



400Hz Alternators



Mecc Alte 400Hz In Depth

Proven Capability

High levels of performance, with the standard alternators filled with performance enhancing features. Supported through an experienced and computer assisted FEM design, professional team able to evaluate all tenders and ensure exceptional support both pre and post order. Unique special machines to suit case specific applications are available, with a specific design to assure the lowest possible losses that is so critical in 400Hz machines. We know that iron losses and shaft currents are a thought job at high frequency, and we select the lowest losses electrical steel on the market.

Exceptional Excitation

The 'MAUX' (Mecc Alte AUXiliary Winding) is used throughout the range of alternators, and has been a proven standard for Mecc Alte in all market sectors. It is a brushless excitation system deriving power from a dedicated auxiliary winding within the main stator. This winding is protected by 4 layers of polyester in addition to the clear varnish and EG43 severe environment protection used in the most demanding applications. Fitted within the main stator, it minimizes overall dimensions of the alternator and ensures a compact machine.

This system ensures a high level of motor start ability, and surpasses the mandatory requirements giving >300% forced current (short circuit maintenance) for 20 seconds – 10 seconds more than the standards require.

Radio Interference Suppression

The standard generators comply with the specification VDE 0875, degree "N" and with the basic safety requirements of the European regulation on electromagnetic compatibility; by applying the EN 60034-1 and aviation rules, we comply with the above-mentioned regulation. Other standards can be achieved adding filter sets, supplied by Mecc Alte.

UVR6-H400B

The UVR6-H400B regulator is an advanced compact electronic regulator used from Mecc Alte for 400 Hz machines. It is internally designed, as we know that this is the only viable route to get the best from our machines.

This regulator is equipped with a low speed and overload protection with an adjustable intervention threshold, it has adjustable voltage stability and it offers the possibility for a remote voltage regulation with a 3-phase sensing capability.

Construction

- Rigid steel frames (FeP12)
- Rotors are dynamically balanced with ½ key (ISO 8821), conforms to class G.2.5 (ISO 1940)
- Copper damping cage is standard from 45kVA, for superior transient load performances

Bearings

- Sealed for life bearings. On customer request, we can select insulated bearing



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Insulation and Impregnation

Insulation materials used provide a system insulated to Class H level. Superior processes are employed to add an EG43 compound after insulation over the main and exciter windings to give a very high standard of protection. Higher levels such as the black butadiene (rubberized) coating are also available.

Reliability

Standardized components are used with 'families' of industrial machines to give very high degrees of interchangeability. Lower component count throughout the range, and also within individual machines, has focused efforts to enhance the reliability of the products. In testimony to this, the reliability prediction according to the military standard MIL-HDBK-217F, was a failure rate of 75,82 fpmh (failures per million hours), 13,189 hours mtbf (mean time between failures).

Minimum Maintenance

The design of the Mecc Alte 400Hz alternators are built with low maintenance in mind. Bearings have up to 40,000 hours life expectancy, and windings, including the auxiliary winding, have high degrees of protection. Where maintenance is necessary, access is very simple (ie no PMG (permanent magnet generator) to remove before replacing and exciter stator. In addition the commonality of parts improves component availability.

Compact Dimensions

Comparing against the competition, the Mecc Alte 400Hz alternators are among the most compact and light alternator packages available. This incredible fact considers machines are among the highest efficiency. This highlights the superior ability of Mecc Alte in the design and production of their alternators.

Accessories

A large number of accessories are available on request. Including:

- Space heaters
- Temperature detectors (thermistors or PT100), for windings and bearings
- Higher degrees of mechanical protection (IP23, IP45 or inlet air filters)
- Line drop compensator (LDC)
- Black butadiene winding protection

Quality Assurance

Products are built in accordance with ISO 9001, accredited by Det Norske Veritas; approvals by Canadian Standards Authority (CSA) and also Underwriters Laboratory (UL) for the insulation systems.

Designs are executed according to the most common specifications such as CEI 2-3, IEC 34-1, EN 60034-1, VDE 0530, BS 4999-5000, CAN/CSA-C22.2 No.14-95 – No.100-95, or aviation rules ISO 1540, BS 2G 219, EN2282, Mil STND 704F. Lamination design has been developed by finite element analysis.



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Power ratings

Type	RPM	Class H [kVA]	Class F[kVA]
HCO3-1S/14	3428	5,5	5
HCO3-2S/14	3428	7	6,5
HCO3-3S/14	3428	9	8,5
HCO3-2L/14	3428	11	10
HCO3-3L/14	3428	13	12

115/200-208V 400 Hz - 3 Ph. 40° ambient temperature

Type	RPM	Class H [kVA]	Class F[kVA]
HCO32-1S/20	2400	45	40
HCO32-2S/20	2400	50	45
HCO32-2L/20	2400	60	55
HCO32-3L/20	2400	70	65

115/200-208V 400 Hz - 3 Ph. 40° ambient temperature

Type	RPM	Class H [kVA]	Class F[kVA]
HCP34-1S/20	2400	75	70
HCP34-2S/20	2400	95	85
HCP34-3S/20	2400	125	115
HCP34-1L/20	2400	150	135

115/200-208V 400 Hz - 3 Ph. 40° ambient temperature

Type	RPM	Class H [kVA]	Class F[kVA]
HCP34-1S/24	2000	75	65
HCP34-2S/24	2000	95	85
HCP34-3S/24	2000	125	110
HCP34-1L/24	2000	150	135
HCP34-VL/24	2000	180	165

115/200-208V 400 Hz - 3 Ph. 40° ambient temperature

DC Generators or custom projects on different poles number are available on direct request.



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