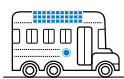


## Overview

XTRA(10A~40A) series is advanced maximum power point tracking (MPPT) charge controllers for off-grid photovoltaic systems, with optional display units (XDB1/XDS1/XDS2). It is designed according to the international standard with higher quality, reliability, and safety. The limitation function of the charging power, charging current, and automatic power reduction function fully ensure stability when working with oversize PV modules(max. 1.5 times of rated power) and operating under a high-temperature environment.

## Features

- MPPT tracking efficiency above 99.5%
- Maximum charge conversion efficiency as high as 97.4%
- Support lead-acid and lithium-ion batteries
- Multiple load work modes
- Charging power and current limitation function
- High-temperature charging power derating function
- Standard Modbus communication protocol with isolated RS485 interface
- Real-time energy statistics function
- Optional LCD display units (XDB1/XDS1/XDS2) and accessories
- IP33 ingress protection design
- CE(LVD IEC62109,EMC EN3/1-6-61000)and ROHS,ETL(UL-1741:2010 and Canadian CSA C22.2-No.107.1.01),FCC Class B Part 15 Compliant,IEC62509:2010



Solar Car



Solar Home



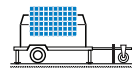
Solar Backpack



Solar Boat



Solar Street Light



Solar Power Generator

# Technical Specifications

| Model  | XTRA 1206N   | XTRA 2206N                   | XTRA 1210N   | XTRA 2210N                   | XTRA 3210N                   | XTRA 4210N                   | XTRA 3215N  | XTRA 4215N                    | XTRA 3415N                                     | XTRA 4415N                                      |
|--|--|------------------------------|--|------------------------------|------------------------------|------------------------------|---|-------------------------------|--|---|
| Nominal system voltage                           | 12/24VDC/<br>Auto  | 12/24VDC/<br>Auto            | 12/24VDC/<br>Auto  | 12/24VDC/<br>Auto            | 12/24VDC/<br>Auto            | 12/24VDC/<br>Auto            | 12/24VDC/<br>Auto   | 12/24VDC/<br>Auto             | 12/24/36/48<br>VDC/Auto                        | 12/24/36/48<br>VDC/Auto                         |
| Battery type                                     | Lead-acid (Sealed/Gel/Flooded)/Lithium (LiFePO <sub>4</sub> /Li(NiCoMn)O <sub>2</sub> )/User |                              |  |                              |                              |                              |   |                               |  |   |
| Battery input voltage range                      | 8~32V  | 8~32V                        | 8~32V  | 8~32V                        | 8~32V                        | 8~32V                        | 8~32V   | 8~32V                         | 8~68V  | 8~68V   |
| Rated charge current                             | 10A  | 20A                          | 10A  | 20A                          | 30A                          | 40A                          | 30A   | 40A                           | 30A  | 40A   |
| Rated discharge current                          | 10A  | 20A                          | 10A  | 20A                          | 30A                          | 40A                          | 30A   | 40A                           | 30A  | 40A   |
| Rated charge power                               | 130W/12V<br>260W/24V   | 260W/12V<br>520W/24V         | 130W/12V<br>260W/24V   | 260W/12V<br>520W/24V         | 390W/12V<br>780W/24V         | 520W/12V<br>1040W/24V        | 390W/12V<br>780W/24V  | 520W/12V<br>1040W/24V         | 390W/12V<br>780W/24V<br>1170W/36V<br>1560W/48V | 520W/12V<br>1040W/24V<br>1560W/36V<br>2080W/48V |
| Max. conversion efficiency                       | 97.90%   | 98.30%                       | 98.20%   | 98.30%                       | 98.60%                       | 98.60%                       | 97.60%  | 97.90%                        | 98.10%   | 98.50%  |
| Tracking efficiency                              | ≥99.5%   |                              |  |                              |                              |                              |   |                               |  |   |
| Max. PV open circuit voltage                     | 60V (At minimum operating environment temperature)<br>46V (At 25°C environment temperature)  |                              | 100V (At minimum operating environment temperature)<br>92V (At 25°C environment temperature) |                              |                              |                              | 150V (At minimum operating environment temperature)<br>138V (At 25°C environment temperature) |                               |  |   |
