

MPPT Solar Charge Controller

LCD / LED 5 A ~ 60 A

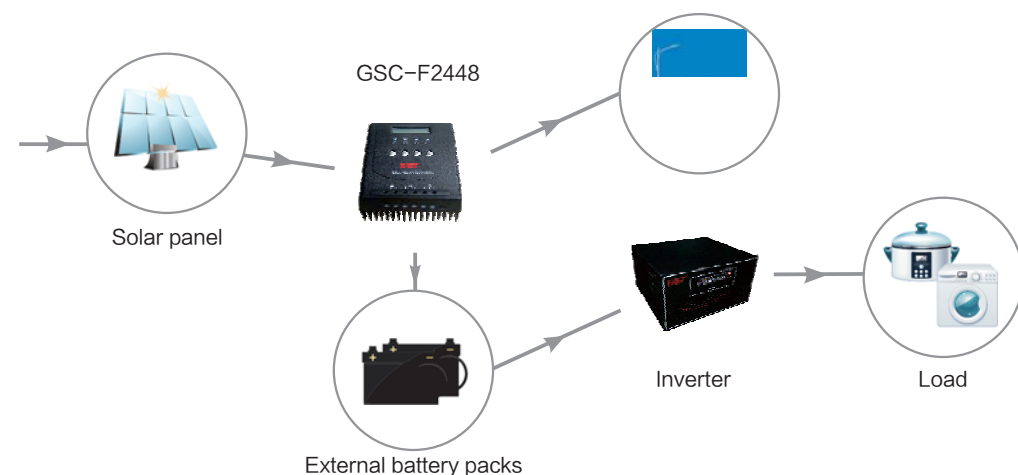
Applications

- Solar home system
- Public security monitoring system
- Solar street lamp system
- DC signal light power supply system
- Small and medium-sized telecommunication station
- Small PV power station and solar DC power supply system



Features

- **Unattended:** PV auto-start and auto-charging, no need of manual operation.
- **High efficient MPPT:** Multiple Power Point Trackers (MPPTs) enable the output power of solar panel array to be at maximum state, improving the energy conversion 20% ~ 30%.
- **High reliability:** Adopt advanced microprocessor to achieve "MPPT + SOC" dual intelligent optimized charging control to ensure the product to be stable and reliable
- **Intelligent charging management:** Adopt charging mode combined constant current and constant voltage to ensure effective battery charging and battery life.
- **Battery protections:** Automatically test the battery running condition. The system will automatically shut down in the event of overdischarge to avoid consuming the battery energy.
- **High efficiency:** Adopt low power consumption MOSFET and PWM soft switch and synchronous rectifier technology, effectively improving the system operating efficiency.
- **Intelligent:** Auto-start by Illumination recognition (optional) – the system can configure auto start the load in the event of insufficient sunshine, such as fog, rain, night etc.
- **Protections:** Overcharge / overdischarge, short circuit, overload, reverse connection, TVS lightning protection etc.
- **Strong adaptability (optional):** Charging voltage is settable to adapt to lithium battery and lead-acid battery
- **Communications (optional):** RS232 and dry contacts port for communication and real-time monitoring
- **Temperature compensation (optional):** The test interface of ambient temperature of the external battery group is available. The battery charging voltage is adjustable in real time according to the ambient temperature of the battery.



