

FullSet Extreme energy storage and management system data sheet

FullSet Extreme is an industrial, high-voltage energy storage system based on durable lithium-ion cells.

It guarantees stability in the operation of your business - **uninterrupted access to energy**, even in the event of blackout, **economy** - the possibility of reducing the power ordered (thanks to the reduction of current peaks) **and energy independence** - using up to 100% of the resources produced by the PV installation.



FullSet Extreme 66.20

FullSet is a complete system:
energy storage + hybrid inverter

Why choose FullSet?



Durability

≥8000 cycles of charge and discharge; more than 20 years of service under standard conditions



Warranty

Up to 10 years warranty



BMS

Battery management system that controls the efficiency of the device



Safety

The products meet European safety standards and are certified



Expandability

Possibility to expand the system with additional energy storages or inverters



Off grid

Use energy during a power failure

High-voltage
energy storage system

FullSet Extreme 66.20

66 kWh / 20 kW



FES

Technical specification
of 66 kWh energy storage

Nominal energy	66 kWh
Dimensions (height x width x depth)	1700 mm x 1370 mm x 885 mm
Estimated weight	~600 kg
Output voltage range	500 VDC ÷ 750 VDC
Maximum discharge current @ 25°C	100 A
Maximum charge current @ 25°C	100 A
Certifications	UN38.3; CE
Operating temperature range	0°C ... +55°C
Recommended temperature	25°C
Communication interface ¹	CAN Bus, Modbus TCP
IP class	20IP
High-current connection between battery blocks	Wire connection
Cycle life	≥8000 ²
Level of discharge (DoD)	80%
Battery chemistry	Li-ion NMC
Installation	In a closed facility
Warranty	Up to 10 years

¹ Depending on customer needs, it is possible to order CAN Bus, Modbus RTU and Modbus TCP simultaneously. CAN bus communication is adaptable according to customer requirements.

² At DoD=100%, the number of cycles is ≥ 6000.

The control system of the energy storage system does not need an external power supply.



Technical specifications of 20 kW hybrid inverter

DC Photovoltaic input	
Typical DC Power*	30 000 W
Maximum DC power on each MPPT	15 000 W (600 V-850 V)
Independent MPPTs / Strings each MPPT	2/2
Maximum DC voltage	1 000 V
Start-up voltage	250 V
Nominal DC voltage	600 V
MPPT range in DC	180 V-960 V
Full power range in DC	450 V-850 V
Maximum DC input current each MPPT	25 A/25 A
Maximum absolute DC input current each MPPT	30 A/30 A
Battery input data	
Type of batteries	Lithium-Ion
Voltage range	180 V-750 V
Number of battery channels	2 (set as independent or paralel)
Maximum charge / discharge power	20 000 W
Allowed temperature range**	-10°C/+50°C
Maximum charge current	25 A (35 A for 60 s)
Maximum discharge current	25 A (35 A for 60 s)
Charge curve	Managed by integrated BMS
Depth of discharge (DoD)	0%-90% (set)
AC output	
Nominal AC Power	20 000 W
Maximum AC Power	22 000 VA
Maximum AC current each phase	32 A
Type of connection / Nominal AC grid voltage	Three Phase 3/N/PE, 220/380, 230/400
AC voltage range	184 V~276 V (according to the local standards)
Nominal AC frequency	50 Hz/60 Hz
AC frequency range	45 Hz-55 Hz / 55 Hz-65 Hz (according to the local standards)
Total Harmonic Distortion (THD)	<3%
Power Factor	1 (Default) (Programmable +/- 0.8)
Active power grid injection	Programmable
EPS (Emergency Power Supply)	
Maximum Power in EPS***	20 000 W
Peak apparnet power in EPS***	22 000 VA for 60 s
Voltage and frequency in EPS	Three Phase 230 V/400 V 50 Hz
Maximum current in EPS	32 A (33 A for 60 s)
Total Harmonic Distortion (THS)	3%
Switch time	<20 ms

Technical specifications of 20 kW hybrid inverter

Efficiency	
Maximum Efficiency	98,20%
EURO Efficiency	97,70%
Efficiency MPPT	99,90%
Maximum charge / discharge efficiency	97,80%
Standby consumption	<15 W
Protection	
Internal interface protection	No
Safety protections	Anti islanding RCMU, Ground Fault Monitoring
DC reverse polarity protection	Yes
DC switch	Integrated
Overheating protection	Yes
Overvoltage category / Protection class	Overvoltage category III / Protective class I
Integrated dischargers	AC/DC MOV: Type 2 standard
AC output overcurrent protection	Yes
Battery Soft start	Yes
Standard	
EMC	EN61000-1, EN61000-3
Safety standards	IEC62109-1, IEC62109-2, NB-T32004/IEC62040-1
Standard of connection to the network	Certifications and connection standards available on the manufacturer's website
Communication	
Interface	Wi-Fi/4G/Ethernet (optional), RS485 (proprietary protocol), USB, CAN 2.0 (Battery data connection), Bluetooth
Additional I/O	RS485 bus for external meters (up to 4 meter connectable), 6 digital inputs (5V TTL), CT direct connections
General data	
Temperature working range	-30 do +60°C
Topology	Transformless
Environmental protection degree	IP65
Humidity range	0~100%
Maximum operative altitude	4000 m (derate above 2000 m)
Acoustic noise	<45 dB @ 1m
Weight	37 kg
Colling system	FANs cooled
Dimensions (Hight x Width x Depth)	515 mm x 571 mm x 264 mm
Display	LED display and APP

* Typical DC power is not an absolute maximum rating

** Standard value for lithium-ion batteries; maximum operativity in the range +10°C/+40°C

*** Power in EPS depends on battery type and on status of the storage system (residual capacity, temperature)