

ABB eStorage Flex 20

Fully integrated Energy Storage System

The state-of-the-art ABB eStorage Flex is a compact and walk-in, fully integrated, pre-engineered energy storage system designed to maximize the return of investment with an industrialized solution that reduces installation time and complexity as well as transportation costs. The solution is optimized for functionality featuring digital intelligence that improves solution performance and operating costs.



eStorage Flex
outside view



Plug-and-play

Provides all required batteries, power conversion, coupling transformer, safety features, cooling, and protection and controls.



Factory tested

Factory built solution integrates comprehensive safety features that bring extensive quality control for the highest level of safety.



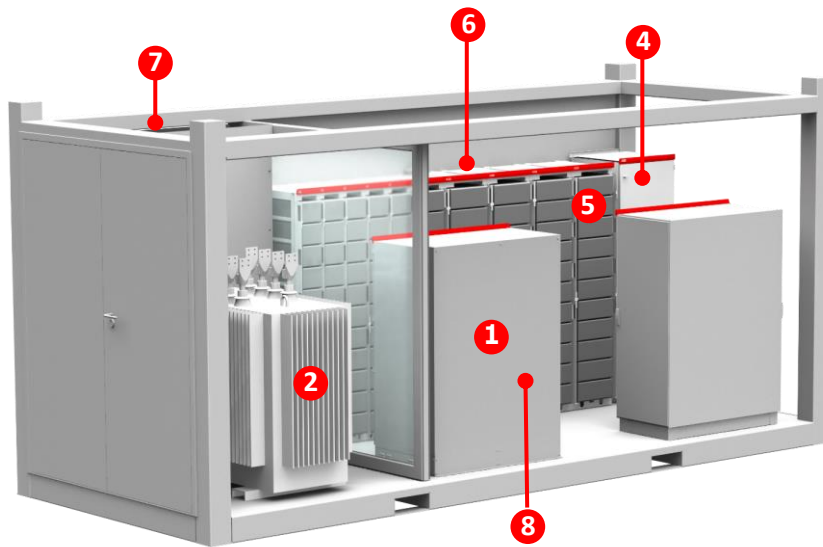
Pre-engineered

Designed with careful equipment selection, catering for a long lifespan in all conditions.

Applications

- **Peak shaving:** reducing energy and power tariffs by capping the consumption peaks.
- **Grid support:** compensating grid fluctuations by regulating reactive and active power or frequency.
- **Diesel genset optimization:** optimizing diesel hybrid systems for consumption by delaying the start and managing ramp rates.
- **Intermittent power generation:** using more of the power generated with distributed energy resources.
- **Charging infrastructure:** integrating charging stations by providing peak shaving, self-consumption optimization and grid system services.
- **Islanding:** supporting microgrids and loads during power outages with seamless transition and black start capabilities.
- **Time of use:** using of the storage system is dependent on the electricity cost (charge when low, discharge when high).
- **Multiuse applications:** combining several applications with dedicated priorities.

