

CATALOGUE



CRISTEC
on-board energy



CRISTEC PRODUCT RANGE

- ⚡ HPOWER battery chargers - high power
- ⚡ HPOWER DNV -GL battery chargers - high power
- ⚡ YPOWER AC-DC battery chargers - medium power
- ⚡ YPOWER AC-DC battery chargers - factory options
- ⚡ YPOWER shore-power units
- ⚡ YPOWER & HPOWER touch-screen remote control panel
- ⚡ CPS3 battery chargers - previous generation - while stocks last
- ⚡ YPOWER DC-DC battery chargers
- ⚡ YPOWER MPPT solar charge regulators
- ⚡ BAT-MON touch-screen battery monitor
- ⚡ VLTG voltage guard
- ⚡ RCE (MOSFET) battery isolators
- ⚡ DC-DC converters
- ⚡ SOLO sinewave inverters
- ⚡ Isolation transformers



Battery chargers and shore-power units





Innovative battery chargers

HPOWER



- ◆ New generation
- ◆ Ruggedness
- ◆ Unrivalled performance
- ◆ Flexible and user-friendly
- ◆ LIN & CAN-BUS interface
- ◆ 12 & 24V - 48V pending

PRESENTATION

Specialized in the design of automatic battery chargers for more than 30 years, CRISTEC is proud to offer you high quality battery chargers for the toughest conditions for professional and recreational purposes : HPOWER.

PERFORMANCE

- **5-STAGE CHARGING PROFILE** to ensure fast and complete charging, power-supply mode available
- **FULL POWER** up to +50°C ambient with no derating allowing rated charge for intensive use in hot or confined place
- **3 ISOLATED BATTERY BANKS** with no current limitation
- **SUITABLE FOR ALL BATTERY TYPES** : flooded, Lead-sealed, Calcium-Lead, AGM, gel, Lithium, etc.
- **INCREASE** battery life



WORLDWIDE USE

- **90-265VAC/47-65HZ** auto-ranging
- **RATED OPERATION REGARDLESS** the available AC voltage including from a genset
- **MEMORY FUNCTION** : in case of unstable AC network the charger will not reset to prevent battery overcharging
- **BEST IN CLASS PROTECTION** : removable fuses and varistor, coated circuit board for marine environment
- **UL-1236 AND CSA 22.2-107.2** standards compliant (pending)

ERGONOMICS

- **FAST AND SECURE INSTALLATION** through external wall fixing device
- **LIGHTWEIGHT RUGGED** Aluminium casing with special coating for marine environment
- **OPTIMAL ACCESSIBILITY** : specific secured connection compartment
- **READABILITY COMFORT** : Dedicated LEDs and icons on the front
- **OPTION** : 2.5" colour touch-screen control panel



BUILT-IN FUNCTIONALITIES

- **CAN-BUS INTERFACE** for data transfer (as standard)
- **PARALLEL OPERATION** : up to 4 chargers through LIN-BUS interface
- **EXTERNAL TEMPERATURE PROBE** to monitor battery compartment (option)
- **ON/OFF**, default /battery low-voltage relays and automatic voltage drop compensation (option)
- **EASILY PROGRAMMABLE** for a variety of applications and specific settings (including charge profile)

DNV-GL CERTIFIED - CERT VERSION

- With integrated touch-screen control panel and relays board
Certificate n° TAEO0003JC





Innovative automatic battery chargers HPOWER RANGE



Part number	HPO12-90	HPO24-45	HPO24-60	HPO24-80	HPO24-100
Model	12V/90A	24V/45A	24V/60A	24V/80A	24V/100A
Recommended battery bank (Pb)	600-1200Ah	300-600Ah	500-800Ah	700-1000Ah	800-1300Ah

INPUT					
Voltage	From 90 to 265VAC single-phase automatic				
Frequency	From 47 to 65Hz automatic				
Input current consumption 230/115VAC	6.0A/16.0A		9.0A/20.0A	11.0A/20.0A	15.0A/30.0A
Recommended power for a generator	1600W	1600W	2100W	2800W	3520W
Power factor	1				
Efficiency	87% typical				
Removable input fuses	2 x 20A 250Vac (6.3x32) (F1/F2)		2 x 25A 250Vac (6.3x32) (F1/F2)		2 x 32A 250Vac (6.3x32) (F1/F2)

OUTPUT					
Number of battery banks	3 (including one for the engine battery) : +BAT E, +BAT 1 et +BAT 2 (integrated isolator), 1 negative -BAT Each bank can be used individually and deliver the rated current				
Connection on threaded rods	M6			M8	
Rated current / power	90A/1282W	45A/1282W	60A/1710W	80A/2280W	100A/2850W
Charging profile	IU or IUoU through internal dip switches (Boost, Absorption and Floating – factory setting). Selectable automatic Refresh				
Battery type	Lead-sealed as factory setting - Gel, AGM, Calcium Lead, Lithium, DC power-supply mode, etc. Specific request on demand				
Boost voltage	14.4VDC as factory setting for Lead-sealed	28,8VDC as factory setting for Lead-sealed			
Floating voltage	13.8VDC as factory setting for Lead-sealed	27,6VDC as factory setting for Lead-sealed			
Regulation tolerance before output diode and fuse	< 1 % (at rated conditions)				
Peak to peak ripple	< 1 % (at rated conditions)				
Automotive fuse in the minus pole -BAT	4 x 30A/32V	2 x 30A/32V	3 x 25A/32V	4 x 25A/32V	4 x 30A/32V

ENVIRONMENT	
Cooling	Electric fan controlled in temperature and current
Sound level	< 50 dBA at 1m
Operating temperature	Rated charge from -20°C to +50°C, derating above 50°C. Automatic charger switch off above 60°C; automatic restart when temperature decreases
Storage temperature	From -20°C to +70°C
Relative humidity	Up to 96% without condensation

CASING	
Material	Painted Aluminium
Dimensions (length, height, depth) / Weight	270x360x130 mm / 6.8 kg 270x410x130 mm / 9.0 kg
Fixing screw (wall)	4 x M6 round screws
Protection factor	IP23
PCB protection	Water-repellent varnish

STANDARDS	
CE / EMC	EN61204-3
CE / Security	EN60335-2-29

PROTECTIONS	
	Against leaking input surge by VDR (Voltage Dependant Resistor) - Not covered by warranty
	Against output polarity reversal by fuse rupture
	Against short-circuit and surge
	Against abnormal overheating by cutting off the charger

OPTIONS	
Temperature probe	Output voltage compensation (12V : -18mV/°C • 24V : -36mV/°C) 2.8m : STP-HPO-2.8 • 5m : STP-HPO-5.0
Parallel mounting	KIT-HPO-LINK : up to 4 units with real time balancing feature
Remote color touch-screen control panel	HPO-DISPLAY-R : also available integrated on the front panel, please consult us





Innovative battery chargers HPOWER DNV-GL

New generation
Robustness
Unrivalled performance
Flexible and user-friendly
LIN & CAN-BUS interface



PRESENTATION

Specialized in the design of automatic battery chargers for more than 30 years, CRISTEC is proud to offer you high quality battery chargers for the toughest conditions for professional and recreational purposes : HPOWER-CERT.

PERFORMANCE

- **5-STAGE CHARGING PROFILE** to ensure fast and complete charging, power-supply mode available
- **FULL POWER** up to +50°C ambient with no derating allowing rated charge for intensive use in hot or confined place
- **3 ISOLATED BATTERY BANKS**, with no current limitation
- **SUITABLE FOR ALL BATTERY TYPES** : flooded, Lead-sealed, Calcium-Lead, AGM, gel, Lithium, etc.
- **INCREASE** battery life



WORLDWIDE USE

- **90-265VAC/47-65HZ** auto-ranging
- **RATED OPERATION REGARDLESS** the available AC voltage including from a genset
- **MEMORY FUNCTION** : in case of unstable AC network the charger will not reset to prevent battery overcharging
- **BEST IN CLASS PROTECTION** : removable fuses and varistor, coated circuit board for marine environment

ERGONOMICS

- **FAST AND SECURE INSTALLATION** through made-to-measure external wall fixing device
- **LIGHTWEIGHT RUGGED** Aluminium casing with special coating for marine environment
- **OPTIMAL ACCESSIBILITY** : secured connection compartment

BUILT-IN FUNCTIONALITIES

- **CAN-BUS INTERFACE** for data transfer
- **2,5" COLOR TOUCH-SCREEN** control panel
- **ON/OFF**, default/battery low-voltage relays and automatic voltage drop compensation
- **EASILY PROGRAMMABLE** for a variety of applications and specific settings

OPTIONS

- **PARALLEL OPERATION** : up to 4 chargers through LIN-BUS interface
- **EXTERNAL TEMPERATURE** probe to monitor battery compartment

DNV-GL TYPE APPROVED PRODUCTS

- With integrated touch-screen control panel and relays
Certificate n° TAE00003JC





Innovative automatic battery chargers

HPOWER DNV-GL



Part number	HPO12-90-CERT	HPO24-45-CERT	HPO24-60-CERT	HPO24-80-CERT	HPO24-100-CERT
Model	12V/90A	24V/45A	24V/60A	24V/80A	24V/100A
Recommended battery bank (Pb)	600-1200Ah	300-600Ah	500-800Ah	700-1000Ah	800-1300Ah

INPUT

Voltage	From 90 to 265VAC single-phase automatic				
Frequency	From 47 to 65Hz automatic				
Input current consumption 230/115VAC	6.0A/12.0A	6.0A/12.0A	8.0A/16.0A	11.0A/18.0A	14.0A/26.0A
Recommended power for a generator	1600W	1600W	2100W	2800W	3520W
Power factor	1				
Efficiency	87% typical				
Removable input fuses	2 x 20A 250Vac (6.3x32)(F1/F2)		2 x 25A 250Vac (6.3x32) (F1/F2)		2 x 32A 250Vac (6.3x32) (F1/F2)

