

The versatile commercial energy storage system

COMMERCIAL 50



Key Facts

50

Power in kW

28—
210

Capacity in kWh

75

Integrated PV connection
in kWp and for up to
four directions

Benefits

- Self-Consumption Optimization 2.0 with AI-optimized utilization of time-of-use tariffs*
- Peak shaving to reduce electricity charges*
- Flexible integration of additional producers and consumers*
- Intelligent integration of e-mobility charging infrastructure, heat pumps and heating elements*
- Plug-&-Play installation
- All-in-one system featuring a compact high-voltage battery, a flexible DC, AC and hybrid inverter, intelligent energy management FEMS, and service from a single source
- Optional backup power supply and generator input
- Ready for your Energy Journey: Modularly expandable with battery towers and FEMS apps

* FEMS App Self-Consumption Optimization and FEMS App Grid-Optimized Charging included. Further apps available optionally.

System

Product warranty 10 years



Installation / Ambient conditions

Ingress Protection	IP55
Operating altitude in m	≤ 2,000
Installation/operating temperature in °C	-20 to +45
Operating temperature in °C*	-20 to +55
Optimal battery operating temperature in °C*	+15 to +30
Max. grid connection	variable through external transformers (not included)

* Outside of the optimal operating temperature range, the (dis-)charging performance may be reduced.

Certifications and Directives

Overall system	CE VDE 2510-50
Inverter	VDE 4105:2018-11 VDE 4110:2023 TOR Generator Type A 1.1
Battery	UN38.3 IEC62619 EMV (complete)
Other countries	Sweden (registered Rikta Rätt), Netherlands (Synergrid C10/11 planned)

Battery module & Parallel switch box



Cell technology	Lithium iron phosphate (LiFePO4)
Module weight in kg	29.6
Nominal module capacity in kWh	2.87
Usable module capacity in kWh	2.8
Capacity warranty**	12 years or 6,000 cycles
Expandable through parallel connection	Yes
Dimensions (W D H)	506 401 140

** For further information, please refer to our warranty conditions at www.docs.fenecon.de.

Parallel switch box

Max. operating voltage in V DC	800
Max. continuous current in A	100
Dimensions (W D H) in mm	606 163 639
Weight in kg	27
Battery inputs	1

Inverter & STS Box



Product name

FINV-50-1-DAH

DC-PV-connection

Max. DC input power in kWp	75
MPP Trackers	4
Inputs per MPPT	2 (MC4)
Starting voltage MPPT in V	200
Max. DC input voltage in V	1,000
MPPT voltage range in V	165 - 850
Nominal input voltage in V	620
Max. effective input current per MPPT in A	42/32/42/32
Max. short circuit current per MPPT in A	55/42/55/42

DC battery connection

Max. (dis-)charging power in W	55,000
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AC connection

Grid connection	400/380 V, 3L/N/PE, 50/60 Hz
Max. output current (400 V) in A	75.8
Max. input current (400 V) in A	75.8
Nominal apparent power in VA	50,000
Max. apparent power output in VA	50,000
Max. apparent power of the grid in VA	50,000
Cos(Phi)	-0.8 to +0.8

General specifications

Dimensions (W D H) in mm	520 260 660
Weight in kg	65
DC surge protection	Type 2
Ripple control receiver inputs	Yes
Cooling	Intelligent fan cooling
Max. efficiency in %	98.1
Europ. efficiency in %	97.5

STS Box (optional)

Product name	STS-200-80
Emergency power capability	Yes
Max. power (consumer, grid) in VA	138,000
Max. current (consumer, grid) in A	200
Emergency-supplied loads (per phase) in VA	55,000 (18,300)
Unbalanced load in VA	18,300
Black start capability & Solar recharging	Yes
Dimensions (W D H) in mm	510 425 156
Weight in kg	16.5
Ingress Protection	IP65

