M-TEC
ENERGY FOR FUTURE

ENERGY BUTLER

INCL. SINGLE-PHASE INVERTER

3 - 6 kW optional

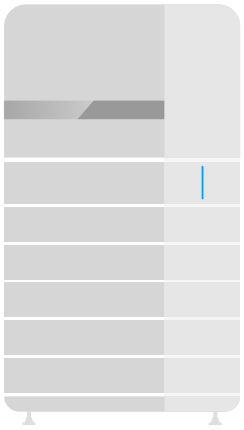
With the Energy-Butler, M-TEC offers the first energy storage system with integrated hybrid inverter in sizes of 3, 4.2 and 6 kW and stackable modules up to 19.2 kWh.

- **Plug-in and Play**:
  Single-phase inverter already integrated
- Up to 5 battery modules for max. 19.2 kWh
  (Lithium Iron Phosphate / LiFePO4)
- 10.000 charging cycles guaranteed within 10 years
- Perfect for off-grid installations such as alpine huts, forest huts, ...
- Simple and quick installation
- Emergency power and black start capable
- Island operation
- UPS capable (switching time less than 10mS)
- For power grids in countries like Italy, Portugal, Belgium, Denmark or in Africa

ESmart® TECHNOLOGY INSIDE

One butler many services and benefits

- Simple configuration via app
- All in one, plug and play
- Smart energy management included
- Information anytime and anywhere
- Battery-High Voltage
- LiFePO4, Superior Safety



* M-TEC reserves the right to modify the technical datasheet and apperance of the product in the manual without prior advice to the users.

www.mtec-systems.com

Single Phase AIO ESS System			
Number of Battery Modules	3	4	5
Storage capacity	11.5 kWh 230V	15.3 kWh 307V	19,2 kWh 384V
Dimensions (W x H x D mm) Weight (kg)	698 × 1268 × 356 168 kg	698 × 1405 × 356 210 kg	698 × 1542 × 356 252 kg
DOD Recommended		90%	

PV Input	3.0 kW	4.2 kW	6.0 kW
Max. usable DC Input Power [kW]	4.8	6.72	9.6
Starting voltage [V]		80	
Max. DC Input voltage [V]		550	
Rated Input DC voltage [V]		360	
MPPT Voltage range [V]		100~550	
MPP Trackers	1	2	2
String connections per MPPT	1	1/1	1/1
Max. Input Current [A]	15	15/15	15/15
Max. Short-circuit Current [A]	20	20/20	20/20

Battery Side	
Battery Type	Lithium Battery (with BMS)
Battery Voltage Range [Vdc]	85~465
Max. Charging/Discharging Current [A]	30/30

Protection		Grid Side (AC)	3.0 kW	4.2 kW	6.0 kW
DC Reverse Polarity Protection	Integrated	Rated Output Power [kW]	3.0	4.2	6.0
Battery Input Reverse Connection Protection	Integrated	Max. AC-output power [kVA]	3.3	4.6	6.6
Insulation Resistance Protection	Integrated	Max. Input Apparent Power [kVA]*	6.0	8.4	12.0
Over-temperature Protection	Integrated	Max. Charging Power of Battery [kVA]	3.0	4.2	6.0
Residual Current Protection	Integrated	Nominal voltage [V]		L/N/PE: 230V	
AC Over voltage Protection	Integrated	Rated AC Frequency [Hz]		50/60	
Overload Protection	Integrated	Max. Output Current [A]	15.0	21.0	28.7
AC Short-circuit Protection	Integrated	Power Factor		0.8 underexcited...0.8 overexcited	
		Max. Total Harmonic Distortion		<3% @Rated output power	
		DCI		<0.5%In	

General Data		Back-up Side	3.0 kW	4.2 kW	6.0 kW
Over Voltage Category	PV:II ; Main:III	Rated Output Power [kW]	3.0	4.2	6.0
Dimensions only inverter (W×H×D mm)	534×418×210	Max. Output Apparent Power [kVA]	3.3	4.6	6.6
Weight only inverter (kg)	27.0	Max. Input Current [A]	15.0	21.0	28.7
Protection Degree	IP65	UPS Switching Time		<10ms	
Standby Self-consumption(W)	<15	Rated Output Voltage [V]		L/N/PE: 230V	
Topology	Transformerless	Rated Output Frequency [Hz]	50/60	50/60	50/60
Operating Temperature Range(°C)	-30~60	Peak Output Apparent Power [kVA]**	3.9, 60s	5.5, 60s	7.8, 60s
Relative Humidity(%)	0~100 (not condensing)	Voltage Harmonic Distortion		<3%@Linear load	
Operating Altitude(m)	3000(>3000m Limitation)				
Cooling	Natural Convection	Efficiency	3.0 kW	4.2 kW	6.0 kW
Noise Level (dB)	<25	Max. efficiency		97.6%	
Display (dB)	OLED & LED	Europ. efficienc		97.0%	
Connections	CAN. RS485, WiFi/LAN(Optional)	Certifications		IEC/EN 62109, IEC/EN 61000, EN50549-1, TOR Generator Type A, VDE-AR-N-4105	

* Max. apparent power from the grid means the maximum power imported from the utility grid used to satisfy the backup loads and charge the battery.
* * The output power will exceed the rated value only when the power in the PV array is sufficient,and the duration of the overload is related to the overload power.

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