GOODWE

# ES Uniq Series

## 8-12kW I Single Phase I 2 MPPTs
## Hybrid Inverter (LV)

The ES Uniq Series is a dedicated single-phase hybrid inverter engineered for residential applications, delivering cost-effective energy storage solutions with capacities of 8, 10, and 12kW. This inverter is designed to work seamlessly with 182mm modules, providing a 200% oversizing capacity. Crucially, it can manage up to a 200% overload, ensuring dependable performance, especially during peak usage. It facilitates the parallel connection of up to 16 inverters for both on-grid and off-grid operations, making it well-suited for expanding energy requirements. Moreover, the ES Uniq inverter facilitates generator management and allows for the storage of energy generated by generators.

### Flexible & Adaptable Applications

· Generator compatibility and charge for battery
· On- and off-grid parallel connection
· Micro-grid solution

### Higher Power Generation

· Max. 16A DC input current per string
· 200% PV input oversizing

### Superb Safety & Reliability

· Optional AFCI[1]
· IP66 ingress protection

### Smart Control & Monitoring

· Smart load control
· Backup with UPS-level switching <10ms

1: Optional functions or devices are purchased separately.

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| Technical Data | GW8000-ES-C10 | GW10K-ES-C10 | GW12K-ES-C10 |
|---|---|---|---|
| **Battery Input Data** | | | |
| Battery Type*1 | | Li-Ion / Lead-acid | |
| Nominal Battery Voltage (V) | | 48 | |
| Battery Voltage Range (V) | | 40 ~ 60 | |
| Start-up Voltage (V) | | 44.2 | |
| Number of Battery Input | | 1 | |
| Max. Continuous Charging Current (A) | 160 | 200 | 240 |
| Max. Continuous Discharging Current (A) | 160 | 200 | 240 |
| Max. Charging Power (kW) | 8.0*2 | 10.0*2 | 12.0*2 |
| Max. Discharging Power (kW) | 8.8*2 | 11.0*2 | 13.2*2 |
| **PV String Input Data** | | | |
| Max. Input Power (kW) | 16 | 20 | 24 |
| Max. Input Voltage (V)*3 | | 600 | |
| MPPT Operating Voltage Range (V)*4 | | 60 ~ 550 | |
| Start-up Voltage (V) | | 58 | |
| Nominal Input Voltage (V) | | 360 | |
| Max. Input Current per MPPT (A) | 32 / 16*5 | 32 / 32*5 | 32 / 32*5 |
| Max. Short Circuit Current per MPPT (A) | 48 / 24 | 48 / 48 | 48 / 48 |
| Number of MPPT Trackers | | 2 | |
| Number of Strings per MPPT | 2 / 1 | 2 / 2 | 2 / 2 |
| **AC Output Data (On-grid)** | | | |
| Nominal Output Power (kW) | 8.0 | 10.0 | 12.0 |
| Nominal Apparent Power Output to Utility Grid (kVA) | 8.0 | 10.0 | 12.0 |
| Max. AC Active Power (kW)*6*7 | 8.8 | 11.0 | 13.2 |
| Max. Apparent Power Output to Utility Grid (kVA)*6*7 | 8.8 | 11.0 | 13.2 |
| Max. Apparent Power from Utility Grid (kVA) | | 16.5 | |
| Nominal Output Voltage (V) | | 220 / 230 / 240 | |
| Output Voltage Range (V) | | 170 ~ 280 | |
| Nominal AC Grid Frequency (Hz) | | 50 / 60 | |
| AC Grid Frequency Range (Hz) | | 45 ~ 55 / 55 ~ 65 | |
| Max. AC Current Output to Utility Grid (A) | 40 | 50 | 60 |
| Max. AC Current From Utility Grid (A) | | 75 | |
| Power Factor | | ~1 (Adjustable from 0.8 leading to 0.8 lagging) | |
| Max. Total Harmonic Distortion | | <3% | |
| **AC Output Data (Back-up)** | | | |
| Back-up Nominal Apparent Power (kVA) | 8.0 | 10.0 | 12.0 |
| Max. Output Apparent Power without Grid (kVA) | 8.8 (16, 10s) | 1.1 (20, 10s) | 1.32 (24, 10s) |
| Max. Output Apparent Power with Grid (kVA) | | 16.5 | |
| Max. Output Current without Grid (A) | 40 | 50 | 60 |
