# AC-DC battery chargers









Bluetooth







CAN-BUS interface









#### **Silent operating**

CRISTEC is the only manufacturer offering chargers up to 12V 60A with natural convection (without fan). This advantage gives the YPOWER+ chargers a completely silent operation and an optimized lifespan. It is therefore possible to install them anywhere on board, including under a berth.



## 3 or 4 independent outputs depending of models

The YPOWER+ chargers are the only chargers having up to 4 independent and non-limited outputs.



#### Low energy bluetooth

The YPOWER+ chargers are equipped with a Bluetooth Low Energy (BLE), variant of "classic" Bluetooth. The major advantage of BLE is its low power consumption as it consumes half of a classic Bluetooth.



#### Thermal withstand

Chargers have full charge up to  $+40^{\circ}$ C for entry models and  $+60^{\circ}$ C ( $140^{\circ}$ F) for others with no loss.



#### **Ignition protected**

All models can be installed in the engine room thanks to ISO8846 compliance which protects against ignition of flammable gases.



#### Worldwide use

Automatic detection of power supply network, from 90 to 265VAC and from 47 to 65Hz. You do not have to care about the AC power grid or genset voltage.



#### 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 keypad pushbutton
- Reboost: new automatic Boost phase if DC consumers and the state of batteries so require.

A regulated DC power-supply mode is also available and YPOWER+ chargers can also be used as high-voltage DC-DC converters with input ranging from 121 to 375VDC.



#### **Easy connection**

Plug & Play connection, secure, simple and fast without opening the charger. AC and DC connectors are included.



#### **Adaptative charging**

Custom-made and simultaneous recharge of 3 or 4 battery banks.

YPOWER+ chargers can be connected to various types of batteries simultanously:

- Opened classic lead
- Sealed, gel or AGM
- Spiral sealed



Lithium Iron Phosphate (LiFePO4) with BMS. Selection of your technology of battery is easy thanks to the front keypad.



#### Remote control

The chargers are fitted with a CAN-Bus and a Bluetooth interface as standard.



Connection to an NMEA network is also available through an optional adaptor, refer to charger's options page.

