FOX ESS

DATASHEET

Stackable AIO

SINGLE-PHASE **HYBRID/AC**

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.
- Designed for single-person installation.

SAFE AND DURABLE

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

REMOTE MONITORING

- Monitor your system remotely via smartphone App or Web portal.
- Ready for AI and VPP Apps.

Advanced System Monitoring
with FoxCloud **V2.0**

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

3.7kW ··· 12kW

For more information about the Fox ESS range, visit:
www.fox-ess.com

TECHNICAL SPECIFICATIONS

MODEL	PQ1-3.7-P	PQ1-5.0-P	PQ1-6.0-P	PQ1-7.0-P	PQ1-8.0-P	PQ1-10.0-P	PQ1-12.0-P
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 @max3PCS			
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-P	PQ1-5.0-P	PQ1-6.0-P	PQ1-7.0-P	PQ1-8.0-P	PQ1-10.0-P	PQ1-12.0-P
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]	660*420*360 (Inverter)						
Net Weight [kg]	43.0 (Inverter)						
Gross Weight [kg]	55.0 (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 3000						
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	CQ7-80 -L2(W)	CQ7-80 -L3(W)	CQ7-80 -L4(W)	CQ7-80 -L5(W)	CQ7-80 -L6(W)	CQ7-80 -L7(W)
ELECTRICAL CHARACTERISTICS						
Battery Type	LFP ($LiFePO_4$)					
Battery Module	2*CQ7-S-80(W)	3*CQ7-S-80(W)	4*CQ7-S-80(W)	5*CQ7-S-80(W)	6*CQ7-S-80(W)	7*CQ7-S-80(W)
Nominal Capacity [kWh]	14.04	21.06	28.08	35.10	42.12	49.14
Nominal Voltage [V]	115.2	172.8	230.4	288.0	345.6	403.2
Operating Voltage [V]	104.4~459.9					
Recommend Discharge Current [A]	50					
Max. Charge/Discharge Current [A]*1	80					
Peak Discharge Current [A]	110 @60sec					
Battery Pack Round-Trip Efficiency [%]	>95					
Depth of Discharge [%]	90					
Communication	CAN					
Display	LED*1					
Scalability	Max. 7 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*D*H) [mm]	660*360*310	660*360*465	660*360*620	660*360*775	660*360*930	660*360*1085
Weight [kg]	97.6	146.4	195.2	244	292.8	341.6
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.