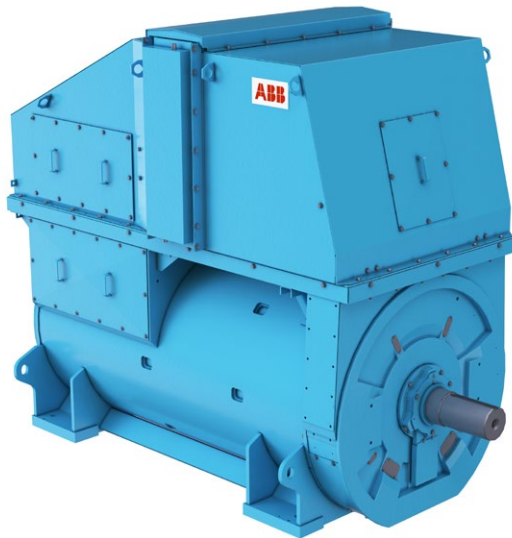


Medium and high voltage generators for steam and gas turbines

Reliable distributed power from 0.9 to 7.8 MVA



Standard industrial product family

As the global technology leader in motors and generators, ABB has expertise in different types of applications to help OEMs and end-users achieve even better performance. We build generators to the strictest manufacturing standards. Our products are used even in the biggest gensets with common base frames, and in demanding marine and offshore applications.

The new 500 – 630 frame size generators extend our broad offering into the 0.9 – 7.8 MVA power range at voltages of 3.3 – 13.8 kV. They are ideal for renewable applications and cogeneration in offshore platforms. These open air, TEWAC or TEAAC cooled, 4-, 6-, 8- and 10-pole synchronous generators feature H-class insulation. High performance PMG excitation is standard, complemented by an analog or digital AVR. Optional accessories enable easy customer interface adaptation.

The generators are built for continuous operation over a 30-year lifetime. ABB can provide marine classifications for offshore application if needed, e.g. waste heat recovery units (WHRUs), in which turbine expanders exploit the exhaust heat from the ship's diesel engines.

Future-proof design means significant savings

The standard platform design needs only few frame lengths to cover the whole power range, providing

ABB is expanding its offering to cover standard mid-range generators for turbine OEMs. Ideal for heavy duty applications; the new compact, high performance generators offer short delivery times and easy installation. ABB's globally identical production processes ensure high quality, easy sourcing and efficient logistics.

scope for complete designs in the future.

No additional length is required when adding filters for the IP44 option, and the same foot design is suitable for all protection classes. The large terminal space has room for optional bus bars, PTs and CTs.

Professional features in a standard generator series

The innovative built-in exciter and PMG unit, as well as the integrated main and auxiliary terminals and AVR, make the generators compact and easy to install – factors that are important in the turbine package design.

For grid operation, ABB's cutting-edge digital AVR option completes the high performance generator package. ABB is the technology leader in grid code compliant LVRT (low voltage ride through) systems, and the digital AVR not only offers power factor regulation, voltage matching and limiters but also built-in diode monitoring and auto-synchronization. Its fast voltage dip detection keeps the genset connected to the network during fault situations.

As a generator manufacturer, ABB can work together with customers to interpret the grid code and determine which requirements apply to generators. ABB can then assist in selecting the correct generator to comply with the requirements and therefore to achieve certification.

Reliable ABB generators with global manufacturing and technical support

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01 ABB's rigid salient pole rotor construction enables reliable operation under the most demanding load conditions.

High reliability and performance

ABB applies advanced design methods like FEM simulation and CFD, enabling OEMs to produce rigid, turbine package designs with low vibration and a long operational lifetime. 3D models can be supplied to help OEMs to rapidly prepare documentation for their complete system offering.

ABB generators have quality built in to their design, materials and manufacturing processes. Purchases are sourced from reliable vendors only and thorough testing is performed at all stages of manufacturing.

Both the stator and rotor use reliable ABB form wound windings and vacuum pressure impregnation – which has proven itself for more than 30 years in tens of thousands of large motors and generators that are operating successfully all over the world. Our advanced insulation system gives the windings superior strength to withstand vibration, and mechanical and electrical stresses. ABB uses many different ways to minimize harmonics, such as 5/6^{*)} winding pitch which reduces all significant harmonics to minimum levels. A 2/3 pitch winding, which eliminates only the 3rd harmonic, can be provided on request.

*) Exact pitch may vary slightly case by case.

