

# Tracer-AN series

## MPPT Solar Charge Controller (50A-100A)



### Product models

Tracer5210AN/Tracer6210AN

Tracer5415AN/Tracer6415AN

Tracer8415AN/Tracer10415AN

Tracer5420AN/Tracer6420AN

Tracer8420AN/Tracer10420AN

### Overview

Tracer AN series controller, based on multiphase synchronous rectification technology (MSRT) and advanced MPPT control algorithm, with dual-core processor architecture and common negative design, has the features of high response speed, high reliability, and high industrial standard. MSRT can guarantee very high conversion efficiency in any charge power, which sharply improves the energy efficiency of solar system; Advanced MPPT control algorithm minimize the maximum power point loss rate and loss time, to ensure the tracking efficiency, corresponding speed as well as high conversion efficiency under high or low power, so that in any situation, Tracer AN products can rapidly track the maximum power point (MPP) of PV array to obtain the maximum energy of the panel. The limitation function of the charging power and current and automatic power reduction function fully ensure the stability when works with oversize PV modules and operate under high temperature environment. With the adaptive three-stage charging mode based on digital control circuit, Tracer AN series controllers can effectively prolong the life-cycle of battery and significantly improve the system performance. The load, utility or generator auto-control relays make it easy to compose the hybrid power system. All-around electronic protections, including overcharging, over discharging, and PV reverse polarity protection, effectively ensure the safer and more reliable operation of the solar system for a longer service time. The isolated RS485 interface with standard MODBUS communication protocol and 5V power supply makes it easy for customer to expand the application, Support up to 8 charging in parallel to expand system and meet with different monitoring requirements, so that can be widely used for various applications, e.g. solar RV, household system and field monitoring, etc.

## Product Features

- CE certification(LVD EN/IEC62109,EMC EN61000-6-1/3)
- High quality & low failure rate components of ST and Infineon to ensure the product's life
- Advanced MPPT technology & ultra-fast tracking speed is up to 99.5% guaranteed
- Maximum DC/DC transfer efficiency is as high as 98.7%
- Advanced MPPT control algorithm will minimize the MPP loss rate and loss time
- The accuracy of the recognition and tracking at the highest point of multiple-peaks MPP
- The wider range of MPP operating voltage.
- Auto control system to limit the charging power & current go over the rated value.
- Support 4 charging options: Sealed, Gel, Flooded and User.
- Battery temperature compensation function
- Real-time energy recording and statistical function
- Automatic over-temperature power reduction function
- Hundred percent full load operation in working environment temperature range within charging & discharging

- Support up to 8 units in parallel to expand system
- Load relay control external load switch signal to realize diversified load work modes
- The first and the second disconnection of load control, contain two relay's contact.
- Auto-control of utility and generator relay design
- Utility or generator auto-control relays make it easy to compose the hybrid power system
- The remote temperature and the voltage sensor design will collect accurate data of battery temperature and voltage
- Isolated RS-485 with 5VDC/200mA to protect output for no power devices with MODBUS protocol
- To monitor or set the parameters by using the phone Apps or PC software.

## Protection

- |                          |                          |                               |
|--------------------------|--------------------------|-------------------------------|
| • PV Over Current/power  | • PV Short Circuit       | • PV Reverse Polarity         |
| • Night Reverse Charging | • Battery Over Voltage   | • Battery Over Discharge      |
| • Battery Overheating    | • Controller Overheating | • TVS High Voltage Transients |

## Accessories



### Remote Meter(MT50)

Set the controller parameter via the LCD display



### Data logger (eLOG01)

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



### Bluetooth adapter (Box-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 )



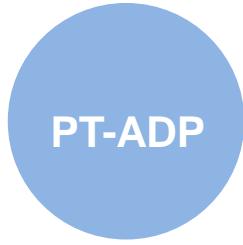
### Remote temperature sensor RTS300R47K3.81A (3m)



### Communication cable

#### CC-USB-RS485-150U

USB to RS485 PC communication cable (1.5m)



