

FENECON Home 20 & 30

The large residential battery energy storage system



Unique. Efficient. Energy transition.

- Compact high voltage battery
- Variable DC, AC and hybrid inverter
- Open-source based energy management FEMS

More than a battery storage

- Max. AC power output: up to 30 kW
- Capacity: scalable from 14.0 to 168.0 kWh
- Two resp. three integrated MPP trackers with PV input up to 45 kWp
- 3-phase back-up power supply with solar recharging and black start function (< 10 ms UPS-standard switching)
- Suitable for outdoor installation
- Plug & Play assembly
- Increased energy density
- Extended temperature range

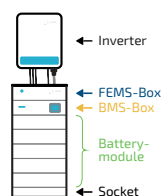


(22.4 kWh configuration)

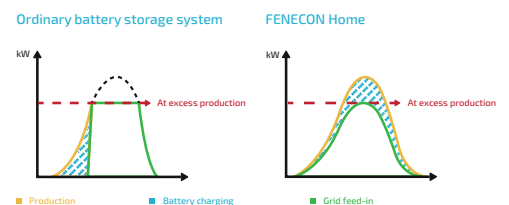
Activate sector coupling over-the-air



Room-efficient



Grid optimized charging



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System and inverter



SYSTEM

Product warranty	10 years
Installation / Ambient conditions	
IP classification	55
Operating altitude in m	<= 2,000
Installation/Operating temperature in °C	-30 to +60
Battery operating temperature* in °C	-20 to +55
Optimal battery operating temperature in °C	+15 to +30
Max. grid connection in A	120
Certifications / Guidelines	
Overall system	CE
Inverter	VDE 4105:2018-11 TOR Erzeuger Typ A 1.1
Battery	UN38.3 VDE 2510-50 EMC; IEC62619

* At cells temperature outside the optimum operating range, charging/discharging power is reduced.



INVERTER

Model	FHI-20-DAH	FHI-29,9-DAH
DC PV connection		
Max. DC input power in kWp	30	45
Number of MPP trackers	2	3
Number of inputs per MPPT	2 (MC4)	
Start-up voltage in V	200	
Max. DC operating voltage in V	950	
Max. DC input voltage in V	1,000	
MPPT operating voltage range in V	200 - 850	
Nominal input voltage in V	620	
Max. input current per MPPT in A	30	
Max. short circuit current per MPPT in A	38	
Battery connection (DC)		
Max. charging/discharging power in W	20,000	30,000
AC connection		
Grid connection	400/380 V, 3L/N/PE, 50/60 Hz	
Max. output current in A	39.9	43.3
Max. input current in A	45	50
Nominal apparent power output in VA	20,000	29,900
Max. apparent power output in VA	22,000	29,900
Max. apparent power from the grid in VA	30,000	33,000
Cos(Phi)	-0.8 to +0.8	
Back-up power		
Back-up power capability	Yes	
Grid shape	400/380 V, 3L/N/PE, 50/60 Hz	
Max. back-up load (per phase) in VA	20,000 (6,666)	29,900 (9,966)
Unbalanced load in VA	6,666	9,966
Black start	Yes	
Solar recharging	Yes	
Efficiency		
Max. efficiency in %	98.0	
European efficiency in %	97.5	
General information		
Dimensions (W D H) in mm	520 220 660	
Weight in kg	48	54
Topology	Non-isolated	
DC-surge protection	Type 2	
Inputs for ripple control receiver	Yes	
Cooling	Adaptive ventilator	
Noise in dB	< 45	

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Battery and system configuration



BATTERY

Cells technology	Lithium Iron Phosphate (LiFePO4)
Module weight in kg	29.6
Nominal module capacity in kWh	2.87
Usable module capacity in kWh	2.80
Extendable	Yes
Tower width Tower depth in mm	506 401
Capacity guarantee*	12 years or 6,000 cycles