*The graphics shown might differ from the actual structure

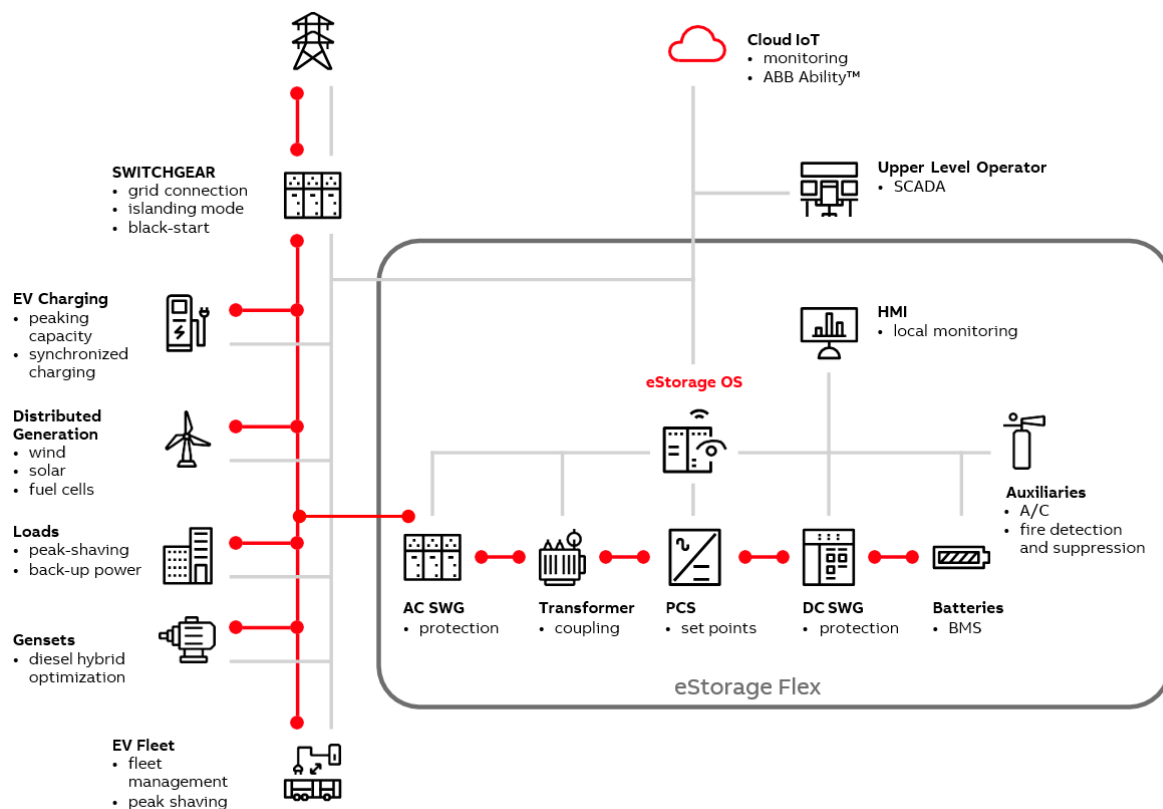


Integrated Equipment

- 1 AC switchgear
- 2 Coupling transformer
- 3 Inverter
- 4 DC switchgear
- 5 Battery Modules + BMS
- 6 Fire suppression system
- 7 HVAC
- 8 eStorage OS

System Architecture

The eStorage OS is a fully integrated digital operating system for the energy storage that provides asset management, monitoring, control and protection; Fieldbus connectivity for remote control and monitoring as predefined option and embedded energy management functions for different applications and remote connectivity are available upon request.



Technical data

1200Vdc

Description	eStorage Flex 20-550	eStorage Flex 20-660
Electrical specifications		
Maximum Outputpower (S) ¹	500kVA	500kVA
Typical Outputpower (P) ^{1, 2}	450kW	450kW
Installed Energy	550kWh	650kWh
Max C-rate	<1C	<1C
Nominal voltage	400Vac, 480Vac	400Vac, 480Vac
Frequency	50/60Hz	50/60Hz
Power factor range	4-quadrant, 0 to 1	4-quadrant, 0 to 1
Connection method	3-phase	3-phase
DC voltage range	800-1200Vdc	800-1200Vdc
Equipment		
Enclosure	ABB EcoFlex	ABB EcoFlex
Inverter operations modes	VSI Vf, CSI PQ, Islanding, Black-start	VSI Vf, CSI PQ, Islanding, Black-start
Battery chemistry	NMC	NMC
Transformer type	Oil-filled, dry-type	Oil-filled, dry-type
Environmental conditions		
Ambient temp. range(nom. ratings)	-20°C to +50°C	-20°C to +50°C
Relative humidity	5% to 95% non-condensing	5% to 95% non-condensing
IP degree transformer compartment	IP23D	IP23D
IP degree batterycompartment	IP54	IP54
General specifications		
Overall dimensions (LxWxH)	6000x2450x2900mm (ISO 20ft)	6000x2450x2900mm (ISO 20ft)
Weight (maximum)	15980kg	22280kg
Product compliance		
Power conversion system	EN 50549-2, IEC 61000-6-2, UL1741, IEEE1547	EN 50549-2, IEC 61000-6-2, UL1741, IEEE1547
Batteries	IEC 62619, UL1973, UN38.3, UL9540A	IEC 62619, UL1973, UN38.3, UL9540A
Transformer	IEC 60076	IEC 60076
Low-voltagedistribution	IEC 61439	IEC 61439
User interface and communications options		
Fieldbus connectivity (predefined option)	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring
Local user interface (upgrade package)	ABB local control paneland embedded ABB Energy Management System	ABB local control paneland embedded ABB Energy Management System
Remote connectivity (upgrade package)	Advanced SCADA andcloud connection, IEC62443	Advanced SCADA andcloud connection, IEC62443

¹ Derating applies above 1000m

² Power factor and performances considered

ABB Ltd.



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