OUTPUT

Number of battery banks	3 (including one for the engine battery) : +BAT E, +BAT 1 et +BAT 2 (integrated isolator) 1 negative -BAT Each bank can be used individually and deliver the rated current				
Connection on threaded rods	M6			M8	
Rated current / power	90A/1282W	45A/1282W	60A/1710W	80A/2280W	100A/2850W
Charging curve	IU or IUoU through internal dip switches (Boost, Absorption and Floating – factory setting). Selectable automatic Refresh				
Battery type	Lead-sealed as factory setting - Gel, AGM, Calcium Lead, Lithium, DC power-supply mode, etc. Specific request on demand				
Boost voltage	14.4VDC as factory setting for Lead-sealed	28,8VDC as factory setting for Lead-sealed			
Floating voltage	13.8VDC as factory setting for Lead-sealed	27,6VDC as factory setting for Lead-sealed			
Regulation tolerance before output diode and fuse	< 1 % (at rated conditions)				
Peak to peak ripple	< 1 % (at rated conditions)				
Automotive fuse in the minus pole -BAT	4 x 30A/32V	2 x 30A/32V	3 x 25A/32V	4 x 25A/32V	5 x 25A/32V

ENVIRONMENT

Cooling	Electric fan controlled in temperature and current				
Sound level	< 50 dBa at 1m				
Operating temperature	Rated charge from -20°C to +50°C, derating above 50°C. Automatic charger switch off above 60°C; automatic restart when temperature decreases				
Storage temperature	From -20°C to +70°C				
Relative humidity	100% with condensation				

CASING

Material	Aluminium painted				
Dimensions (length, height, depth) / Weight	270x360x130 mm / 6.8 kg			270x410x130 mm / 9.0 kg	
Fixing screw (wall)	4 x M6 round screws. Mounting kit + securing screws				
Protection factor	IP23				
PCB protection	Water-repellent varnish				

STANDARDS

EC / EMC	NF EN 61000-6-1 / NF EN 61000-6-2 / NF EN 61000-6-4				
EC / LVD	NF EN 60335-2-29				

PROTECTIONS

	Against leaking input surge by VDR (Voltage Dependant Resistor) - Not covered by warranty				
	Against output polarity reversal by fuse rupture				
	Against short-circuit and surge				
	Against abnormal overheating by cutting off the charger				

BUILT-IN FUNCTIONALITIES

Temperature probe (option)	Output voltage compensation (12V : -18mV/°C • 24V : -36mV/°C) 2.8m : STP-HPO-2.8 • 5m : STP-HPO-5.0				
Parallel mounting (option)	KIT-HPO-LINK : up to 4 units with real time balancing feature				
Remote color touch-screen control panel	HPO-DISPLAY-R : fully integrated as standard				
Isolated CAN-BUS interface	Fully integrated as standard				

F-HPO-CERT-02-A. Specifications may change without notice. Please contact us.



CRISTEC
on-board energy



- Silent
- High temperature performance
- Plug & play : easy connection
- CAN-BUS interface
- Automatic and Autonomous
- Remote touch-screen control panel

Innovative automatic battery chargers **YPOWER RANGE**



www.cristec.fr

Innovative battery chargers

YPOWER RANGE



AC input



DC output

OPTIMAL MADE-TO-MEASURE CHARGING FOR A LONGER BATTERY LIFE

Founded in 1983, CRISTEC - CReation, Innovation Scientific and TEChnical - specializes in energy conversion.

CRISTEC offers expertise on an international scale with a distribution network present in more than 50 countries.

CRISTEC is proud to offer you the assets of its fifth generation HF charger range, YPOWER, having already sold more than 150,000 units throughout the world.



PLUG & PLAY CONNECTORS

QUICK, RELIABLE AND FRIENDLY MOUNTING CHARGER TO BE LOCATED IN TIGHTER PLACES

AC & DC PLUG CONNECTORS INCLUDED
(except for OEM version, please consult us)



SILENT OPERATING

ALL FANLESS MODELS EXCEPT 12V/60A & 24V/30A



HIGH TEMPERATURE PERFORMANCE

RATED CHARGE UP TO +60°C WITH NO DERATING

CAN BE INSTALLED IN AN ENGINE ROOM

MODEL 12V/40A IGNITION PROTECTED ACCORDING TO STANDARDS SAE J1171 AND ISO8846



WORLDWIDE USE

90-265VAC/47-65HZ AUTO-RANGING

DESIGN AND CONSTRUCTION ACCORDING TO UL-1236 MARINE AND CSA 22.2-107.2 STANDARDS

MEET ALSO ABYC A-31 REQUIREMENTS



SMART CASING

NEW MODERN ROBUST AND COMPACT CASING
TWO-COLOURED LEDS INDICATING CHARGE STATUS
4 EXTERNAL FIXINGS FOR EASY MOUNTING



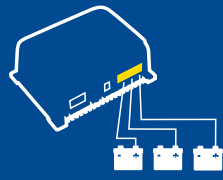
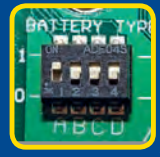
5-STAGE CHARGING PROFILE

- BOOST :** CHARGES BATTERIES TO 80% OF FULL CHARGE
 - ABSORPTION :** SLOWLY COMPLETES REMAINING CHARGE TO 100%
 - FLOATING :** MAINTAINS BATTERY CHARGE
 - AUTOMATIC REFRESH :** PREVENTS SULPHATION AND REVITALIZES BATTERIES, SELECTABLE BY INTERNAL SWITCH
 - REBOOST :** NEW AUTOMATIC BOOST PHASE IF BATTERIES DEMAND NEEDS IT
- POWER-SUPPLY MODE ALSO AVAILABLE
IU MODE BY BOOST INHIBITING BY INTERNAL SWITCH



ADAPTATIVE CHARGING

BATTERY TECHNOLOGY SELECTION BY INTERNAL SWITCHES INCLUDING GEL, AGM, FLOODED, CALCIUM-LEAD, LITHIUM, ETC.
SPECIFIC REQUESTS: BY FACTORY SOFT ADJUSTMENT, CONSULT US.

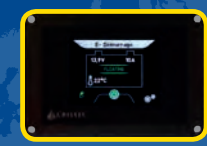


3 ISOLATED BATTERY BANKS

AUTOMATICALLY SENSES AND DISTRIBUTES 100% OF AVAILABLE CHARGING AMPS TO ANY ONE BANK OR COMBINATION OF ALL BANKS
ONE BANK DEDICATED TO THE ENGINE BATTERY + BAT E
INTEGRATED ELECTRONIC MOSFET CHARGE SEPARATOR
PROTECTION OF THE CHARGER DURING ENGINE STARTING PHASE

SCALABLE CHARGER

CAN-BUS INTERFACE FOR DATA AND CONTROL TRANSFER (OPTION)
REMOTE TOUCH-SCREEN CONTROL PANEL (OPTION)



PARALLEL STACKING FEATURE

ALLOWS UP TO 4 CHARGERS TO WORK TOGETHER TO COMBINE THE OUTPUT CURRENT

IP22

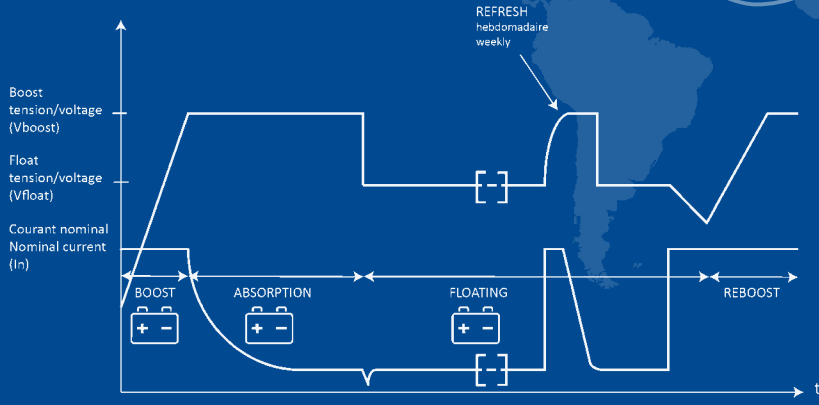
90/265Vac

48Vdc

47/65Hz

24Vdc

12Vdc



YPOWER : scalable chargers that meet current and future needs. Specific charging profiles and communication protocols upon request.





