

Key Benefits

- Improves governor response compared to integrated control systems
- Minimizes periodic maintenance requirements
- Simplifies interface to Governor Oil Pumps and Auxiliary equipment
- Easy to comprehend standardized governor software
- Much shorter lead time compared to complex, custom DCS/PLC systems
- Simple to install and test
- COTS components for long-term maintainability
- Short lead time
- On-site and Factory Training available

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Digital Governor

Summary

Not everyone wants or needs a full-blown DCS or Unit Control system. Some owner/operators just want a digital governor that works the way their old ones did: high reliability, high sensitivity, low deadband.

Good News is that it is affordable, powerful, standardized-yet-flexible. Digital governor kits are available from Mercury Governor to restore lost performance, improve operations and simplify future maintenance. Better yet, they are completely stand-alone and cyber-secure (air gapped).

Our **Digital Governor** is powered by an Allen-Bradley CompactLogix™ PLC and features a 10" HMI. Pre-wired in a wall-mountable NEMA 12 enclosure, the **Digital Governor** comes complete with standardized software, configurable set-up parameters, intuitive HMI screens, and an easy-to-understand **User Guide**. This solution is perfect for customers who just want a responsive and reliable governor.

Standard Features:

- Wall-mount Control Enclosure
- Color Touchscreen Human Machine Interface (10" HMI)
- Redundant Power Supplies and 8 Interposing Relays
- User-Accessible, Easy-to-Understand Governor Software
- PT Speed Sensing Module

Optional Equipment:

- Universal Electro-Hydraulic Interface
- Position Feedback Devices (these devices are specifically selected by MGG to reduce unit downtime)

Applicability

- Turbine types: Francis and Kaplan
- Governor types: Mechanical, analog and digital

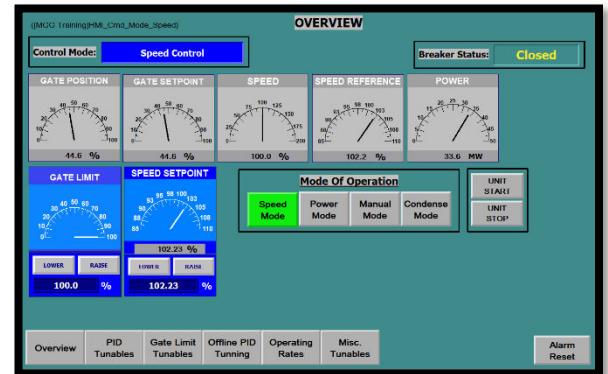
Features and Benefits of the Standardized Digital Governor:

Standardized Electrical Design

- 10" Human Machine Interface (HMI) provides full access to all Operating Modes and control parameters
- Redundant 125VDC/24VDC cabinet power supplies for enhanced reliability and availability
- No proprietary equipment or software; Commercial-Off-The-Shelf (COTS) parts used throughout
- Simple, straightforward User Guide with complete electrical schematics
- User-accessible, easy-to-understand Governor Control Software (see below)

Standardized Color Touchscreen

- Easy-to-understand Operator screens provide vital information and unit controls
- Easy-to-navigate Testing and Trending screens enable on-site testing without a laptop
- Operator-accessible 'Tunable Parameters' screens provide simplified access to basic governor settings
- Engineer-accessible 'Configuration and Set-up' screens provide enhanced access to governor configuration data
- Custom screens available upon request (Optional)

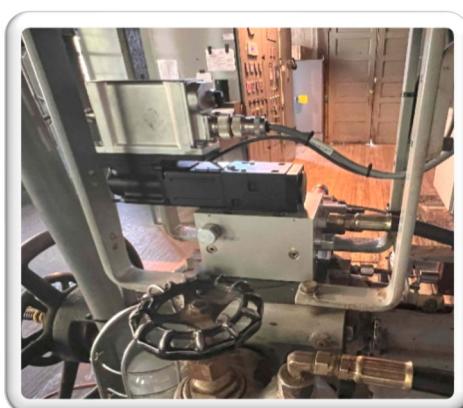


Standardized PLC and HMI Software

- Standardized software for both Francis and Kaplan units
- High-response Governor software written in ladder logic, the *preferred format* of most I&C technicians
- Intuitive program code with straightforward 'tag' names
- Control sensitivity conforms to IEEE 125 and 1207 requirements for deadtime and deadband
- Frequency responsiveness conforms to NERC MOD 27
- Smooth, rapid synchronization regardless of Net Head
- Speed, Power, Manual and Maintenance control modes
- All on-line control modes include Droop response (MOD 027)
- Stable Megawatt Control regardless of Net Head
- Enhanced Load Rejection response algorithm returns unit to 'Ready to Sync' status within seconds, avoiding Excitation trip
- Simple, semi-automatic calibration of position feedback signals
- Custom software available upon request (Optional)



Universal ElectroHydraulic Interface (UEHI) (Optional)



- Modern control valve manifold designed to be **compatible with all** types of **Woodward** and **Pelton** Mechanical Cabinet Actuators, all **Woodward** Gateshaft governors, and virtually every other style of legacy hydro governor system
- **True fail-safe design** uses dirt-tolerant poppet valves instead of a 'shutdown shuttle' piston that can stick, virtually eliminating a risk inherent in prior-generation designs
- Suitable for both Low- and High-Pressure hydraulic systems: **180psi to 2500psi**