BROCHURE

ABB Data Center generators

NMG Generators — Powering data centers reliably



Generators for world's ever-increasing data demand

Data centers are extremely demanding in terms of the reliability (up-time) and quality of their power supplies. High reliability and excellent performance make ABB generators an ideal solution for data centers.

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ABB compact medium and high voltage synchronous generators offer maximum reliability for data centers

Highest reliability and performance
Reliability and up-time are essential for data centers. For maximum reliability, ABB NMG generators feature form wound windings and vacuum pressure impregnation (VPI) for both the stator and rotor. This VPI system gives the windings added strength to withstand vibrations as well as mechanical and electrical stresses.

Adjustable design for your application
In terms of electrification, not all of the data centers are similar. Therefore, it is essential to have a fully functional generator design for the application. ABB NMG generators are designed especially from this perspective – ABB NMG generators cover the wide range of PF s (Power Factors) and support non-linear loads, high block-load capability and load characteristics specified by certification bodies like the Uptime Institute and TLC.

Our designs support fast genset ramp-up and voltage build-up by having a high-performance PMG excitation combined with digital AVR. Reactance levels are chosen to meet the best starting-kVA (skVA) requirements.

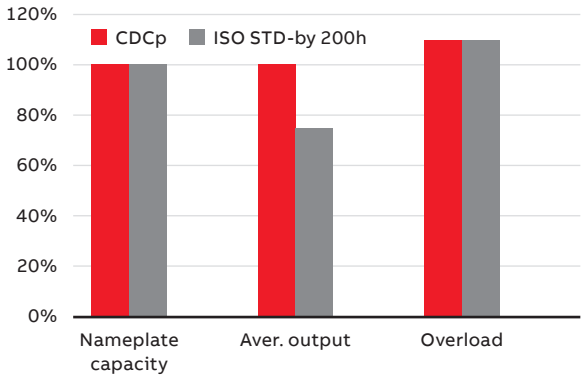
Higher quality of electricity from minimized harmonic content
A key method of improving the quality of an electricity supply is to reduce its harmonic content. As a standard, ABB supplies the generators with a 5/6 winding pitch, which reduces the most significant harmonics (5th and 7th) to minimal levels. At the same time, the 5/6 winding pitch increases the generator's overall efficiency, which enables them to be built in a smaller size. ABB can also supply generators with a 2/3 winding pitch in cases where the neutral point is directly earthed.

Reliable solutions for data center

Continuous Data Center power

The continuous data center power (CDCp) rating is applicable for all data center installations where a reliable utility is the main electricity source. ABB NMG generators provide unlimited operational hours per year with 110% overload-ability. The CDCp of ABB NMG generators are applicable for all TIER levels from I to IV as defined by the Uptime Institute, which means it has a wide range of power with no limitation on average power.

