FENECON Home

The clever energy reversal storage system

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For new PV-systems or for retrofitting

- Open energy management
- Compact high-voltage battery
- Flexible DC-, AC- and hybrid inverter

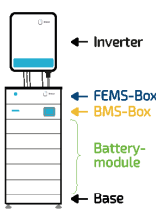
More than just an energy storage unit

- Plug & Play assembly
- Integrated PV connection (15 kWp)
- 3-phase back-up power capability and solar recharging
- 10 kW power
- Modularly expandable from 8.8 to 66 kWh
- Outdoor capable
- Capable for unbalanced loads
- Black start capable

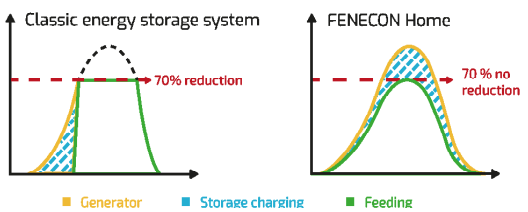
Unique. Efficient. Energy transition.

Sector coupling over-the-air activation

Space-saving



Grid-suitable charging



Energy Storage Systems for the 100% Energy Transition

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System and inverter

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General

Installation / Environmental conditions

IP- classification	55
Operating altitude in m	<= 2000
Installation/operating temperature in °C	-30 to +60
Battery operating temperature in °C*	-10 bis +50
Optimum battery operating temperature in °C	+15 bis +30
Cooling	Fanless
Max grid connection	120 A

Certification

Overall system	CE
Inverter	VDE 4105:2018-11 TOR Erzeuger Typ A 1.1
Battery	UN38.3 VDE 2510-50 EMC; IEC62619

* Reduction of charging/discharging power below +5 °C and above 45 °C; below -10 °C and above 50 °C no charging/discharging takes place..

Inverter

DC-PV connection

Max. DC input power in kWp	15
MPP-Tracker	2
Inputs per MPPT	1 (MC4)
Starting voltage in V	180
Min. DC supply voltage in V	210
Max. DC supply voltage in V	1000
MPPT voltage range in V	200 - 850
MPPT voltage range full load in V	460 - 850
Max. usable input current in A per MPPT	12,5
Max. short circuit current in A per MPPT	15,2

AC-connection

Grid connection	400/380, 3L/N/PE, 50/60 Hz
Max. output current in A	16,5
Max. input current in A	22,7
Nominal apparent power output in VA	10000
Max. apparent power output in VA	11000
Max. apparent power from the grid VA	15000
Cos(Phi)	-0,8 to +0,8

Backup-power

Back-up power capability	Yes
Grid shape	400/380, 3L/N/PE, 50/60 Hz
Back-up supplied loads (per phase) in VA	10000 (3333)
Unbalanced load in VA	3333
Black start	Yes
Solar recharge	Yes

Efficiency

Max. efficiency	98,2%
European efficiency	97,5%

General

Width | Depth | Height in cm	41,5 | 18,0 | 51,6
Weight in kg	24
Topology	Trafolos
DC overvoltage protection	Type 2
Ripple control receiver inputs	Yes

