

XTRA-N SERIES

MPPT Solar Charge Controller



The XTRA-N series integrate the latest design philosophy, as the main part which is the solar charge controller can carry different display units(XDB1/XDS1/XDS2). The limitation function of the charging power and current and reducing charging power function automatic improve the stability which works even connecting oversize PV modules and in high temperature. Meanwhile, it adopts the water-proof design with the IP32 class, and increase the professional protection chip for the communication port, further improving the reliability and meeting the different application requirements.

Improving the MPPT control algorithm further, XTRA N series can minimize the maximum power point loss rate and loss time, quickly track the maximum power point of the PV array and obtain the maximum energy from solar modules under any conditions; and can increase the ratio of energy utilization in the solar system by 10%-30% compared with a PWM charging method.

With the adaptive three-stage charging mode based on a digital control circuit, XTRA N series controllers can effectively prolong the life-cycle of batteries, significantly improve the system performance and support all-around electronic protection functions, including overcharging and over discharging protection to minimize damages to components of the system caused by incorrect installation or system failure at the utmost, and effectively ensure safer and more reliable operation of the solar power supply system for a longer service time. This modular solar controller can be widely used for different applications, e.g., Communication base stations, household systems, and field monitoring, etc.

Product models

XTRA1206N/XTRA2206N

XTRA1210N/XTRA2210N

XTRA3210N/XTRA4210N



Product portfolio

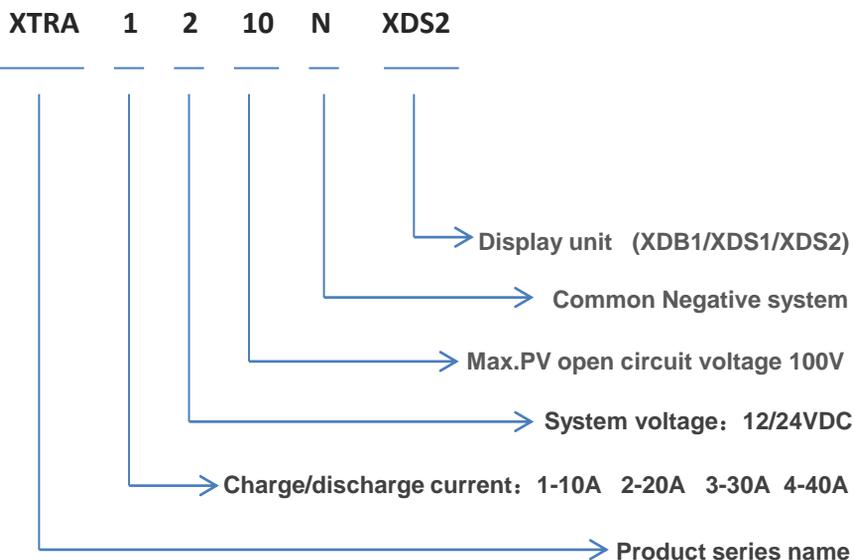


NOTES::Optional LCD display units (XDB1/XDS1/XDS2)

Product naming rule



12V/24V,10A



Product Features

- Optional LCD display units (XDB1/XDS1/XDS2)
- Full-load operation without any drop in capacity within the range of working environment temperature
- Dustproof and waterproof design with IP32*class International famous brands of ST and IR's components of high quality and low failure rate are used, which can ensure the product's service life
- The communication port adopts professional protection chip, which can provide 5VDC power supply, and has over-current and short-circuit protection.
- Advanced MPPT technology, with efficiency no less than 99.5%
- Advanced MPPT control algorithm to minimize the maximum power point loss rate and loss time
- High quality components, perfecting system performance, with maximum conversion efficiency of 98%
- Ultra-fast tracking speed and guaranteed tracking efficiency
- Accurate recognition and tracking of multiple-peaks maximum power point
- Automatic limitation of the charging power and current
- Wide MPP operating voltage range
- Compatible with lead-acid and lithium-ion batteries
- Battery temperature compensation function
- Real-time energy statistics function
- Overheating power reduction function
- Multiple load work modes
- With RS-485 communication bus interface and Modbus communication protocol, it is available to meet various communication requirements in different situations.
- Monitor and set the parameters via mobile phone APP or PC software
- Extensive electronic protection

