



# Sincro SK industrial alternators: simply smart.

**Sincro 4 pole alternators range, developed with user friendly approach and technologies, provides compactness, versatility, easy installation and maintenance.**

**Sincro SK range of industrial brushless/ AVR alternators, with powers from 65 up to 2,600 kVA/50Hz, is made of more than 30 models available in 7 series (SK225, SK250, SK315, SK355, SK400, SK450, SK500) in low and medium voltage.**

These alternators are made in Sincro d.o.o. factory in Škrlevo (Rijeka, Croatia), just 70 kilometers from Italy. Sincro d.o.o. is part of the Soga Energy Team, being held by Soga S.p.A., owner of the Sincro brand and Cornedo plant, and which head-quarter is based in Montecchio Maggiore (Vicenza, Italy). The partnership between Italy and Croatia

started back in 2002 when Sincro S.r.l., international leading company in the production of 2 pole alternators established in 1987, acquired from the Končar Group (currently a relevant industrial group, known throughout the world) the business unit Končar Electrical Rotating Machines, dedicated to the production of 4 pole industrial alternators and which origins date back to 1948 with the name Svjetlost.

The combination of Sincro's technological know-how and Končar's electromechanical tradition has led, in a few years, to the full integration of the skills within the organizations, supported by huge investments in Rijeka plant

in the most modern production equipments (numerical control machines and robotic systems for each stage of production), as well as in the training of the staff, rapidly increasing the number of skilled employees. Sincro d.o.o. is also ISO 9001:2008 (Quality management systems) and ISO 14001:2004 (Environmental management systems) certified.

The outcome of all of this process is the SK range of 4 pole alternators (SK stands for Sincro-Končar) which development, based on a user-friendly approach, has determined the introduction of standard features and technologies making them very compact, suitable for the most different environmental contexts and

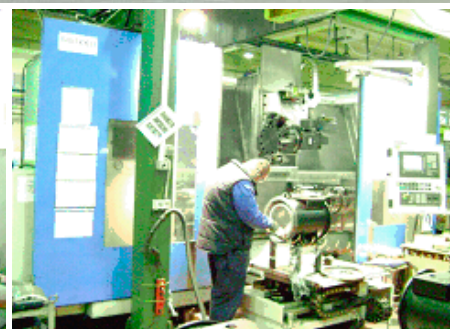
Sincro d.o.o. in Rijeka, Croatia



1956: workers at Svjetlost



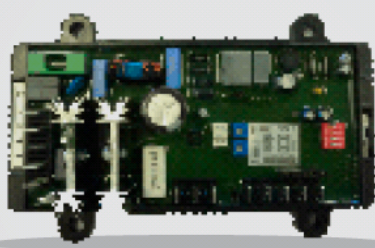
Today: automatic welding process



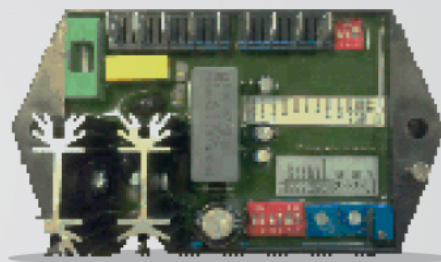
Today: automatic housing machining



BL4-U / 65 - 300 kVA



DBL1 / 350 - 2,600 kVA



RD2 / on request

applications and able to simplify the building of generating-sets and their maintenance. For OEMs, this implies an increase in efficiency and optimization of the generating-set assembly and after-sale processes.

SK alternators are among the most compact solutions today available in the market thanks to accurate studies on their design, developed through FEM systems to optimize the electromagnetic circuit and increase both efficiencies and performances. Their compactness brings to a strong reduction in the gen-sets manufacturing (canopies and basements) and logistic costs (storage and shipping).

The range is suitable for any kind of environment. The standard protection degree is IP23; for specific environments, models with a higher protection are available, with TEFC and TEAAC execution. For marine applications the models are BV (Bureau Veritas) certified; executions in accordance with other marine registers can also be built.

The protection grids are made in zinc plated steel and are equipped with special hooks that allow an easy and quick assembly and disassembly. To assure the clear reading of the data over time, also the data plates are made with metal, cut with laser technology.

The lay-out of the terminal boxes is designed to make the connection operations easier and to allow cables exit to be possible from both sides of the alternator.

The AVR can be accessed through a small opening on the terminal box, to carry out setting operations in a safe way. If necessary, it can be moved on the opposite side of the terminal box.

Thanks to a microprocessor, the digital regulators can be connected to a pc for supervision, both locally and remotely, of all measurements, states and registered alarms, as well

as for allowing regulation, at a distance, of the machine's parameters.

Just two types of AVR are covering the whole range, to be used on more models: the BL4-U analogic regulator up to 300 kVA having an accuracy in the voltage regulation of 1% and single-phase sensing, and the DBL1 digital AVR from 350 up to 2,600 kVA with an accuracy in the voltage regulation of 0,25% and three-phase sensing. On request the BL4-U can be substituted by the RD2 digital AVR, with an accuracy in the voltage regulation of 0,5% and three-phase sensing.

The feeding voltage of the AVR is supplied by an auxiliary winding up to 720 kVA. From 800 kVA it is supplied by a PMG system that assures better stability of the output voltage even with unbalanced and distorting loads; it can be applied already from 65 kVA.

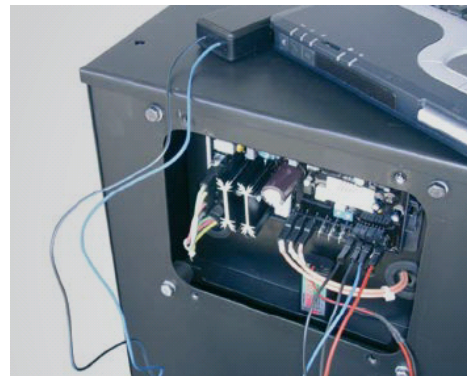
Such solutions lead towards a better management of heavy duties (example: electric motors starting) and the decrease of EMI/EMC problems (EMC filter for 'N' VDE 0875 grade is standard. Additional filter for 'K' grade is available on request, to further reduce the emissions).

In order to maintain the best waveform, models are made with skewed rotors and damper cage.

The windings, all with 2/3 pitch, are impregnated with resins standing up to high temperatures (primary impregnation). Always as a standard, all SK are tropicalized.

SK range can be equipped with a wide possibility of optionals such as, just to mention a few, space heaters and drop-kit, which can be easily retrofitted, besides with custom-made executions like, for instance: 12-lead-execution, encapsulation of the windings, specific external painting for extreme environments, and many more.

Direct access to the AVR



Remote/local control

While SK 4 pole alternators from 225 frame size up are manufactured in Croatia, the smaller ones on 132 and 160 sizes are made in Italy in Sincro plant. The Italian range (from 6 to 70 kVA/50Hz) includes also the 2 pole versions (SK160 supercompact - FB - HB - IB series).

With such an extensive offering of models and features, Sincro range of brushless/AVR alternators is one of the most complete available today in the international market.