### **AC-DC BATTERY CHARGERS YPOWER+**







Part Number					
Recommended battery bank*   100 2004h   200 4004h   500 4004h   500 7004h	Part Number	YPO12-20STPL	YPO12-30STPL	YPO12-40STPL	YPO12-60STPL
From 90 to 265WC single-phase automatic	Model	12V/20A	12V/30A	12V-40A	12V-60A
AC Voltage   From 90 to 265/AC cingle-phase automatic	Recommended battery bank**	100-200Ah	200-300Ah	300-500Ah	500-700Ah
Prom 121 to 35YVDC	Input				
Promotion	AC Voltage	From 90 to 265VAC single-phase automatic			
Current consumed 20/115VAC   1.3/2.6A   2/4A   2.7/5.6A   4.4/6.7A	DC Voltage	From 121 to 375VDC			
Recommended power for a generator	Frequency	From 47 to 65Hz automatic			
Power factor 92.8% in 230VAC & 91% in 115VAC  Imput face 153A-250V 153A-250V 153A-250V  To 3A-250V 153A-250V 153A-250V  Number of battery banks 23-240-240 24-240 2	Current consumed 230/115VAC	1.3/2.6A	2/4A	2.7/5.6A	4.4/8.7A
Efficiency   92.8% in 230VAC & 91% in 131VAC	Recommended power for a generator	450W	650W	700W	1050W
Colput	Power factor	1			
Number of battery banks    3 separate positive terminals - 8AT E _ +8AT 1 and -8AT 2 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 1 _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 1 negative terminals - 8AT E _ +8AT 2 and +8AT 3 (integrated MCSFET spitter) 4 AMD 2 integrated MCSFET spitter) 4 AMD 2 inte	Efficiency	92.8% in 230VAC & 91% in 115VAC			
Number of battery banks    Separate positive terminals - 2AT	Input fuse	T6.3A/250V T15A/250V			
Number of battery banks   (integrated MOSFET pillitre) 1 negative terminal : -BAT Each bank can be used individually and delivers the rate durrent Each bank can be used individually and delivers the rate durrent Each bank can be used individually and delivers the rate durrent Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used individually and delivers the rated current Each bank can be used in the property of the public of the publ	Output				
Charging curve  Charging curve selection by push-button, Bluetooth or CAN-Bus (Boost, Absorption, Floating and Refresh)  Battery type  Seeled lead, Gel, AGM as factory setting - calcium lead, LiFePC4, DC power-supply mode, etc. Specific request on demand  Boost voltage for seeled lead battery (factory setting)  14.4VDC  Hoating voltage for seeled lead battery (factory setting)  128.WDC  Peak to peak ripple and notise  - 2% (et rated conditions)  Automotive fuses mounted in series in minus pole-BAT  1 x 30A/32V  2 x 30A/32V  3 x 30A/32V  4 x 30A/32V  4 x 30A/32V  4 x 30A/32V  5 x 30A/32V  4 x 30A/32V  4 x 30A/32V  5 x 30A/32V  5 x 30A/32V  5 x 30A/32V  6 x 30A/32V  6 x 30A/32V  6 x 30A/32V  6 x 30A/32V  7 x 30A/32V  7 x 30A/32V  8 x 30A/32V  7 x 30A/32V  8 x 30A/32V  9 x 30A/32V  8 x 30A/32V  1 x 30A/32V  8 x 30A/32V  1 x 30A/32V  8 x 30A/	Number of battery banks	(integrated MOSFET splitter	r) 1 negative terminal : -BAT	(integrated MOSFET splitter) 1 negative terminal : -BAT	
Sealed lead, Gel, AGM as factory setting - calcium lead, LiFePO4, DC power-supply mode, etc. Specific request on demand	Nominal current (+/-7%) @ rated power	20A/276W	30A/356W	40A/570W	60A/855W
Boost voltage for sealed lead battery (factory setting)   13,8VDC	Charging curve	Charging curve s	Charging curve selection by push-button, Bluetooth or CAN-Bus (Boost, Absorption, Floating and Refresh)		
Peak to peak ripple and noise	Battery type	Sealed lead, Gel, AGM as factory setting - calcium lead, LiFePO4, DC power-supply mode, etc. Specific request on demand			
Peak to peak ripple and noise         < 2% (at rated conditions)           Automotive fuses mounted in series in minus pole -BAT         1 x 30A/32V         2 x 30A/32V         3 x 30A/32V         4 x 30A/32V           Environment         Cooling         Natural (fanless)           Sound level         0 dB           Operating T* at 250VAC         From -20°C to +0°C (-4°E to +140°E)         from 60°C (140°E)	Boost voltage for sealed lead battery (factory setting)	14.4VDC			
Automotive fuses mounted in series in minus pole -BAT  1 x 30A/32V  2 x 30A/32V  3 x 30A/32V  4 x 30A/32V  4 x 30A/32V  4 x 30A/32V  5 x 30A/32V  4 x 30A/32V  5 x 30A/32V  4 x 30A/32V  5 x 10A/67 Fin billions  6 x 20A/67 Fin billions  7 x 20A/	Floating voltage for sealed lead battery (factory setting)	13.8VDC			
