area, we manufactures its developments at optimized costs.

Member of EIGHT LAKES since 2015.
International group specialized in electronics and mechatronics business



Business engineer



Project manager



Hardware and software engineer



Qualification and certification engineer



Industrial, purchase and quality manager



Sales administration

INDUSTRIALIZATION AND PRODUCTION



We industrialize your product and ensure set quality goals achievement based on OEM's needs.



Industrialization method

Definition of wiring tools and integration process.



Purchasing management

Supply contracts implementation according to industrial and commercial plan over a sliding 12-month period.



Production tests

Production control tools configuration. AOL, INSITU...
Realization of tests: functional, dielectric, error correction.



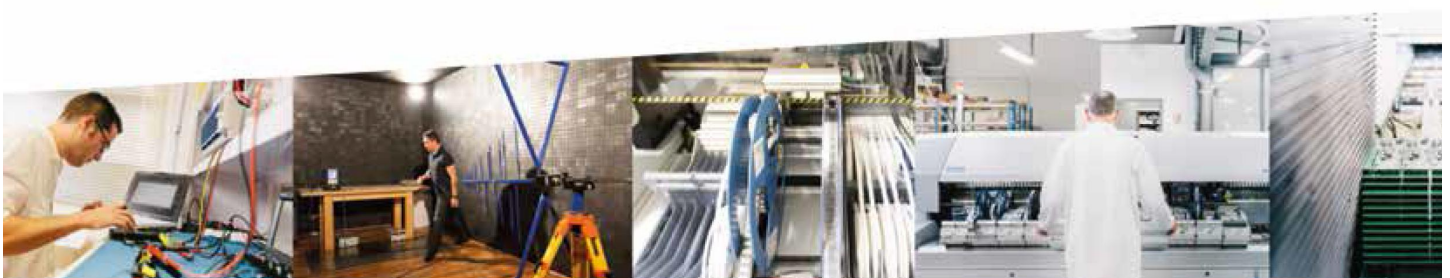
First series

First series manufacturing, production process audit, and industrial validation.



Serial life

Production batch manufacturing, quality indicators monitoring and obsolescence management.



Dolphin

premium



PLUG AND PLAY BATTERY CHARGER



- New robust and compact casing
- 3 completely isolated battery outputs
- Easy wiring and connection thanks to the Winsta (Wago) and Phoenix contact connectors
- Digital management with up to date microcontroller
- 4 charging programs including one for lithium-ion-iron-phosphate with integrated BMS
- Full power at temperatures up to 120° F
- Automatic weekly equalisation for all charging programs
- Automatic 115/230V switchover (12V 25A, 12V 40A & 24V 20A only)
- Night mode : silent - without fan (12V 25A, 12V 40A & 24V 20A only)
- Conformal coating of PCB to prolong the life of the battery charger



DOLPHIN PREMIUM 12V 60A

- Premium 12V 60A includes CAN BUS J1939 feature



ROBUST CASING



	12V					24V
	10A	15A	25A	40A	60A	20A
Input						
Input Voltage	230V (+/-15%) 115V available on request		115V/ 230V (+/-15%) Automatic Switchover			
Frequency	50Hz/60Hz (+/-10%)					
Cos	0,6 typ		0,9 typ			
Efficiency	80% typ					
Max. Current 115V/230V	NA/1,3A	NA/1,9A	4A/2A	7A/3,5A	12A/6A	7A/3,5A
Fuse	T2A 250V	T3,15A 250V	T6A 250V	T10A 250V	T16A 250V	T10A 250V
Output						
Number of outputs	3 isolated outputs					
Number of charging curves	4 programs, position selected by dip switch NEW - one of which is LiFeSO4 with integrated BMS					
Charging curve	IUUo + weekly automatic equalisation					
Weekly equalisation	Automatic					
Voltage share	+/-2%					
Ripple	< 1% pp (BW < 20MHz)					
Fuse (automotive mini)	F15A 32V	F20A 32V	2 x F15A 32V	2 x F25A 32V	3 x F25A 32V	2 x F15A 32V
Protection						
	In case of output overload, Excessive internal temperature Charging voltage too high, Reverse battery polarity (fuse)					
General						
Display	Tricolour LED					
Night/Silent mode	By button					
Operating temperature	14° F to 122° F					
Storage temperature	- 4° F to 158° F					
Humidity	10% to 90% (without condensation)					
Ventilation	Natural		Forced fan cooling			
Security	EN60335-2-29 (2002)					
Housing	Powder coating aluminium					
Mouting	2 Screws #10			4 Screws #10	2 Screws #10	
Dimensions	4-3/4"W x 9-3/8"H x 3-3/4"D		4-3/4"W x 13-7/8"H x 3-3/4"D		10-3/4"W x 9-1/2"H x 4-1/4"D	4-3/4"W x 13-7/8"H x 3-3/4"D
Weight	2.87 lbs.		4.18 lbs.		6.61 lbs.	4.18 lbs.
Input terminals	20A 230V, 14 AWG max WINSTA - WAGO 770.813/G11-000					
Battery terminal	40A 630V, 10 AWG max PHOENIX CONTACT PC6-16/4-G1F, 16			4 AWG max	10 AWG max	
CAN BUS	No			Yes	No	
Code	99001	99011	99020	99030	99050	99040

