

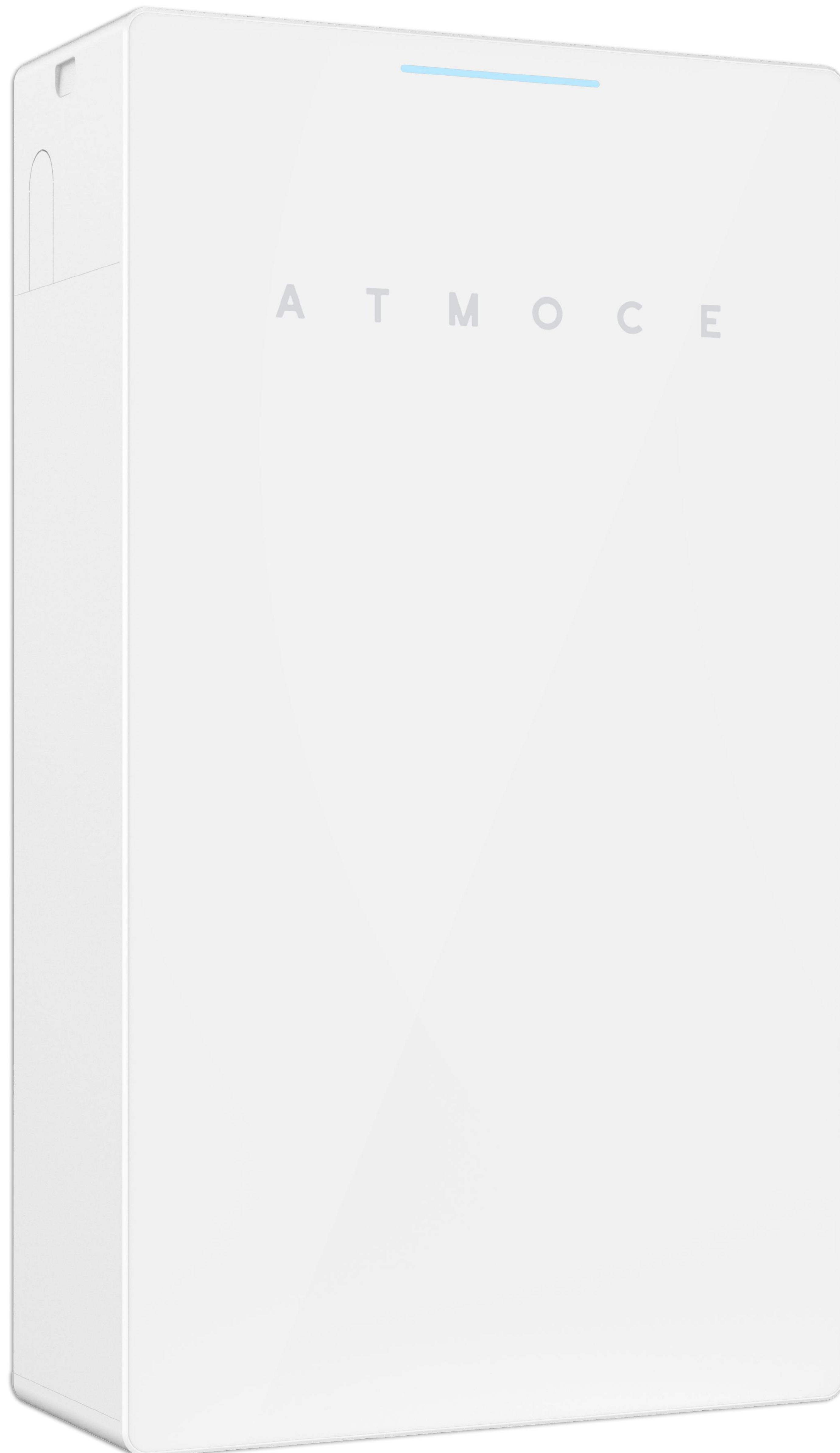
**ATMOCE**

Data Sheet

## **M-ELV Battery**

MS-7K-U-1P/ MS-7K-U-3P /

MS-7K-U-1P + MC100PRO-S1P / MS-7K-U-3P + MC100PRO-T3P



# Key Features

## Ultimate Safety

- <30 Vdc extra low voltage
- Lithium iron phosphate (LFP) chemistry
- Cell level management and optimization
- Galvanic isolation between battery and grid

## Flexibility & Adaptability

- One SKU for all 1-phase, 3-phase & stand alone installations
- AC coupling, compatible with 3rd-party PV and EMS systems
- Supports self-consumption, TOU and grid ancillary services modes

## Higher Power

- 90% AC round trip efficiency
- 3.75 kVA Max. continuous input power, 5 kVA Max. output power
- 126 kWh scalability<sup>a</sup>

## More Reliability

- 12-year warranty
- 10,000 cycles
- Electrolytic capacitors free



a. This value defines the maximum scalable capacity achievable with one M-Gateway.