Cooling	Peak to peak ripple and noise	< 2% (at rated conditions)			
Cooling         Natural (fanless)           Sound level         0 dB           Operating 1° at 230VAC         From -20°C to +60°C (-4°F to +140°F)           Derating (rated charge)         from 40°C (140°F)         from 60°C (140°F)         from 60°C (140°F)           Storage 1°         From -20°C to +70°C (-4°F to +158°F)           Relative humidity         up to 70% (95% without condensation)           Bluetooth         Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)           Casing         Material         Aluminium sink frame and clasp / Thermoplastic body           Dimensions (length, height, depth)         238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)         289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)           Weight         2kg (4.4 lb)         3.5kg (6.6 lb)         3.7kg (6.7 lb)           Fixing screw (wall)         4 M5 round head screws           Protection factor         IP34 (electronic) & IP22 (connections)           Electronic card protection         Sealed casing         Water-repellent varnish (marine environment)           Standards         CE declaration of conformity         Available on request           CE / EMC         EN61204-3           CE / Security         EN60335-2-29, ISO8846	Automotive fuses mounted in series in minus pole -BAT	1 x 30A/32V	2 x 30A/32V	3 x 30A/32V	4 x 30A/32V
Sound level         0 dB           Operating T° at 230VAC         From -20°C to +60°C (-4°F to +140°F)           Derating (rated charge)         from 40°C (140°F)         from 40°C (140°F)         from 60°C (140°F)           Storage T°         From -20°C to +70°C (-4°F to +158°F)           Relative humidity         up to 70% (95% without condensation)           Bluetooth         Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)           Casting         Aluminium sink frame and clasp / Thermoplastic body           Dimensions (length, height, depth)         238 x 181 x 81mm (94 x 7.1 x 3.2 in)         289 x 197 x 105mm (1.1 4 x 7.8 x 4.1 in)           Weight         2kg (4.4 lb)         3.5kg (6.6 lb)         3.7kg (6.7 lb)           Fixing screw (wall)         4 M5 round head screws           Protection factor         IP34 (electronic) & IP22 (connections)           Electronic card protection         Sealed casing         Water-repellent varnish (marine environment)           Standards         CE declaration of conformity         Available on request           CE / EMC         EN61204-3           CE / Security         EN60335-2-29, ISO8846	Environment				
Operating T° at 230VAC         From -20°C to +60°C (-4°F to +140°F)         from 60°C (140°F)         from 158°F}         from 158°F}         from 158°F}         get         from 60°C (140°F)	Cooling	Natural (fanless)			
Derating (rated charge)         from 40°C (140°F)         from 40°C (140°F)         from 60°C (140°F)         from 60°C (140°F)           Storage T°         From -20°C to +70°C (-4°F to +158°F)           Relative humidity         up to 70% (95% without condensation)           Bluetooth         Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)           Casing         Aluminium sink frame and clasp / Thermoplastic body           Dimensions (length, height, depth)         238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)         289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)           Weight         2kg (4.4 lb)         3.5kg (6.6 lb)         3.7kg (6.7 lb)           Fixing center distance         219 x 155mm (8.6 x 6.1 in)         272 x 170mm (10.7 x 6.7 in)           Fixing screw (wall)         4 M5 round head screws           Protection factor         1P34 (electronic) & 1P24 (electronic) & 1P22 (connections)           Electronic card protection         Sealed casing         Water-repellent varnish (marine environment)           Standards         CE declaration of conformity         Available on request           CE / EMC         EN61204-3           CE / Security         EN60335-2-29, ISO8846	Sound level	0 dB			