Dolphin pro



ROBUST AND POWERFUL MARINE BATTERY CHARGER



- Can operate up to 149° F without D rating
- Internal diode isolator without voltage drop
- User friendly design : a solid casing in aluminium, mounting by 4 easily accessible screws
- A front cover allowing easy access to the charge selector and the wiring connections (4 solid 5/16" terminals for the battery outputs)
- A cable gland for the input cable and a cable grommet with a waterproof seal
- Integrated Control Panel : LED display indicating the charging curve (boost, absorption, floating), as well as anomalies and faults (temperature, voltage, fuses...)
- Automatic switchover : equipped with 3 isolated outputs, automatic switchover 115V / 230V, 50Hz / 60Hz
- 9 charging programs (including 2 winterizing and 1 power supply) depending on battery type, makes this charger suitable for all charging needs
- Optional extras : external touch screen control panel Touchview and a battery temperature sensor allowing a charging level adjustment
- Conformal coating of PCB to prolong the life of the battery charger
- Using Built-in CAN BUS J1939 interface, the Dolphin Pro can be connected to any monitoring system



	12V		24V				
	70A	90A	40A	60A	80A	100A	
Input							
Input Voltage	115/230V (+/-15%)				230V (+/-15%)		
Frequency	50/60 hz						
Cos	> 0,9						
Efficiency	83%			87%			
Max. Current 115V/230V	13A/6A	16A/7A	14A/6A	15A/9A	15A	17A	
Fuse	T20A	T20A	T20A	T20A	T20A	2T20A	
Output							
Number of outputs	3						
Number of charging curves	Open lead acid / Sealed lead acid / Lead calcium / calcium calcium / Spiral cell AGM / Winterizing open lead acid / Winterizing sealed lead acid / GEL AGM / Power Supply / LifeSo4 + BMS						
Charging curve	I.U.U.o						
Voltage share	+/-2%						
Ripple	< 1% (BW < 20MHz)						
Fuse (auto mini)	4F30A	4F30A	3F25A	3F25A	5F25A	5F25A	
Protection							
	Output current limited / Output short circuit / Overload output voltage / Reverse polarity / Over temperature						
General							
Display	LED display or optional touch multi-colour Touchview						
Operating temperature	14° F to 130° F						
Storage temperature	-4° F to 158° F						
Humidity	10% to 95% (without condensation)						
IP	IP22						
Ventilation	Force fan adjustable speed cooling						
Safety	EN 60335-1						
EMC	EN 55016, IEC 61000						
Housing	White Powder coating aluminium						
Mounting	Wall mounted 4 x #8 Screws						
Dimensions	13.4" W x 14.2" H x 4.9" D				13.4" W x 14.2" H x 7.5" D		
Weight	13-1/4 lbs.				25-1/4 lbs.		
AC Connection	3-point cage terminal 10 AWG max						
DC Terminal	4 x 5/16" Terminals						
Output alarm contact	1A 30V NO						
Optional connections							
Battery temperature sensor	2-point 14 AWG cage terminal						
External touch screen control panel (Touch-view)	RJ45						
CAN Bus connection	2 Micro-Fit & RJ11						
Code	99507	99501	99502	99503	99505	99504	

Dolphin pro HD+



TOUGH
ENVIRONMENT
DNV-GL* TYPE
APPROVED

Dedicated to commercial and offshore market
Type-approved by Det Norske Veritas (DNV-GL)
DOLPHIN PRO HD+ will be delivered with its Touchview display as a standard, measuring AMP/VOLT of battery charger, showing charging mode and alarms (temperature, fuse, battery)
The HMI touchscreen control panel is a real innovation in the battery charger environment
Using built-in CAN BUS J1939 interface, the DOLPHIN PRO HD+ can be connected to any monitoring system
Built-in alarm relay is included for remote alarm system
Conformal coating of PCB to prolong the life of the battery charger
Compatible with MARBLE Automation NL (approved oct 14)