SYSTEM VARIANTS

Number of modules per tower	5	6	7	8	9	10	11	12	13	14	15
Nominal capacity in kWh											
1 tower with x modules	14.34	17.20	20.07	22.94	25.80	28.67	31.54	34.41	37.27	40.14	43.01
2 towers, each with x modules				45.88	51.61	57.34	63.08	68.81	74.55	80.28	86.02
3 towers, each with x modules							94.62	103.22	111.82	120.42	129.0
4 towers, each with x modules								137.63	149.09	160.56	172.03
Usable capacity in kWh**											
1 tower with x modules	14.0	16.8	19.6	22.4	25.2	28.0	30.8	33.6	36.4	39.2	42.0
2 towers, each with x modules				44.8	50.4	56.0	61.6	67.2	72.8	78.4	84.0
3 towers, each with x modules							92.4	100.8	109.2	117.6	126.0
4 towers, each with x modules								134.4	145.6	156.8	168.0
Nominal power in kW ***	11.20	13.44	15.68	17.92	20.16	22.40	24.64	26.88	29.12	30.00	30.00
(Charging and discharging power)											
Weight in kg											
1 tower with x modules	187	217	247	277	307	337	367	397	427	457	487
2 towers, each with x modules				554	614	674	734	794	854	914	974
3 towers, each with x modules							1,101	1,191	1,281	1,371	1,461
4 towers, each with x modules								1,588	1,708	1,828	1,948
Approx. height of the tower in mm	1,120	1,263	1,406	1,549	1,692	1,835	1,978	2,121	2,264	2,407	2,550

* For more information, please refer to our warranty terms and conditions at www.fenecon.de.

** From DC side at 25 °C and 0.2 C

*** Average power at nominal voltage; actual power depends on other factors such as state of charge, ambient temperature, cells temperature and residual capacity.



Inverter

520 mm

660 mm

System variant -
1 tower with
5 modules

506 mm

1,120 mm



System variant - 4 towers each with 15 modules

506 mm

2,550 mm



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FEMS energy management system



Hardware interfaces

Inputs	3 x potential free contacts
Outputs	5 x load switch contacts (10 A per channel & measured), 2 x potential-free switch contacts (max. 24V), 1 x analogue output (0 to 10 V)
Parallel connection	CAN
Communication with internal components	RS485 – Modbus RTU
Communication with external components	RS485 – Modbus RTU / LAN-Modbus TCP

Communication interfaces

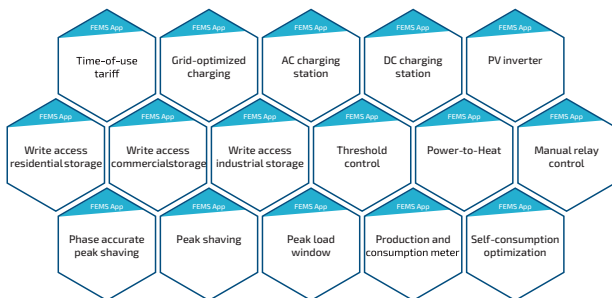
Connection to internet	LAN
Local	Modbus/TCP-API (read, optional write), REST-API (read, optional write)
Online	Cloud-Rest-API (read, optional write)

Basis and sustainability

Operating system	FEMS (based on OpenEMS)
Classification	OpenEMS Ready Gold
Updates	Unrestricted, automatic and free of charge
Feed-in management	0 % to 100 %

Advanced charging and discharging strategy

Grid optimized charging	Included in standard delivery scope
Time-of-use tariffs	Optional (compatible electricity tariff required)



Easy installation of energy management apps

FEMS apps are important building blocks of the future energy world, where users can adapt their FENECON energy storage system according to their individual needs.

- Use the advantages of FEMS on your energy journey even more efficiently with FENECON
- Simply download apps and install them via license key
- Purchase apps optionally as bundles
- Fast and convenient installation process

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Presented by:

