

Medium and high voltage generators for engines

Range from 0.9 to 7.8 MVA

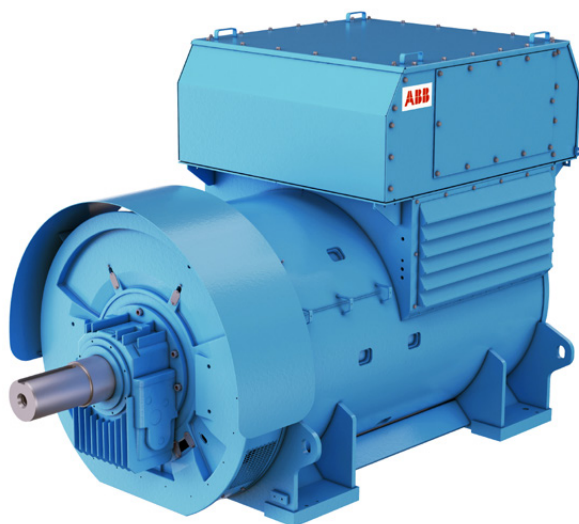


ABB is expanding its range to cover standard 4-, 6-, 8- and 10-pole generators for engine and genset manufacturers. Ideal for continuous or standby power, the new compact, high performance generators offer short delivery times and easy installation. ABB's globally identical production processes ensure high quality, easy sourcing and efficient logistics.

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 for even the biggest gensets with common base frames.

The new upgraded 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 both continuous and standby applications.

These open air cooled, TEWAC or TEAAC synchronous generators feature H-class insulation. Reliable, high performance PMG excitation comes as standard, complemented by an analog or digital AVR. Optional accessories enable easy customer interface adaptation.

Future-proof design means significant savings

The many pre-engineered options mean the standard platform needs only a few frame lengths to cover the whole power range and provide scope for various designs in the future. Adding an inlet air filter (IP23), for example, does not require extra width or derating. The NEMA version also has the same dimensions, with only a slightly higher terminal box.

No additional length is required for the IC01A-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. The center bus bar arrangement enables easy cable connection. These factors not only help OEMs to minimize the number of genset base frames but also produce significant savings in engineering, material and installation costs.

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 genset business.

In parallel operation no additional PLCs or cabling are needed to realize Voltage Droop Compensation (VDC) control. 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.

Reliable ABB generators with global manufacturing and technical support

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

— 02 Built-in exciter and PMG in NDE shield with easy access to diodes.

High reliability and performance

ABB applies advanced techniques like FEM simulation and CFD, enabling OEMs to produce rigid, predictable genset designs with excellent vibration durability. 3D models can be supplied to help OEMs to rapidly prepare documentation for their genset 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 on a case by case basis.

Together with our expertise in a wide range of bearing constructions, these factors result in high availability and trouble-free operation.

The new standard product family offers high reliability and low cost of ownership. It provides a cost-efficient solution with the fastest delivery times, backed by ABB's globally identical high quality manufacturing processes and worldwide network of local engineering and service facilities.

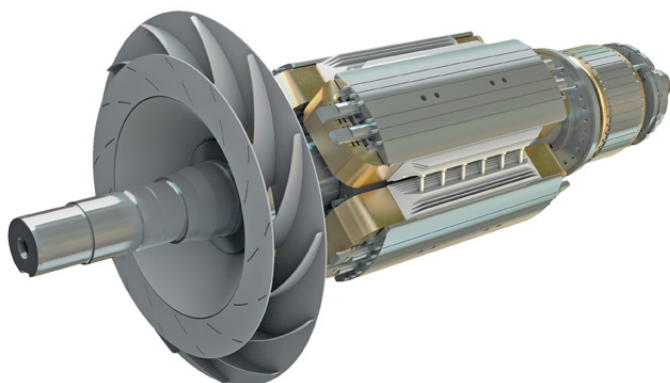
The ETO design – engineered to order

ABB generators fit with all engine brands and can be easily adapted to comply with their special requirements. In addition to the most common IP23 open air cooled 4-pole design with single or double bearings, various pre-engineered solutions and selected ETO configurations are available.

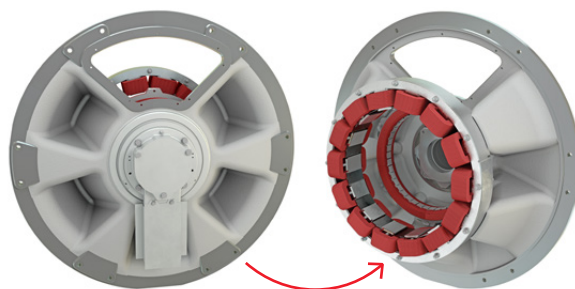
Optimized sourcing and logistics

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

—
01



—
02



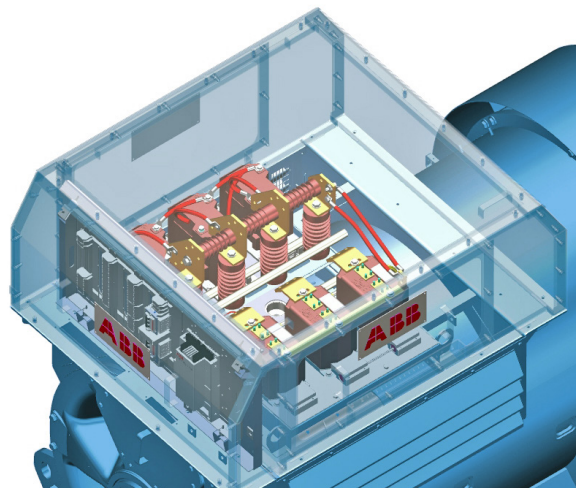
Professional features in standard generator series

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

04 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 using the most reliable PMG excitation
- 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



04

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 – 1800 rpm
Cooling and protection	IC 0A1/ IP23, open air cooled IC8 A1W7 and IC616 /IP54
Mounting	IM 1101, double bearings, raised feet
Main dimensions	500: 2463 x 1310 x 1789 mm IM1101 (LWH)
	560: 2693 x 1400 x 1909 mm 630: 3363 x 1650 x 2049 mm

Design features

Insulation class/ Temp. rise	H / H, F or B
Excitation method	PMG as standard
AVR type	Digital or analog
Winding pitch	5/6 (approx.), 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)
- SAE 0 and SAE 00 flanges
- 6 bus bars, CTs and PTs for differential protection
- Inlet air filters (with no power derating or extra width, IP 23)
- Adaptable cable output, all directions with 45° angle cable tube
- Customer specific IP, IC and IM options

03



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

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG.
Copyright© 2021 ABB. All rights reserved.