* Certificate No: E-14112 / File No 822.20 / Job ID/ 262.1-018698-1
Type tests in accordance with IEC 60335-1 & IEC 60335-2-29. Low temperature & Vibration tests in accordance with SfC No. 2.4 Class A, Humidity / Damp heat tests in accordance with SfC No. 2.4 Class B. EMC in accordance with SfC No. 2.4 Class A



		24V		
		40A	60A	100A
Input				
Input Voltage	115V/ 230V (+/-15%) Automatic Switchover		230V (+/-15%)	
Frequency	50Hz/60Hz (+/-10%)			
Cos	0,9 typ			
Efficiency	0.85		0.88	
Max. Current 115V/230V	12A/6A	12A/9A		15A
Fuse	T20A		2xT20A	
Output				
Number of outputs	3 isolated outputs			
Number of charging curves	9 programs, position selected by dip switch 00-Liquid Lead Acid batteries (open) 01-Sealed Lead batteries 02-Lead Calcium batteries 03-«Delphi» batteries 04- «Optima/Maxima» batteries 05-Winterizing 06-Batteries Gel&AGM 07-Power supply 08-LiFeSo4 batteries			
Charging curve	IUUo 3 modes			
Voltage share	+/-2%			
Ripple	< 1%			
Fuse (automotive mini)	3F30A	5F30		
Protection				
	In case of output overload, Excessive internal temperature, Charging voltage too high Reverse battery polarity (fuse), Excessive battery temperature, Temperature sensor default, AC over and under voltage			
General				
Display	Touch screen control panel			
Operating temperature	14° F to 149° F			
Storage temperature	- 4° F to 185° F			
Humidity	10% to 95% (without condensation)			
Ventilation	Forced fan adjustable speed cooling			
Security	EN60335-29-2			
EMC	Emission EN55014-1			
Housing	Powder coating aluminium and composites materials (LED display)			
Mouting	wall mounted 4 x #8 screws			
Dimensions	13.4" W x 14.2" H x 4.9" D	13.4" W x 14.2" H x 7.5" D		
Weight	13-1/4 lbs.	26-1/2 lbs.		
DC connection	4 5/16" terminals			
Battery terminal	1/4" bolt for ground			
Output alarm contact	1A 30V NO			
Optional connections				
Battery temperature sensor	2 pins terminal 14 AWG max			
CAN bus connection	RJ11			
Code	99165	99175	99185	

Dolphin

charger

NEW DOLPHIN PRO 24.150



The DOLPHIN PRO battery charger is dedicated for tough environment applications, commercial, and marine fields. Evolution of DOPHIN 2 series with 16 years of experience and more than 100 000 units installed worldwide the DOLPHIN PRO is more compact, more efficient and more technologically advanced than his predecessor.

Perfect evolution of DOLPHIN 2 series battery charger the DOLPHIN PRO series use low-loss built-in blocking diode for a better efficiency and high temperature components providing full power up-to 50 Celsius degree.

A new innovative ergonomic casing made with high grade aluminum material. Easy mounting with 4 screws only and front access for user.

Features

The new DOLPHIN PRO battery chargers have new exclusive feature. Display with AMP/VOLT of battery charger, charging mode (floating, absorption, boost) and alarms (temperature, fuse, battery)

Using built-in CAN BUS J1939 interface the DOLPHIN PRO can be connected to any monitoring system without any external device. Built-in alarm relay is included for remote alarm systems.

9 charging programs for all type of battery (lead acid, agm, gel, LiFeO4. . .) winterizing battery programs and power supply mode First HMI innovative TOUCH SCREEN 85mm diameter panel

Application :

Onboard charging systems for Multi purpose offshore vessel, LCS (littoral combat ship), IPV (inshore patrol vessel), OPV (offshore patrol vessel), OCV (offshore construction vessel), PSV (platform supply vessel), Fast crew supplier, Pilot vessel, Tug, Workboat, deep water anchor handler, water taxi, water bus, Fast ferries, Fishing vessels, megayachts. . .

Why DOLPHIN PRO?

