

# Axpert Ultra Off-Grid Inverter



- Dual outputs for smart load management
- Two independent AC power sources connected and switched automatically
- Built-in current transformer sensor to meet self-consumption application
- Support external BTS (Battery Temperature Sensor) detection
- Built-in power status lighting indicators
- Built-in 2.8" colored LCD with slide operation
- Built-in Wi-Fi for mobile monitoring and OTA firmware upgrade
- Supports USB On-the-Go function
- Reserved communication port for BMS (RS485, CAN-BUS or RS232)
- Support optional GFCI, Rapid shutdown, AFCI detections
- Parallel operation with 6 units

## Axpert Ultra Off-Grid Inverter Selection Guide

| MODEL                                 | Axpert Ultra 8K                                                                               |  | Axpert Ultra 11K   |  |
|---------------------------------------|-----------------------------------------------------------------------------------------------|--|--------------------|--|
| RATED POWER                           | 8000VA/8000W                                                                                  |  | 11000VA/11000W     |  |
| PARALLEL CAPABILITY                   | YES, 6 units                                                                                  |  |                    |  |
| INPUT                                 |                                                                                               |  |                    |  |
| Voltage                               | 230 VAC                                                                                       |  |                    |  |
| Selectable Voltage Range              | 170-280 VAC (For Personal Computers)<br>90-280 VAC (For Home Appliances)                      |  |                    |  |
| Frequency Range                       | 50 Hz/60 Hz (Auto sensing)                                                                    |  |                    |  |
| OUTPUT                                |                                                                                               |  |                    |  |
| AC Voltage Regulation (Batt. Mode)    | 230VAC ± 5%                                                                                   |  |                    |  |
| Surge Power                           | 16000VA                                                                                       |  | 22000VA            |  |
| Efficiency (Peak)                     | 93%                                                                                           |  |                    |  |
| Transfer Time                         | 10 ms (For Personal Computers) ; 20 ms (For Home Appliances)                                  |  |                    |  |
| Waveform                              | Pure sine wave                                                                                |  |                    |  |
| BATTERY                               |                                                                                               |  |                    |  |
| Battery Voltage                       | 48 VDC                                                                                        |  |                    |  |
| Floating Charge Voltage               | 54 VDC                                                                                        |  |                    |  |
| Overcharge Protection                 | 63 VDC                                                                                        |  |                    |  |
| SOLAR CHARGER & AC CHARGER            |                                                                                               |  |                    |  |
| Solar Charger Type                    | MPPT                                                                                          |  |                    |  |
| Maximum PV Array Power                | 10000W (5000W x 2)                                                                            |  | 12000W (6000W x 2) |  |
| MPPT Range @ Operating Voltage        | 90 ~ 450 VDC                                                                                  |  |                    |  |
| Maximum PV Array Open Circuit Voltage | 500 VDC                                                                                       |  |                    |  |
| Maximum PV Input Current              | 27A x 2 (MAX 40A)                                                                             |  |                    |  |
| Maxmum Solar Charge Current           | 150A                                                                                          |  | 150A               |  |
| Maximum AC Charge Current             | 120A                                                                                          |  | 150A               |  |
| Maximum Charge Current                | 150A                                                                                          |  | 150A               |  |
| PHYSICAL                              |                                                                                               |  |                    |  |
| Dimension, D x W x H (mm)             | 145 x 438 x 553.6                                                                             |  |                    |  |
| Net Weight (kgs)                      | 18.4                                                                                          |  |                    |  |
| Communication Interface               | USB/RS232/RS485/WiFi/Dry-contact/BTS<br>Support optional GFCI, Rapid shutdown, AFCI detection |  |                    |  |
| External Current Sensor Port          | Yes, built-in current transformer sensor                                                      |  |                    |  |
| OPERATING ENVIRONMENT                 |                                                                                               |  |                    |  |
| Humidity                              | 5% to 95% Relative Humidity(Non-condensing)                                                   |  |                    |  |
| Operating Temperature                 | -10°C to 50°C                                                                                 |  |                    |  |
| Storage Temperature                   | -15°C to 60°C                                                                                 |  |                    |  |
| STANDARD                              |                                                                                               |  |                    |  |
| Compliance Safety                     | CE                                                                                            |  |                    |  |

Product specifications are subject to change without further notice.

# A48100

This 4.8kWh LFP module supports both floor-standing and wall-mounted installations. It is equipped with OTA function for remote upgrade and monitoring.

Up to 30 modules in parallel, it can meet various needs of users and enable flexible expansion.