Innovative battery chargers YPOWER RANGE



Part Number	YPO12-16ST	YPO12-25ST	YPO12-40ST	YPO12-60ST	YPO24-12ST	YPO24-20ST	YPO24-30ST
Model	12V/16A	12V/25A	12V/40A	12V/60A	24V/12A	24V/20A	24V/30A
Recommended battery bank (Pb)	100-200Ah	200-300Ah	300-500Ah	500-700Ah	100-200Ah	200-300Ah	300-500Ah
INPUT							
Voltage	From 90 to 265VAC single-phase automatic						
Frequency	From 47 to 65Hz automatic						
Input current consumption 230/115VAC	1,1/2,2A	1,7/3,4A	2,7/5,6A	4,4/8,7A	1,7/3,4A	2,9/5,9A	4,5/8,8A
Recommended power for a generator	280W	435W	700W	1050W	420W	700W	1050W
Power factor	1						
Efficiency	90% typical						
Removable input fuses	T6,3A/250V SCHURTER MST 250 Réf.0034.6623 (F101)		T15A/250V 6,3x32 (F101)		T6,3A/250V SCHURTER MST 250 Réf.0034.6623 (F101)		T15A/250V 6,3x32 (F101)
OUTPUT							
Number of battery banks	3 (including one for the engine battery) : +BAT E, +BAT 1 et +BAT 2 (integrated Mosfet splitter) Each bank can be used individually and deliver the rated current						
Total rated current (+/-7%) / Rated power	16A/228W	25A/356W	40A/570W	60A/855W	12A/342W	20A/570W	30A/855W
Charging curve	IU or IUoU through internal dip switches (Boost, Absorption and Floating – factory setting) - Selectable automatic Refresh						
Battery type	Lead sealed as factory setting - Other choices through internal setting (Calcium Lead, gel, AGM, LiFePO4, Opened, etc.) - Specific requests : consult us						
Boost voltage	14,4VDC for Lead sealed battery (factory setting)				28,8VDC for Lead sealed battery (factory setting)		
Floating voltage	13,8VDC for Lead sealed battery (factory setting)				27,6VDC for Lead sealed battery (factory setting)		
Regulation tolerance before output diode and fuse	< 2% (at rated conditions)						
Peak to peak ripple	< 2% (at rated conditions)						
Automotive fuse in the minus pole -BAT	1 x 20A/32V (F500)	1 x 30A/32V (F500)	2 x 25A/32V (F500, F501)	3 x 25A/32V (F500, F501, F502)	1 x 15A/32V (F500)	1 x 25A/32V (F500)	2 x 20A/32V (F500, F501)
ENVIRONMENT							
Cooling	Natural (fanless) - Electric fan controlled in temperature and current for 12V/60A and 24V/30A models						
Sound level	0			< 50dBa at 1m	0		< 50dBa at 1m
Operating temperature (230VAC)	From -20°C to +60°C, derating from 60°C. Above 65°C, automatic charger switch off, automatic restart when temperature decreases						
Storage temperature	From -20°C to +70°C						
Relative humidity	Up to 70% (95% without condensation)						
CASING							
Material	Casing comprises 3 parts : · Aluminium sink frame · Thermoplastic body · Aluminium clasp						
Dimensions (length, height, depth) / Weight	236 x 180 x 96 mm / 2,1 kg		289 x 195 x 106 mm / 3,5kg		236 x 180 x 96 mm / 2,1 kg		289 x 195 x 106 mm / 3,5 kg
Fixing center distance	219 x 155 mm		272 x 170 mm		219 x 155 mm		272 x 170 mm
Fixing screw (wall)	4 M5 round screws						
Protection factor	IP22						
PCB protection	Water-repellent varnish (marine environment)						
STANDARDS							
CE / EMC	EN61204-3						
CE / Security - Others	EN60335-2-29 - J1171/ISO8846 for model 12V/40A - ABYC A-31 - Pending UL and CSA						
PROTECTIONS							
	Against leaking input surges by VDR rupture (voltage dependent resistor) - Not covered by warranty						
	Against output polarity reversal by fuse rupture (removable automotive type)						
	Against short-circuit and surge						
	Against abnormal overheating by cutting off the charger (internal temperature probe - automatic restart)						
OPTIONS							
Temperature probe	Output voltage compensation : -18mV/°C				Output voltage compensation : -36mV/°C		
Communication	CAN-BUS interface						

YPOWER battery charger options	Temperature sensor for battery compartment	Touch-screen control panel	Charger ON/OFF remote control	CAN-BUS and relays board
Item part number	STP-NEW-2.8 / STP-NEW-5.0	YPO-DISPLAY-R	G-ON/OFF-R	See specific datasheet





YPOWER CHARGERS

WITH RELAYS OR CAN-BUS BOARD

The very popular YPOWER chargers⁽¹⁾ are now available with **factory integrated options** : relays board or CAN-BUS board.

⁽¹⁾ Please refer to dedicated datasheet for complete characteristics.

The relays board allows two alarms to be transmitted through dry contacts (NO and NC) : Low battery voltage and charger fault.

Alarm Low Battery voltage is triggered if the voltage of the battery bank is less than :

- 10.2V for 12V models
- 20.4V for 24V models

Alarm Charger Fault is triggered if :

- Charger is OFF
- Charger fails
- Output fuse has blown
- Charger voltage is less than :
 - o 11V for 12V models
 - o 22V for 24V models



CAN-BUS interface board allows the charger to communicate with a monitoring system or any other peripheral device using this mode of communication. Protocol can be made-to-measure on request.⁽²⁾

⁽²⁾ Please consult us.

Available data are :

- AC input voltage and frequency
- Battery voltage (up to 3 banks)
- Charger current
- Charger status (Boost, Absorption, etc.)
- Battery temperature



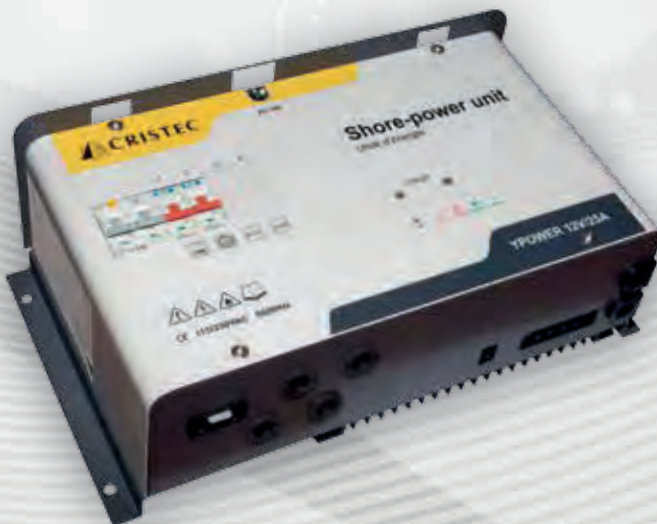
DESCRIPTION	Charger with relays board Part number ⁽³⁾	Charger with CAN-BUS board Part number ⁽³⁾
12V/16A/3 banks - No fan	YPO12-16RELST	YPO12-16COMST
12V/25A/3 banks - No fan	YPO12-25RELST	YPO12-25COMST
12V/40A/3 banks - No fan	YPO12-40RELST	YPO12-40COMST
12V/60A/3 banks	YPO12-60RELST	YPO12-60COMST
24V/12A/3 banks - No fan	YPO24-12RELST	YPO24-12COMST
24V/20A/3 banks - No fan	YPO24-20RELST	YPO24-20COMST
24V/30A/3 banks	YPO24-30RELST	YPO24-30COMST

⁽³⁾ References not compatible with YPO-DISPLAY-R control panel option.



SHORE-POWER UNITS

YPOWER Range



PRESENTATION

The new CRISTEC shore-power units integrate in a single cabinet the AC circuit protection and an automatic battery charger.

- ◆ The complete system meets the European on-going rules. Compact and lightweight, it provides practical entry for the cabling that reduces mounting time.
- ◆ The AC circuit protection is insured by a 16A/30mA residual current device (RCD/GFCI Ground fault circuit interrupter) and 2, 3 or 4 off 10A DPN miniature circuit breakers (MCB) depending on models.
- ◆ The battery charger function is ensured by an HF switch mode CRISTEC PCB stemming from the latest YPOWER generation that delivers a smart 5 stage charging profile.

GENERAL CHARACTERISTICS



- INPUT VOLTAGE : 115⁽¹⁾/230VAC +/-15% automatic
- INPUT FREQUENCY : 50/60Hz⁽¹⁾

- FRONT COVER DISPLAY :
 - green LED for AC input presence
 - 1 dual colour LED for charger state



- AC INPUT CABLING : WAGO-WINSTA 3 pins connector
- OUTPUT CABLING : terminal through pass wire



- EXTERNAL FIXINGS
- NATURAL COOLING (NO FAN)
- OPERATING TEMPERATURE : from -20°C to +40°C
- PROTECTION FACTOR : IP20
- PROTECTIVE COATING :

Satin slate grey RAL 715 and grey RAL 7047, salt atmosphere resistant

STANDARDS

- CE standards : NF EN 61000-6-1, NF EN 61000-6-2, EN60950 & ISO 13297

OPTIONS

- Remote touch-screen control panel - Item code YPO-DISPLAY-R
- 2.8m Temperature probe - Item code STP-NEW-2.8



(1) For use in 115VAC 60Hz, please contact us.





Selection of battery type and protection by removable fuses

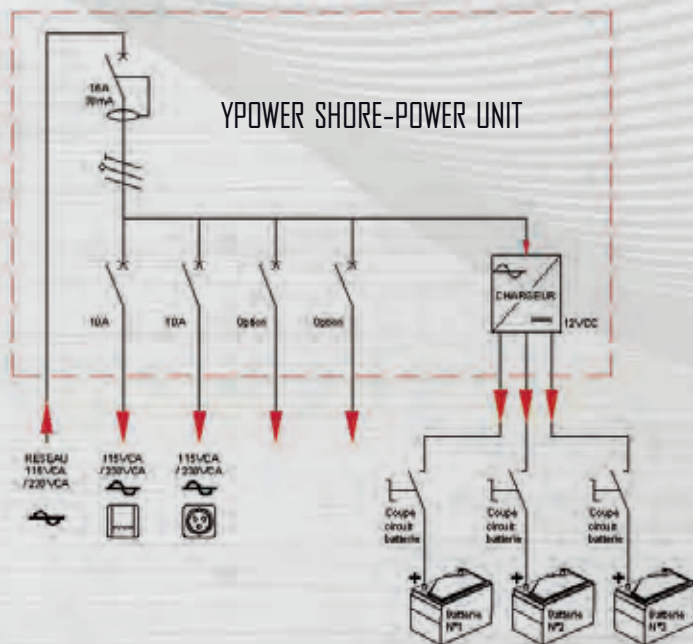
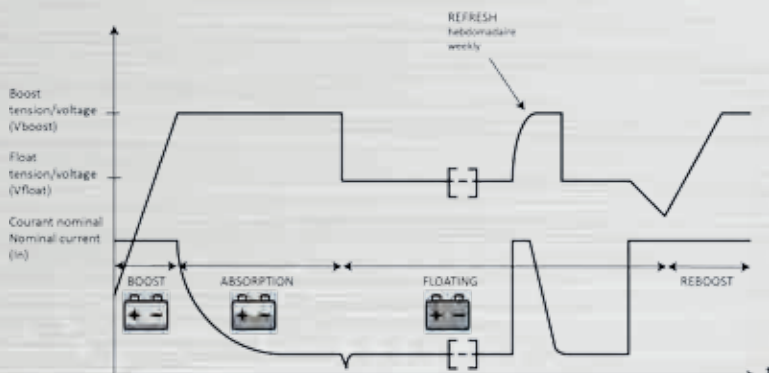
CHARGER CHARACTERISTICS