| Max. Output Current with Grid (A) | | 75 | |
| Nominal Output Voltage (V) | | 220 / 230 / 240 | |
| Nominal Output Frequency (Hz) | | 50 / 60 | |
| Output THDv (@Linear Load) | | <3% | |
| **AC Data (Generator)** | | | |
| Nominal Apparent Power from AC generator (kVA) | 8.0 | 10.0 | 12.0 |
| Max. Apparent Power from AC generator (kVA) | 8.8 | 11.0 | 13.2 |
| Nominal Intput Voltage (V) | | 220 / 230 / 240 | |
| Input Voltage Range (V) | | 170 ~ 280 | |
| Nominal AC generator Frequency (Hz) | | 50 / 60 | |
| AC generator Frequency Range (Hz) | | 45 ~ 55 / 55 ~ 65 | |
| Max. AC Current From AC generator (A) | 50.0 | 54.5 | 54.5 |
| Nominal AC Current From AC generator (A) | 36.4 at 220V<br>34.8 at 230V<br>33.3 at 240V | 45.5 at 220V<br>43.5 at 230V<br>41.7 at 240V | 54.5 at 220V<br>52.2 at 230V<br>50.0 at 240V |
| Nominal Input Current (A) | 36.4 at 220V<br>34.8 at 230V<br>33.3 at 240V | 45.5 at 220V<br>43.5 at 230V<br>41.7 at 240V | 54.5 at 220V<br>52.2 at 230V<br>50.0 at 240V |
| **Efficiency** | | | |
| Max. Efficiency | | 97.6% | |
| European Efficiency | | 96.2% | |
| Max. Battery to AC Efficiency | | 95.5% | |
| MPPT Efficiency | | 99.9% | |
| **Protection** | | | |
| PV String Current Monitoring | | Integrated | |
| PV Insulation Resistance Detection | | Integrated | |
| Residual Current Monitoring | | Integrated | |
| PV Reverse Polarity Protection | | Integrated | |
| Anti-islanding Protection | | Integrated | |
| AC Overcurrent Protection | | Integrated | |
| AC Short Circuit Protection | | Integrated | |
| AC Overvoltage Protection | | Integrated | |
| DC Switch | | Integrated | |
| DC Surge Protection | | Type III | |
| AC Surge Protection | | Type III | |
| AFCI | | Optional | |
| Rapid Shutdown | | Optional | |
| Remote Shutdown | | Integrated | |
| **General Data** | | | |
| Operating Temperature Range (℃) | | -35 ~ +60 | |
| Relative Humidity | | 0 ~ 95% | |
| Max. Operating Altitude (m) | | 3000 | |
| Cooling Method | | Smart Fan Cooling | |
| User Interface | | LCD, WLAN + APP | |
| Communication with BMS | | CAN | |
| Communication | | RS485, WiFI + LAN + Bluetooth | |
| Communication Protocols | | Modbus-RTU, Modbus-TCP | |
| Weight (kg) | 27 | 29 | 29 |
| Dimension (W x H x D mm) | | 560 x 444.5 x 226 | |
| Topology | | Non-isolated | |
| Ingress Protection Rating | | IP66 | |
| Mounting Method | | Wall Mounted | |

*1: The Li-Ion battery usually contain two mainstream type: LFP and Ternary Lithium battery.
*2: When the PV input voltage is higher than 490V, the battery charging and discharging power will be gradually limited, and the power limitation will be lifted after the input voltage is lowered.
*3: When the input voltage is 560V-600V, the inverter will enter standby mode. The inverter will return to normal operation state when the voltage returns to the MPPT working voltage range.
*4: Please refer to the user manual for the MPPT Voltage Range at Nominal Power.
*5: The maximum input current per string is 16A. Or For the MPPT with two strings, the current of each string is 16A.
*6: For Sri Lanka, Max. Output Power (kW) is 8.0kW for GW8000-ES-C10, 10.0kW for GW10K-ES-C10, and 12.0kW for GW12K-ES-C10.
*7: For Brazil and Chile, the max. AC output power is Pn, such as the max. AC output power of GW8000-ES-C10 is 8000W (VA).
*: Please visit GoodWe website for the latest certificates.
*: As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.