Technical Data

| MODEL | F12-05/10/M | F12-20 | F24-05/10/M | F24-20 | F1224-10/20/30/40/50/60 M F2448-10/20/30/40/50/60 M |
|---------------------------------------|--|--------|--|--------|---|
| Display | LED | | | | LCD + LED |
| Rated voltage | 12 V | | 24 V | | 12 V / 24 V; 24 V / 48 V |
| Max. charging current | 5 / 10 A | 20 A | 5 / 10 A | 20 A | 10/20/30/40/50/60 A |
| Max. load current | 5 / 10 A | 20 A | 5 / 10 A | 20 A | 10/20/30/40/50/60 A |
| Max. PV power | 12 V - 05 A 60 W 12 V - 10 A 120 W | 240 W | 24 V - 05 A 120 W 24 V - 10 A 240 W | 480 W | 12V - 120/240/360/480/600/720 W 24V - 240/480/720/960/1200/1440 W 48V - 480/960/1440/1920/2400/2880 W |
| Battery capacity (lead-acid) | 17 Ah ~ 400 Ah | | | | 38 Ah ~ 800 Ah |
| Max. efficiency | ≥ 98% | | | | |
| Max. PV input voltage | F1224 (12 V: 0 ~ 30 V; 24 V: 0 ~ 60 V); F2448 (24 V: 0 ~ 48 V; 48 V: 0 ~ 96 V) | | | | |
| Optimum operating voltage of PV (Vmp) | 12 V: 15 ~ 22 V; 24 V: 29 ~ 38 V; 48 V: 58 ~ 72 V | | | | |
| Equalizing charge voltage | 12 V: 14.6 V ±1 %; 24 V: 29.2 V ±1 %; 48 V: 58.4 V ±1 % | | | | |
| Floating charge voltage | 12 V: 14.4 V ±1 %; 24 V: 28.8 V ±1 %; 48 V: 57.6 V ±1 % | | | | |
| Overcharge protections | 12 V: 14.7 V ±1 %; 24 V: 29.4 V ±1 %; 48 V: 58.8 V ±1 % | | | | |
| Charging fold-back voltage | 12 V: 13.2 V ±1 %; 24 V: 26.4 V ±1 %; 48 V: 52.8 V ±1 % | | | | |
| Undervoltage alarm | 12 V: 11.2 V ±1 %; 24 V: 22.4 V ±1 %; 48 V: 44.8 V ±1 % | | | | |
| Overdischarge protections | 12 V: 10.8 V ±0.3 V; 24 V: 21.6 V ±0.3 V; 48 V: 43.2 V ±0.4 V | | | | |
| Overdischarge restoring start voltage | 12 V: 13.2 V ±0.3 V; 24 V: 26.4 V ±0.3 V; 48 V: 52.8 V ±0.4 V | | | | |
| Overload / short circuit protections | 110% for 255 s; 125% for 60 s; 150% for 10 s / Auto shutdown if short circuit | | | | |
| PV reverse polarity protection | Available | | | | |
| Communications (optional) | RS232 / dry contacts | | | | |
| Operating temperature | -20°C ~ +45°C | | | | |
| Storage temperature | -25°C ~ +85°C | | | | |
| Max. altitude | 1000 m at rated power (derating 1% for each additional 100 m); Max. 4000 m | | | | |
| Relative humidity | 0 ~ 95% (non-condensing) | | | | |
| Storage humidity | ≤ 85% | | | | |
| Installation | Vertical wall mounting | | | | |
| Dimensions (W × D × H) (mm) | 136 × 100 × 35 | | | | 164 × 168 × 55 (F1224-10/20/30 M & F2448-10/20 M) 164 × 168 × 100 (F1224-40/50/60 M & F2448-30/40/50/60 M) |
| Packaged dimensions (W × D × H) (mm) | 145 × 110 × 45 | | | | 215 × 208 × 145 |
| Net weight (kg) | 0.23 | | | | 0.85 (F1224-10/20/30 M & F2448-10/20 M) 2.05 (F1224-40/50/60 M & F2448-30/40/50/60 M) |
| Gross weight (kg) | 0.28 | | | | 1.05 (F1224-10/20/30 M & F2448-10/20 M) 2.25 (F1224-40/50/60 M & F2448-30/40/50/60 M) |

Disclaimer:

- These data in this document are tested under specified conditions. It may result in difference between actual results and these data due to some uncertain factors. The statement about this product is for reference only. It makes no representation or warranty.
- All specifications subject to change without notice.