- Input voltage : from 90 to 265VAC (automatic)
- Input frequency : from 47 to 65Hz
- Output voltage : 12VDC +/-1%
- Three automatic charge cycles : Boost, Absorption, Floating (IUoU)
- Additional Refresh and Reboost selectable by internal switch
- Timed Boost by internal switch (ON/OFF)
- Charge distributor incorporated into each battery output
- 3 independant outputs - Specific output matched to the engine battery charging (+ BAT E)
- Selection of the curve of charge according to the battery type : AGM, Gel, Calcium Lead, Lead sealed, Lithium Ion Iron Phosphate, etc.
- Internal potentiometer allows output voltage to be adjusted
- Protection against short-circuit and polarity reversal (removable fuses on input and output)

MODEL	PART NUMBER	RECOMMENDED BATTERY BANK (Ah)	CHARGER CURRENT	CHARGER OUTPUTS	NUMBER OF 10A MCBs ⁽¹⁾	WEIGHT (Kg)	DIMENSIONS L x h x d (mm)
12V/16A	UEYPO/12-16/2D	100-200	16A	3	2	4,4	389 x 214,5 x 137,2 mm
	UEYPO/12-16/3D				3		
	UEYPO/12-16/4D				4		
12V/25A	UEYPO/12-25/2D	200-300	25A	3	2	6	439 x 214,5 x 134,2 mm
	UEYPO/12-25/3D				3		
	UEYPO/12-25/4D				4		
12V/40A	UEYPO/12-40/3D	300-500	40A	3	3	6	439 x 214,5 x 134,2 mm
	UEYPO/12-40/4D				4		

Specifications may change without notice. Please contact us.

(1) Miniature Circuit Breakers



YPOWER battery charger options	Temperature sensor for battery compartment	Touch-screen control panel	CAN-BUS
Item part number	STP-NEW-2.8	YPO-DISPLAY-R	Consult us





TOUCH-SCREEN CONTROL PANEL

YPO-DISPLAY-R
HPO-DISPLAY-R



DISPLAY

External dimensions	105 x 75 x 25 mm
Screen dimensions	51 x 39 mm
Cut-out	87 x 65 mm
Weight	300 gr
Ingress protection of front side	IP65, not for outdoor use
DC supply range	DC 8-30V through +BAT E terminal
Operating temperature	From -10°C to +50°C
Storage temperature	From -20°C to +70°C
Convection	Natural

SYSTEM DC CONSUMPTION THROUGH +BAT E TERMINAL

Display and interface at full brightness	81mA @12VDC	51mA @24VDC
Display and interface in sleep mode	3.3mA @12VDC	4.8mA @24VDC
Interface only (display not connected)	1.7mA @12VDC	3.1mA @24VDC

PRESENTATION

This brand new innovating remote display is offered as option for HPOWER, YPOWER battery chargers⁽¹⁾ and shore-power units⁽¹⁾, 12V and 24V.

- ◆ It displays information about the charging process while the charger is running as well as battery supervision when AC network is off.
- ◆ User friendly thanks to its 2.5" color touch-screen.

⁽¹⁾ Depending on the charger or shore-power revision number some functions like individual battery setting may not be available. Please consult us.

MAIN CHARACTERISTICS

- Battery voltage (up to 3)
- AC network status : voltage and frequency
- Total charger's output current
- Charge status (Boost, Absorption, Floating)
- Battery pack temperature (if optional probe connected)
- Brightness night and day mode to be activated by pressing the center part of the screen

SETTINGS

- Battery channel and name : up to 3 - house, starter, bow, etc.
- Charger output : ON/OFF
- Alarm : battery low voltage, high voltage, etc.
- Output battery charger current : from 100% to 30%
- Day mode : brightness
- Night mode : ensures quiet operation by stopping charger's fan if any
- Charger parameters : battery type, boost ON/OFF, etc.
- Languages : English, French, German, Italian, Spanish & Turkish

Part numbers : YPO-DISPLAY-R
HPO-DISPLAY-R





CRISTEC
on-board energy

Battery chargers

CPS3 RANGE



Innovative

> Special terminal to connect an additional battery isolator for connecting up to 6 independent charging banks.

Optimal made-to-measure charging for a longer battery life

- Founded in 1983, CRISTEC (CReation, Innovation Scientific and TEChnical) specialises in energy conversion.
- CRISTEC offers expertise on an international scale with its range of standard products mainly designed for on-board applications. Our network of agents and distributors is present in over 50 countries.
- Today CRISTEC is proud to offer you the assets of its fourth generation HF battery charger range, CPS3, having already sold more than 80,000 HF units throughout the world.

> Innovative

Specific terminal to connect an additional battery isolator for connecting up to **6 independent charging banks**.

> Reinforced protection

Anti-drip covering.
Electronic board coated with waterproof varnish.

> **3 year guarantee**

> Optimal ergonomics: Easy to install

CPS3 battery chargers can be fixed vertically or horizontally.

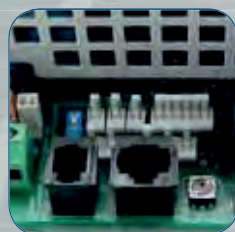
The charger can be accessed externally by removing the front yellow housing.

AC and DC connections as well as charger settings are grouped together on the PCB in a connection area that ensures a safe, quick and easy installation.

> Front panel indicators: Easy to read

3 panel indicators are clearly visible on the front of the charger enabling easy monitoring of charger operation.

Remote indicators are also available as an option, depending on models.



The DC connection on threaded rods is particularly robust and practical due to the available space.

> Interfaces

Optional connection for external battery temperature sensor - depending on models - enables optimization of battery charging and/or a digital display unit to check battery state.

> Multiple outputs:

Charge 3 batteries simultaneously



CPS3 battery chargers have 3 independent outputs (except models > 80A) which can individually deliver nominal output current.

One of these outputs is designed for matching specific engine battery requirements for marine application.

The built-in battery isolator on each battery bank means the batteries stay permanently connected to the charger and there is no need to disconnect them during engine startup.

The CRISTEC CPS3 battery chargers are the only ones available on the market with an extra terminal to connect an additional external battery isolator for connecting up to 6 independent battery banks (3 from the charger and 3 from the battery isolator).

CRISTEC recommends using a voltage drop free isolator. Please refer to the CRISTEC RCE battery isolator range.

> Choose your charging curve:

Safety and freedom

On CPS3 chargers the BOOST phase is particularly safe as it is not only timed but also current controlled. In the event of a cut in the charger power-supply the charging cycle does not reset.

The 3-step charge mode being faster (BOOST, ABSORPTION and FLOATING) it is particularly useful when you run out of time to charge the batteries (charger powered from a generator, short stay in the marina, etc.).

It is possible to interrupt the Boost phase for specific applications where this function is not required: wintering, self-maintaining battery charge or when the charger is used as direct current regulated and filtered power supply.

> Choose your battery type:

Made-to-measure battery charging

As your choice regarding battery technology is extensive, you have to make sure charging characteristics comply with your specific battery type. CPS3 battery chargers have internal selectors for setting the charge level in compliance with the battery technology and application: many settings such as Lead-sealed, Calcium-Lead, AGM, Gel, etc.



> Universal AC powering:

Worldwide use

The AC input voltage and frequency auto-ranging – from 85 to 265 VAC and from 47 to 65 Hz – guarantees batteries can be charged anywhere (in Europe and in the USA), from commercial Mains or generators, even when available power is limited (end of pontoon, foreign network, etc.). Except model 24V/150A 400VAC 3 phases.



The strength of innovation

CPS3 battery chargers: the answer to constantly changing requirements in a climate of increasingly stricter standards.

> Special coating: peace of mind

The charger electronic boards are coated with waterproof and tropicalised varnish. An anti-drip covering protects the charger from water ingress. The entire charger casing paint is specifically coated to prevent corrosion.

> Managing technology: high performance

The latest HF technology and COS PHI 1 regulation (integrated PFC – Power Factor Correction) ensure nominal charger operation in the event of wide input fluctuation. As AC charger input consumption is low you economise generator power.

> In-built protection: reliability

The CPS3 battery chargers have numerous in-built protection devices (polarity reversal, short-circuits through removable fuses, over-heating, etc.) ensuring a long charger life.

> Parallel-mount: flexibility

You can parallel-mount our chargers thereby multiplying the output current (2 off 24V/60A chargers will deliver 24V/120A). You can parallel-mount up to 6 chargers preferably the same size.

