

### 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<sup>(1)</sup>
- Supports two PV inputs<sup>(2)</sup>
- Max. MPPT tracking efficiency: 99.9%; Max. Conversion efficiency: 98.5%
- Compatible with AGM, Gel, Flooded, LiFePO4 batteries, etc.
- No battery mode: 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<sup>(3)</sup>
  - 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
<b>Electrical Parameters</b>			
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°C)		
MPPT Operating Voltage Range	(Battery voltage plus 2V, and > 28V) to 144V (@ 25 °C)		
Tracking Efficiency	≥ 99.5%		
Maximum Conversion Efficiency	98.3%	98.1%	98.5%
Temperature Compensation Coefficient	-3mV/°C/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)		
<b>Mechanical Parameters</b>			
Dimension (mm) (L×W×H) IP43 (Controller & White Terminal Cover)	307 × 253 ×143	320 × 263 ×158	352 × 263 ×158
Dimension (mm) (L× W×H) IP32 (Controller Only)	307 × 202 ×134	320 × 212 ×149	352 × 212 ×149
Mounting Dimension (L×W)	295 × 130	308 × 140	340 × 140
Mounting Hole Size (mm)	Φ7		
Wiring Terminal	6AWG/16mm <sup>2</sup>	2AWG/35mm <sup>2</sup>	2AWG/35mm <sup>2</sup>
Recommended Cable	6AWG/16mm <sup>2</sup>	4AWG/25mm <sup>2</sup>	2AWG/35mm <sup>2</sup>
Net Weight IP43 (kg) (Controller & White Terminal Cover)	5.00	6.55	7.79
Net Weight IP32 (kg) (Controller Only)	4.79	6.33	7.55
<b>Environmental Parameters</b>			
Operating Temperature Range	-25°C to +60°C (Derating when temperature is higher than 40°C)		
LCD temperature range	-20°C to +70°C		
Storage Temperature Range	-30°C to +70°C		
Relative Humidity	5%-95% (N.C)		
Altitude	5,000m (> 2,000m Derating)		
Enclosure	IP43 (Controller & White Terminal Cover); IP32 (Controller Only)		
Pollution Degree	PD2		
<b>Certification</b>			
Safety	EN/IEC62109-1		
EMC	EN61000-6-1 / EN61000-6-3		
FCC	47 CFR Part 15, Subpart B		
ROHS	IEC62321-3-1		