FOX ESS

DATASHEET

Stackable AIO

THREE-PHASE HYBRID/AC

Stackable AIO is the latest generation of an intergrated residential energy storage system, modular designed to meet various installation scenarios.

FLEXIBLE APPLICATION

- Built-in 63A bypass for full house backup.
- 3 MPPTs, 20A per string.
- PV min. voltage of 120V and min. battery voltage of 80V.

EASY INSTALLATION

- Integrated configuration, plug and play set-up.

SAFE AND DURABLE

- Integrating active and passive safety.
- Intelligent AFCI function.
- IP66 and type II DC/AC surge protection.

5kW ··· 15kW

Advanced System Monitoring
with **FoxCloud 2.0**

REMOTE MONITORING

- Monitor your system remotely via smartphone App or Web portal.
- Ready for AI mode, dynamic trading and VPP.

www.fox-ess.com

TECHNICAL SPECIFICATIONS

MODEL	HQ3-5.0-M	HQ3-6.0-M	HQ3-8.0-M	HQ3-10.0-M	HQ3-12.0-M	HQ3-15.0-M
PV INPUT						
Max. Array Power[W]	11000	14000	18000	20000	24000	30000
Max. Input Power [W]	11000	13200	17600	20000	24000	30000
Max. Input Voltage [V]	1000 [1]					
Nominal Operating Voltage [V]	620					
Max. MPPT Input Current [A]	20/20/20					
Max. MPPT Short-Circuit Current [A]	25/25/25					
Max. MPPT Input Power [W]	10000/10000/10000					
Min. Operating Input Voltage [V]	90 [2]					
MPPT Voltage Range [V]	120 ~ 950					
Start-Up Input Voltage [V]	140					
MPPT Voltage Range (Full Load) [V]	120 ~ 850	120 ~ 850	140 ~ 850	175 ~ 850	210 ~ 850	263 ~ 850
No. of MPP Trackers	3					
Strings per MPP Tracker	1+1+1					
Max. Inverter Backfeed Current to the Array	0					
BATTERY CONNECTION						
Battery Type	Lithium-Ion battery (LFP)					
Battery Voltage [V]	80 ~ 500					
Min. Operating Battery Voltage [V]	85					
Min. Battery Voltage @ Full AC Load [V]	108	125	160	210	250	310
Max. Battery Charge Power [W]	6000	7200	9600	12000	14400	15000
Max. Battery Discharge Power [W]	5000	6000	8000	10000	12000	15000
Max. Charge/Discharge Current [A]	50					
Communication Interface	CAN					
AC OUTPUT						
Nominal Output Power [W]	5000	6000	8000	10000	12000	15000
Max. Apparent Output Power [VA]	5500	6600	8800	11000	13200	16500
Rated Grid Voltage (AC Voltage Range) [V]	400/230; 380/220, 3L/N/PE					
Rated Grid Frequency [Hz]	50/60, ±5					
Rated Output Current (Per Phase) [A]	7.6	9.1	12.1	15.2	18.2	22.7
Max. Output Current (Per Phase) [A]	8.3	10.0	13.3	16.7	20.0	25.0
Power Factor	1 (Adjustable from 0.8 leading to 0.8 lagging)					
THDI [%]	<3 @rated power					
AC INPUT						
Max. Input Power [VA]	43470					
Rated Grid Voltage [V]	400/230; 380/220, 3L/N/PE					
Rated Grid Frequency [Hz]	50/60, ±5					
Max. Input Current (Per Phase) [A]	63					
EPS OUTPUT(ON GRID MODE)						
Max. Output Power For Backup Load (Per Phase) [W]	43470					
Max. Output Current For Backup Load [A]	3*63					
EPS OUTPUT(OFF GRID MODE)						
Max. Apparent Output Power [VA]	5000	6000	8000	10000	12000	15000
Peak Apparent Output Power (60s) [VA]	6000	7200	9600	12000	14400	15000
Rated Output Voltage [V]	400/230; 3L/N/PE					
Rated Grid Frequency [Hz]	50/60					
Max. Continuous Current (Per Phase) [A]	7.2	8.7	11.6	14.5	17.4	21.7
Max. Unbalanced Load Power (Per Phase) [kW]	1.6	2.0	2.6	3.3	4.0	5.0
Step-Down Start	YES					
EPS Overload Automatic Recovery Time	Try 3 times(15s) everytime will alarm a fault, after 3 failures, stop the recovery logic, clients need to clear the fault manually.					
Power Factor	1 (Adjustable from 0.8 leading to 0.8 lagging)					
Parallel Operation	Yes @ Max. 4 pcs					
Switch Time (Single Device) [ms]	<20					
THDV [%]	<3 @rated power					
EFFICIENCY						
MPPT Efficiency [%]	99.90					
Max. Efficiency [%]	97.80	97.80	97.90	97.90	97.90	97.90
European Efficiency [%]	97.00	97.00	97.10	97.30	97.50	97.50
Max. Battery Charge Efficiency (PV to BAT) (@ Full Load) [%]	97.00	97.10	97.20	97.40	97.50	97.60
Max. Battery Discharge Efficiency (BAT to AC) (@ Full Load) [%]	97.00	97.10	97.20	97.20	97.20	97.20