CPS3 battery chargers



Part number	CPS3/12-80	CPS3/12-100	CPS3/24-60	CPS3/24-75	CPS3/24-120	CPS3/24-150-TRI		CPS3/48-30	CPS3/48-60
Output voltage	12 VDC			24 VDC			48 VDC		
Nominal output current	80 A	100 A	60 A	75 A	120 A	150 A		30 A	60 A
Input voltage	From 85 to 265 VAC single-phase automatic					304/552 VAC 3-phase	From 85 to 265 VAC single-phase automatic		
Input frequency	From 47 to 65 Hz automatic								
Input current consumption at 230 VAC	6,0 A	6,9 A	9,0 A	11,5 A	17,0 A	7,0 A *		9,0 A	17,0 A
AC input connection	On screw terminal with clamping through plastic gland								
Power limitation through external bipolar switch (max input current = 6A)	yes					no	yes		
Power factor	0,9 at rated conditions **								
Efficiency	> 80% at rated conditions **								
Output voltage regulation	+/- 1%								
Recommended battery bank (Ah)	700-800	900-1200	500-700	600-900	900-1400	1200-1800		200-400	500-700
Number of battery bank (through cable lead-in and with in-built anti-return diode)	3 : +BAT D, +BAT1 and +BAT2	1	3 : +BAT D, +BAT1 and +BAT2		1			3 : +BAT D, +BAT1 and +BAT2	1
Special terminal to connect an additional battery isolator	yes								
DC output connection on threaded rod h=25mm	M6	M8	M6		M8			M6	M8
Charging curve	3-step IUoU as manufacturing setting - IU through internal setting								
Battery type	Lead sealed as factory setting - Other choice through internal setting (calcium lead, gel, AGM, etc.)								
Boost voltage	14,5 / 29,0 / 58 VDC for Lead sealed batteries - Manufacturing setting								
Typical Boost duration	4 hours								
Floating voltage	13,8 / 27,6 / 55,2 VDC for Lead sealed batteries - Manufacturing setting								
Output voltage adjustment	Using internal potentiometer								
Front panel indicators	3 LEDs that monitor the AC presence and the charge phase (Boost, Absorption, Floating)								
Operating temperature	Nominal conditions : from - 10°C to + 55 °C ; then derating : output power reduction < 2,5 %/°C For temperature > 65°C automatic stopping - Automatic restart								
Cooling	Electric fan controlled by the output current								
Sound level	< 50 DbA at 1 metre								
In-built electrical protection	Against short-circuit, polarity reversal, over-voltage, over-heating, over-current								
Protection factor	IP 22								
Overall dimensions (mm) Not including cable gland	h : 260 w : 350 d : 123	h : 400 w : 350 d : 123	h : 260 w : 350 d : 123		h : 400 w : 350 d : 123			h : 260 w : 350 d : 123	h : 400 w : 350 d : 123
Case type	3M	1H	3M		1H/2H			3M	1H
Weight (kg)	7,5	12,7	7,5		14			7,5	12
Standards	CE, UL and CSA								
Guarantee	3 years								

*@400 VAC 3-phase
** Except CPS3/24-150-TRI

CPS3 BATTERY CHARGER OPTIONS *	Remote ON/OFF charger	Remote front indicators	Remote ON/OFF Boost	Temperature sensor for battery compartment	Digital display	Battery monitor
Item part number	A/M-CPS2-CPS3	LED-DEP-CPS3	BAD-CPS2-CPS3	STP-5M	SEEL009104	JBNUMII-CPS3

* According to models.



DC-DC BATTERY CHARGERS

YPOWER RANGE



Convert and charge

Wide scale

Temperature performance

Silent

CAN-BUS interface

PRESENTATION

◆ **YPOWER** DC-DC chargers-converters have been designed to charge a 12 or 24V battery bank from a 12 or 24V network. The most typical case of use is the 24V bow-thruster battery bank charge from the 12V onboard network.

◆ Thanks to their large scale of input and output voltages, they can be configured as a simple converter or as a battery charger. In this case, the charging curve delivered is comparable to the one of a smart charger:

- 5 steps
- all types of batteries (wet & sealed Lead, Calcium Lead, gel, AGM, Lithium, etc.)

INPUT/OUTPUT CHARACTERISTICS

- Input voltage : 12 or 24VDC (from 10 to 32VDC)
- Output voltage : 12 or 24VDC (from 0 to 32VDC)
- Nominal power : 800W
- Max. output current : 30 or 60A at nominal voltage (depending on model)
- Isolation Input/Output : no as DV is common
- 5-step charging curve : Boost, Absorption, Floating, Refresh & Reboost
- Battery type selection through push-button or communication
- Efficiency : >96%
- Ripple : < 1%
- Electronic limitation of the input current
- Remote control : serial CAN-BUS interface



THERMAL CHARACTERISTICS

- Operating temperature : from -20° to +60°C without derating
- Storage temperature : from -40° to +70°C
- Optional temperature probe : compensation -36mV/°C° in 24V and -18mV/°C° in 12V



PROTECTIONS

- PCB : water-repellent varnish (marine environment)
- ◆ Output :
 - * Integrated anti-return device to avoid battery discharge
 - * Protection against polarity reversal by removable fuses
- ◆ Input and output :
 - * Current limitation
 - * Automatic power limitation for an ambient temperature > 60°C

MECHANICAL CHARACTERISTICS

- Input/output connection : on external threaded M8 rods
- Indicator : 2 bicolour LEDs
- Casing : 4 x M5 external fixings for easy wall mounting
- Natural cooling (fanless)

STANDARDS

- CE/EMC : EN61204-3
- CE/Security : EN60335-2-29
- ISO 7637

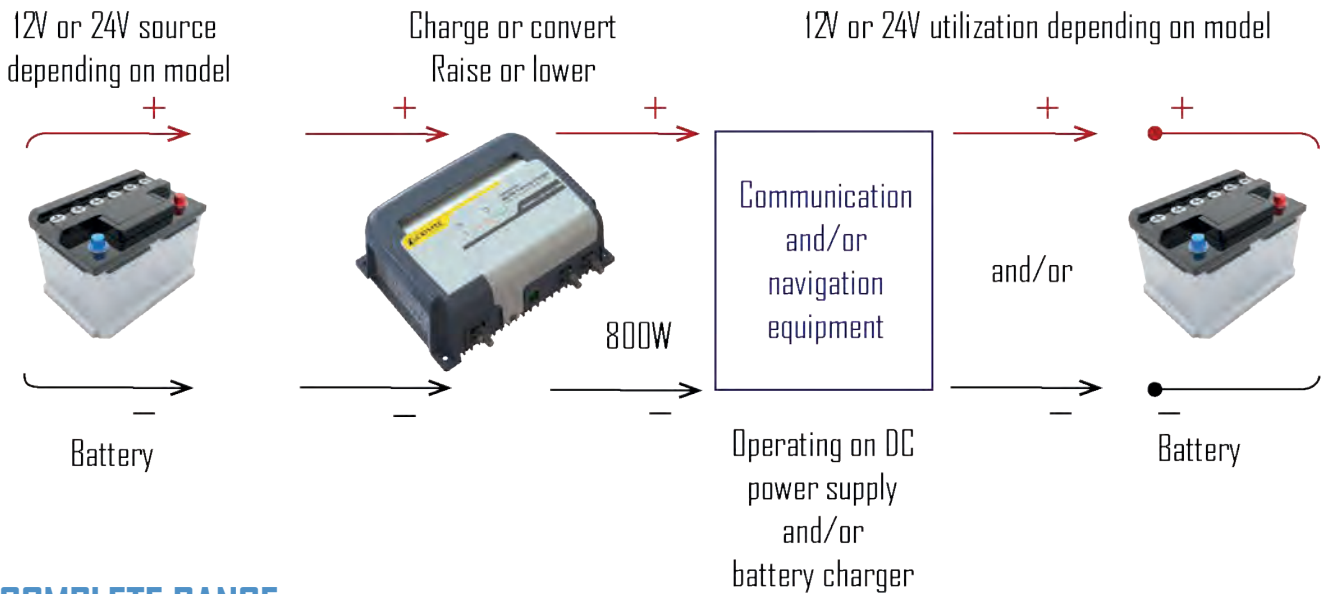


DC-DC CHARGERS-CONVERTERS

YPOWER RANGE



CONFIGURATION OF INSTALLATION



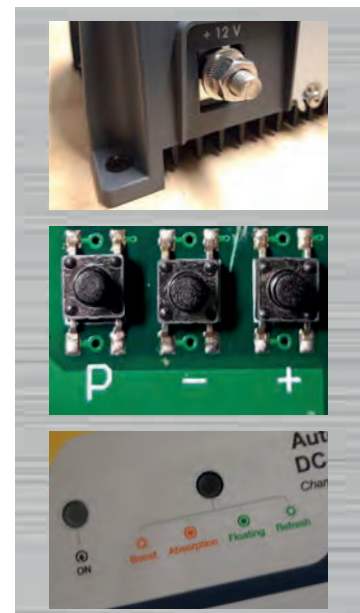
COMPLETE RANGE

INPUT VOLTAGE	OUTPUT VOLTAGE ⁽¹⁾	NOMINAL CURRENT	ITEM CODE	DIMENSIONS (l x h x d)	PROTECTION	WEIGHT
12V	12V	60A	YPO12-12/60	236 x 180 x 96 mm	IP 22	2.2 Kg
12V	24V	30A	YPO12-24/30			
24V	24V	30A	YPO24-24/30			
24V	12V	60A	YPO24-12/60			

⁽¹⁾ in charger mode :
 14.4VDC in Boost - 13.8VDC in Floating (factory setting)
 Other selections available through internal push-button (i.e. stabilized power-supply)
 Specific request : please consult us

OPTIONS

- | | |
|----------------------------------|---------------|
| Touch-screen remote display 2.5" | UNI-DISPLAY-R |
| Temperature probe 2.8m | STP-UNI-2.8 |
| Temperature probe 5m | STP-UNI-5.0 |
| Charger ON/OFF remote control | G-ON/OFF-R |





SOLAR CHARGE REGULATORS

YPOWER RANGE



MPPT technology

High power

12 & 24V

Silent

CAN-BUS interface

PRESENTATION

- ◆ **YPOWER** fanless solar charge regulators are designed for installations in 12 or 24V, medium & high power.
- ◆ **MPPT** technology (Maximum Power Point Tracking) increases the efficiency of solar panels enabling to recharge batteries faster.
- ◆ Thanks to a charge regulation similar to a smart battery charger, it matches all battery types : wet & sealed Lead, Calcium Lead, gel, AGM, Lithium, etc.
- ◆ Input voltage detection is not automatic to avoid any major malfunction in the event of a faulty output battery.