Continuous Data Center power – CDCp



Endorser of the EU Code of Conduct for Data Centers

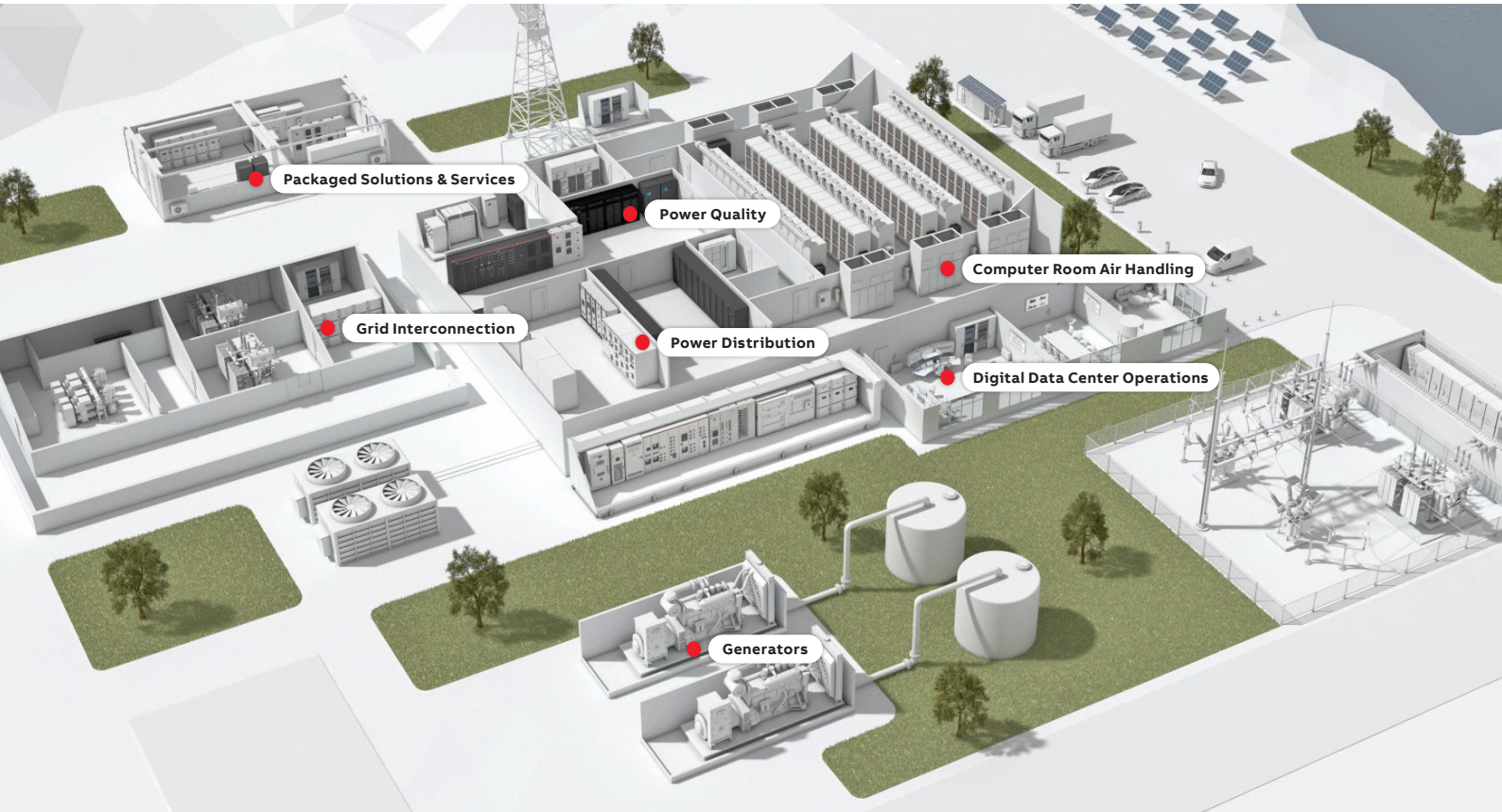
This Code of Conduct has been created in response to the increasing energy consumption in data centers and the need to reduce the related environmental, economic and energy supply security impact.

The aim is to inform and stimulate data center operators and owners to reduce energy consumption in a cost-effective manner without hampering the mission-critical function of data centers. The Code of Conduct aims to achieve this by improving understanding of energy demand within the data center, raising awareness, and recommending energy-efficient best practices and targets.