## Technical Data

Based on the instruction to reference the parameter information for the individual components, the details are organized as follows:

### **Combination 1: MS-7K-U-1P + MC100PRO-S1P**

\*(Referencing the parameter information for the MS-7K-U-1P and the MC100PRO-S1P below)\*

- a. Main Unit Model: MS-7K-U-1P
- b. Parameter Information: [Refer to the specific data for MS-7K-U-1P]
- c. Matching Component Model: MC100PRO-S1P
- d. Parameter Information: [Refer to the specific data for MC100PRO-S1P]

### **Combination 2: MS-7K-U-3P + MC100PRO-T3P**

\*(Referencing the parameter information for the MS-7K-U-3P and the MC100PRO-T3P below)\*

- a. Main Unit Model: MS-7K-U-3P
- b. Parameter Information: [Refer to the specific data for MS-7K-U-3P]
- c. Matching Component Model: MC100PRO-T3P
- d. Parameter Information: [Refer to the specific data for MC100PRO-T3P]

Items	Unit	MS-7K-U-1P	MS-7K-U-3P
<b>Electrical Parameters</b>			
Rated output apparent power	kVA		4.5
Max. output power	kVA		5
Max. continuous input power	kVA		3.75
Nominal voltage	V <sub>a.c.</sub>	1/N/PE ~ 230	3/N/PE ~ 230/400
Operating voltage range (L to N)	V <sub>a.c.</sub>		176 - 276
Backfeed short-circuit current	A	27.27	9.09
Maximum short circuit current	A	27.27	9.09
Nominal frequency	Hz		50
Frequency range	Hz		45-55 @50 Hz
Max. input current	A	16.30 @ 230 Va.c.	16.30 @ 230 Va.c., 5.41 @ 400 Va.c.
Max. output current	A	21.74 @ 230 Va.c.	21.74 @ 230 Va.c., 7.25 @ 400 Va.c.
Power factor (adjustable)			0.8 leading...0.8 lagging
Max. Battery Continuous Charging Current	A		235 (DC)
Max. Battery Continuous Discharging Current	A		270 (DC)
AC round-trip efficiency	%		90 <sup>b</sup>
THDi	%		<3
<b>Battery</b>			
Total energy capacity	kWh		7.168
Rated battery energy	kWh		7
Usable battery capacity	kWh		7
Nominal battery capacity	Ah		280
Nominal DC voltage	V		25.6
Max. DC voltage	V		28.8
Chemistry			Lithium iron phosphate (LFP)
Number of cycles			10,000
Battery depth of discharge	%		100 <sup>c</sup>
DC round-trip efficiency	%		96
<b>Mechanical data</b>			
Dimensions (without bracket)	mm		830 × 480 × 195 (H x W x D)
Lifting weight (without bracket)	kg		73.5
Mounting			Floor or wall mount
Ambient operating temperature range	°C		-20 to 55
Optimum operating temperature range	°C		0 to 30
Storage temperature	°C		-20 to 55
Protection class			I
Ingress Rating			IP66
Cooling			Intelligent air cooling
Operating Humidity (RH)	%		4 to 100, condensing
Altitude	m		Up to 3,000
Pollution Rating			PD3
Operation Noise	dB		< 35

b. Limited by the ambient temperature of the battery, the maximum operating ambient temperature is 55 °C for outdoor unconditioned with solar effects.

c. For usable battery capacity, our DoD is 100%, while for total energy capacity, it is 98%.

