# ET-NC G3 Series
Solar Charge Controller

## Overview

The ET-NC G3 series is a new generation of high-current MPPT charge controller. It offers superior MPPT tracking and conversion efficiency. The series is compatible with various lithium battery types and supports three-stage charging management to extend battery lifespan. Its exceptional low-power design significantly reduces static consumption, prolonging system standby time.

Comprehensive electronic protection and flexible communication options (WiFi, Bluetooth, 4G, etc.) further enhance system reliability and monitoring capabilities. It is widely used in RVs, boats, industrial monitoring, and small to medium-sized solar power systems.

## Features

- Supports 12V/24V/36V/48V systems; Charging current: 50A–100A
- All metal die-casting shell, IP43(1)
- Supports two PV inputs(2)
- Max. MPPT tracking efficiency: 99.9%; Max. Conversion efficiency: 98.5%
- Compatible with AGM, Gel, Flooded, LiFePO4 batteries, etc.
- Constant voltage output function: Enables direct load supply with sufficient PV energy
- Communication interface with electrical isolation
  - CAN Communication: Parallel operation of up to 6 devices(with or without batteries)
  - BMS Communication: Ensures reliable lithium battery charge/discharge management (3)
  - RS485 Communication: Optional Bluetooth, WiFi, or 4G modules
- Real-time data recording, event logging, and power statistics function
- EMC compliant (CLASS B)

(1)IP32 without terminal cover
(2)ET10420NC G3 supports two PV inputs
(3)Directly communicates with EPEVER batteries; Requires BMS-LINK module for others (refer to manual)







## Technical Specifications

| Model | ET5420NC G3 | ET7420NC G3 | ET10420NC G3 |
|---|---|---|---|
| **Electrical Parameters** | | | |
| Battery Rated Voltage | 12/24/48VDC or Auto | | |
| Controller Operating Voltage Range | 8–62V | | |
| Battery Type | AGM (Default) / Gel / Flooded / User | | |
| Lithium Battery Type | LiFePO4 / Li (NiCoMn)O2 / User | | |
| Rated Charging/Discharging Current | 50A | 75A | 100A |
| Rated Charging Power | 650W/12V; 1,300W/24V; 2,600W/48V | 975W/12V; 1,950W/24V; 3,900W/48V | 1,300W/12V; 2,600W/24V; 5,200W/48V |
| Maximum Charging Power | 650W/12V; 1,300W/24V; 2,600W/48V | 975W/12V; 1,950W/24V; 3,900W/48V | 1,300W/12V; 2,600W/24V; 5,200W/48V |
| PV Maximum Open-circuit Voltage | 200V (@ lowest temperature); 180V (@ 25℃) | | |
| MPPT Operating Voltage Range | (Battery voltage plus 2V, and > 28V) to 144V (@ 25 ℃) | | |
| Tracking Efficiency | ≥ 99.5% | | |
| Maximum Conversion Efficiency | 98.3% | 98.1% | 98.5% |
| Temperature Compensation Coefficient | -3mV/℃/2V (Default) | | |
| Self-consumption (Enabled Communication) | 98mA/12V; 60mA/24V; 46mA/48V | | |
| Self-consumption (Disabled Communication) | 48mA/12V; 25mA/24V; 14mA/48V | | |
| Grounding Type | Common negative grounding | | |
| Dry Contact (Oil Generator) | Rated value: 5A/30VDC; Maximum value: 0.5A/60VDC | | |
| RS485 Communication Port | 5VDC/200mA (RJ45) | | |
| **Mechanical Parameters** | | | |
| Dimension (Length × Width × Height) IP43 (Controller & White Terminal Cover) | 307 × 253 ×143mm | 320 × 263 ×158mm | 352 × 263 ×158mm |
| Dimension (Length × Width × Height) IP32 (Controller Only) | 307 × 202 ×134mm | 320 × 212 ×149mm | 352 × 212 ×149mm |
| Mounting Dimension (Length × Width) | 295 × 130mm | 308 × 140mm | 340 × 140mm |
| Mounting Hole Size | Φ7mm | | |
| Wiring Terminal | 6AWG/16mm$^2$ | 2AWG/35mm$^2$ | 2AWG/35mm$^2$ |
| Recommended Cable | 6AWG/16mm$^2$ | 4AWG/25mm$^2$ | 2AWG/35mm$^2$ |
| Net Weight IP43 (Controller & White Terminal Cover) | 5.00Kg | 6.55Kg | 7.79kg |
| Net Weight IP32 (Controller Only) | 4.79Kg | 6.33Kg | 7.55kg |
| **Environmental Parameters** | | | |
| Operating Temperature Range | -25℃ to +60℃ (Derating when temperature is higher than 40℃) | | |
| LCD temperature range | -20℃ to +70℃ | | |
| Storage Temperature Range | -30℃ to +70℃ | | |
| Relative Humidity | 5%–95% (N.C) | | |
| Altitude | < 5,000M (Derating when altitude is higher than 2,000m) | | |
| Enclosure | IP43 (Controller & White Terminal Cover); IP32 (Controller Only) | | |
| Pollution Degree | PD2 | | |
| **Certification** | | | |
| Safety | EN/IEC62109-1 | | |
| EMC | EN61000-6-1 / EN61000-6-3 | | |
| FCC | 47 CFR Part 15, Subpart B | | |
| ROHS | IEC62321-3-1 | | |