FALCON ESS

DATASHEET

SIGNATURE GREY SERIES

CLEAN ENERGY
A BRIGHTER TOMORROW

Power Cube

SINGLE-PHASE HYBRID/AC

Power Cube is the latest generation of an integrated residential energy storage system, modularly designed to meet various installation scenarios.



FLEXIBLE APPLICATION

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

EASY INSTALLATION

- Built-in gateway with 63A bypass for full house backup.
- No cables required between the inverter and batteries.

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 mode, dynamic trading and VPP.

3.7kW >>> 12kW



Advanced System Monitoring
with **FalconCloud 2.0**

TECHNICAL SPECIFICATIONS

MODEL	PQ1-3.7	PQ1-4.6	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	16000	20000	20000	24000	24000	24000
Max. Input Power [W]	15700	16000	16000	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	120 ~ 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	20/20/20/20
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	25/25/25/25
No. of MPP Trackers	2	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+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	95	105	125	145	165	207	247
Max. Battery Charge Power [W]	12000							
Max. Battery Discharge Power [W]	3680	4600	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	4600	5000	6000	7000	8000	10000	12000
Rated Apparent Power [VA]	3680	4600	5000	6000	7000	8000	10000 [2]	12000
Max. Apparent Power [VA]	3680	5060	5500	6600	7700	8800	11000 [2]	13200
Rated Grid Voltage [V]	220/230/240, L/N/PE							
Rated Grid Frequency [Hz]	50/60							
Rated Output Current [A]	16.7	20.9	22.7	27.3	31.8	36.4	45.5	54.5
Max. Output Current [A]	16.7	23.0	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	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							
Max. Input Current [A]	32.0	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)							
BACK UP OUTPUT								
Max. Apparent Power [VA]	3680	4600	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							
Rated Output Current for Backup Load (Bybass) [A]	32.0	32.0	40.0	50.0	63.0	63.0	63.0	63.0
Max. Output Current [A]	16.7	20.9	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	97.62
European Efficiency [%]	97.16	97.20	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	PQ1-4.6	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 ~ +55 (Derating at 45)							
Storage Temperature [°C]	-10 ~ +55							
Storage/Operation Relative Humidity [%]	0 ~ 95 (No condensation)							
Altitude [m]	<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	Natural	FAN cooling	FAN cooling	FAN cooling	FAN cooling
Noise Emission (Average) [dB]	<35	<35	<35	<35	<50	<50	<50	<50
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 exceeding 600 V may damage the inverter.

[2] Under Australian standards, the maximum apparent power is 9999 VA.

[3] This parameter can be set and adjusted via the App.

TECHNICAL SPECIFICATIONS

MODEL	TQ5000 -S (w)_2S	TQ5000 -S (w)_3S	TQ5000 -S (w)_4S	TQ5000 -S (w)_5S	TQ5000 -S (w)_6S
ELECTRICAL CHARACTERISTICS					
Battery Type	LFP ($LiFePO_4$)				
Battery Module	2	3	4	5	6
Nominal Energy [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 (60S) [A]	65				
Battery Pack Round-Trip Efficiency [%]*2	>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] (warm up function off)*3	Charge: 0 ~ 55, Discharge: -10 ~ 55				
Operating Temperature [°C] (warm up function on)	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	IP66				

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

*2 @25°C, 0.3C charging/discharging.

*3 Charge and discharge power reduction applies at low temperatures.