Items	Unit	MS-7K-U-1P	MS-7K-U-3P
<b>Protection</b>			
AC port overvoltage class			III
AC surge protection			TYPE II
Galvanic Isolation			YES
Insulation resistance monitor			YES
Anti-islanding Protection			Yes (frequency shift)
<b>Features and compliance</b>			
Indicator			LEDs for SOC & Status
Communication			CAN
Backup		Support with MC100PRO-S1P	Support with MC100PRO-T3P
Services <sup>d</sup>		Self-consumption, TOU, Grid ancillary services	
Cloud Service		ATMOCE Cloud & ATMOZEN APP	
Compliance		IEC 62619, ISO 13849, IEC 61000-6-1, IEC 61000-6-3, IEC 63056, IEC 62477-1, VDE- AR-E 2510-50, AS/NZS 4777.2	
Country of manufacture			China

d. Work together with ATMOCE Gateway.

Items	Unit	MC100PRO-T3P	MC100PRO-S1P
<b>What's in the combiner PRO</b>			
M-Gateway MG100			1 × MG100
Gateway Breaker		1 × unit, 10 A, 3-pole	1 × unit, 10 A, 1-pole
PV Inverter-side Breaker <sup>e</sup>		1 × unit, 50 A, 3-pole	2 × unit, 50 A, 1-pole
PV Inverter-side Rated Input Current	A		40
PV Inverter-side Rated Input Apparent Power	VA	27600	9200
Grid-side Breaker		1 × unit, 63 A, 3-pole	1 × unit, 63 A, 1-pole
Grid-side Rated Input/Output Current	A		50
Non Backup terminal		1 × unit, 3-pole	1 × unit, 1-pole
Non Backup Rated Output Current	A		50
Non Backup Rated Output Apparent Power	VA	34500	11500
Battery-side Breaker		1 × unit, 63 A, 3-pole	1 × unit, 63 A, 1-pole
Battery-side Rated Input/Output Current	A		50
Battery-side Rated Input/Output Apparent Power	VA	34500	11500
Bypass breaker		1 × unit, 63 A, 3-pole	1 × unit, 63 A, 1-pole
Backup Port breaker		1 × unit, 63 A, 3-pole	1 × unit, 63 A, 1-pole
Backup Port Rated Output Current	A		50
Backup Port Rated Output Apparent Power	VA	34500	11500
PV Inverter CT		3 × CTs, accurate up to 0.1%	1 × CT, accurate up to 0.1%
Battery CT		3 × CTs, accurate up to 0.1%	1 × CT, accurate up to 0.1%
Consumption CT interface		3 × CTs, accurate up to 0.1%	1 × CT, accurate up to 0.1%
<b>Electrical parameters</b>			
Grid setup		Three-phase	Single-phase
Nominal voltage	V	380/400/415Va.c.	220/230/240Va.c.
Operating voltage range (L to N)	V		176 to 276
Nominal frequency	Hz		50/60
Extended frequency range	Hz		45 to 65
Power factor range			1 leading...1 lagging
Maximum Output Fault Current	A	10.12	28.71
Overvoltage category			III
<b>Mechanical parameters</b>			
Dimensions (W × H × D)	mm	475 × 690 × 150	420 × 550 × 150
Weight	kg	19	11
Ambient temperature range	°C		-30 to 50
Cooling			Natural convection
Enclosure environmental rating			Outdoor, IP65
Wire sizes <sup>f</sup>	mm <sup>2</sup>	PV side: 6 to 16   Grid side: 6 to 16   Battery side: 2.5 to 16	
Communication cable sizes	mm <sup>2</sup>	0.25 to 0.75	
Communication		PLC, Wi-Fi, BLE, ETH, CAN, RS485	
Noise	dB		<35
Altitude	m		3000
Protection class			II
Pollution degree			III

Items	Unit	MC100PRO-T3P	MC100PRO-S1P
<b>Communication interfaces</b>			
Grid side	DRM0		Support
Battery side	CAN		Support
Load side	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability	
	Digital I/O	4 × 12 V DO, 3 × DI	
	RS485	Support	
	Digital I/O for Generator	1 × DO, 1 × DI, 1 × RS485	
Atmoce-Cloud	Wi-Fi	2.4 GHz	
	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability	
Atmozen app	BLE	2.4 GHz	
Indicators		5 × LEDs	
<b>Compliance</b>			
Safety		IEC 61439-1/-2	
Health		IEC 62311	
EMC		EN 301 489-1/-17, IEC 61000-6-1/-3	
Radio spectrum		EN 300 328	
PLC		EN 50065-1/-2	

e. The standard configuration of the PV-side breaker is 20A, which can be replaced with a 25A / 32A rated circuit breaker, supporting a maximum of 30kW.

f. Refer to the local electrical regulations to select the cable size.