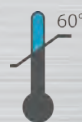
INPUT/OUTPUT CHARACTERISTICS

- Input voltage : 0 to 45VDC
- Output voltage : 12 or 24VDC (from 0 to 32VDC)
- Nominal power : 800W
- Output current : 60A max. in 12v, 30A max. in 24V
- Isolation Input/Output : no as 0V is common
- 5-step charging curve : Boost, Absorption, Floating, Refresh & Reboost
- Battery type selection through push-button or communication
- Efficiency : >96%
- Ripple : < 1%
- Remote control : serial CAN-BUS interface



THERMAL CHARACTERISTICS

- Operating temperature : from -20° to +60°C without derating
- Storage temperature : from -40° to +70°C
- Optional temperature probe : compensation -36mV/°C in 24V and -18mV/°C in 12V



PROTECTIONS

- PCB : water-repellent varnish (marine environment)
- ◆ Output :
 - * Integrated anti-return device to avoid battery discharge
 - * Protection against polarity reversal by removable fuses
- ◆ Input and output :
 - * Current limitation
 - * Automatic power limitation for an ambient temperature > 60°C

MECHANICAL CHARACTERISTICS

- Input/output connection : on external threaded M8 rods
- Indicator : 2 bicolour LEDs
- Casing : 4 x M5 external fixings for easy wall mounting
- Natural cooling (fanless)
- Protection factor : IP22
- Dimensions : 236 x 180 x 96 mm
- Weight : 2.2 kg



OPTIONS

- Touch-screen remote display 2.5"
- Temperature probe 2.8 or 5m
- Charger ON/OFF remote control



STANDARDS

- CE/EMC : EN61204-3
- CE/Security : EN60335-2-29
- ISO 7637

Item codes : YPO12-60/MPPT
YPO24-30/MPPT





Other equipment





BATTERY MONITOR

BAT-MON TOUCH-SCREEN 3.5"



PRESENTATION

• 3 BATTERY BANKS OR DC SOURCES

Brand new CRISTEC's advanced battery monitor **BAT-MON** for most demanding users. For up to 3 battery banks or power generation (DC source) with 3 additional battery voltage readings.

It operates at **12 and 24V** and is suitable for all types of batteries, including Lithium.

The battery monitor **BAT-MON** shows all relevant standard data such as voltage, current, remaining capacity and time of the service battery plus one additional voltage for starter or bow battery at the same time.

Moreover the battery monitor **BAT-MON** records history data of your battery such as average discharge depth, unavailable capacity and number of charge/discharge cycles.

An active high-precision **300A** shunt unit is provided as standard for battery control. Two extra ones can be used as option. For each used shunt an additional voltage measurement is also available (i.e. bow-thruster battery).

• POTENTIAL FREE CONTACT

If one of the controlled batteries reaches the configured low capacity or voltage threshold, an acoustic alarm comes on and an appropriated symbol appears on the screen.

When there is an on-board generator battery monitor **BAT-MON** supervises the battery capacity and controls the generator through a potential free contact. The generator is switched on according to the adjusted capacity threshold.

TECHNICAL SPECIFICATIONS

- Very high accuracy (10mA) and large capacities (up to 2000Ah)
- Adjustable nominal battery voltage (12V/24V) ⁽¹⁾
- High resolution, energy-saving back light LCD display
 - * Dimensions : L 105 x H 105 x D 40 mm
 - * Cut-out : 88 x 88 mm
- 1 x internal potential free contact : to activate a monostable or bistable relay
- 1 x active shunt 300A as standard. Suitable for max power of 3600W at 12V or 7200W at 24V
 - * Dimensions : L 119 x H 44 x D 43 mm
 - * Connection : M8 bolts
- Languages : French, English, German and Spanish.

⁽¹⁾ 48V pending



BATTERY MONITOR

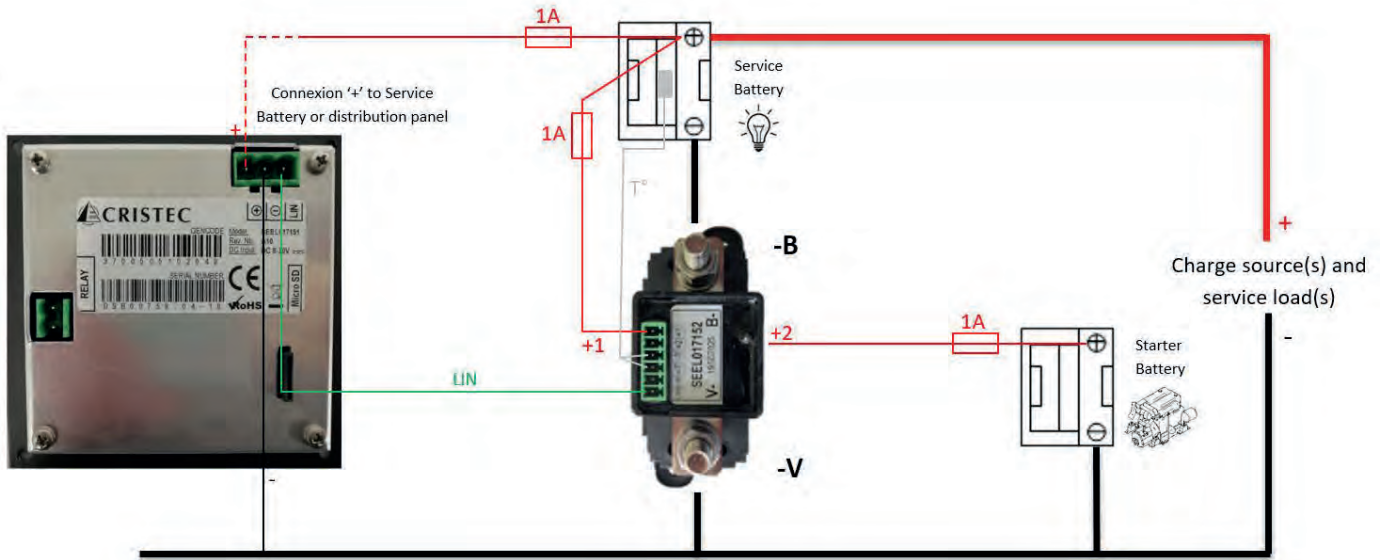
BAT-MON TOUCH-SCREEN 3.5"



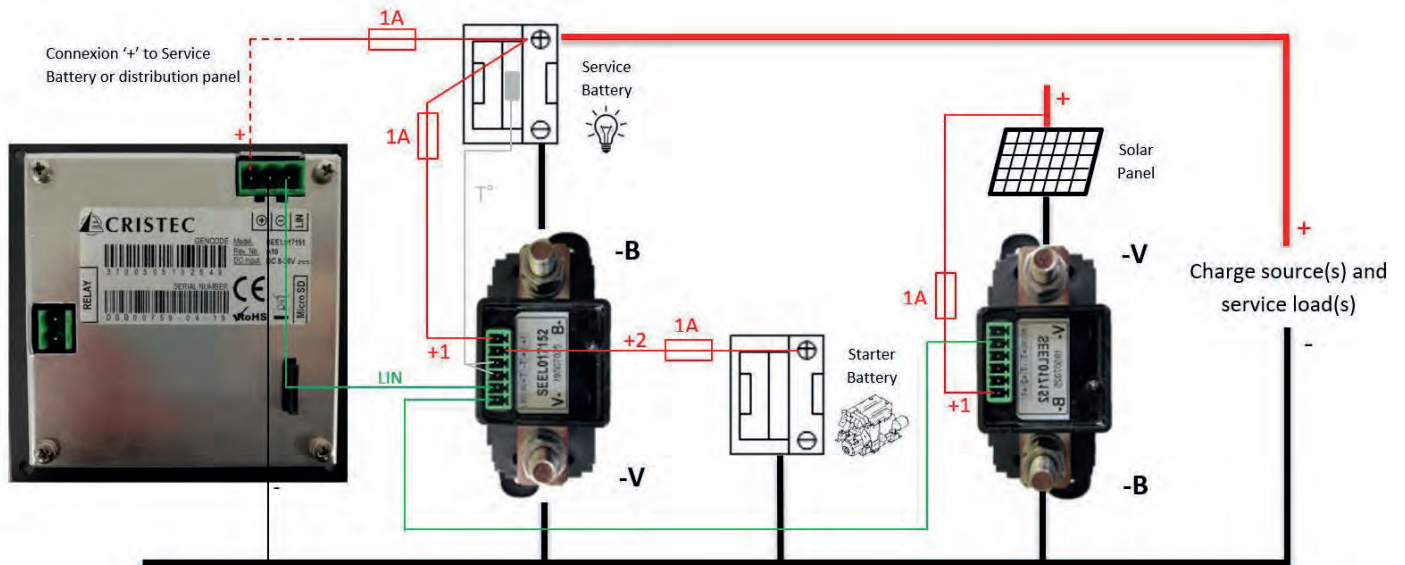
DESCRIPTION	REFERENCE
Battery monitor (screen + 1 shunt 300A)	BAT-MON-3.5
Additional shunt 300A (option)	SHUNT-300-3.5
Wiring kit (option)	SEEL017153
Temperature probe 2.8m (option)	STP-NEW-2.8
Temperature probe 5m (option)	STP-NEW-5.0

2 EXAMPLES OF INSTALLATION

- Monitoring of a service battery + voltage of the starter battery



- Monitoring of a service battery + voltage of the starter battery and control of the flow of a solar panel



We reserve the right to make modifications to the specification without prior notice. Please consult us. F-BAT-MON-02-B



VOLTAGE GUARD

VLTG-70

The best solution to protect your battery against :

Deep discharge

Overtoltage

Overload



PRESENTATION

The voltage guard protects your battery in order to increase its duration life.