TECHNICAL SPECIFICATIONS

MODEL	HQ3-5.0-M	HQ3-6.0-M	HQ3-8.0-M	HQ3-10.0-M	HQ3-12.0-M	HQ3-15.0-M
PROTECTION						
PV Reverse Polarity Protection	YES					
Battery Reverse Protection	YES					
Anti-Islanding Protection	YES					
Output Short Protection	YES					
Leakage Current Protection	YES					
Insulation Resistor Detection	YES					
Overvoltage Category	III (AC Side), II (DC Side)					
Reverse Connect Protection	YES					
Overcurrent Protection/Overtemperature Protection	YES					
DC/AC Surge Protection	Type II (PV)/Type II (AC)					
AFCI Protection	Optional					
DC Switch	YES					
GENERAL DATA						
Dimensions (W*H*D) [mm]	570*420*380 (Inverter)					
Dimensions of Packing (W*H*D) [mm]	760*545*595 (Inverter)					
Net Weight [kg]	42.6 (Inverter)					
Gross Weight [kg]	64.5 (Inverter)					
Installation	Floor-mounted					
Operating Temperature Range [°C]	-25 ~ +60 (Derating at 45)					
Storage Temperature [°C]	-40 ~ +70					
Storage/Operation Relative Humidity [%]	0 ~ 100 (No condensation)					
Altitude [m]	<4000 @ Derating Exceeding 3000					
Protection Class	I					
Ingress Protection	IP66 (For Outdoor Use)					
Standby Consumption [W]	<15 (Only PV and Battery)					
Idle Mode	YES					
Cooling	Natural	Natural	Natural	Natural	FAN Cooling	FAN Cooling
Noise Level [dB]	<40	<40	<40	<40	<55	<55
Inverter Topology	Non-Isolated					
Monitoring Module (Integrated)	WIFI, LAN, 4G					
Communication Interface	Meter, WIFI/4G (Optional), Bluetooth, DRM, Ethernet, USB, BMS (CAN), RS485, Ripple Control, SG Ready, Dry Contact*2					
Display	LED, LCD, App, Website					
Button	Capacitive Touch Sensor					
Buzzer	1, Inside (EPS & Earth Fault)					
STANDARD						
Safety	EN/IEC62109-1, EN/IEC62109-2					
EMC	IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3, IEC61000-4-2/3/4/5/6/8					
Certification	AS4777.2-2020, VDE-AR-N 4105, VDE0126-1-1, G98, EN50549-1, CEI 0-21, IEC62116, IEC61727, IEC61683					

[1] For 1000V system, PV maximum operating voltage is 950V.
[2] The starting working voltage of the power supply is 90V.

TECHNICAL SPECIFICATIONS

MODEL	EQ5000-P-S-L2 (w)	EQ5000-P-S-L3 (W)	EQ5000-P-S-L4 (W)	EQ5000-P-S-L5 (W)	EQ5000-P-S-L6 (W)	EQ5000-P-S-L7 (W)	EQ5000-P-S-L8 (W)	EQ5000-P-S-L9 (W)
ELECTRICAL CHARACTERISTICS								
Battery Type	LFP ($LiFePO_4$)							
Battery Module	1	2	3	4	5	6	7	8
Nominal Energy [kWh]	9.94	14.91	19.88	24.85	29.82	34.79	39.76	44.73
Nominal Voltage [V]	89.6	134.4	179.2	224.0	268.8	313.6	358.4	403.2
Operating Voltage[V]	81.2 ~ 102.2	121.8 ~ 153.3	162.4 ~ 204.4	203.0 ~ 255.5	243.6 ~ 306.6	284.2 ~ 357.7	324.8 ~ 408.8	365.4 ~ 459.9
Recommend Charge/Discharge Current [A]	50							
Max. Charge/Discharge Current [A]*1	50							
Peak Discharge Current (60S) [A]	65							
Battery Pack Round-Trip Efficiency [%]	>95							
Depth Of Discharge [%]	95							
Communication	CAN							
Display	LED*1							
Scalability	Max. 9 Modules in Series							
OPERATING CONDITIONS								
Installation Location	Outdoor/ Indoor (Stand)							
Operating Temperature [°C]	Charge: 0 ~ 55, Discharge: -10 ~ 55							
Operating Temperature [°C] (warm up function on, optional)	Charge: -25 ~ 55, Discharge: -25 ~ 55							
Storage Temperature [°C]	-10 ~ 35							
Cooling Method	Natural Convection							
Humidity [%]	5 ~ 95 (No Condensation)							
Altitude [m]	Max. 3,000							
PROTECTION								
Fire Protection Function	YES							
MECHANICAL CHARACTERISTICS								
Dimensions (W*D*H) [mm]	570*380							
	*276	*414	*552	*690	*828	*966	*1104	*1242
Weight [kg] (±5%)	82	123	164	205	246	287	328	369
Cell Net Weight [kg] (±5%)	56.6	84.8	113.1	141.4	169.7	198.0	226.2	254.5
CERTIFICATES								
Safety	IEC 62619							
EMC	EN IEC 61000-6-1/2/3/4							
Transportation	UN38.3							
Ingress Protection	IP65							

*1 The current is affected by temperature, cell voltage and SOC.