Protection

- PV Over Current protection
- PV Reverse Polarity protection
- Battery Reverse Polarity protection
- Battery Over Discharge protection
- Lithium Battery Low Temperature protection
- Load Overload protection
- TVS High Voltage Transients protection
- PV Short Circuit protection
- Night Reverse Charging protection
- Battery Over Voltage protection
- Battery Overheating protection
- Load Short Circuit protection
- Controller Overheating protection

Accessories



Remote Meter(MT50)

Set the controller parameter via the LCD display



Logger (eLOG01)

Real-time parameter recording of the product through the RS485 communication mode



Bluetooth adapter (eBox-BLE-01)

with 2m communication cable (for the controller with RS485 port)



WIFI adapter (eBox-WIFI-01)

with 2m communication cable (for the controller with RS485 port)



Remote temperature sensor RTS300R47K3.81A (3m)



Communication cable CC-USB-RS485-150U

USB to RS485 PC communication cable (1.5m)



OTG cable (OTG-12CM)

Connect the controller to mobile APP



Electrical Parameters

Item	XTRA 1206N	XTRA 2206N	XTRA 1210N	XTRA 2210N	XTRA 3210N	XTRA 4210N
System nominal voltage	12/24VDC ^① Auto					
Rated charge current	10A	20A	10A	20A	30A	40A
Rated discharge current	10A	20A	10A	20A	30A	40A
Battery voltage range	8~32V					
Max. PV open circuit voltage	60V ^② 46V ^③		100V ^② 92V ^③			
MPP voltage range	(Battery voltage +2V)~36V		(Battery voltage +2V)~72V			
Max. PV input power	130W/12V 260W/24V	260W/12V 520W/24V	130W/12V 260W/24V	260W/12V 520W/24V	390W/12V 780W/24V	520W/12V 1040W/24V
Self-consumption	≤12mA					
Discharge circuit voltage drop	≤0.23V					
Temperature compensate coefficient ^④	-3mV/°C/2V (Default)					
Grounding	Common negative					
RS485 interface	5VDC/100mA					
USB interface	60S (Default)					

①When a lead-acid battery is used, the controller doesn't the low temperature protection.

②At minimum operating environment temperature

③At 25°C environment temperature

④When a lithium-ion battery is used, the system voltage can't be identified automatically.

Environmental Parameters

Working environment temperature◆(100% input and output)	-25°C~+50°C (LCD) -30°C~+50°C (No LCD)
Storage temperature range	-20°C~+70°C
Relative humidity	≤95%, N.C.
Enclosure	IP32★

◆Within the range of working environment temperature, the controller can operate under full load ; but when its internal temperature exceeds 81°C, the controller will reduce the charging power automatically.

★3-Dustproof: It can prevent any solid foreign objects with the diameter larger than 2.5mm from invading;

2-Waterproof: When tilted for 15° , it still can prevent any water droplets from immersing.

Mechanical Parameters

Item	XTRA1206N XTRA1210N	XTRA2206N XTRA2210N	XTRA3210N	XTRA4210N
Dimension	175×143×48mm	217×158×56.5mm	230×165×63mm	255×185×67.8mm
Mounting dimension	140×134mm	180×149mm	180×159mm	200×176mm
Mounting hole size	Φ5mm			
Terminal	12AWG(4mm ²)	6AWG(16mm ²)	6AWG(16mm ²)	6AWG(16mm ²)
Recommended cable	12AWG(4mm ²)	10AWG(6mm ²)	8AWG(10mm ²)	6AWG(16mm ²)
Weight	0.57kg	0.96kg	1.31kg	1.67kg

Certifications

ROHS	FCC	CE	IEC62109:2010	IEC62509:2010
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