TECHNICAL DATA SHEET

EcoFlex eHouse

Renewable - wind and solar applications

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EcoFlex with cover

Economical eHouse and package substation solutions of varied ratings

Accelerate your project completion via use of the EcoFlex pre-engineered modular designs, to be combined to suit your specific project needs

Reduce your overall site work costs by delivery of a pre-tested complete solution with minimal site installation requirements

Minimize your transport costs by use of standard ISO transport and lifting methods

The EcoFlex eHouse portfolio covers a wide range of designs applicable to various industry segments. Its robust design and construction makes the EcoFlex eHouse easy to transport and install, and ideal for renewable wind and solar applications. Typical configurations consist of medium voltage (MV) switchgear, transformers and low voltage circuit breakers.

Features

- Fully assembled and routine tested in the factory
- Robust construction providing protection for equipment
- Reduced risk via standardized design and production
- Compact design, easily and economically transported
- Minimized site works
- Reliable – proven components from a single source
- All doors lockable to prevent unauthorized entry
- Available with MV air-insulated switchgear (AIS) or gas-insulated switchgear (GIS)
- Natural ventilation; forced air cooling or air conditioning

Transformer

EcoFlex can be supplied with either oil immersed or dry type transformers. The transformer can be provided with alarm and trip contacts for temperature and gas pressure.

Medium voltage

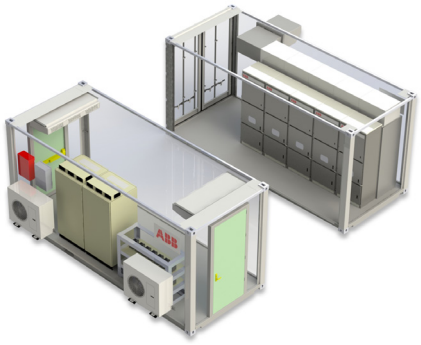
EcoFlex can be provided with different options of MV switchgear from ABB's SF_6 or air-insulated switchgear portfolio, fitted with ABB's line of relays for protection, remote monitoring and control. The MV switchgear can be supplied with SF_6 gas alarm, switch position contacts, plug-in MV surge arresters or auto reclosing functions. MV switchgear can be equipped with smart grid options to allow operation and monitoring via SCADA.

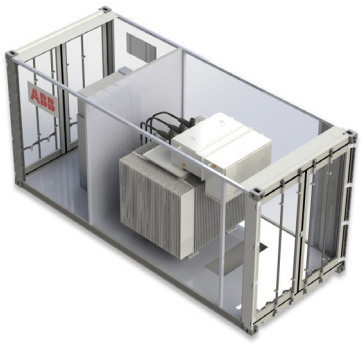
Low voltage

There are various numbers and ratings of outgoing feeders (ACB or MCCB) based on transformer rating and customer needs. EcoFlex can be equipped with devices to allow remote control and monitoring.

Housing

EcoFlex, in accordance with ISO/1161, is provided with corner fittings for lifting and transport. Enclosure standard dimensions are according to ISO 1496-1. It is constructed with steel frames, full vertical corrugated steel side and end walls, steel flooring, die-stamped corrugated steel roof and corrugated double hinged doors. All the steelwork is constructed by semi-automatic and automatic MIG arc welding. All exterior welding seams, including those on the base structure, are continuous to give perfect water-tightness.





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01 Typical layout for 2 module, switchgear and auxiliary solution
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02 Typical layout for 2 module, switchgear and auxiliary solution – separated and without cover
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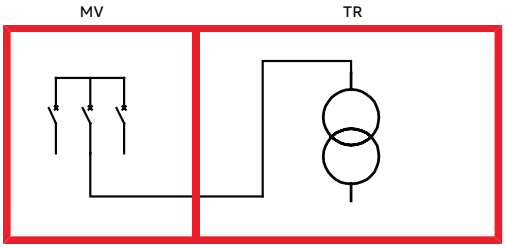
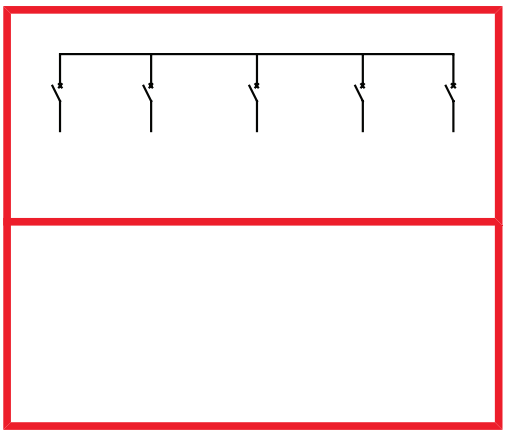
03 Typical layout for 1 module, transformer and RMU solution – without cover

General technical data

Maximum voltage rating, kV	Up to 40.5 kV
Ambient temperature range, °C	-25 to +40 °C
Relative humidity, non-condensing	95%
Max altitude above sea level without derating	1000m
Corrosion class (ISO 12944)	C5M
Standard dimensions (mm)	6058 x 2438 x 2896
IP rating, MV compartment/transformer	IP54/IP23

Single line diagrams/layouts





Pre-engineered solution technical data

Predesigned solutions are available for optimization and quicker delivery. The solutions are equipped with medium voltage switchgear SafePlus or SafeAir with combinations of cable switches (C), fused disconnectors (F) or circuit breakers (V). There are also configurations of switchgear only, from ABB's primary MV GIS and AIS range, up to 40.5 kV 40 kA. The transformer includes standard integrated protection for pressure and gas. Product datasheets are available with an overview of other options available. Pre-designed solutions are shown below:

Enclosure type	Steel	Steel	Steel
Overall parameters			
Length x width x height, mm	6058 x 2438 x 2896	6058 x 4876 x 2896	6058 x 4876 x 2896
Weight, approximate in metric tons	12 – 17.5 (depends on transformer)	9 (with maximum switchgear installed)	10 (with maximum switchgear installed)
Medium voltage switchgear			
Switchgear type	SafePlus (with C, V or F combinations)	UniGear ZS1	ZX0.2
Protection relay	REJ603	REF615	REF615
Transformer			
Transformer type	oil immersed	N/A	N/A
Power rating, kVA	Up to 4000	N/A	N/A
Low voltage level, V	400	N/A	N/A
Medium voltage level, kV max	up to 40.5	Up to 17.5 @ 31.5 kA	Up to 36 @ 40 kA
Standard protection	RIS*	N/A	N/A

*RIS is an integrated transformer protection unit consisting of pressure, gas and 2 levels of temperature switches.

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