It provides a constant low voltage, overvoltage and overload protection.

When you battery reaches the pre-set low voltage the voltage guard will disconnect automatically the DC consumers.

DC consumers will be switched on again automatically when battery voltage increases and when defined threshold is reached.

The system will operate the same way for over-voltage.

Low voltage threshold can be selected from external DIP switches.

The over-voltage value is fixed.

The system can be used as manual main switch. The output is turned off when the switch is closed.

In this mode the voltage guard will only operate as battery low voltage protector.

The voltage guard has an integrated buzzer and LED to monitor its operating state.

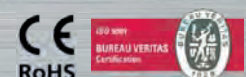
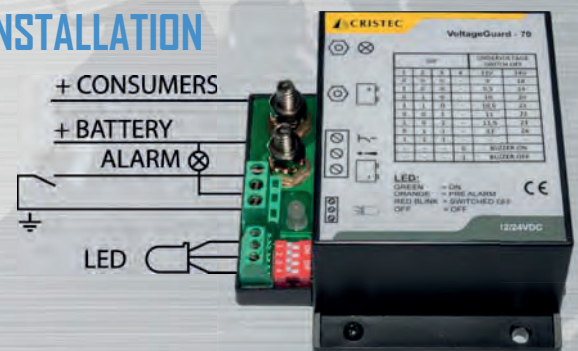
It is compliant with all Lead battery types : wet, sealed, gel, AGM, Calcium, etc.

Part number : VLTG-70

TECHNICAL CHARACTERISTICS

- Rated current (constant) : 70 A
- Max current (10s @ 20°C) : 140 A
- Voltage : 12 and 24 VDC
- Input voltage range : 8 - 31 VDC
- Consumption : > 2mA (LED off)
- Presentation : plastic housing with external fixings - IP51
- Connection : on threaded rods
- Dimensions (l x h x d) : 100 mm x 89.2 mm x 43 mm
- Weight : 0.21 kg
- Operating temperature : from -10°C to +60°C
- Storage temperature : from -20°C to +85°C
- 12V low voltage adjustment : 9 - 12 VDC
- 12V overvoltage threshold : 15.5 VDC
- 24V low voltage adjustment : 18 - 24 VDC
- 24V overvoltage threshold : 31 VDC

INSTALLATION



ELECTRONIC BATTERY ISOLATORS

RCE RANGE



PRESENTATION

- ◆ The electronic battery isolators (MOS transistors) prevent the current from flowing from one battery set to another and allow to automatically direct the current of charge to the lowest charged battery.
- ◆ As they do not create any voltage drop unlike the usual diode splitters, the efficiency of the charge circuit is improved.
Easy to connect, they automatically fit to the 12 or 24Vdc input power supply voltage.

GENERAL CHARACTERISTICS

- TYPE : MOSFET
- TO A COMPLETE AND FAST CHARGE OF 2 OR 3 BATTERY SETS
- OPERATING IN 12V OR 24V FROM ANY ENERGY SOURCE : alternator, wind generator, solar-panel, battery charger, etc.
- INTEGRATED IGNITION ALTERNATOR TERMINAL (except model RCE/100-2E-3)
- CONNECTION : + battery on threaded rods, - battery on Faston terminal at minus common (reference)
- OPERATING INDICATOR (alternator output voltage presence)
- OPERATING TEMPERATURE : -40°C/+85°C
- COOLING : natural

STANDARDS

EN 50081-1 (emission) ; EN 50082-1 (immunity) ; EN 60950-1 (safety)

RANGE

OPTIONAL :

Isolator kit - Ref. SEELO10604 : needed with RCE/100-2E-3 model if the DC source requires a voltage reference to start and to regulate (1 kit per involved source).

ITEM CODE	RATED CURRENT	NUMBER OF INPUTS	NUMBER OF OUTPUTS	IG CONNECTION (stimulation of alternator)	OVERALL DIMENSIONS in mm (w x h x d)	WEIGHT
RCE/100-1E-2IG	100A	1 (Ø M6)	2 (Ø M6)	Yes	146x97x85	0,8 Kg
RCE/100-1E-3IG	100A	1 (Ø M6)	3 (Ø M6)	Yes	158x146x85	0,8 Kg
RCE/100-2E-3	100A	2 (Ø M6)	3 (Ø M6)	No	158x146x85	0,8 Kg
RCE/150-1E-2IG	150A	1 (Ø M8)	2 (Ø M6)	Yes	146x97x85	0,8 Kg
RCE/150-1E-3IG	150A	1 (Ø M8)	3 (Ø M6)	Yes	158x146x85	0,8 Kg
RCE/180-1E-2IG	180A	1 (Ø M8)	2 (Ø M8)	Yes	146x97x85	0,8 Kg
RCE/180-1E-3IG	180A	1 (Ø M8)	3 (Ø M8)	Yes	158x146x85	0,8 Kg
RCE/200-1E-3IG	200A	1 (Ø M10)	3 (Ø M8)	Yes	158x146x85	0,8 Kg

We reserve the right to make modifications to the specification without prior notice. Please consult us.



ISOLATED DC/DC CONVERTERS



PRESENTATION

- ◆ CRISTEC switch-mode DC/DC converters are dedicated to the power-supply of electric and electronic equipment.
- ◆ They guarantee a high quality output voltage and ensure insulation. Thanks to their input voltage range they can be connected directly to a battery (can be used as a battery charger).
- ◆ Their dimensions and weight allow an easy maintenance.

GENERAL CHARACTERISTICS

- **NOMINAL INPUT VOLTAGE :**
 - 12Vdc : from 10 to 18Vdc
 - 24Vdc : from 18 to 36Vdc
 - 48Vdc : from 36 to 72Vdc
- **OUTPUT VOLTAGE :**
 - 12, 24 or 48Vdc nominal
 - Voltage adjustment by external potentiometer
- **OUTPUT POWER : 195W**
- **OUTPUT ELECTRIC CHARACTERISTICS :**
 - Typical efficiency : 75 %
 - Line regulation : 1 %
 - Load regulation : 2 % (10 to 100 %)
- **DIELECTRIC RIGIDITY :** input/output > 1000Vdc
- **COOLING :** natural
- **OPERATING TEMPERATURE :** from 0°C to +50°C
- **STORAGE TEMPERATURE :** from -20°C to +85°C
- **PRESENTATION :**
 - In closed box
 - Fixing on screw terminals
- **INPUT PROTECTION :**
 - Against polarity reversal
 - EMI filter
 - By fuses
- **OUTPUT PROTECTION :**
 - Against short-circuit
 - Against overload by current limitation
 - Against overvoltage (Vnom + 25 %)

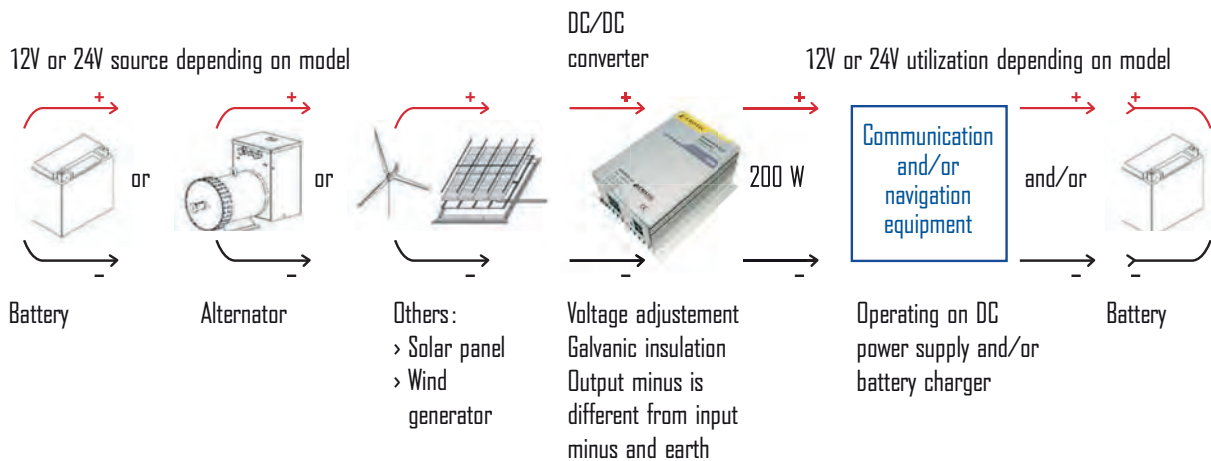
STANDARDS

- Safety : EN 60950
- EMC : EN 50081-2





TYPICAL INSTALLATION



ITEM CODE	DESCRIPTION	INPUT VOLTAGE (Vdc)	OUTPUT VOLTAGE (Vdc)	OUTPUT CURRENT (A)	MAX. OUTPUT CURRENT (A)	DIMENSIONS h x w x d (mm)
25000160DD	SD 203-I1-DD-AL	12	12	16	18	166x108x80mm
25000163DD	SD 206-I1-DD-AL	12	24	8	10	166x108x80mm
25000166DD	SD 208-I1-DD-AL	12	48	4	5	166x108x80mm
25000161DD	SD 203-I2-DD-AL	24	12	16	18	166x108x80mm
25000164DD	SD 206-I2-DD-AL	24	24	8	10	166x108x80mm
25000167DD	SD 208-I2-DD-AL	24	48	4	5	166x108x80mm
25000162DD	SD 203-I3-DD-AL	48	12	16	18	166x108x80mm
25000165DD	SD 206-I3-DD-AL	48	24	8	10	166x108x80mm
25000168DD	SD 208-I3-DD-AL	48	48	4	5	166x108x80mm

Specifications may change without notice. Please contact us.