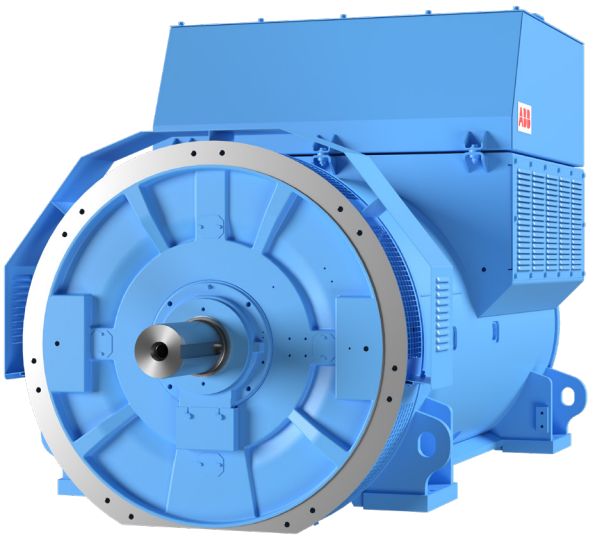
ABB complies with the code of conduct and responsibly supports customers via cost-effective energy consumption and positive environmental effect.

ABB data center solutions

ABB data center solutions and integrated systems are designed for the world's ever-increasing data demands. We offer technologies for electrification, cloud, colocation and telecommunications services to customers. Learn more via: https://new.abb.com/data-centers/



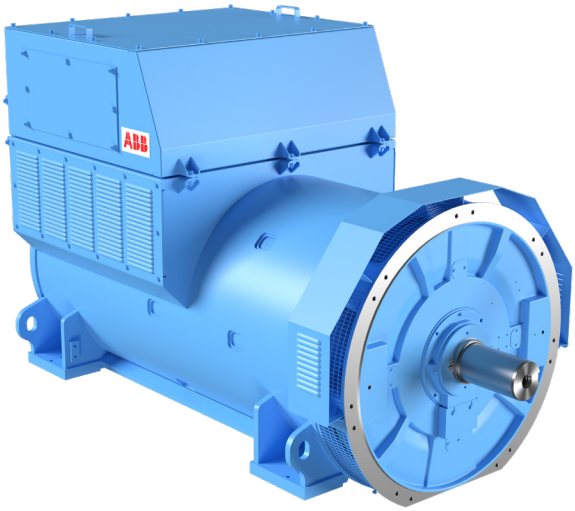
Key Benefits of ABB NMG generators for data center

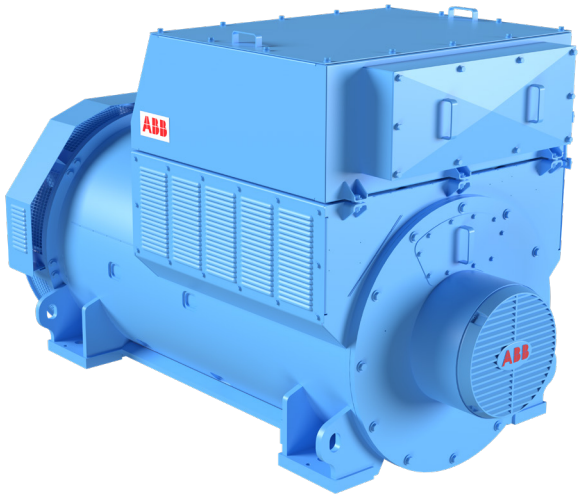


- 100% up-time and reliability
- Best-in-class power density ensures smallest footprint of the whole genset
- Perfect technical features arrangement for Data center needs
- Best total cost of ownership and operations with a short lead time
- Continuous Data Center power ratings
- Worldwide service

General Technical specifications

NMG generator	
Rated output	1375 – 3000 kVA
Rated el. Power	1100 – 2400 kWe
Rated voltage	10500 – 11000 V
Rated current	75.6 – 165 A
Duty type	CDCp
Protection	IP23
Cooling method	IC0A1
Direction of rotation (face D-end)	Clockwise
Mounting arrangement	IM1101
Number of bearings	1 or 2
Estimated machine weight	4600 – 6800kg
Applicable standard	IEC60034-1
Temperature rise class	F or H
Power factor	0.8
Frequency	50 Hz
Rated speed	1500 rpm
Overspeed	1875 rpm





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Key Technical specifications per type

Type	NMG 0500A	NMG 0500A	NMG 0500B	NMG 0500B	NMG 0500B
Duty type	CDCp	CDCp	CDCp	CDCp	CDCp
Rated output	1375 kVA	1500 kVA	1750 kVA	2000 kVA	2250 kVA
Rated el. Power	1100 kWe	1200 kWe	1400 kWe	1600 kWe	1800 kWe
Rated voltage	10500 V	10500 V	10500 V	10500 V	10500 V
Rated speed	1500 rpm	1500 rpm	1500 rpm	1500 rpm	1500 rpm

Type	NMG 0500B	NMG 0500C	NMG 0500C
Duty type	CDCp	CDCp	CDCp
Rated output	2500 kVA	2750 kVA	3000 kVA
Rated el. Power	2000 kWe	2200 kWe	2400 kWe
Rated voltage	10500 V	10500 V	10500 V
Rated speed	1500 rpm	1500 rpm	1500 rpm

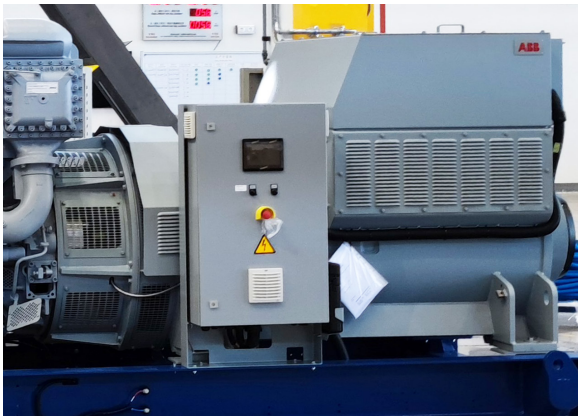
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List of Accessories

Standard accessories in NMG generators	Optional accessories
Voltage measurement: U_n / 110 V, 20 VA, CL0.5, 1-ph	Additional stator winding sensors per customer's needs
Current measurement: I_n / 1 A, 4 VA, CL 0.5, 50/60 Hz	Dual type RTD for bearings
Stator winding protection: 6 pcs (2 pcs/phase) RTD (Pt100), 3-wire	Differential current transformers
RTD (Pt100) for bearings: 2 pcs (1 pcs / bearing), 3-wire	3-ph voltage measurement
Anti-condensation heater: 230 VAC, 1 phase	Voltage regulator type and brand per customer's preference
Voltage regulator: Digital AVR	SAE 0 or SAE 00 flange
Auxiliary terminal box B3A IP23	

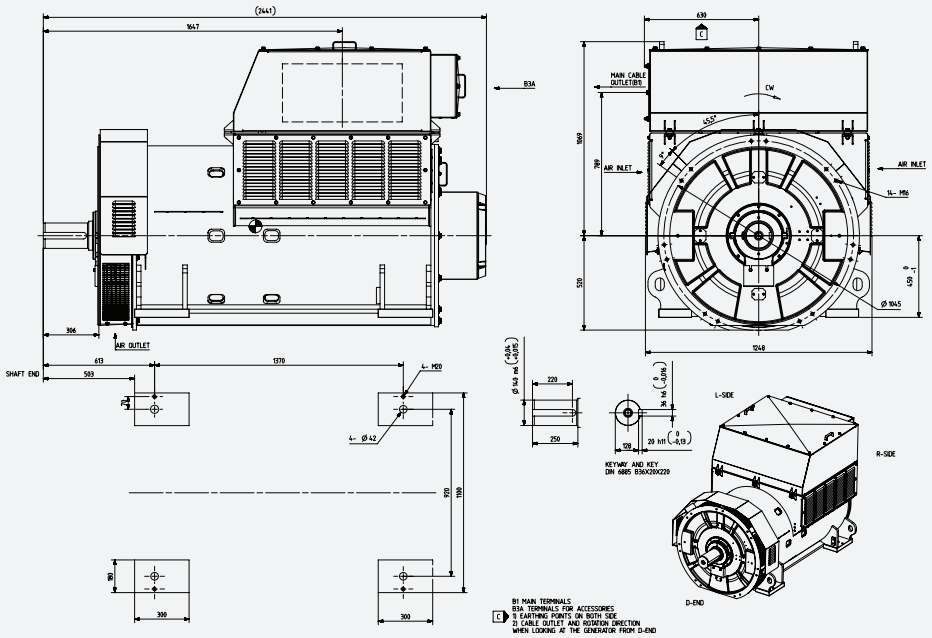
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Emergency and back-up generator set supplying 2,500 kVA / 11 kV