- Over 15 years experience designing and producing smart battery charger for trouble free application

- Unique high temperature specification without derating

- Triple outputs with no-loss built-in blocking diode

- Unique can bus interface with innovative touch-screen remote panel

- Possibility to parallel operation system using CAN BUS interface up to 10 units

- High quality standard with individual test under TUV Rheinland certification

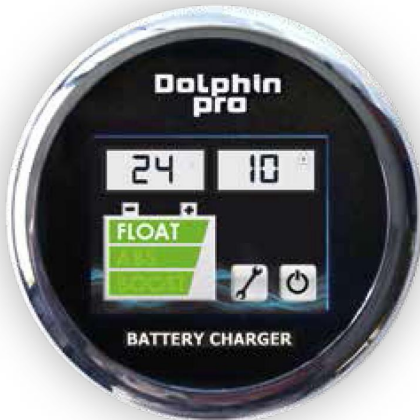
150 AMP	
INPUT	
Voltage (+/-15%)	230 Vac 1 Phase 400 Vac 3 Phase + Neutral
Frequency	50/60 Hz (+/- 15%)
Max consumption	25 Amp 9 Amp
Power Factor	0.9 typ
Efficiency	85%
Fuses	
OUTPUT	
Number	3 isolated (no loss splitter)
Max current	150 Amp adjustable from Touch Display (105 Amp / 75 Amp / 45 Amp)
Temperature compensation	Yes with external Temp Sensor +/- 25Mv / °C
Fuses	200 Amp (On Negative Leg)
Floating and Boost Voltage	Based on charging program selected (Lead acid, Lead/Calcium, Calcium/Calcium maintenance free/ AGM Spiral cell/ Gell/AGM/Winterizing/Power supply
Voltage tolerance	+/- 2%
Protections	Over and under voltage / Overload and short circuit / Over internal and battery temperature / Reverse polarity
Communication	CANBUS J1939 open
Display	Touch panel 2.5"
Alarm relay	Free contact output 10 Amp
Technical specifications	
Operating temperature	14° F to 131° F
Storage temperature	- 4° F to 158° F
Max humidity	90%
Cooling	Variospeed thermostated fans
Enclosure	IP22
Dimensions (mm)	14" W x 16" H x 9-1/2" D
Weight	42 lbs.

Standards	
EMC	EN 55016-2-1, EN 55016-2-1/A1, CISPR 16-2-1, EN 55016-2-3
	IEC 61000-4-3 + A1 + A2
	IEC 61000-4-2, IEC 61000-4-6, IEC 61000-4-5, IEC 61000-4-4
Environment	IEC 60068-2-30 & IEC 60068-2-1
	IEC 60068-2-52 salt spray
Mechanical	IEC 60068-2-6 & IEC 60068-2-64 Vibrations
	IEC 60529 IP
Safety	EN 60335-1
Part Number	99509

TOUCH VIEW CONTROL PANEL



- External touch screen control panel for Dolphin Pro range
- Tactile, with Can Bus connection
- You can supervise your charger and your battery bank
- 5 languages
- Instructions menu : temperature, error messages, charging current, charging curve selected, charging phase (boost, absorption, float), power max delivered



	12/24V
General information	
Screen size	round diameter 2,4" - 6,1 cm
LCD Type	a-Si TFT
Color configuration	RGB vertical stripe
Backlight	White LED
Interface	16-bit interface for i80system
Conformity	ROHS
Code	99520

BAT VIEW 2.0 BATTERY MONITOR

- At the touch of a button, you will be able to monitor a host of important information
- Simple to connect
- Automatically detects the input voltage (12 VDC or 24 VDC)
- CanBus SAE J1939 interface
- Flush fitted, diameter Ø 2"
- The BAT VIEW 2.0 battery monitor analyses battery voltage, battery efficiency, temperature and capacity on 2 battery banks (by means of an optional second shunt) also the voltage on 2 additional banks



	12/24V
10 - 5000 Ah	
Power supply	
Voltage	10-30 VDC
Consumption	10mA approx. (normal mode)
	30mA approx. (alarm mode)
Display functions	
Display type	Graphic OLED display 4 lines
Parameter selection	5 way navigation keypad
Parameters displayed	
Batteries 1 & 2	Voltage, Current, Temperature & Capacity
Batteries 3 & 4	Voltage
Alarm functions	
Batteries 1 & 2	Battery undervoltage (adjustable) Battery overvoltage Excessive temperature Low capacity
Batteries 3 & 4	Battery undervoltage (adjustable) Battery overvoltage
Alarm output	Dry loop, 1 inv - 1 Amp max.
Supplied with	
Temperature sensor	1 electric sensor
Shunt	1 shunt 300 Amps/100mV
General information	
Security	Delayed fuse 100 mA on +
Operating temperature	14° F to 122° F
Storage temperature	- 4° F to 158° F
Convection	Natural
Presentation	Flush mounted Ø 2"
Dimensions	2-3/4" x 2-3/4" x 1-1/4"
Weight	1.1 lb.
Connection	2 screw terminals
Code	99032

