



RVX POWER

SPEED GOVERNOR

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Speed Governor

The **RVX POWER** Digital Governor is based on our most advanced platform designed to ensure high performance and reliability.

This high-end solution provides speed and power control functions, operation of the hydraulic actuators and monitoring and automation for the hydraulic power unit.



Experience

REIVAX, founded in 1987, has supplied over 2,300 systems controlling more than 170 GW in power generation. We are leaders in control system retrofits world wide.

- Modular and scalable design along with highly configurable software allow for meeting the most varied requirements and characteristics of each application.
- Certified to meet main electromagnetic compatibility standards and designed considering the most demanding segments to operate in highly aggressive environments.

Applications



Hydroelectric

Francis | Kaplan/Bulb | Pelton

HYDRAULIC UNIT

The **RVX POWER** system can be supplied with a new or existing hydraulic power unit.

- Hydraulic unit with electro-hydraulic actuator manifold block with standard directional valves up to 1,500 L/min
- Hydraulic unit with electro-hydraulic actuator and distributing valves up to 10,000 L/min



COMMUNICATION PROTOCOLS

Modbus TCP
Modbus RTU
IEC 60870-5-101
IEC 60870-5-104
IEC 61850 – MMS/GOOSE
DNP3.0

CLOCK SYNCHRONIZATION INTERFACES

IRIG - B
NTP
PTP

ARCHITECTURE

The POWER platform supports single or fully redundant controllers, increasing the availability of the synchronous machine.

Redundancy Options

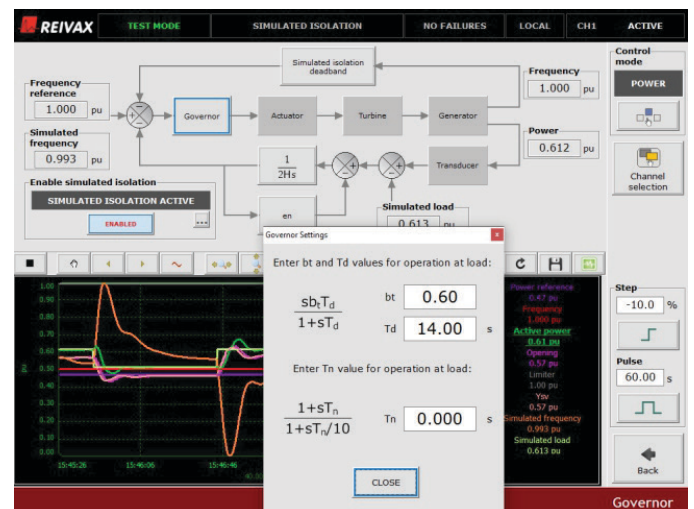
Redundancy aims to maximize the uptime of the synchronous machine, allowing repairs or replacements of components even with the unit in operation.

Components that can be provided with redundancy:

- Control power supply
- Control Hardware
- Input and output modules
- Other options on request

MAIN CONTROL FUNCTIONS

- Speed control
- Active power control
- Opening control
- Tracking function for bumpless switching
- Automation for start and stop processes
- Control of hydraulic actuators
- Configuration of unit soft start process
- Opening limiter
- Creep detector
- Simulated isolation test IEEE 1207
- Subsystems monitoring: hydraulic power unit, piping and by-pass valves and more
- Controller settings and step response test integrated into the HMI



SPECIAL FEATURES

For Kaplan / Bulb

Runner blades movement reduction feature:

- Prevents excessive oil consumption
- Avoids mechanical wear
- Reduces hours of operation of the oil pump
- Increases life span
- Reduces maintenance shutdowns

For Pelton

- Easy configuration for the number of operating nozzles
- Selects nozzle topologies that preserve symmetry of the jets in the runner
- Nozzle priority configuration
- Bumpless transfer between nozzle topologies

OPTIONAL FEATURES

Level control
Frequency matching
Power Limiter
Cavitation Limiter
Frequency Response Tool

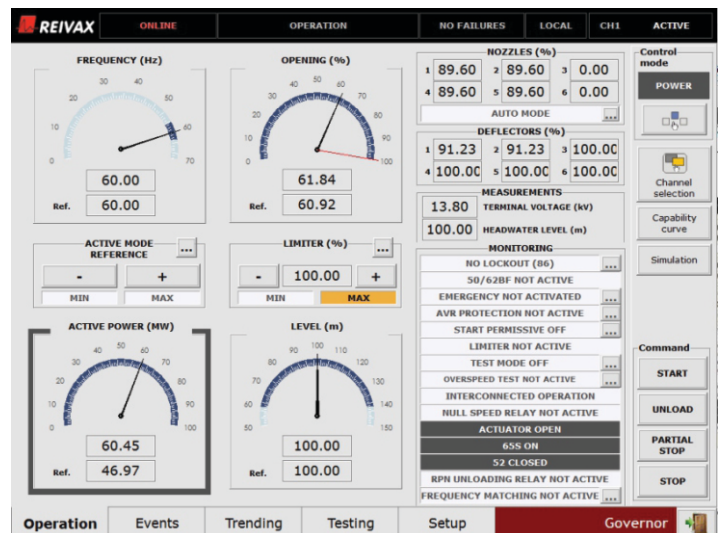
BASIC HARDWARE

Programmable controller that allows editing of logic, protection and remote communication

High-density I/O module (48 digital inputs / 30 digital outputs / 16 analog inputs / 16 analog outputs / 3 PT inputs / 3 CT inputs).
Insulation class: 2,000 V

HUMAN-MACHINE INTERFACE

The **RVX POWER** includes an user friendly operating interface with multi-level password protection that allows for advanced monitoring of the operation and the supervision of actuators and governor subsystems.



SUPPORT AND MAINTENANCE TOOLS

- Programming software, that allows modification or addition of new features. Intuitive graphical environment using block diagram programming
- View continuous and discrete signals directly on a block diagram
- Simulator tool for initial settings and performance analysis
- Event log with time stamping, allowing the simultaneous connection of multiple clients to collect the sequence of events
- High-capacity internal datalogger with time stamping and configurable triggers
- Tools to retrieve and analyze datalogger recordings
- I/O test tool
- Support of verification and validation of remote communication protocols
- Parameter Report Generates

→ TECHNICAL ASSISTANCE

Technical support including weekends and holidays.

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