System configurations



Battery modules per tower	5	6	7	8	9	10	11	12	13	14	15
Nominal capacity in kWh											
2 towers with x modules each	28.7	34.4	40.1	45.88	51.61	57.34	63.08	68.81	74.55	80.28	86.02
3 towers with x modules each							94.62	103.22	111.82	120.42	129.02
4 towers with x modules each								137.63	149.09	160.56	172.03
5 towers with x modules each									186.35	200.70	215.05
Effective capacity in kWh*											
2 towers with x modules each	28.0	33.6	39.2	44.8	50.4	56.0	61.6	67.2	72.8	78.4	84.0
3 towers with x modules each							92.4	100.8	109.2	117.6	126.0
4 towers with x modules each								134.4	145.6	156.8	168.0
5 towers with x modules each									182.0	196.0	210.0
Nominal power in kW**											
2 towers with x modules each	22.40	26.88	31.36	35.84	40.32	44.80	49.28	53.76	55.00	55.00	55.00
3 towers with x modules each							49.28	53.76	55.00	55.00	55.00
4 towers with x modules each								53.76	55.00	55.00	55.00
5 towers with x modules each									55.00	55.00	55.00
Weight in kg											
2 towers with x modules each	374	434	494	554	614	674	734	794	854	914	974
3 towers with x modules each							1,101	1,191	1,281	1,371	1,461
4 towers with x modules each								1,588	1,708	1,828	1,948
5 towers with x modules each								1,985	2,135	2,285	2,435
Height in mm (approx.)											
	1,120	1,263	1,406	1,549	1,692	1,835	1,978	2,121	2,264	2,407	2,550

* DC-side at 25 °C and 0.2 C

** Average DC power at nominal voltage; The actual power depends on factors like state of charge, ambient and cell temperature and the operating mode.

*** Splitbase configuration optional.

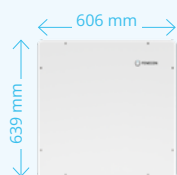
STS Box (optional)



Inverter



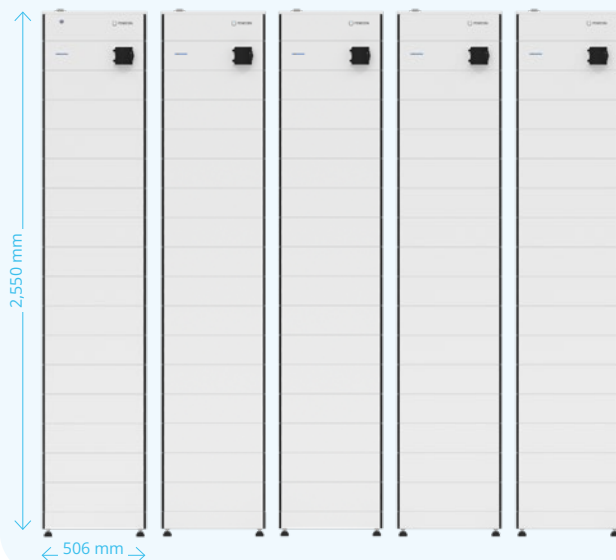
Parallel switch box



System variant 2 towers with 5 modules each



System variant 5 towers with 15 modules each



FEMS Hardware



Hardware interfaces

Inputs	4 digital inputs
Outputs (FEMS relay board)	3 wet contacts (10 A per channel & metered), 2 dry contacts
Communication between components	RS485 – Modbus RTU

Communication interfaces

Internet connection	LAN
Local	Modbus TCP API, REST API (read access, write access optional)
Online	Cloud REST API (read access, write access optional)

Software & future capability

Operating system	FEMS, based on OpenEMS (Open Source)
Classification	OpenEMS Ready Gold
Updates	Unlimited, automatic & free of charge
Feed-in management	0% (e.g., outside EEG) up to 100%

Advanced charging & discharging

Grid-optimized charging	Standard
Time-of-use tariffs	Optional (compatible tariff required)

Options for sector coupling

Heating element controller	Optional
Heat pump control „SG-Ready“	Optional
Threshold controller	Optional
Manual relay controller	Optional
Wallbox controller	Optional
Controller for multiple wallboxes	Optional
Monitoring of external producers or individual consumers	Optional

FEMS

FENECON Energy Management System



A system that selects the best route every day.

Essential

FEMS is the heart of your energy system and is fully integrated into the energy storage system as a compact module right from the start.

Future-proof

Thanks to FEMS, your energy storage system remains ready for whatever the future may bring. Optional FEMS apps allow you to expand your system with new devices, ideas, and possibilities at any time. All easily implemented thanks to our manufacturer-independent open-source approach.

Intelligent

FEMS ensures optimal utilization of the energy you have generated. The AI-based forecast creates a holistic, customized energy roadmap in real time that takes into account weather data, consumption profiles, tariffs, and grid conditions.



More info about FEMS



Test it yourself with our demo access

FENECON GmbH
Gewerbepark 6
94547 Iggenbach
Germany

+49 9903 6280-0
info@fenecon.de
www.fenecon.com



More info about the product

