

## Tracer series

## 40A 12V 24V MPPT Solar charge controller

### Introduction:

EPSOLAR Tracer series controller adopts MPPT technology (Maximum Power Point Tracking). The advanced tracking algorithm make the solar module operate at ideal voltage which the solar modules can produce the maximum available power. Compared to conventional PWM controller, MPPT technology increase charge efficiency up to 30% and decrease the power of solar array needed.

Tracer has the ability to step-down the higher voltage solar array to recharge a lower voltage battery bank. Max. 150VDC input. So it allows on grid solar modules or thin film modules to charge the off-grid battery. And the cable size can be reduced because of the small current from the solar array.

### Key features:

- ✧ MPPT technology
- ✧ Peak conversion efficiency of 97 %
- ✧ High Tracking efficiency of 99%
- ✧ Several seconds tracking speed
- ✧ Very fast Sweeping of the entire I-V curve
- ✧ 4- Stage charge with PWM output
- ✧ Excellent thermal design and nature air cooling
- ✧ Full power output in ambient temperatures up to 45°C
- ✧ Temperature compensation function
- ✧ Sealed, Gel, Flooded battery type optional
- ✧ Diversified load control: Manual, Dusk to Dawn, Dual timer, TEST
- ✧ RJ45 interface with optional remote meter
- ✧ Standard 2 years warranty
- ✧ CE certificate

## Electronic protections

- ◇ PV Array Short Circuit
- ◇ PV Overvoltage/Overcurrent
- ◇ Load Overload
- ◇ Load short circuit
- ◇ PV Reverse Polarity
- ◇ Battery Reverse Polarity
- ◇ High Voltage Transients



## Environmental Specification

| Environment   | Parameter     |
|---------------|---------------|
| Working temp. | -35°C ~+55°C  |
| Storage temp. | -35°C ~+80°C  |
| Humidity      | 10%-90%(NC)   |
| protection    | IP30 (indoor) |

## Technical specification:

### • Mechanical Parameters

|                    |   |                                |                                |
|--------------------|---|--------------------------------|--------------------------------|
| Model              | Tracer-1206RN<br>Tracer-1210RN<br>Tracer-1215RN | Tracer-2210RN<br>Tracer-2215RN | Tracer-4210RN<br>Tracer-4215RN |
| Dimension          | 156 x 97 x 68 mm                                | 169 x 118 x 83 mm              | 242 x 169x 91 mm               |
| Mounting holes     | 147 x 60 mm                                     | 160 x 80 mm                    | 180 x 160 mm                   |
| Mounting hole size | Φ5  | Φ5                             | Φ5                             |
| Terminal           | 4mm <sup>2</sup>                                | 10mm <sup>2</sup>              | 25mm <sup>2</sup>              |
| Weight             | 0.55kg  | 0.95kg                         | 2.05kg                         |

### Electrical Parameters

|                           |   |                                    |                                     |
|---------------------------|---|------------------------------------|-------------------------------------|
| Model                     | Tracer-1206RN<br>Tracer-1210RN<br>Tracer-1215RN | Tracer-2210RN<br>Tracer-2215RN     | Tracer-4210RN<br>Tracer-4215RN      |
| System voltage            | 12VDC/ 24VDC auto work                          |                                    |                                     |
| Max. battery current      | 10A   | 20A                                | 40A                                 |
| <b>Rated Load Current</b> | 10A   | 20A                                | 20A                                 |
| Battery voltage range     | 32V   |                                    |                                     |
| Max. solar input voltage  | 60VDC<br>(Tracer-1206RN)                        | —                                  | —                                   |
|                           | 100VDC<br>(Tracer-1210RN)                       | 100VDC<br>(Tracer-2210RN)          | 100VDC<br>(Tracer-4210RN)           |
|                           | 150VDC<br>(Tracer-1215RN)                       | 150VDC<br>(Tracer-2215RN)          | 150VDC<br>(Tracer-4215RN)           |
| Max. PV input powe        | 12V system 130W<br>24V system 260W              | 12V system 260W<br>24V system 520W | 12V system 520W<br>24V system 1040W |

|                                |                    |
|--------------------------------|--------------------|
| Self-consumption*              | <10mA(24V)         |
| Charge Circuit Voltage Drop    | ≤0.26V             |
| Discharge Circuit Voltage Drop | ≤0.15V             |
| Communication                  | TTL232 / 8pin RJ45 |

\* Charging & discharging circuit close, LED indicator & tube OFF, remote meter disconnected.

### Battery charging

|                          |                   |
|--------------------------|-------------------|
| Battery charging setting | Parameter setting |
| Charging mode            | Four stages       |
| Temp. compensation       | -5mV/°C/2V (25°C) |

### Battery voltage setting (25°C)

| Charging Parameter       |               |               |               |
|--------------------------|---------------|---------------|---------------|
| Battery charging setting | Gel           | Sealed        | Flooded       |
| High Volt Disconnect     | 16V; x2/24V   | 16V; x2/24V   | 16V; x2/24V   |
| Charging limits voltage  | 15.5V; x2/24V | 15.5V; x2/24V | 15.5V; x2/24V |
| Equalization voltage     | —             | 14.6V; x2/24V | 14.8V; x2/24V |
| Boost voltage            | 14.2V; x2/24V | 14.4V; x2/24V | 14.6V; x2/24V |
| Float voltage            | 13.8V; x2/24V | 13.8V; x2/24V | 13.8V; x2/24V |
| Boost return voltage     | 13.2V; x2/24V | 13.2V; x2/24V | 13.2V; x2/24V |
| Low voltage reconnect    | 12.6V; x2/24V | 12.6V; x2/24V | 12.6V; x2/24V |
| Under voltage recover    | 12.2V; x2/24V | 12.2V; x2/24V | 12.2V; x2/24V |
| Under voltage warning    | 12V; x2/24V   | 12V; x2/24V   | 12V; x2/24V   |
| Low voltage disconnect   | 11.1V; x2/24V | 11.1V; x2/24V | 11.1V; x2/24V |
| Boost duration           | 2hours        | 2hours        | 2hours        |
| Equalize duration        | —             | 2hours        | 2hours        |