FOX ESS

DATASHEET

Stackable AIO

SINGLE-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.
- 4ms seamless switch.
- Up to 200% PV input with 4 MPPTs, 20A per string.

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.

3.7kW ••• 12kW

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	PQ1-3.7	PQ1-5.0	PQ1-6.0	PQ1-7.0	PQ1-8.0	PQ1-10.0	PQ1-12.0
PV INPUT							
Max. Array Power[W]	16000	16000	20000	20000	24000	24000	24000
Max. Input Power [W]	13700	15000	18000	19000	20000	22000	24000
Max. MPPT Input Power (Per) [W]				8000			
Max. Input Voltage [V]				600 [1]			
Min. Input Voltage [V]				75			
Start-Up Input Voltage [V]				80			
Nominal Voltage [V]				360			
MPPT Voltage Range [V]				80 ~ 550			
MPPT Voltage Range (Full Load) [V]	96 ~ 550	130 ~ 550	105 ~ 550	121 ~ 550	105 ~ 550	130 ~ 550	155 ~ 550
Max. PV Input Current [A]	20/20	20/20	20/20/20	20/20/20	20/20/20/20	20/20/20/20	20/20/20/20
Max. Isc PV Current [A]	25/25	25/25	25/25/25	25/25/25	25/25/25/25	25/25/25/25	25/25/25/25
No. of MPP Trackers	2	2	3	3	4	4	4
Strings per MPP Tracker	1+1	1+1	1+1+1	1+1+1	1+1+1+1	1+1+1+1	1+1+1+1
BATTERY CONNECTION							
Battery Type				Lithium-Ion battery (LFP)			
Battery Voltage [V]				80 ~ 500			
Min. Operating Battery Voltage [V]				80			
Min. Battery Voltage @ Full AC Load [V]	78	105	125	145	165	207	247
Max. Battery Charge Power [W]				12000			
Max. Battery Discharge Power [W]	3680	5000	6000	7000	8000	10000	12000
Max. Charge/Discharge Current [A]				50/50			
Depth of Discharge [%]				90			
Scalability				YES			
AC OUTPUT							
Rated Output Power [W]	3680	5000	6000	7000	8000	10000	12000
Rated Apparent Power [VA]	3680	5000	6000	7000	8000	10000 [2]	12000
Max. Apparent Power [VA]	3680	5500	6600	7700	8800	11000 [2]	13200
Rated Grid Voltage [V]				220/230/240, L/N/PE			
Rated Grid Frequency [Hz]				50/60, ±5			
Rated Output Current [A]	16.7	22.7	27.3	31.8	36.4	45.5	54.5
Max. Output Current [A]	16.7	25.0	30.0	35.0	40.0	50.0	60.0
Power Factor				1 (Adjustable from 0.8 leading to 0.8 lagging)			
THDI [%]				<3 @rated power			
AC INPUT							
Max. Apparent Power [VA]	7000	8800	11000	14500 [3]	14500 [3]	14500 [3]	14500 [3]
Rated Grid Voltage [V]				220/230/240, L/N/PE			
Rated Grid Frequency [Hz]				50/60, ±5			
Max. Input Current [A]	32.0	40.0	50.0	63.0 [3]	63.0 [3]	63.0 [3]	63.0 [3]
Power Factor				1 (Adjustable from 0.8 leading to 0.8 lagging)			
EPS OUTPUT							
Max. Apparent Power [VA]	3680	5000	6000	7000	8000	10000	12000
Load Start Capability [A]				122 @2s			
Rated Output Voltage [V]				220/230/240, L/N/PE			
Rated Grid Frequency [Hz]				50/60			
Max. Output Current for Backup Load (Bybass) [A]	32.0	40.0	50.0	63.0	63.0	63.0	63.0
Max. Output Current [A]	16.7	22.7	27.3	31.8	36.4	45.5	54.5
Power Factor				1 (Adjustable from 0.8 leading to 0.8 lagging)			
Parallel Operation				Yes @ Max. 3 pcs			
Switch Time [ms]				<4			
THDV [%]				<3 @linear load			
EFFICIENCY							
Max. Static MPPT Efficiency [%]				99.90			
Max. Conversion Efficiency [%]	97.60	97.62	97.62	97.62	97.62	97.62	97.62
European Efficiency [%]	97.16	97.20	97.20	97.20	97.20	97.20	97.20
Max. Battery Charge Efficiency (PV to BAT) (@ Full Load) [%]				97.33			
Max. Battery Discharge Efficiency (BAT to AC) (@ Full Load) [%]				96.40			

