REFUbat

High Voltage Lithium - Ion Battery Storage

7.4K
36.8K

Power that grows with you

REFUbat offers high-voltage lithium batteries with intelligent BMS, ensuring safe, efficient operation and remote management for residential and commercial use.

Profitability & Flexibility

- High energy density - compact energy storage.
- Stackable design - flexibility of battery size.

Installation & Service

- Modular & stackable design - easy installation.
- Remote update - service convenience.

Safety

- LFP chemistry - proven for safety.
- Built in over-charge and thermal runaway protection.

Reliability

- Cycle life of 5500+.
- 5/10 years warranty.
- Active balancing - better performance.

*Battery selection chart for hybrid systems.....

	+	REFUhyb 1 Phase Resi	+	REFUhyb 3 Phase Resi	+	REFUhyb 3 Phase C&I
REFUbat 7.36	x1	3kW, 5kW, 6kW, 8kW, 10kW		-		-
REFUbat 11.04	x1	3kW, 5kW, 6kW, 8kW, 10kW		-		-
REFUbat 14.72	x1	3kW, 5kW, 6kW, 8kW, 10kW		-		-
REFUbat 18.40	x1	3kW, 5kW, 6kW, 8kW, 10kW	x1	5kW, 6kW, 8kW, 10kW, 12kW	x3	29.9kW, 30kW, 40kW, 50kW
REFUbat 22.08	x1	3kW, 5kW, 6kW, 8kW, 10kW	x1	5kW, 6kW, 8kW, 10kW, 12kW	x3	29.9kW, 30kW, 40kW, 50kW
REFUbat 25,76	x1	3kW, 5kW, 6kW, 8kW, 10kW	x1	5kW, 6kW, 8kW, 10kW, 12kW	x3	29.9kW, 30kW, 40kW, 50kW
REFUbat 29,44		-	x1	5kW, 6kW, 8kW, 10kW, 12kW	x3	29.9kW, 30kW, 40kW, 50kW
REFUbat 33,12		-	x1	5kW, 6kW, 8kW, 10kW, 12kW	x3	29.9kW, 30kW, 40kW, 50kW
REFUbat 36,80		-	x1	5kW, 6kW, 8kW, 10kW, 12kW	x3	29.9kW, 30kW, 40kW, 50kW

Battery combinations are made based on Inverter's operating voltage range.

*Residential hybrid inverters offer single battery input(x1) whereas.
*C&I hybrid inverters offer three battery inputs (x3) for built in parallel operation.

REFUbat

Residential rechargeable lithium battery

Technical Data Art. No.	REFUbat 7.36 390P007	REFUbat 11.04 390P011	REFUbat 14.72 390P014	REFUbat 18.40 390P018	REFUbat 22.08 390P022
STACK DATA					
Number of Modules	2	3	4	5	6
Module Interconnections			Locking connections (no wire required)		
Chemistry			LiFePO4 (LFP)		
ELECTRICAL DATA (at 25°C)					
Module Capacity (kWh)	7.36	11.04	14.72	18.4	22.08
Power (kW)	3.68	5.52	7.36	9.2	11.04
Max. Power (kW)	7.36	11.04	14.72	18.4	22.08
Recommended C-Rate*			≤0.5C		
Nominal system voltage (V)	102.4	153.6	204.8	256	307.2
Module capacity (Ah)			72		
Min. Operating voltage (V)	89.6	134.4	179.2	224	268.8
Max. Operating voltage (V)	115.2	172.8	230.4	288	345.6
Charging / Discharging current (A)			36		
Peak charging current (A)			50		
Peak discharging current (A)			50		
Capacity available at DOD (kWh)	5.9	8.8	11.8	14.7	17.7
PERFORMANCE					
Max. Charging / discharging Efficiency (%)			≥98		
COMMUNICATION*					
RS485 / CAN			yes / yes		
PROTECTION					
DC switch			Integrated		
Protection against over charge / discharge			Over charge voltage, over charge current, under voltage, over discharge current, deep sleep		
Safety protection			Over temperature, under temperature, reverse polarity, short circuit, thermal runaway		
Ingress protection			IP54		
GENERAL DATA					
Operating temperature (°C)			'**Discharging**: -20 ... +50 (5 ... 40 recommended) / **Charging**: 0 ... +45 (15 ... 30 recommended)		
Single module dimensions (LxDxH) (mm)			710 X 320 X 137		
Tower dimensions (Height) (mm)	502	639	776	913	1050
Tower weight (kg)	93.84	130.96	160.08	204.7	246.6
Humidity (%)			5......95 (non – condensing)		
Cooling			Natural convectionx		
Display / Indications			LED		
Certification			IEC62619, IEC63056, MSDS, IEC61000-6-1, IEC61000-6-3, UN38.3		
Cycles (under STC)			≥5500		
Warranty			10 Years		
COMPATIBLE INVERTERS					
REFUhyb single phase (residential)			**REFUhyb** : 3KH1-2T1B ; 6KH1-2T1B ; 8KH1-2T1B ; 10KH1-2T1B		
REFUhyb three phase (residential)			**REFUhyb** : 5KH3-2T1B ; 6KH3-2T1B ; 8KH3-2T1B ; 10KH3-2T1B ; 12KH3-2T1B		