| MPP voltage range                                | (Battery voltage+2V)<br>~36V   | (Battery voltage+2V)<br>~36V | (Battery voltage +2V)<br>~72V  | (Battery voltage+2V)<br>~72V | (Battery voltage+2V)<br>~72V | (Battery voltage+2V)<br>~72V | (Battery voltage+2V)<br>~108V   | (Battery voltage+2V)<br>~108V | (Battery voltage+2V)<br>~108V                  | (Battery voltage+2V)<br>~108V                   |
| Equalization voltage                             | Sealed:14.6V,Flooded:14.8V,User-defined:9-17V  |                              |  |                              |                              |                              |   |                               |  |   |
| Boost voltage                                    | Gel:14.2V,Sealed:14.4V,Flooded:14.6V,User-defined:9-17V                                      |                              |  |                              |                              |                              |   |                               |  |   |
| Float voltage                                    | Gel/Sealed/Flooded:13.8V,User-defined:9-17V  |                              |  |                              |                              |                              |   |                               |  |   |
| Low voltage reconnect voltage                    | Gel/Sealed/Flooded:12.6V,User-defined:9-17V  |                              |  |                              |                              |                              |   |                               |  |   |
| Low voltage disconnect voltage                   | Gel/Sealed/Flooded:11.1V,User-defined:9-17V  |                              |  |                              |                              |                              |   |                               |  |   |
| Self-consumption                                 | ≤14mA(12V)<br>≤15mA(24V)   | ≤14mA(12V)<br>≤15mA(24V)     | ≤30mA(12V)<br>≤16mA(24V)   | ≤30mA(12V)<br>≤16mA(24V)     | ≤30mA(12V)<br>≤16mA(24V)     | ≤30mA(12V)<br>≤16mA(24V)     | ≤30mA(12V)<br>≤16mA(24V)  | ≤30mA(12V)<br>≤16mA(24V)      | ≤30mA(12V)<br>≤16mA(24V)<br>≤13mA(36V)         | ≤30mA(12V)<br>≤16mA(24V)<br>≤13mA(36V)          |
| Temperature compensation (for lead-acid battery) | -3mV/°C/2V (Default)   |                              |  |                              |                              |                              |   |                               |  |   |
| Relative humidity                                | ≤95%, N.C  |                              |  |                              |                              |                              |   |                               |  |   |
| Enclosure  | IP33   |                              |  |                              |                              |                              |   |                               |  |   |
| Communication interface                          | RS485(RJ45)  |                              |  |                              |                              |                              |   |                               |  |   |
| Grounding  | Common negative  |                              |  |                              |                              |                              |   |                               |  |   |
| Operating temperature range                      | -25°C ~ +50°C(LCD); -30°C ~ +50°C(No LCD)  |                              |  |                              |                              |                              | -25°C ~ +45°C(LCD); -30°C ~ +45°C(No LCD)   |                               |  |   |
| Dimensions(LxWxH)(mm)                            | 175×143<br>x48   | 217×158<br>x56.5             | 175×143<br>x48   | 217×158<br>x56.5             | 230×165<br>x63               | 255×185<br>x67.8             | 255×185<br>x67.8  | 255×187<br>x75.7              | 255×187<br>x75.7                               | 255×189<br>x83.2                                |
| Net weight                                       | 0.57kg   | 0.96kg                       | 0.57kg   | 0.96kg                       | 1.31kg                       | 1.70kg                       | 1.70kg  | 2.07kg                        | 2.07kg   | 2.47kg  |

1. The controller can't automatically identify system voltage if lithium batteries were connected.

2. The voltage point is for 12V system, please \*2 in 24V system, \*3 in 36V system, \*4 in 48V system.