TECHNICAL SPECIFICATIONS

MODEL	PQ1-3.7	PQ1-5.0	PQ1-6.0	PQ1-7.0	PQ1-8.0	PQ1-10.0	PQ1-12.0
PROTECTION							
PV Reverse Polarity Protection	YES						
Anti-Islanding Protection	YES						
Output Short Protection	YES						
Leakage Current Protection	YES						
Insulation Resistor Detection	YES						
Overvoltage Category	YES						
Overcurrent Protection/Overtemperature Protection	YES						
Earth Fault	YES						
DC/AC Surge Protection	Type II (PV)/Type II (AC)						
AFCI Protection	Optional						
Battery Warming Function	Optional						
DC Switch	YES						
GENERAL DATA							
Dimensions (W*H*D) [mm]	570*420*380 (Inverter)						
Dimensions of Packing (W*H*D) [mm]	654*538*464 (Inverter)						
Net Weight [kg]	35.0 (Inverter)						
Gross Weight [kg]	40.5 (Inverter)						
Installation	Floor-mounted						
Operating Temperature Range [°C]	-25 ~ +60 (Derating at 45)						
Storage Temperature [°C]	-10 ~ +55 (-25 ~ +55 after warm up)						
Storage/Operation Relative Humidity [%]	0 ~ 95 (No condensation)						
Altitude [m]	<4000 @ Derating Exceeding 2000						
Protection Class	I						
Overvoltage Category	III (AC), II (DC)						
Pollution Degree	PD3 (PD2 inside)						
Ingress Protection	IP66 (For Outdoor Use)						
Standby Consumption [W]	<15 (Only PV and Grid)						
Cooling	Natural	Natural	Natural	FAN cooling	FAN cooling	FAN cooling	FAN cooling
Noise Emission (Average) [dB]	<35 [4]	<35 [4]	<35 [4]	<50 [4]	<50 [4]	<50 [4]	<50 [4]
Inverter Topology	Non-Isolated						
Communication Interface	Ethernet, EMS(RS485), Meter, WiLAN(WiFi+LAN+Bluetooth), 4G(Optional), DRM, Ripple Control, USB, BMS(CAN), SG Ready						
Display	LED, LCD, App, Website						
Export Limit Control	YES						
Button	Capacitive Touch Sensor						
STANDARD							
Safety	EN/IEC 62109-1, EN/IEC 62109-2, EN/IEC62477-1, EN/IEC 62040(AU)						
EMC	EN IEC 61000-6-1:2019, EN IEC 61000-6-3:2021, EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019, IEC 62920:2017						
RED	EN 50665:2017, ENIEC 62311:2020, EN 301 489-1 V2.2.3 (2019-11), EN 301 489-17 V3.2.4 (2020-09), EN 300 328 V2.2.2(2019-07), EN 55032:2015+A11:2020+A1:2020, EN 55035:2017+A11:2020						
Grid Regulation	AS/NZS 4777.2:2020						
Battery Regulation	IEC62619:2022						

[1] Voltages exceed 600V may damage the inverter.
[2] According to Australian standards, the maximum apparent power is 9999VA.
[3] Configuration can be set on the platform according to requirements.
[4] Excludes wear parts such as LCD and fans.

TECHNICAL SPECIFICATIONS

MODEL	TQ5000-S -L2	TQ5000-S -L3	TQ5000-S -L4	TQ5000-S -L5	TQ5000-S -L6
ELECTRICAL CHARACTERISTICS					
Battery Type	LFP ($LiFePO_4$)				
Battery Module (TQ5000-S)	2	3	4	5	6
Nominal Capacity [kWh]	9.84	14.76	19.68	24.60	29.52
Nominal Voltage [V]	128.0	192.0	256.0	320.0	384.0
Operating Voltage [V]	116.0 ~ 146.0	174.0 ~ 219.0	232.0 ~ 292.0	290.0 ~ 365.0	348.0 ~ 438.0
Recommend Discharge Current [A]	38.5				
Max. Charge/Discharge Current [A]*1	50				
Peak Discharge Current [A]	65 @60sec				
Battery Pack Round-Trip Efficiency [%]	>95				
Depth of Discharge [%]	90				
Communication	CAN				
Display	LED*1				
Scalability	Max. 6 Modules in Series				
OPERATING CONDITIONS					
Installation Location	Outdoor/ Indoor				
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 ~ 50				
Cooling Method	Natural Convection				
Humidity [%]	5 ~ 95 (No Condensation)				
Altitude [m]	Max. 3,000				
PROTECTION					
Fire Protection Function	YES				
MECHANICAL CHARACTERISTICS					
Dimensions (W*H*D) [mm]	570*270*380	570*405*380	570*540*380	570*675*380	570*810*380
Weight [kg]	82	123	164	205	246
Cell Net Weight [kg]	56.3	84.5	112.6	140.8	168.9
CERTIFICATES					
Safety	IEC 62619				
EMC	IEC 61000-6-1/2/3/4				
Transportation	UN38.3				
Ingress Protection	IP65				

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