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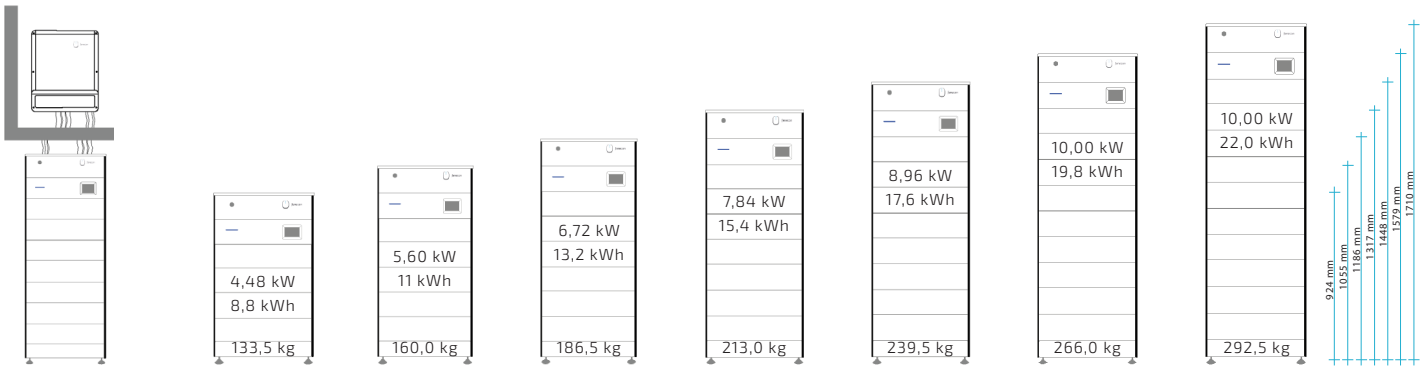
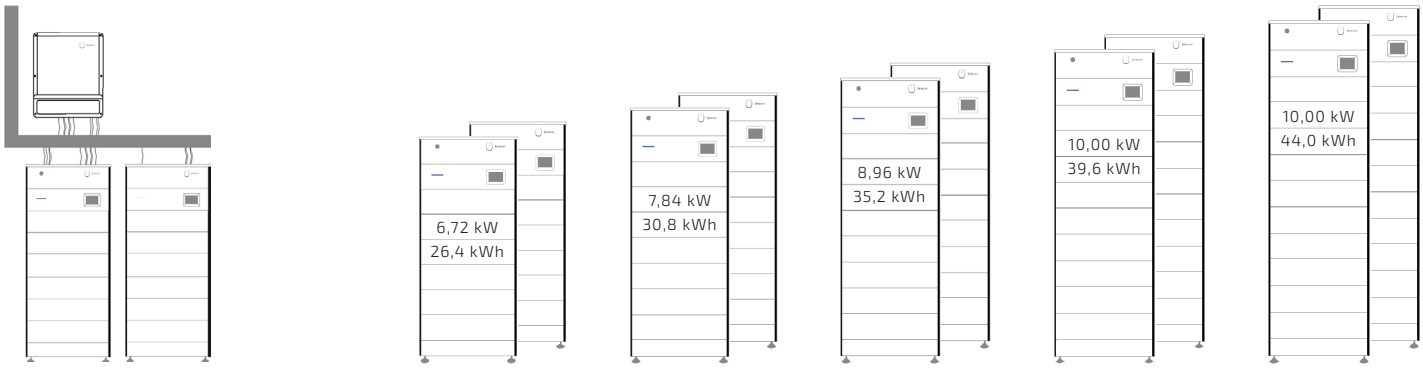
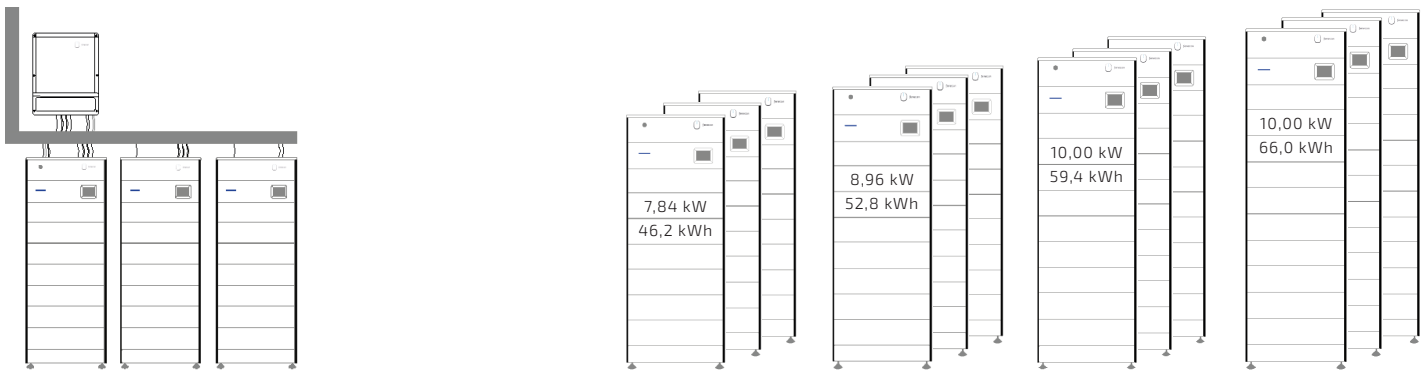
System configuration

