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F.u.G. Elektronik is an experienced manufacturer of capacitor chargers for kicker magnets

Extended product program for capacitor chargers now also with enhanced operation comfort.

F.u.G. Elektronik GmbH, the experienced Rosenheim manufacturer of highly precise high and low voltage power supplies, offers a wide range of capacitor charging power supplies for different applications.

One of them is the use with so called kicker magnets. These are magnet coils which serve to steer the particle beam of an accelerator to a new trajectory to extract or inject it from or to a Synchrotron, for example. Due to the high speed (approaching the speed of light) of the particle beam, the steering magnetic field shall change very fast. For a synchrotron ring with a diameter of approx. 1km this means, that there is only approx 10 μ s time between two succeeding one another passages of the same particle package. For more than one packages stored in the ring or for smaller rings this time will be shorter. During this time the magnet has to establish the magnetic field, which is necessary to bend the trajectory of the particles. To reach the fast changing speed of the magnetic field strength, a high voltage shall be applied to the coil. This voltage is usually delivered by a bank of capacitors which has to be recharged after each shoot.

So there is a need in capacitor charging power supplies which are especially tuned to the capacitive load, and can charge the capacitors also with high repetition rates, achieving a good reproducibility.

During forming the discharging pulse often is used the resonance of the oscillating circuit formed from capacitor bank and coil. The polarity inversion of the voltage due to this makes additional demands on the power supply unit.

F.u.G. offers capacitor charging power supplies with a charging power from less 100J/s up to 150KJ/s and more at voltages up to 65kV. They are designed for a repetition rate of up to 100 Hz (or more on request) and can withstand repeated oscillating discharge. The reproducibility between discharging pulses is 0,1%. They can be operated continuously or triggered by means of external signal.

The picture shows the new design of the operating panel with two 4 ½ digit displays for voltage and current, separately adjustable over voltage protection and the possibility to display the actual set values. The displays can show actual values or - on request - average values or peak values processed by means of a sample-and-hold circuit. A range of matching computer interfaces completes the offer.