FALCON ESS

CLEAN ENERGY
A BRIGHTER TOMORROW

SIGNATURE GREY SERIES

POWER A CLEANER
TOMORROW




# PowerQ

ALL-IN-ONE RESIDENTIAL ENERGY STORAGE SYSTEM

## FLEXIBILITY
Modular design to meet various backup scenarios.

## EASY INSTALLATION
Integrated configuration, plug and play set-up.

## TYPE 4X
Engineered to last with maximum flexibility. Suitable for outdoor installation.

## FALCONCLOUD 2.0
Monitor your system remotely via smartphone app or web portal.

**3.8kW ··» 11.4kW**
11.4kW/20kWh




Falcon ESS PowerQ is the latest generation of an integrated residential energy storage system. With up to 20kWh total backup capacity, PowerQ is designed to meet various backup scenarios via modular system design and scalability.

For more information about the Falcon ESS range, visit:
www.falcon-ess.com

POWER A CLEANER TOMORROW

RELIABLE
CLEAN ENERGY
FOR A BRIGHTER
TOMORROW

FC C SP® US
302680

# TECHNICAL SPECIFICATIONS

| MODEL | AIO-AC1-3.8-US<br>AIO-H1-3.8-US | AIO-AC1-5.7-US<br>AIO-H1-5.7-US | AIO-AC1-7.6-US<br>AIO-H1-7.6-US | AIO-AC1-9.6-US<br>AIO-H1-9.6-US | AIO-AC1-11.4-US<br>AIO-H1-11.4-US |
|---|---|---|---|---|---|
| **PV INPUT (ONLY FOR HYBRID)** | | | | | |
| Max. Solar STC Power [W] | 7600 | 11400 | 15200 | 19200 | 22800 |
| Max. Input Voltage [V] | | | 600 | | |
| Start-up Input Voltage [V] | | | 100 | | |
| Rated Input Voltage [V] | | | 380 | | |
| MPPT Operating Voltage Range [V] | | | 80 ~ 550 | | |
| MPPT Operating Voltage Range [V] (Full Load) | 204 ~ 500 | 204 ~ 500 | 271 ~ 500 | 257 ~ 500 | 305 ~ 500 |
| Max. Input Current [A] | 28 / 14 | 28 / 14 | 28 / 14 | 28 / 14 / 14 | 28 / 14 / 14 |
| Max. Short-circuit Current [A] | 44 / 22 | 44 / 22 | 44 / 22 | 44 / 22 / 22 | 44 / 22 / 22 |
| No. of Independent MPP Trackers | 2 | 2 | 2 | 3 | 3 |
| No. of Strings per MPP Tracker | 2 / 1 | 2 / 1 | 2 / 1 | 2 / 1 / 1 | 2 / 1 / 1 |
| **BATTERY CONNECTION** | | | | | |
| Battery Type | | | LFP ($LiFePO_4$) | | |
| Battery Voltage Range [V] | | | 85 ~ 460 | | |
| Rated Battery Voltage [V] | | | 360 | | |
| Max. Continuous Charge / Discharge Current [A] | | | 50 | | |
| Max. Continuous Charge / Discharge Power [W](for H1) | 5700/4180 | 8550/6270 | 11400/8360 | 14400/10560 | 17100/12540 |
| (for AC1) | 3800/4180 | 5700/6270 | 7600/8360 | 9600/10560 | 11400/12540 |
| Max. Discharge Current (60s) [A] | | | 60 | | |
| **AC INPUT AND OUTPUT (GRID)** | | | | | |
| Max. AC Input Power [VA] | 3800 | 5700 | 7600 | 9600 | 11400 |
| Max. AC Input Current [A] | 16 | 24 | 32 | 40 | 48 |
| Input Voltage Range [V] | | | 211 ~ 264 | | |
| Input Frequency Range [Hz] | | | 57 ~ 63 | | |
| Rated Output Power [W] | 3800 | 5700 | 7600 | 9600 | 11400 |
| Max. Output Apparent Power [VA] | 3800 | 5700 | 7600 | 9600 | 11400 |
| Rated Output Current [A] | 15.8 | 23.8 | 31.7 | 40.0 | 47.5 |
| Max. Output Current [A] | 15.8 | 23.8 | 31.7 | 40.0 | 47.5 |
| Rated Grid Voltage [V] | | | 240 (211 ~ 264) | | |
| Rated Grid Frequency [Hz] | | | 57 ~ 63 | | |
| Power Factor | | | >0.99 (Adjustable from 0.8 leading to 0.8 lagging) | | |
| THDi [%] | | | <3 @rated power | | |
| **AC OUTPUT (BACKUP)** | | | | | |
| Rated Output Power [W] | | | 11400 | | |