Battery variations

Number of modules per tower	4	5	6	7	8	9	10
Nominal capacity in kWh	9,3	11,7	14,0	16,3	18,6	21,0	23,3
2 towers with x modules each			28,0	32,6	37,3	41,9	46,6
3 towers with x modules each				48,9	55,9	62,9	69,9
Usable capacity in kWh*	8,8	11,0	13,2	15,4	17,6	19,8	22,0
			26,4	30,8	35,2	39,6	44,0
				46,2	52,8	59,4	66,0
Rated power in kW**	4,48	5,60	6,72	7,84	8,96	10,00	10,00
Cell technology	Lithium iron phosphate						
Module weight in kg	26,5						
Extendible	Yes						
Tower width | depth in cm	50,6 | 39,7						
Tower height approx. in cm	92,4	105,5	118,6	131,7	144,8	157,9	171,0
Weight in kg	133,5	160,0	186,5	213,0	239,5	266,0	292,5
			373,0	426,0	479,0	532,0	585,0
				639,0	718,5	798,0	877,5
Capacity guarantee***	10 years, or 3650 cycles, 80% residual capacity						







* DC-side at 25 ° C and 0.2 C
** Average power at nominal voltage; actual performance depends on other factors such as state of charge, ambient temperature and cell temperatures.
*** For more information, please refer to our warranty conditions at www.fenecon.de

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Energy Management System

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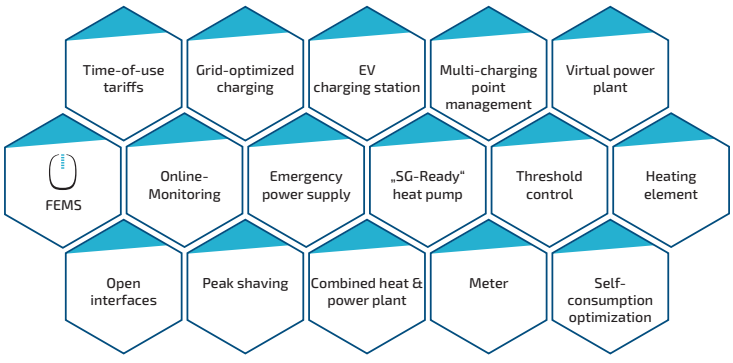
FEMS - FENECON Energy Management System

Hardware interfaces	
Inputs	4x potential-free contacts
Outputs	3x load switch contacts (10 A per channel)
Parallel connection	CAN
Communication of the components	RS485 - Modbus RTU
Communication interfaces	
Internet connection	LAN
Local	Modbus/TCP API (reading, optionally writing) REST-API (reading, optionally writing)
Online	Cloud-REST-API (reading, optionally writing)
Basis & sustainability	
Operating system	FEMS based on OpenEMS
Classification	OpenEMS Ready Gold
Updates	Unlimited, automatic & free of charge
Feed-in management	0% (e.g. outside EEG) to 100 %.
Advanced loading and unloading strategies	
Grid-suitable charging	Standard
Time-variable electricity tariffs	Optional (compatible electricity tariff provided)
Options for sector coupling	
Heating element control „SG-Ready“ heat pump control Threshold control Manual relay switching Wallbox control Control of multiple wallboxes	Optional (the relays for this are already included in the scope of delivery. It is only an optional app activation via software).
Producer & Consumer Monitoring	
Recording of further generators or individual loads	Optional



Apps can be activated at any time and combined as desired.

FEMS is based on OpenEMS, the leading standard for multifunctional energy management.

Back-up capability: In the event of a grid failure, the storage unit supplies the household grid and recharges itself in the event of a PV surplus.

Future-proof: Intelligent, learning charging strategy; controllable consumers; time-variable electricity tariffs; clouds / communities / flat rates and much more can be easily integrated via OpenEMS.

Independent and free: FEMS can connect apps, wallboxes and other hardware to the FENECON Home via OpenEMS, regardless of the manufacturer.

Multiple award-winning energy management system: FENECON has been awarded the world's most important energy storage prize, the EES Award, the European Energy Storage Highlight and the Handelsblatt Energy Award.

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