TECHNICAL DATA SHEET

# 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.

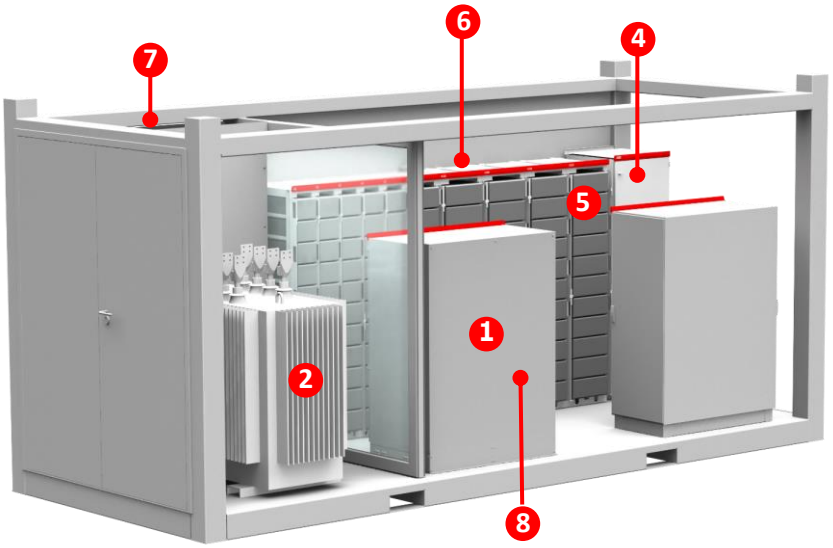
**Factory tested**
Factory built solution integrates comprehensive safety features that bring extensive quality control for the highest level of safety.

**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

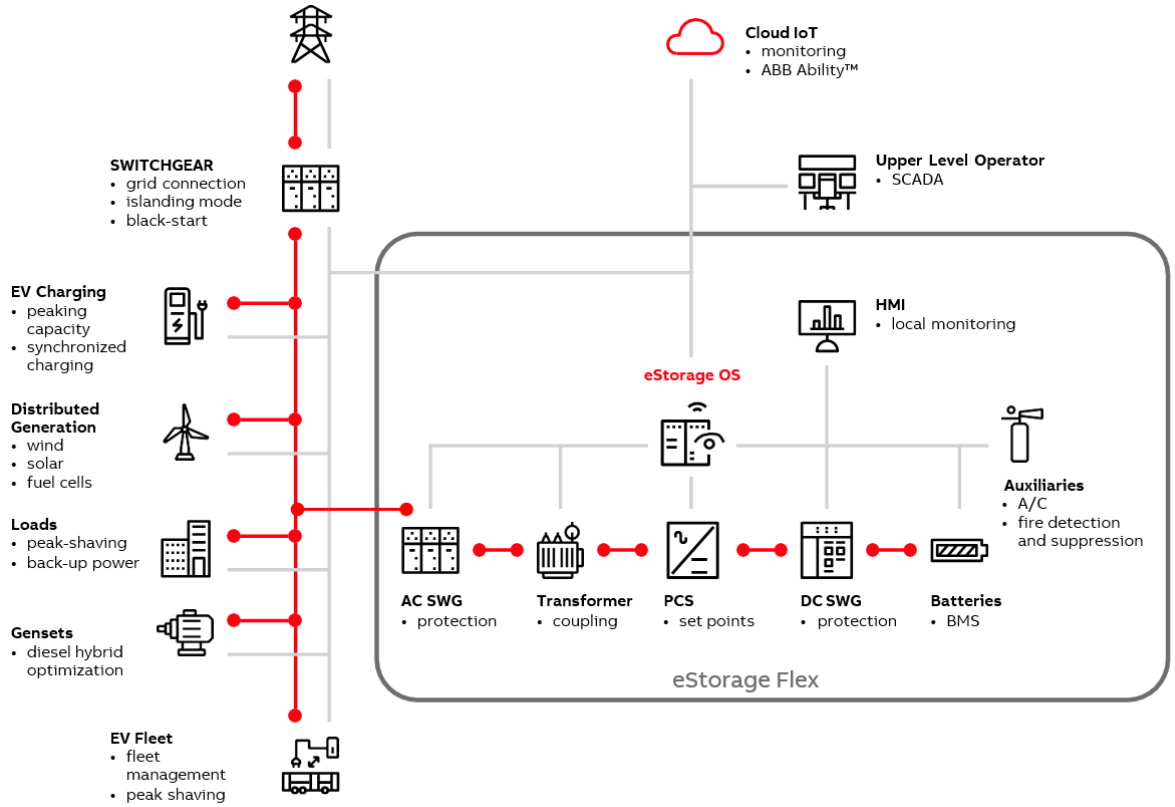



**Integrated Equipment**

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

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ABB Ltd.

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