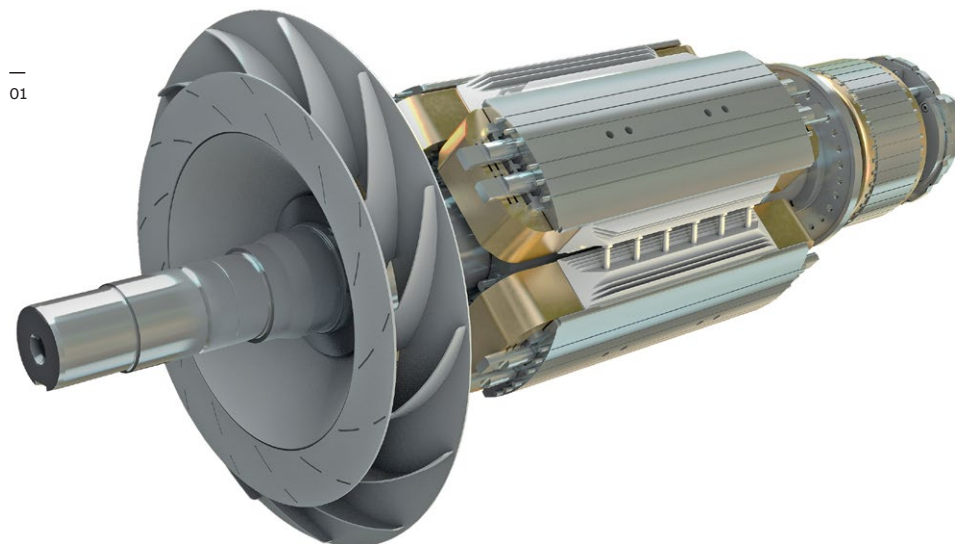
Together with our expertise in a wide range of bearing constructions, this results in high availability and troublefree operation.

The new standard product family offers the same high reliability and low cost of ownership as our proven high power generators. It provides a cost-efficient solution with the fastest delivery times, backed by ABB's global engineering, manufacturing and service network, and local presence around the world.

Optimized sourcing and logistics

ABB is a truly global company that offers its customers a complete portfolio of products – so OEMs can get all the products they need on time, wherever they are located.

This new generator is designed, manufactured and supported globally. It is produced in globally identical high quality manufacturing processes, and is backed by local engineering support. As a result our customers can benefit from short delivery times with optimized sourcing and logistics.



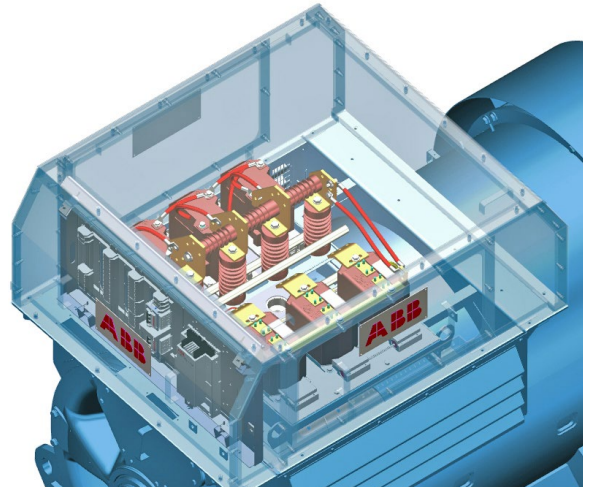
Professional features in standard generator series

02 ABB's cutting-edge digital AVR option makes for a reliable generator package without needing external synchronization or diode monitoring units.

03 Large, integrated terminal space in top of frame for easy installation of cables, transformers and AVR, with a clever cooling function.

Key benefits

- Compact in size and easy to install
 - built-in exciter and PMG
 - large terminal unit with built-in AVR
- Adaptability with short delivery times
 - standard platform for serial manufacturing with optional accessories
 - ETO range with pre-engineered configurations
- Reliable operation under changing and non-linear loads
 - good short-circuit, overload and motor starting capabilities
- Optimized sourcing and efficient logistics
 - globally identical ABB manufacturing processes
- Local support
 - backed by ABB's global service network
- Complete portfolio of products from single, reliable partner
 - independent supplier, technology and market leader with unrivalled experience



03

Technical data

Frame size	500 to 630
Power range	0.9 – 7.8 MVA
Voltage range	3.3 – 13.8 kV
Frequency	50 or 60 Hz
Pole number	4-, 6-, 8- and 10-pole (720 or 1800 rpm)
Cooling and protection	IC 0A1/ IP23, open air cooled IC8 A1W7 and IC616 / IP54
Mounting	IM1001 double bearings, normal feet
Main dimensions	500: 2480 x 1310 x 1730 mm (LWH) 560: 2700 x 1400 x 1850 mm (LWH) 630 A, B and C: 3163 x 1650 x 2049 mm (LWH) 630 D: 3363 x 1650 x 2049 mm (LWH)

Design features

Insulation class/ Temp. rise	F/F
Excitation method	PMG as standard
AVR type	Digital or analog
Winding pitch	5/6, (2/3 on request)
Connections	Top integrated terminals and AVR, 4 bus bars – 6 leads

Main options

- Cutting-edge digital AVR (advanced ABB Unitrol 1010)
- 6 bus bars, CTs and PTs for differential protection
- Air filters (with no power derating)
- Adaptable cable output, all directions with 45° angle cable tube

02



Proven ABB generators enable reliable power production with the lowest life time cost

ABB is the technology and market leader in motors and generators for all industrial and marine applications. We have supplied tens of thousands of large motors and generators to customers all over the world, based on more than 120 years of experience in the widest range of solutions.

ABB's global engineering, manufacturing and service network enables our customers to offer reliable and efficient power generation wherever they operate.

For more information please visit:
new.abb.com/motors-generators

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