Storage T° Relative humidity up to 70% (95% without condensation) Bluetooth Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)  Casing  Material Aluminium sink frame and clasp / Thermoplastic body  Dimensions (length, height, depth) 238 x 181 x 81mm (9.4 x 7.1 x 3.2 in) 289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)  Weight 228 (4.4 lb) 3.5kg (6.6 lb) 3.7kg (6.7 lb)  Fixing center distance 219 x 155mm (8.6 x 6.1 in) 272 x 170mm (10.7 x 6.7 in)  Fixing screw (wall)  Protection factor IP34 (electronic) & IP22 (connections)  Electronic card protection Sealed casing Water-repellent varnish (marine environment)  Standards  CE declaration of conformity Available on request  CE / EMC EN61204-3  CE / Security	Operating T° at 230VAC	From -20°C to +60°C (-4°F to +140°F)			
Relative humidity       up to 70% (95% without condensation)         Bluetooth       Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)         Casing       Aluminium sink frame and clasp / Thermoplastic body         Dimensions (length, height, depth)       238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)       289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)         Weight       2kg (4.4 lb)       3.5kg (6.6 lb)       3.7kg (6.7 lb)         Fixing center distance       219 x 155mm (8.6 x 6.1 in)       272 x 170mm (10.7 x 6.7 in)         Fixing screw (wall)       4 M5 round head screws         Protection factor       IP34 (electronic) & IP22 (connections)         Electronic card protection       Sealed casing       Water-repellent varnish (marine environment)         Standards       CE declaration of conformity       Available on request         CE / EMC       EN61204-3         CE / Security       EN60335-2-29, ISO8846	Derating (rated charge)	from 40°C (140°F)	from 40°C (104°F)	from 60°C (140°F)	from 60°C (140°F)
Bluetooth Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)  Casing  Material Aluminium sink frame and clasp / Thermoplastic body  Dimensions (length, height, depth) 238 x 181 x 81mm (9.4 x 7.1 x 3.2 in) 289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)  Weight 2kg (4.4 lb) 3.5kg (6.6 lb) 3.7kg (6.7 lb)  Fixing center distance 219 x 155mm (8.6 x 6.1 in) 272 x 170mm (10.7 x 6.7 in)  Fixing screw (wall) 4 M5 round head screws  Protection factor 1P34 (electronic) & IP22 (connections)  Electronic card protection Sealed casing Water-repellent varnish (marine environment)  Standards  CE declaration of conformity Available on request  CE / EMC EN61204-3  CE / Security EN60335-2-29, ISO8846	Storage T°	From -20°C to +70°C (-4°F to +158°F)			
Casing     Aluminium sink frame and clasp / Thermoplastic body       Dimensions (length, height, depth)     238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)     289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)       Weight     2kg (4.4 lb)     3.5kg (6.6 lb)     3.7kg (6.7 lb)       Fixing center distance     219 x 155mm (8.6 x 6.1 in)     272 x 170mm (10.7 x 6.7 in)       Fixing screw (wall)     4 M5 round head screws       Protection factor     IP34 (electronic) & IP22 (connections)       Electronic card protection     Sealed casing     Water-repellent varnish (marine environment)       Standards       CE declaration of conformity     Available on request       CE / EMC     EN61204-3       CE / Security     EN60335-2-29, ISO8846	Relative humidity	up to 70% (95% without condensation)			
Material       Aluminium sink frame and clasp / Thermoplastic body         Dimensions (length, height, depth)       238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)       289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)         Weight       2kg (4.4 lb)       3.5kg (6.6 lb)       3.7kg (6.7 lb)         Fixing center distance       219 x 155mm (8.6 x 6.1 in)       272 x 170mm (10.7 x 6.7 in)         Fixing screw (wall)       4 M5 round head screws         Protection factor       IP34 (electronic) & IP22 (connections)         Electronic card protection       Sealed casing       Water-repellent varnish (marine environment)         Standards       CE declaration of conformity       Available on request         CE / EMC       EN61204-3         CE / Security       EN60335-2-29, ISO8846	Bluetooth	Low energy bluetooth (BLE) - Power: +9dBm (frequency: 2412-2484MHz)			