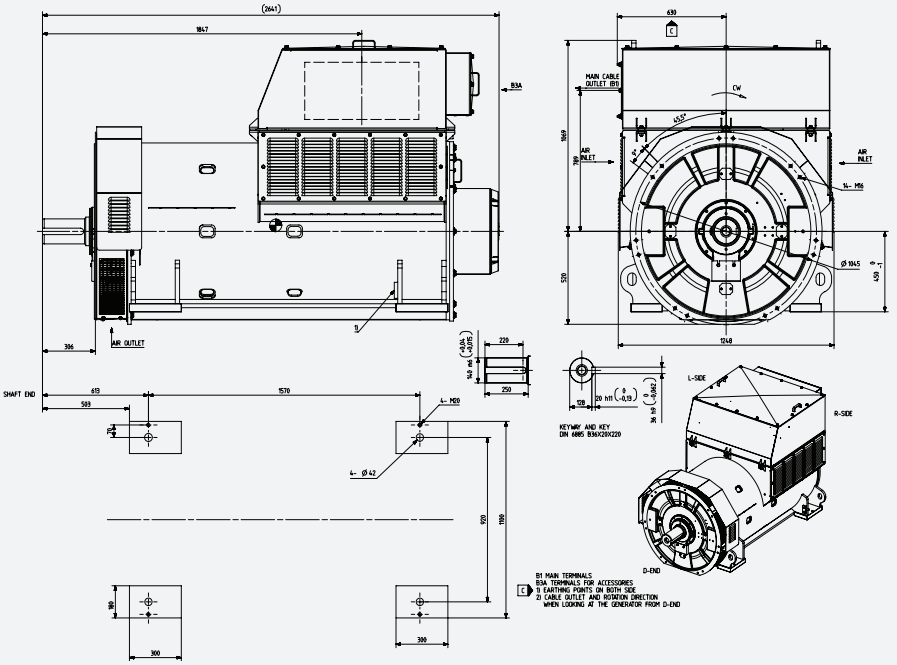




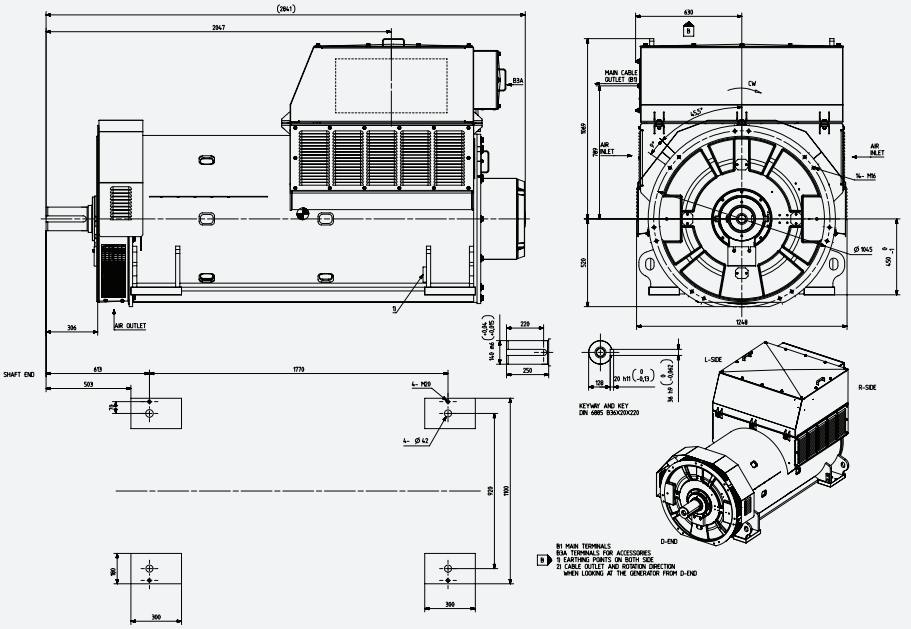
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Dimensional drawing of medium and high voltage generator for data center applications