*The device communicates with the REFUhyb inverter, which then communicates with our REFUview server using an external device.

*The recommended charge rate [C-rate] for LFP chemistry for optimal cycle life is 0.5C.

Technical Data Art. No.	REFUbat 25.76 390P025	REFUbat 29.44 390P029	REFUbat 33.12 390P033	REFUbat 36.8 390P036
STACK DATA				
Number of Modules	7	8	9	10
Module Interconnections	Locking connections (no wire required)			
Chemistry	LiFePO4 (LFP)			
ELECTRICAL DATA (at 25°C)				
Module Capacity (kWh)	25.76	29.44	33.12	36.8
Power (kW)	12.88	14.72	16.56	18.4
Max. Power (kW)	25.76	29.44	33.12	36.8
Recommended C-Rate*	⩽0.5C			
Nominal system voltage (V)	358.4	409.6	460.8	512
Module capacity (Ah)	72			
Min. Operating voltage (V)	313.6	358.4	403.2	448
Max. Operating voltage (V)	403.2	460.8	518.4	576
Charging / Discharging current (A)	36			
Peak charging current (A)	50			
Peak discharging current (A)	50			
Capacity available at DOD (kWh)	20.6	23.6	26.5	29.4
PERFORMANCE				
Max. Charging / discharging Efficiency (%)	⩾98			
COMMUNICATION*				
RS485 / CAN	yes / yes			
PROTECTION				
DC switch	Integrated			
Protection against over charge / discharge	Over charge voltage, over charge current, under voltage, over discharge current, deep sleep			
Safety protection	Over temperature, under temperature, reverse polarity, short circuit, thermal runaway			
Ingress protection	IP54			
GENERAL DATA				
Operating temperature (°C)	**Discharging:** -20 ... +50 (5 ... 40 recommended) / **Charging:** 0 ... +45 (15 ... 30 recommended)			
Single module dimensions (LxDxH) (mm)	710 X 320 X 137			
Tower dimensions (Height) (mm)	1187	1324	1461	1598
Tower weight (kg)	275.12	316.56	353.68	390.8
Humidity (%)	5......95 (non – condensing)			
Cooling	Natural convention			
Display / Indications	LED			
Certification	IEC62619, IEC63056, MSDS, IEC62040-1, IEC61000-6-1. IEC61000-6-3, UN38.3			
Cycles (under STC)	⩾5500			
Warranty	10 Years			
COMPATIBLE INVERTERS				
REFUhyb three phase (residential)	**REFUhyb** : 5KH3-2T1B ; 6KH3-2T1B ; 8KH3-2T1B ; 10KH3-2T1B ; 12KH3-2T1B			
REFUhyb three phase (C&I)	**REFUhyb** : 29.9KH3-3T3B ; 30KH3-3T3B ; 40KH3-4T3B ; 50KH3-4T3B			

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*The recommended charge rate (C-rate) for LFP chemistry for optimal cycle life is 0.5C.