Dolphin booster

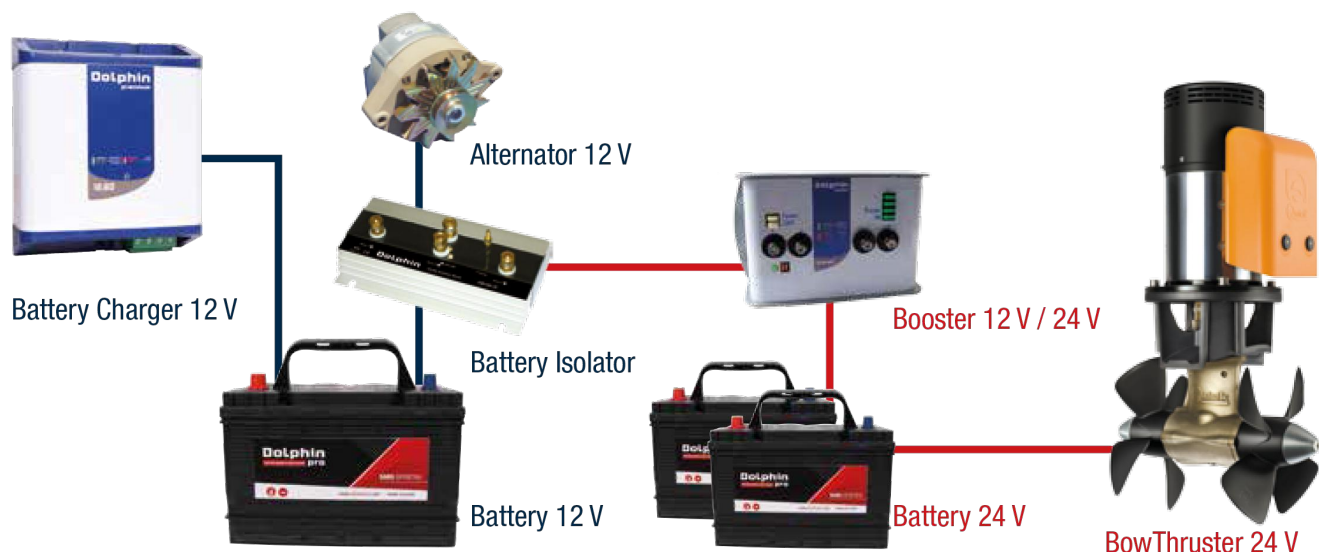


CHARGE DC BATTERY FROM ANOTHER



- When there is a requirement to charge one DC battery from another the DOLPHIN DC/DC BOOSTER provide excellent performance
- It can be named as DC-DC intelligent battery charger, DC-DC Booster charger, DC-DC isolated power booster, isolated switch mode power conditioner
- Product range : 12 volts & 24 volts charging at 30 amp and 24 volts & 24 volts charging at 30 amp
- Galvanic isolated means you can connect to any loads without interruption from the input to the output
- Typical application : charge an auxiliary battery from a single battery bank, commercial and leisure boat, vehicles including fire, police, ambulance
- These smart DOLPHIN DC/DC BOOSTER provide 4 stage charging program as well as automatic protection against battery source drainage
- Advanced and unique 4 charging program can be selected based on battery specification (lead/acid, gel, agm and LifeSo4)
- Conformal coating of PCB to prolong the life of the battery charger

DOLPHIN BOOSTER SUBSYSTEM



	12V	24V
	30A	
Input		
Input Voltage	13V +/-3V	26V +/-6V
Max. Current	70A	35A
Efficiency	85% to 90%	
Fuse	4 x F30A	
Output		
Number of outputs	1 output	
Battery voltage	24V	
Battery capacity	50 to 200Ah	
Output voltage	26,5V to 30V +/-1%	
Max. Current	30A +/-5%	
Number of charging curves	4 programs, position selected by dip switch Lead Acid, AGM, Gel, LiFeSO4	
Charging curve	IUUo	
Ripple	< 1%	
Fuse	2 x F25A	
Protection		
	In case of output overload Excessive internal temperature Reverse battery polarity (fuse)	
General		
Display	Tricolour LED	
Operating temperature	14° F to 130° F	
Storage temperature	- 4° F to 158° F	
Humidity	10% to 90% (without condensation)	
Ventilation	Forced fan cooling	
Dimensions	9-7/8" W x 6" H x 3-1/8" D	
Weight	4-1/2 lbs.	
Input connection	4-1/2 lbs.	
Battery connection	5/16" terminal bolts	
Option		
	Can Bus connection with Touchview or Navicolor RJ11 and/or Micro-Fit connection	
Code	99201	99202