



RVX POWER
Speed Governor

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The RVX POWER SYSTEM

■ Experience

REIVAX, founded in 1987, has supplied over 1,100 systems controlling more than 90 GW of power generation. We are leaders in control system retrofits world wide.

The **RVX POWER** system is based on REIVAX 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.

■ Communication Protocols

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

■ Interface Synchronism Time

IRIG-B
NTP

■ 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 upto 1,500 L/min
- Hydraulic unit with electro-hydraulic actuator and distributing valves up to 10,000 L / min



■ Applications



Hydroelectric
- Francis
- Kaplan/Bulb
- Pelton



Biomass



Industry



Thermoelectric



Oil & Gas

Modular design, scalability and a configurable software capable of meeting the most varied requirements and characteristics for each application.

Certified as per the main standards for eletromagnetic compatibility and operating in highly demanding environments.

ARCHITECTURE

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

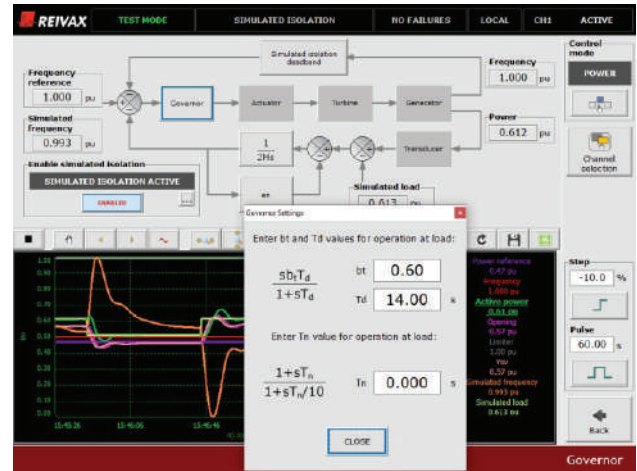
■ Redundancy Options

Redundancy maximizes the operating time of the synchronous machine, enabling on line repair or replacement of components. Redundant components:

- Control power supply
- Control Hardware
- Input and output modules
- Transducer for runner blades position
- Transducer for wicket gate position

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
- Subsystems monitoring: hydraulic power unit, piping and by-pass valves and more
- Controller settings and response to step test integrated into the HMI



SPECIAL FEATURES

From 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

From 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

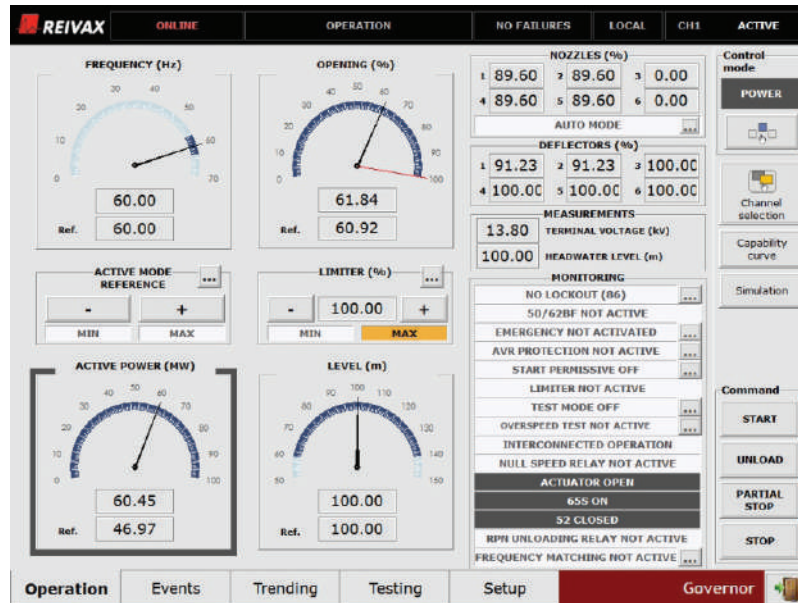
- Level control
- Frequency matching
- Power Limiter
- Cavitation Limiter
- Frequency Response Tool

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 / outputs 16 analog / 03 specific entries for TP / 03 specific entries to TC). Insulation class 2500V

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.



MAINTENANCE AND SUPPORT 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 A
- **Technical Assistance**
Technical support including weekends and holidays.



EXCITATION SYSTEMS,
SPEED GOVERNORS,
INTEGRATED CONTROL
SYSTEMS AND AUTOMATION

REIVAX NORTH AMERICA, INC
Montreal – Canada

666 Sherbrooke West, suite 900
QC, H3A 1E7 - Montreal | Canada

Tel.: +1 438 288-0246
Fax: +1 (800) 665-0933
Toll Free: +1 877 7-REIVAX

RNA@reivax.com

www.reivax.com