### PT Adapter PT-ADP

Manage to work and communicate with the 2 to 8 pcs controllers in parallel

## Technical specifications

Item	Tracer5210AN	Tracer6210AN	Tracer5415AN	Tracer6415AN	Tracer8415AN			
Nominal System Voltage	12/24VDC or Auto		12/24/36/48VDC or Auto					
Battery Input Voltage Range	8V~32V		8V~68V					
Battery Type	Sealed/Gel/Flooded/User							
Battery fuse	80A/58V				150A/58V			
Rated charge current	50A	60A	50A	60A	80A			
Rated charge Power	625W/12V 1250W/24V 1875W/36V 2500W/48V	750W/12V 1500W/24V 2250W/36V 3000W/48V	625W/12V 1250W/24V 1875W/36V 2500W/48V	750W/12V 1500W/24V 2250W/36V 3000W/48V	1000W/12V 2000W/24V 3000W/36V 4000W/48V			
Max. PV open circuit voltage	100V① 92V②		150V① 138V②					
MPP Voltage Range	(Battery Voltage+2V) ~72V③		(Battery Voltage +2V) ~108V③					
Tracking efficiency	≥99.5%							
Conversion efficiency	≤98.7%							
Temperature compensate coefficient	-3mV/°C/2V(Default)							
Self-consumption	98mA/12V;60mA/24V;50mA/36V;46mA/48V							
Grounding	Common negative							
Relay	Rated Value:5A/30VDC; Max. Value:0.5A/60VDC							
RS485 interface	RS485(RJ45)							
LCD backlight time	60S(Default)							
Item	Tracer10415AN	Tracer5420AN	Tracer6420AN	Tracer8420AN	Tracer10420AN			
Nominal System Voltage	12/24/36/48VDC or Auto							
Battery Input Voltage Range	8V~68V							
Battery Type	Sealed/Gel/Flooded/User							
Battery fuse	150A/58V	80A/58V		150A/58V				
Rated charge current	100A	50A	60A	80A	100A			

Rated charge Power	1250W/12V 2500W/24V 3750W/36V 5000W/48V	625W/12V 1250W/24V 1875W/36V 2500W/48V	750W/12V 1500W/24V 2250W/36V 3000W/48V	1000W/12V 2000W/24V 3000W/36V 4000W/48V	250W/12V 2500W/24V 3750W/36V 5000W/48V
Max. PV open circuit voltage	150V① 138V②	200V① 180V②			
MPP Voltage Range	(Battery Voltage +2V) ~108V③	(Battery Voltage+2V) ~144V③			
Tracking efficiency	≥99.5%				
Conversion efficiency	≤98.7%				
Temperature compensate coefficient	-3mV/°C/2V(Default)				
Self-consumption	98mA/12V;60mA/24V;50mA/36V;46mA/48V				
Grounding	Common negative				
Relay	Rated Value:5A/30VDC; Max. Value:0.5A/60VDC				
RS485 interface	RS485(RJ45)				
LCD backlight time	60S(Default)				

①At minimum operating environment temperature;

②At 25 °C environment temperature

③The maximum PV open circuit voltage must never exceed 138V or 180V at 25 °C environment temperature.

## Environmental Parameters

Ambient temperature range	-25°C ~ +45°C
LCD temperature range	-20°C ~ +70°C
Storage temperature range	-30°C ~ +85°C
Humidity	≤95%, N.C.
Enclosure	IP20

## Mechanical Parameters

Item	Tracer5210/5415/5420AN	Tracer6210/6415/6420AN
Dimension	261×216×119mm	340×236×119mm
Mounting dimension	180×204mm	260×224mm
Mounting hole size		Φ7
Terminal	6AWG(16mm <sup>2</sup> )	2AWG(35mm <sup>2</sup> )
Recommended cable	6AWG(16mm <sup>2</sup> )	16mm <sup>2</sup> (5AWG)
Weight	3.5kg	4.5kg

Item	Tracer8415/8420AN	Tracer10415/10420AN
Dimension	394×240×134mm	394×242×143mm
Mounting dimension	300×228mm	300×230mm
Mounting hole size		Φ7
Terminal		2AWG(35mm <sup>2</sup> )
Recommended cable	25mm <sup>2</sup> (4AWG)	35mm <sup>2</sup> (2AWG)
Weight	6.1kg	7.4kg

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