Dimensions (length, height, depth)         238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)         289 x 197 x 105mm (11.4 x 7.8 x 4.1 in)           Weight         2kg (4.4 lb)         3.5kg (6.6 lb)         3.7kg (6.7 lb)           Fixing center distance         219 x 155mm (8.6 x 6.1 in)         272 x 170mm (10.7 x 6.7 in)           Fixing screw (wall)         4 M5 round head screws           Protection factor         IP34 (electronic) & IP22 (connections)           Electronic card protection         Sealed casing         Water-repellent varnish (marine environment)           Standards         CE declaration of conformity         Available on request           CE / EMC         EN61204-3           CE / Security         EN60335-2-29, ISO8846	Casing				
Weight         2kg (4.4 lb)         3.5kg (6.6 lb)         3.7kg (6.7 lb)           Fixing center distance         219 x 155mm (8.6 x 6.1 in)         272 x 170mm (10.7 x 6.7 in)           Fixing screw (wall)         4 M5 round head screws           Protection factor         IP34 (electronic) & IP22 (connections)           Electronic card protection         Sealed casing         Water-repellent varnish (marine environment)           Standards         CE declaration of conformity         Available on request           CE / EMC         EN61204-3           CE / Security         EN60335-2-29, ISO8846	Material	Aluminium sink frame and clasp / Thermoplastic body			
Fixing center distance  219 x 155mm (8.6 x 6.1 in)  272 x 170mm (10.7 x 6.7 in)  Fixing screw (wall)  4 M5 round head screws  Protection factor  IP34 (electronic) & IP22 (connections)  Electronic card protection  Sealed casing  Water-repellent varnish (marine environment)  Standards  CE declaration of conformity  Available on request  CE / EMC  EN61204-3  CE / Security  EN60335-2-29, ISO8846	Dimensions (length, height, depth)	238 x 181 x 81mm (9.4 x 7.1 x 3.2 in)		289 x 197 x 105mm	n (11.4 x 7.8 x 4.1 in)
Fixing screw (wall)  Protection factor  IP34 (electronic) & IP22 (connections)  Electronic card protection  Sealed casing  Water-repellent varnish (marine environment)  Standards  CE declaration of conformity  Available on request  CE / EMC  EN61204-3  CE / Security  EN60335-2-29, ISO8846	Weight	2kg (4.4 lb)		3.5kg (6.6 lb)	3.7kg (6.7 lb)
Protection factor  Electronic card protection  Sealed casing  Water-repellent varnish (marine environment)  Standards  CE declaration of conformity  Available on request  CE / Security  EN60335-2-29, ISO8846	Fixing center distance	219 x 155mm (8.6 x 6.1 in)		272 x 170mm	(10.7 x 6.7 in)
Electronic card protection  Sealed casing  Water-repellent varnish (marine environment)  Standards  CE declaration of conformity  Available on request  CE / EMC  EN61204-3  CE / Security  EN60335-2-29, ISO8846	Fixing screw (wall)	4 M5 round head screws			
Standards       CE declaration of conformity     Available on request       CE / EMC     EN61204-3       CE / Security     EN60335-2-29, ISO8846	Protection factor	IP34 (electronic) & IP22 (connections)			
CE declaration of conformity     Available on request       CE / EMC     EN61204-3       CE / Security     EN60335-2-29, ISO8846	Electronic card protection	Sealed casing Water-repellent varnish (marine environment)			
CE / EMC         EN61204-3           CE / Security         EN60335-2-29, ISO8846	Standards				
<b>CE / Security</b> EN60335-2-29, ISO8846	CE declaration of conformity		Available o	on request	
•	CE / EMC	EN61204-3			
	,		EN60335-2-2	29, ISO8846	

 $Against \ transient \ input \ overvoltage \ by \ varistor \ (Not \ covered \ by \ warranty) \ / \ Against \ output \ polarity \ reversal \ by \ removable \ fuses \ / \ Against \ short-circuits \ and \ output \ overloads \ / \ Against \ abnormal \ overheating$ 

Communication

CAN-Bus / Bluetooth

Options

Temperature probe & OTD probe (Over Temperature Device)

 $<sup>^*</sup> Included AC and DC connectors for item codes containing \\ \text{``ST"} = ST \\ \text{and ard (except item codes containing } \\ \text{``OE"} - Original Equipment)$ 

<sup>\*\*</sup> Overall battery capacity recommended for lead-type batteries, C/10. For Lithium batteries, C/3, consult us if needed.

