

SPEED CONTROLLER S 2005

SUITABLE FOR ALL
TURBINE TYPES



BELTRAME
CENTRO SERVIZI ENERGIA



Having a consolidated experience in the management of generation fields, BELTRAME CSE has developed a new speed controller for thermoelectric and hydroelectric turbines, type S2005.

The control is based on microcontroller with DSP cores with analog data acquisition, which implements the most sophisticated technologies provided by electronics and allows a FULLY DIGITAL setting of the system.

All adjustment settings and implementing, can be programmed via PC software.

All quantities of interest can be monitored either locally or remotely in real time.

The new AVR S2005 is completely in compliance with the following standards: CEI 0-16 - CEI 0-21 - ATTACHED TERNA A70.

Complete with communication port for protocol IEC 61850.

TECHNICAL FEATURES

OPERATING MODES

- Hot or cold start-up modes according to the curves set by the operator (for steam turbines);
- Possibility of manual start from operator or up/down input;
- Possibility of limiting the opening of the actuator in percentage;
- Double dynamic distinguishing between speed control or load control;
- Measurement and control the active power.

AVAILABLE INPUTS

- 6 analog input (isolated) 0÷20mA;
- 2 pick up inputs;
- 3 current inputs;
- 1 mains input;
- 3 generator inputs;
- 20 digital inputs;

AVAILABLE OUTPUTS

- 6 analog outputs (isolated) 0÷20mA;
- 1 output AVR $\pm 5V$;
- 1 actuator output 1 - 0÷200mA;
- 1 actuator output 2 - 0÷20mA;
- 13 digital outputs.

COMMUNICATIONS

- RS232 service serial communication;
- RS485 serial communication type;
- 2 Ethernet ports (protocol IEC 61850).

FUNCTIONALITY

- Speed control;
- Turbine load control (power loop);
- Measuring electrical parameters;
- Level control (Hydroelectric turbines);
- Pressure derivation control;
- Backpressure control.

SCADA

Using Ethernet communication the regulator status can be monitored as well as all electrical readins. The ethernet communication based on the Modbus TCP/IP-RTU protocol.

OPERATOR PANEL *(optional)*

Thanks to the operator panel all parameters could be easily and convenient displayed in real-time as follows:

- Pick-Up reading (Hz);
- Revolutions reading (RPM);
- Active power reading;
- Revolutions set point;
- Generator output voltage and current reading;
- Ability to view and modify the operating parameters of the regulator;
- Viewing alarm and shut down events.

FEEDING:

Low Voltage: 24 ÷ 110Vdc | 24 ÷ 115Vac
High Voltage: 185 ÷ 265Vac

PRECISION

- Revolution precision: 0,2 ‰
- Power measures precision: 1 ‰