CRISTEC
on-board energy

# CPS3 battery chargers

## Innovative

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

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# 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

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**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.

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

## › 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.


## › 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 12V/60A chargers will deliver 12V/120A). You can parallel-mount up to 6 chargers preferably the same size.

# **CPS3** battery chargers

| Part number | CPS3/12-16 | CPS3/12-25 | CPS3/12-40 | CPS3/12-60 | CPS3/12-80 | CPS3/12-100 | CPS3/24-12 | CPS3/24-20 | CPS3/24-30 | CPS3/24-60 | CPS3/24-75 | CPS3/24-120 | CPS3/24-150-TRI | CPS3/48-15 | CPS3/48-30 | CPS3/48-60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Output voltage | 12 VDC | | | | | | 24 VDC | | | | | | | 48 VDC | | |
| Nominal output current | 16 A | 25 A | 40 A | 60 A | 80 A | 100 A | 12 A | 20 A | 30 A | 60 A | 75 A | 120 A | 150 A | 15 A | 30 A | 60 A |
| Input voltage (VAC) | From 85 to 265 single-phase automatic | | | | | | | | | | | | 304/552 3-phase | From 85 to 265 single-phase automatic | | |
| Input frequency | From 47 to 65 Hz automatic | | | | | | | | | | | | | | | |
| Input current consumption at 230 VAC | 1,4 A | 2,0 A | 3,2 A | 4,6 A | 6,0 A | 6,9 A | 1,9 A | 3,1 A | 4,4 A | 9,0 A | 11,5 A | 17,0 A | 7,0 A* | 4,3 A | 9,0 A | 17,0 A |
| AC input connection | On screw terminal with clamping through plastic gland | | | | | | | | | | | | | | | |
| Power limitation external switch (max input current = 6A) | no | | | | yes | | no | | | yes | | | no | yes | | |
| Power factor | 0,9 at rated conditions** | | | | | | | | | | | | | | | |
| Efficiency | > 80% at rated conditions** | | | | | | | | | | | | | | | |
| Output voltage regulation | +/- 1% | | | | | | | | | | | | | | | |
| Recommended battery bank (Ah) | 100-200 | 200-300 | 300-500 | 500-700 | 700-900 | 900-1200 | 100-200 | 200-300 | 300-500 | 500-700 | 600-900 | 900-1400 | 1200-1800 | 100-200 | 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 |
| Terminal for extra battery isolator | yes | | | | | | | | | | | | | | | |
| DC output connection on threaded rod h=25 mm | M5 | | M6 | | | M8 | M5 | 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<br>For temperature > 65°C automatic stopping - Automatic restart | | | | | | | | | | | | | | | |
| Cooling | Natural | | | Electric fan controlled by the output current | | | Natural | | | 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 23 | | | IP 22 | | | IP 23 | | | IP 22 | | | | | | |
| Overall dimensions (mm) Not including cable gland | h: 179<br>w: 258<br>d: 106 | | h: 212<br>w: 282<br>d: 117 | | h: 260<br>w: 350<br>d: 123 | h: 400<br>w: 350<br>d: 123 | h: 179<br>w: 258<br>d: 106 | h: 212<br>w: 282<br>d: 117 | | h: 260<br>w: 350<br>d: 123 | | h: 400<br>w: 350<br>d: 123 | | h: 212<br>w: 282<br>d: 117 | h: 260<br>w: 350<br>d: 123 | h: 400<br>w: 350<br>d: 123 |
| Case type | 1M | | 2M | | 3M | 1H | 1M | 2M | | 3M | | 1H/2H | | 2M | 3M | 1H |
| Weight (Kg) | 2,5 | | 4,2 | | 7,5 | 12,7 | 2,5 | 4,2 | | 7,5 | | 14 | | 4,2 | 7,5 | 12,7 |
| Standards | CE, UL and CSA | | | | | | | | | | | | | | | |
| Guarantee | 3 years | | | | | | | | | | | | | | | |
| Monitoring interfaces (relays) | Charger failure, low battery voltage (+BAT1/+BAT2) according to models - Cut-off characteristics = 30V/100mA | | | | | | | | | | | | | | | |

*@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-CPS2-CPS3 | SEEL009104 | JBNUMII-CPS3 |

* According to the models.



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