| Rated output power @different batteries [W] | | | 5760 @H2 Battery<br>8640 @H3 Battery<br>11400 @H4 Battery<br>11400 @H5 Battery<br>11400 @H6 Battery (Only for non US mainland)<br>11400 @H7 Battery (Only for non US mainland) | | |
| Max. Output Apparent Power [VA] | | | 12540 | | |
| Peak Output Apparent Power (10min) [VA] | | | 13680 | | |
| Peak Output Apparent Power (60s) [VA] | | | 15390 | | |
| Max. Continuous Output Current [A] | | | 52.3 | | |
| LRA [A] | | | 160 | | |
| Rated Output Voltage [V] | | | 120 / 240 | | |
| Rated Output Frequency [Hz] | | | 60 | | |
| Load Start Capacity [A] LRA | | | 50 @H2 Battery<br>75 @H3 Battery<br>110 @H4 Battery<br>160 @H5 Battery<br>160 @H6 Battery (Only for non US mainland)<br>160 @H7 Battery (Only for non US mainland) | | |
| THDv ( Linear Load) [%] | | | <3 @rated power | | |
| Imbalance for Split-Phase Loads [%] | | | 100 | | |
| **EFFICIENCY** | | | | | |
| CEC Efficiency [%] | | | 97.00 | | |
| Max. Efficiency [%] | | | 97.60 | | |
| Max. Battery Discharge Efficiency (BAT to AC) (@full load, 340Vdc) [%] | | | 97.40 | | |
| **PROTECTION** | | | | | |
| Insulation Monitoring | | | YES | | |
| Residual Current Monitoring | | | YES | | |
| DC Reverse Polarity Protection | | | YES | | |
| Anti-islanding Protection | | | YES | | |
| AC Short-circuit Protection | | | YES | | |
| AC Overcurrent / Overvoltage Protection | | | YES | | |
| DC Switch | | | YES | | |
| SPD | | | DC: Type II / AC: Type II | | |
| AFCI | | | YES | | |
| **GENERAL DATA** | | | | | |
| Topology | | | Transformerless | | |
| Cooling Method | | | Natural convection | | |
| Noise Emission [dB] | | | <35 | | |
| Max. Operating Altitude [ft / m] | | | 9843 / 3000 (Derating above 6560 / 2000) | | |
| Operating Temperature [°F / °C] (North America) | | | -13 ~ +131 / -25 ~ +55 (Derating above 104 / 40) | | |
| Operating Temperature [°F / °C] (Non-North America) | | | 14 ~ +131 / 10 ~ +55 (Derating above 104 / 40) | | |
| Humidity [%] | | | 0 ~ 100 (No Condensation) | | |
| Protection Degree | | | Type 4X | | |
| Standby consumption [W] | | | <25 | | |
| Monitoring Module | | | WiFi, LAN | | |
| Communication | | | CAN2.0, RS485, Meter, CT, ISO alarm, SUNSPEC | | |
| Display | | | LED, App, Website | | |
| Warranty [Year] | | | 12.5 | | |
| **STANDARD COMPLIANCE (MORE AVAILABLE UPON REQUEST)** | | | | | |
| Safety | | | UL1741 SA, UL 1741 SB, UL1741 CRD, HECO SRD-V2.0, CSA C22.2 No.107.1-16, UL1998, UL1699B, Rule 21, ANSI/CAN/UL9540 | | |
| EMC | | | FCC part15 CLASS B | | |
| Grid Regulation | | | IEEE1547-2018, IEEE1547a-2020, IEEE1547.1-2020 | | |

| MODEL | AIO-US-EQL2 | AIO-US-EQL3 | AIO-US-EQL4 | AIO-US-EQL5 | AIO-US-EQL6 | AIO-US-EQL7 |
|---|---|---|---|---|---|---|
| **MECHANICAL CHARACTERISTICS** | | | | | | |
| Dimensions (W*H*D) [mm] | 570*848*380 | 570*986*380 | 570*1124*380 | 570*1262*380 | 570*1400*380 | 570*1538*380 |
| Dimensions (W*H*D) [inch] | 22.4*33.4*15.0 | 22.4*38.8*15.0 | 22.4*44.3*15.0 | 22.4*49.7*15.0 | 22.4*55.1*15.0 | 22.4*60.6*15.0 |
| Weight [kg/lbs] | 128.3 / 282.9 | 165.2 / 364.2 | 202.1 / 445.6 | 239.0 / 526.9 | 275.9 / 608.3 | 312.8 / 689.6 |