

Digital voltage regulator - KONreg S1000

All-in-one excitation system for brushless and small synchronous generators, motors, and motor-generator sets

With its compact design, small dimensions, and integrated power converter, the KONreg S1000 is the perfect fit for brushless synchronous generators, motors, and motor-generator sets.

The KONreg S1000 supports a broad range of communication protocols and includes multiple communication interfaces for seamless system integration.

Its advanced design and dedicated software enable excitation control up to 25 A (40 A for 10 s) and 375 V DC, ensuring optimal performance and stability.

The primary control loop is an automatic voltage regulator (AVR) with an adjustable PID controller. Additionally, the system incorporates higher-level control functions, such as a power factor regulator and a $\cos(\varphi)$ regulator, ensuring precise voltage and reactive power control. As a backup control mechanism, the system includes a PI-type excitation current regulator. Other key functionalities include automatic synchronization, allowing for smooth integration into power grids.

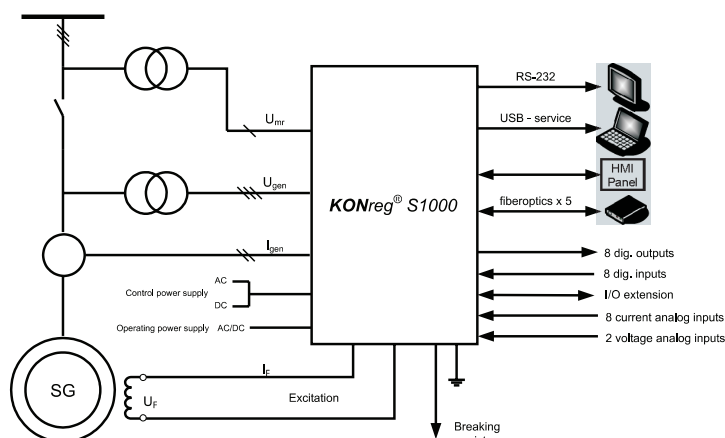
The KONreg S1000 enables easy parameter adjustment, real-time signal monitoring, and waveform recording via a personal computer or HMI devices.

Its digital control platform is highly adaptable, incorporating multiple subsystems responsible for energy production optimization and safe generator operation.



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| TECHNICAL SPECIFICATIONS | |
|-------------------------------------|---|
| Control power | |
| AC Supply | 85 - 264 VAC |
| DC Supply | 100 - 375 VDC |
| DC Supply | 24 VDC |
| Operating power | |
| AC Supply | 0 - 300 VAC |
| Generator voltage & current sensors | |
| Generator voltage (2-phase) | 100 V or up to 450 V |
| Generator current (2-phase) | 1/5 A |
| Frequency range | 30 - 120 Hz |
| Field output | |
| Nominal current | 25 A |
| Max. output current (10 s) | 40 A |
| Digital inputs (8) | Dry contacts, three voltage levels (24 V, 110 + 125 V, and 220 + 250 V) |
| Electrical data | |
| Auxiliary power supply | |
| • Maximum power consumption | 25 W |
| Excitation output | |
| • Maximum continuous current | 25 A DC |
| • Overload (max. 10 s) | 40 A DC |
| • Overload (max. 4 min) | 30 A DC |
| Measurement frequency range | 30 - 120 Hz |
| Accuracy | |
| • Voltage regulation | < 0,1 % |
| Analog input (2) | |
| • Current range | 4 - 20 mA |
| • Binary/Analog I/O | Fully isolated |
| Communication | |
| Interfaces | ETHERNET, GPRS, UMTS, Wi-Fi, OPTICS |
| Protocols | PROFIBUS, MODBUS, CAN, IEC 60870-5-104 |
| Environmental conditions | |
| Storage temperature | -25° do 65°C |
| Max. operating altitude | 1000 m |
| Max. relative humidity | 95% at 40°C |
| Mechanical data | |
| Weight | 19 kg |
| Protection class | IP 20 |
| Dimensions (width x depth x height) | 334 x 295 x 278 mm |



Block diagram of the digital voltage regulator KONREG S1000