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NMG 0500A_04 DAP



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NMG 0500B_04 DAP



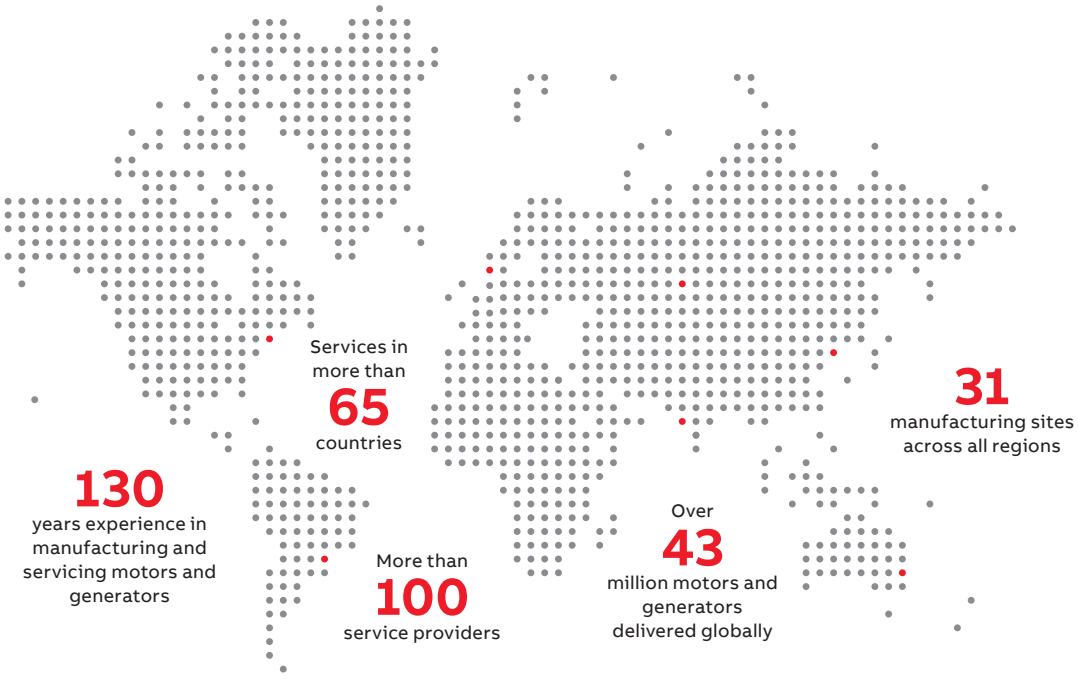
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NMG 0500C_04 DAP

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

Throughout the life cycle
From installation and commissioning – through spares, repairs and upgrades – to remote monitoring solutions, ABB offers the most extensive service offering to fit your needs. Based on 130 years' experience of building and servicing motors and generators, ABB service units and authorized value providers offer services that maximize performance, uptime and efficiency throughout the life cycle of your generators.

Service near you
Our network of service centers and certified partners spans the world. This enables us to deliver local support no matter where you are located, and ensures that we always provide the optimum, most cost-effective solution.

Benefits of ABB support
- High uptime
- Maximum performance
- Extended useful equipment life



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

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