SOLO INVERTERS

SINEWAVE



ADVANTAGES

- Significant overload capacity for starting surges.
- High efficiency-Low stand-by consumption.
- High reliability, limited size and weight.
- Fuse integrated protection.
- Battery protection with stop on low voltage.
- Silent and comfort.

RANGE POSSIBILITIES

- **INCOMING POWER** : voltage 12, 24 or 48VDC.
- **OUTPUT** : voltage 230VAC - single phase - 50Hz, power from 200VA to 3500VA.
On request : 115VAC - 50Hz/60Hz or 230VAC - 60Hz.

GENERAL SPECIFICATIONS

- **INCOMING POWER** :
voltage 12, 24 or 48VDC (-12 % +30 %),
reduced consumption off load.
- **OUTPUT** :
230VAC single phase +/- 5 %, frequency 50Hz +/- 0,05 %,
sinewave - distortion ≤ 3 %, power factor - inductive and capacitive,
instantaneous power from 1,5 to 3,5 rated power according to model.
- **COMMON CHARACTERISTICS** :
galvanic isolation input output ≥ 2 M Ω ,
electric rigidity 2 U+1000, conditions for standard functioning :
 - temperature from - 20 to + 50 °C,
 - humidity from 0 to 95 % without condensation,
 - acoustic noise ≤ 45 db.
- **PHYSICAL CHARACTERISTICS** :
features : standart IP 20 metal grey box, IP30 for models ≤ 800 W.
Connection of cables by means of terminal block through a cable gland,
depending on model.
- **EC CONFORMITY** :
EN 50081 I/II ▪ EN 50014 ▪ EN50022 ▪ EN60950 ▪ EN50091-2
IEC 801 II/III/IV ▪ CEI 555.EN 60950

PRESENTATION

The aim of the inverters is to convert batteries direct voltage into 230VAC/50Hz alternating current.
The SOLO digital sinewave has reduced the number of components and increased the equipment reliability.

◆ USE

The SOLO inverters deliver a sinusoidal wave identical to mains supply.
Their physical characteristics enable a wide scope of applications : marine, mobile, renewable energy, industry, etc.

- **Data processing** :
vehicule equipped with computing equipment,
on-board computer, automatic systems, etc.
- **Télécommunications** :
radio communication relay,
on-board telephony, radio stations and beacons,
radionavigation, etc.
- **Lighting** :
security lighting, incandescent and fluorescent lighting, etc.
- **Domestic and industrial equipment** :
domestic appliances, television, portable tools,
refrigerators, micro-waves, etc.





STANDARD RANGE

Input : 12, 24 or 48VDC
 Output : 230VAC, single phase, 50Hz
 Sinusoidal signal - Wall mounted box



PART NUMBER	INPUT VOLTAGE	CONSTANT POWER	MAXIMUM POWER	INSTANTANEOUS POWER (5s)	EFFICIENCY	DIMENSIONS	WEIGHT
SEEL006054B	12V	200VA	275VA (30mn)	450VA	93%	163 x 142 x 84 mm	2,4 Kg
SEEL006056B	12V	400VA	500VA (30mn)	1000VA	93%	240 x 142 x 84 mm	4,5 Kg
SEEL006072*	12V	800VA	1000VA (30mn)	2200VA	93%	428 x 142 x 84 mm	8,5 Kg
SEEL006088*	12V	2000VA	2100VA (30mn)	5000VA	92%	399 x 273 x 117 mm	19 Kg
SEEL006050B	24V	300VA	350VA (30mn)	650VA	94%	163 x 142 x 84 mm	2,6 Kg
SEEL006052B	24V	500VA	600VA (30mn)	1200VA	94%	240 x 142 x 84 mm	4,5 Kg
SEEL006074*	24V	1000VA	1300VA (30mn)	2800VA	94%	428 x 142 x 84 mm	8,5 Kg
SEEL006090*	24V	2000VA	2400VA (30mn)	5200VA	94%	399 x 273 x 117 mm	18 Kg
SEEL006092	24V	2300VA	3000VA (15mn)	8000VA	95%	591 x 215 x 124 mm	27 Kg
SEEL006822	24V	3300VA	4300VA (15mn)	11000VA	95%	636 x 215 x 124 mm	30 Kg
SEEL006954	48V	300VA	400VA (30mn)	1000VA	94%	163 x 142 x 84 mm	2,6 Kg
SEEL008368	48V	500VA	700VA (30mn)	1400VA	94%	240 x 142 x 84 mm	4,5 Kg
SEEL006082	48V	1200VA	1800VA (15mn)	4200VA	95%	391 x 215 x 124 mm	13,2 Kg
SEEL006094	48V	2300VA	3400VA (15mn)	8000VA	95%	636 x 215 x 124 mm	27 Kg
SEEL006096	48V	3500VA	4300VA (15mn)	12000VA	95%	791 x 215 x 124 mm	38 Kg

*Possible option : ON/OFF remote control box including 5m cable, part number : SEEL007130

Variant : 115VAC/60Hz or 230VAC/60Hz on request

Minimum required battery capacity = C.Ah > 5 x Inverter constant power (VA) / Inverter input voltage (V)

The characteristics given in this sales brochure do not have contractual force and CRISTEC reserves the right to modify the product technical characteristics without prior notice.
 Please consult us before any technical integration.



ISOLATION TRANSFORMERS

WITH SOFTSTART



TECHNICAL CHARACTERISTICS

- Power : 3600W
- Input voltage : 115 or 230V, automatic and manual versions available
- Frequency : 50/60Hz
- Rated current : 32A (115VAC) - 16A (230VAC)
- Softstart : automatic
- Efficiency : > 93%
- Operating temperature : from -20°C to +40°C
- Thermal protection integrated
- Cooling : temperature controlled forced ventilation (2 speeds)
- Transformer type : toroidal
- Internal fuse : no
- Dimensions : 400 x 300 x 200 mm
- Enclosure material : aluminium
- Protection category : IP21
- Weight : 24 kg
- Standards : IEC 60076

Part numbers : IT-3600-M
IT-3600-A

PREVENTION OF GALVANIC CORROSION

CRISTEC isolation transformers avoid electrolysis in salted water. Slow galvanic corrosion not only occurs in metal and aluminium hulls. It can occur in any metallic part being in contact with water : anodes, shafts, etc.

CRISTEC isolation transformers eliminate any electrical continuity between the boat AC on-board network and the shore-side supply.

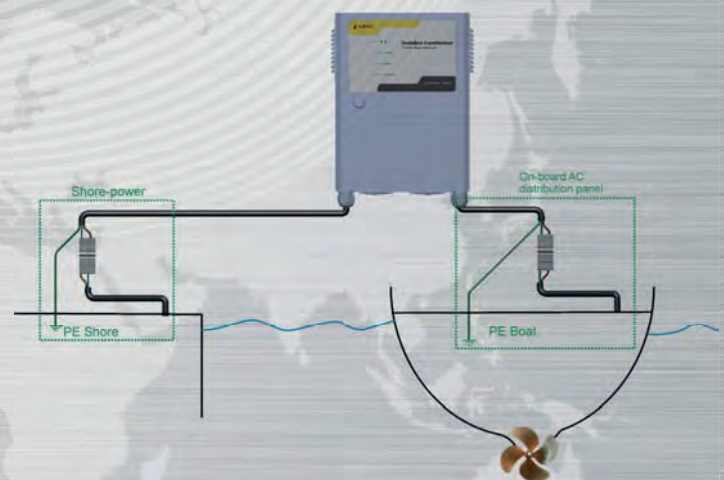
SAFETY

The isolation transformers allow powering a boat safely from shore power without any risk of galvanic corrosion. The boat AC on-board network is safe and secured to the created isolated ground specific to the boat : the GFCI - Ground Fault Current Interrupter - will trip or a fuse will blow in case of current leakage to ground.

COMFORT

CRISTEC isolation transformers are toroidal type in order to limit weight and noise.

They have an integrated softstart which avoids the shore-power fuse to blow or the GFCI to trip due to the inrush grid connection.



The installer should decide on rating and nature of the external protection devices.

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CRISTEC, on-board energy

⚡ Our vocation

Founded in 1983, CRISTEC (standing for Creation, Innovation Scientifique et Technique, or Scientific and Technical Innovation and Creation) specialises in energy conversion.

CRISTEC offers expertise on an international scale via its range of standard products mainly for on-board applications.

CRISTEC belongs to the ENAG group and its success is built on its teams and technical means, whose expertise is widely recognised.

Thanks to our network of agents and distributors who are present in over 40 countries we can guarantee our clients reliable universal solutions for use in extreme environmental conditions.

⚡ Our clients

Sailing boats, motor and electric boats, barges, vehicles for the police and emergency services, for work and leisure uses, autonomous electrical installations for wind and solar power, etc. whenever the situation or energy management demands are particularly stringent.

From Europe to Asia, the number and diversity of CRISTEC's clients is proof of our success and represents an ongoing challenge to meet and anticipate their needs.

⚡ Products

Our automatic H.F. chargers, an innovative technology in which CRISTEC was the precursor, and all our products relating to battery charging meet the whole host of international standards and norms.

The design of our latest equipment benefits from unrivalled feedback on 100 000 HF chargers in use.

High-performance, compact and light, their ergonomic design means they are easy to install, quick to hook up and keep on functioning over time in perfect safety.

⚡ Means

Thanks to our R & D department backed up by specifically adapted testing facilities we can rapidly develop product ranges to meet technical specifications as well as assessing prototypes and preproduction models.

Our competitive positioning for standard CRISTEC models means that we have an international supply and subcontracting chain.

Our industrial organisation has earned ISO 9001 certification and is continually seeking to improve, with optimal customer satisfaction as our guiding principle.

⚡ Mission

CRISTEC energy conversion - putting our expertise and skills at the service of current and future clients to help them anticipate and find the solution to tomorrow's needs today.

Place your trust in us and incorporate all our on-board energy working at your sides!

