

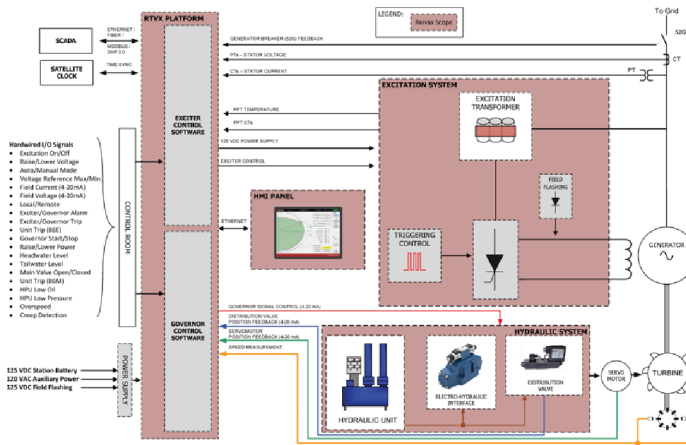


RTVX POWER

Combined System for
Excitation System & Speed Governor

RTVX POWER

Excitation System & Speed Governor



Main Control Functions

- Control Modes for Gate Opening, Frequency and Power with bumpless transfer
- Droop control
- Automatic Start / Stop with custom user configuration
- Automatic pre-load (reverse power prevention)
- Gate limit control
- PT and back-up speed sensing
- On / Off line gains
- Grid connect & isolated grid mode (with simulation)
- Power vs Wicket Gate Opening look-up table
- Creep detection
- Hydraulic power unit monitoring: Flow, temperature, level
- Integrated step response function
- Control Modes for AUTO, Manual and MVar/PF with bumpless transfer
- Three (3) sets AVR parameters
- Active / Reactive compensation
- Over excitation Limiter (OEL) Under excitation Limiter (UEL)
- Volts / Hertz Limiter (V/Hz)
- Stator current Limiter (SCL)
- Protection functions (24,27,32,37F,40/32Q,50/51,59,59F,76F,81O/U)

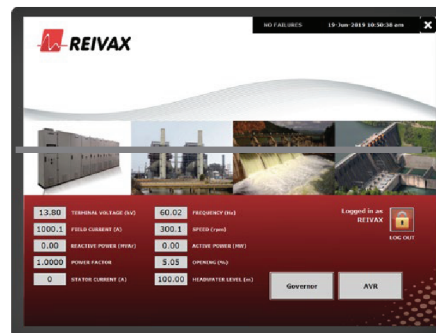
■ Experience

REIVAX combined Excitation System and Speed Governor system was first installed in 1999 and there are currently 368 RTVX systems in operation throughout the world, controlling more than 12GW of power generation.

■ Advantages

- Increased system reliability through reduction of hardware count
- Reduction in footprint
- Reduced cost in installation and commissioning

Common HMI Interface



■ Applications

- Hydroelectric
 - Francis
 - Kaplan/Bulb
 - Pelton

The system reliability or Mean Time Between Failure (MTBF) increases by 100% in a combined system compared to individual controllers for the Excitation System and the Speed Governor.

With the addition of a redundant controller, each programmed with the combined solution, the MTBF increases by 200%.



EXCITATION SYSTEMS,
SPEED GOVERNORS AND
COMBINED SYSTEMS

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