



AMERICAN GOVERNOR

DIGITAL GOVERNOR UPGRADE KIT **For Woodward Gateshaft Governors**

American Governor has developed standardized digital upgrade kits for every type and model of Woodward Gateshaft Governor. Our kits are simple to install and include everything you need to upgrade, including Allen-Bradley™ PLC controller, cabinet, power supply, ElectroHydraulic Interface, local operator interface, high-resolution speed sensing and electronic feedback devices. Off-the-shelf components are used wherever possible to ensure long-term support.

Upgrade Benefits:

- Reduced maintenance
- Enhanced control functionality
- Color touchscreen operator interface
- Utilizes standard, off-the-shelf components
- Interfaces easily with other plant systems:
 - Autosynchronizer
 - Plant Controller
 - SCADA System



Complete Package Includes:

- Pre-wired Control Cabinet with PLC and accessories
- Emergency Stop Pushbutton
- Potential Transformer (PT) Speed Signal Module
- Color Touchscreen Operator Interface, featuring:
 - Unit Start / Stop Control
 - Display of All Unit Parameters
 - On-line Control Mode Selection
 - Unit Alarm Indication
 - Basic Trending and Event Log
 - Access to Tunable Parameters
- ElectroHydraulic Interface (EHI), including:
 - Proportional Valve for primary control of relay valve
 - Solenoid Valve for fail-safe emergency shutdown
 - Filter assembly, brackets and all mounting hardware
- Electronic position feedback devices for servomotor and relay valve
- Complete documentation for Operations and Maintenance (O&M)



Digital Upgrade Reduces Maintenance

Gateshaft Upgrade Kits greatly reduce periodic maintenance because nearly all the wearing components of a Gateshaft Governor are removed: flyball assembly, pilot valve, dashpot, links, levers and mechanical restoring. The only items retained are the low-pressure oil pump, unloader, tank, relay valve, and servomotor, and AGC offers complete overhaul services for all retained components and assemblies.

- **REDUCED MAINTENANCE**
- **ENHANCED CONTROL**
- **SIMPLIFIED TROUBLESHOOTING/DIAGNOSTICS**
- **USES STANDARD OFF-THE-SHELF COMPONENTS**
- **SIMPLE TO INSTALL & TUNE**
- **INTERFACES WITH OTHER PLANT SYSTEMS**
- **COLOR OPERATOR TOUCHSCREEN**
- **COMPLETE O&M MANUAL**



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Standard Features and Functionality

- Dual speed / load dynamics for synchronizing and on-line operation
- Color Touchscreen for local operator control and monitoring
- Speed/Frequency Control including isochronous and droop modes
- Bumpless isochronous/droop transfer with auto-detection
- Level or MW Control ((requires external 4-20mA signals)
- Maintenance Manual control
- Gate Limit control
- Selectable start/stop modes (manual or automatic)
- Startup and shutdown ramping with rapid-load capability
- Selectable brake operation
- Selectable switches for Speed, Gate Position, and Gate Limit
- Remote control via external signals (analog and/or discrete inputs)
- System alarm indications
- I/O and CPU diagnostics

Optional Features and Functionality

System functionality can be customized for special requirements with:

- Additional input/output points
- Additional control modes
- Redundant feedback transducers
- Redundant power supplies (AC or DC)
- Back-up Manual Control (independent PLC and Dual-EHL manifold)
- Creep Detection (requires proximity probes)
- Ethernet TCP/IP communication
- Plant HMI control system with historical data archiving

Complete Documentation

Each Digital Upgrade Kit comes with the following documentation:

- Operations & Maintenance Manual
- Cabinet Wiring Diagrams
- Elementary Diagrams
- Hydraulic Schematics
- Component and Device Manuals

Simple Installation

Installation time is minimized because all brackets and mounting hardware are pre-engineered to mate with existing equipment. Installation can be done by site staff or our highly-qualified Field Service Engineers. Installation, check-out and start-up typically takes a day or two, and site training classes are available.

System Specifications

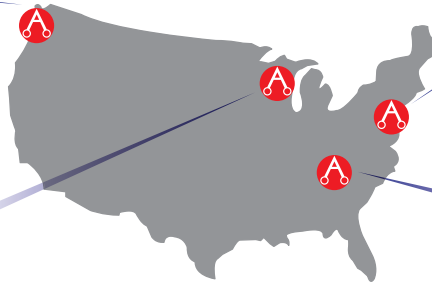
System Power	85-264 VAC, 18-56 VDC, or 100-140 VDC
Speed Input	Generator PT's (std) and/or Proximity Probes (option)
Position Input	Rugged, non-contacting MLDT and LVDT devices
Oil Consumption	1 liter per minute (0.25 GPM) during normal operation
Oil Selection	ISO-68 (typ), may vary depending on site conditions
Oil Filtration	10 micron or better

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