## APP Monitoring (optional)

Real-time monitoring  
& Remote upgrade available



## Module Design

Flexible expansion



## Various Mounting Methods

Wall-mounted,  
floor-standing and stacked



## High Safety LFP

Cell level monitoring and balancing



## Wide Compatibility

Matching with leading inverters

# Technical Specifications

| Model                                   | A48100                                                                       |
|-----------------------------------------|------------------------------------------------------------------------------|
| Battery Type                            | LiFePO4                                                                      |
| Nominal Battery Energy                  | 4.8kWh                                                                       |
| Nominal Capacity                        | 100Ah                                                                        |
| Nominal Voltage                         | 48V                                                                          |
| Operating Voltage                       | 42 ~ 54V                                                                     |
| Recommended Charge & Discharge C Rate   | 0.5C                                                                         |
| Recommended Charge/Discharge Current    | 50A                                                                          |
| Max Continuous Charge/Discharge Current | 75A                                                                          |
| Peak Power Charge/Discharge Current     | 100A (15s)                                                                   |
| Depth of Discharge (DOD)                | 90%                                                                          |
| Net Weight                              | 45kg                                                                         |
| Dimension[W*D*H]                        | 504*597*155 mm                                                               |
| Charging Temp. Range                    | 0~55°C                                                                       |
| Discharging Temp. Range                 | -20~55°C                                                                     |
| Communication                           | CAN/RS485/RS232                                                              |
| Cycle Life <sup>[1]</sup>               | ≥6000 Cycles                                                                 |
| Protection Level                        | IP20                                                                         |
| Expansion                               | Up to 30 units in parallel                                                   |
| Pros                                    | Can be used in both off-grid and hybrid setups, compact design               |
| Certification & Safety Standard         | UN38.3/CE-EMC/IEC62619/IEC60730/CEI-021/GOST-R/UKCA                          |
| Compatible Inverters                    | SMA/Victron/Ingeteam/Delios/Goodwe/Solis<br>/Deye/SAJ/Voltronic/Sungrow etc. |

[1] Test conditions: 0.2C Charging/Discharging, @25°C, 90% DOD



High Power Output  
Low LCOE



Maximum Power  
455W+



# TWMNH

N-type Half-cell  
Bifacial Black Frame Module (48)

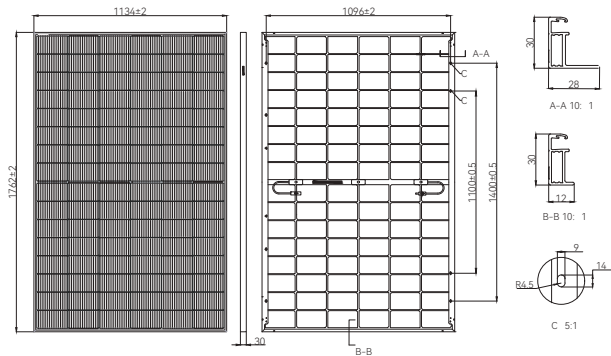
## 48HD435-455W



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 **DRAWINGS (Unit: mm)** **ELECTRICAL CHARACTERISTICS (STC)**

Module Type: TWMNH-48HDXXX

|                                               |       |       |       |       |       |
|-----------------------------------------------|-------|-------|-------|-------|-------|
| Maximum Power: P <sub>max</sub> [W]           | 435   | 440   | 445   | 450   | 455   |
| Open Circuit Voltage: V <sub>oc</sub> [V]     | 34.49 | 34.67 | 34.85 | 35.03 | 35.21 |
| Short Circuit Current: I <sub>sc</sub> [A]    | 15.90 | 15.95 | 16.00 | 16.05 | 16.10 |
| Voltage at Maximum Power: V <sub>mp</sub> [V] | 29.54 | 29.72 | 29.90 | 30.08 | 30.26 |
| Current at Maximum Power: I <sub>mp</sub> [A] | 14.73 | 14.81 | 14.89 | 14.97 | 15.04 |
| Module Efficiency: η [%]                      | 21.8  | 22.0  | 22.3  | 22.5  | 22.8  |

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass1.5, Measuring Tolerance: ±3% **ELECTRICAL CHARACTERISTICS (NMOT)**

|                                               |       |       |       |       |       |
|-----------------------------------------------|-------|-------|-------|-------|-------|
| Maximum Power: P <sub>max</sub> [W]           | 327   | 331   | 335   | 338   | 342   |
| Open Circuit Voltage: V <sub>oc</sub> [V]     | 32.77 | 32.94 | 33.11 | 33.28 | 33.45 |
| Short Circuit Current: I <sub>sc</sub> [A]    | 12.84 | 12.88 | 12.92 | 12.96 | 13.00 |
| Voltage at Maximum Power: V <sub>mp</sub> [V] | 27.51 | 27.68 | 27.88 | 27.96 | 28.18 |
| Current at Maximum Power: I <sub>mp</sub> [A] | 11.89 | 11.96 | 12.02 | 12.09 | 12.14 |

\* NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s **ELECTRICAL CHARACTERISTICS (Rear Power Gain)**

|     |                                     |      |      |      |      |      |
|-----|-------------------------------------|------|------|------|------|------|
| 5%  | Maximum Power: P <sub>max</sub> [W] | 456  | 462  | 467  | 472  | 477  |
|     | Module Efficiency: η [%]            | 22.8 | 23.1 | 23.4 | 23.6 | 23.9 |
| 15% | Maximum Power: P <sub>max</sub> [W] | 500  | 506  | 511  | 517  | 523  |
|     | Module Efficiency: η [%]            | 25.0 | 25.3 | 25.6 | 25.9 | 26.2 |
| 25% | Maximum Power: P <sub>max</sub> [W] | 543  | 550  | 556  | 562  | 568  |
|     | Module Efficiency: η [%]            | 27.2 | 27.5 | 27.8 | 28.1 | 28.4 |

 **TEMPERATURE PARAMETERS**

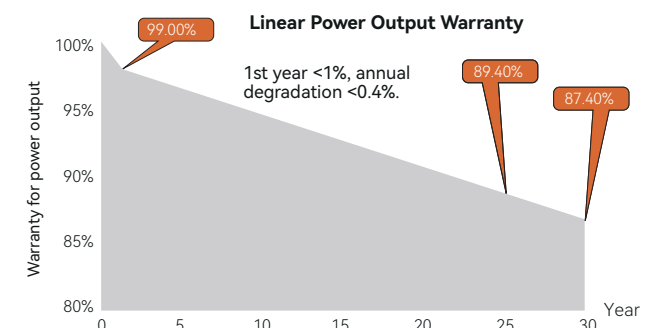
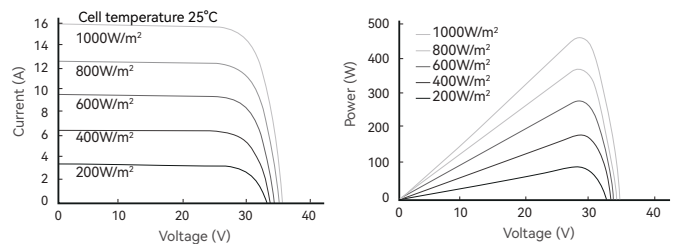
|                                             |            |
|---------------------------------------------|------------|
| Temperature Coefficient (P <sub>max</sub> ) | -0.30%/°C  |
| Temperature Coefficient (V <sub>oc</sub> )  | -0.25%/°C  |
| Temperature Coefficient (I <sub>sc</sub> )  | +0.046%/°C |
| NMOT                                        | 45±2°C     |

 **MAXIMUM RATINGS**

|                            |             |
|----------------------------|-------------|
| Operational Temperature    | -40°C~+85°C |
| Maximum System Voltage     | 1500V DC    |
| Maximum Series Fuse Rating | 30A         |
| Power Output Tolerance     | 0~+5W       |
| Maximum Bifaciality        | 80±10%      |

 **MECHANICAL PARAMETERS**

|                  |                                             |
|------------------|---------------------------------------------|
| Cells            | TNC (N Type Monocrystalline Cell)           |
| Cell Orientation | 96[6×16]                                    |
| Dimension        | 1762±2×1134±2×30mm                          |
| Weight           | 20.9kg                                      |
| Front Glass      | 1.6mm high transmittance, AR tempered glass |
| Rear Glass       | 1.6mm semi-tempered glass                   |
| Frame            | Anodized aluminum alloy black frame         |
| Junction Box     | IP68, 3 diodes                              |
| Output Cable     | 4.0mm <sup>2</sup>                          |
| Cable Length     | ±1200mm, length can be customized           |
| Wind/Snow Load   | 2400Pa/5400Pa                               |
| Packaging        | 36pcs per pallet, 936pcs per 40'HC          |

 **WARRANTY** **I-V CURVE** **CERTIFICATIONS****Quality Management System and Product Certification**

ISO 9001: 2015/Quality management system  
ISO 14001: 2015/Environmental management system  
ISO 45001: 2018/Occupation health safety management system  
ISO 50001: 2018/Energy management system  
IEC 62941: 2019/Quality system for PV module manufacturing  
IEC 61215/61730, IEC 62804(PID), IEC 61701(Salt),  
IEC 62716 (Ammonia), IEC 60068-2-68(Sand)



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Statement: With technological process and product update, there maybe deviation between the technical parameters of Tongwei's module products and the technical parameters contained in the specification, and Tongwei Solar has the right to adjust the technical parameters at any time without notifying the customer, the final interpretation of the technical specification is vested in Tongwei Solar. (Preview-20240228)