

# Rockwell Automation® Steam Turbine Governor

Full-featured Control in a Cost-effective Package  
For Single-valve and Two-valve Steam Turbine Applications

## Features and Benefits

Providing you with a pre-programmed assembly for ease of installation, the Rockwell Automation Steam Turbine Governor brings advanced technology and greater functionality to steam turbine control.

### Allen-Bradley platform is easily integrated into a plant-wide network

- CompactLogix Controller
  - Ethernet and Serial Modbus communications
  - Up to three active or passive speed probes
- PanelView Plus HMI

### PanelView HMI simplifies operator interface with color display

- Start-up sequence status at a glance
- Detailed alarm management & diagnostics
- Trending process assists in troubleshooting
- Easy-to-use interlocks & permissives
- Integrated overspeed testing

### Advanced troubleshooting and diagnostic information allows more control and can help increase uptime

- Manual or automatic start-up
- Multiple critical speed avoidance ranges
- Multiple idle (warm-up) speeds

### Enhanced control features can help eliminate the need for additional devices

- Load/capacity control
- Generator control
- Extraction control
- Exhaust control
- Real power control

### Simple menu driven configuration replaces handheld device

- Ability to configure directly on HMI screen
- Full-featured PC-based configuration tool
  - Configuration archive allows you to back up and restore
  - Upload/download configurations
- Multiple levels of passwords can provide enhanced security



Single-Valve Steam Turbine Governor



Two-Valve Steam Turbine Governor

The Rockwell Automation Steam Turbine Governor is a cost-effective governor for single-valve, single-valve rack or two-valve steam turbines. This device, designed to control industrial steam turbines whether driving a small mechanical load (e.g., a pump) or a large generator, is built on a common hardware platform offering accelerated execution speed and communication capabilities.

Easily integrated into a plant-wide network, the Steam Turbine Governor uses the Allen-Bradley® CompactLogix™ control platform, supporting an open architecture with a multitasking, multiprocessing operating system. A full-color Allen-Bradley PanelView™ Plus human-machine interface (HMI) simplifies and enhances operator interface and provides valuable insight and control.

This solution simplifies installation and start-up by providing a package that combines operator interface, control and power options in a preprogrammed assembly. Designed to meet your demands for enhanced functionality, application flexibility and reliability, the Steam Turbine Governor offers a number of commonly requested options, including a larger HMI display and stainless steel enclosure (see Steam Turbine Governor Models table on page 3).

Available locally and supported globally, the Steam Turbine Governor brings advanced technology and greater functionality to steam turbine control.

LISTEN.  
THINK.  
SOLVE.®

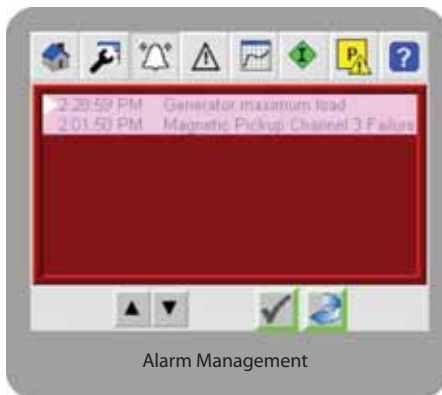
## Greater Visibility

The Steam Turbine Governor takes visualization to the next level with a full-color PanelView HMI, along with alarm management, multiple operating modes, auxiliary PID controls, droop and isochronous generator control capabilities. Standard Ethernet or serial Modbus communications allow you to view critical data remotely.



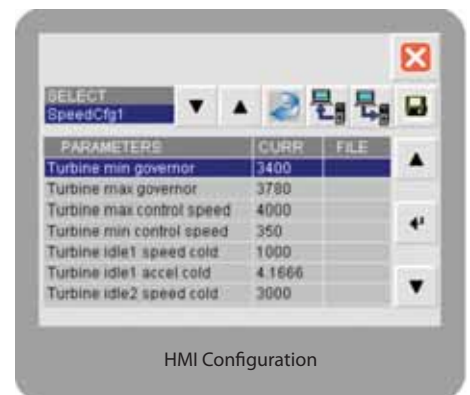
## Easy to Operate & Troubleshoot

The integrated PanelView HMI includes detailed alarm management, trending and comprehensive diagnostics designed to streamline steam turbine control. Replacing arcane error codes with descriptive messages, you'll be able to easily locate and correct faults to help minimize downtime and increase productivity.



## Easy to Install & Configure

The Steam Turbine Governor comes pre-programmed and ready to install. A convenient NEMA enclosure, terminations and power supplies make installation fast and simple. The menu-based configuration system allows you to easily enter parameters directly on the PanelView HMI or by use of the PC configuration tool, eliminating the need for a handheld configuration device.



## Available Features

Feature	Single-Valve Steam Turbine	Two-Valve Steam Turbine
Speed Control	X	X
Remote Speed Setpoint	X	X
Auxiliary PID (capacity control)	X	X
Auxiliary PID Remote Setpoint		X*
Generator Load Control (Valve Position)	X	X
Generator Load Control (Real Power Sensor)		X*
Complete Turbine Overview Graphic		X
Analog Inputs for Inlet Pressure, Temp, Flow. Extraction Pressure, Temp, Flow. Exhaust Pressure, Temp, Flow		X
Control Valves Position Feedback		X
Extraction Control PID		X
Extraction Control Remote Setpoint		X
Exhaust Control PID		X
Exhaust Control Remote Setpoint		X
Inlet Pressure Control		X*
Inlet Pressure Limiter (Only Generator Apps)		X*
Graphic Overview Updates showing only the implemented instrumentation		X*
True Frequency Input Module for Speed Pickups		X*

\* Utilize these advanced features of the two-valve packaged solution on your single-valve application.

## Steam Turbine Governor Models

Description	Catalog Number	
	Single-Valve Steam Turbine	Two-Valve Steam Turbine
NEMA 12 enclosure, PanelView Plus 400 3.5" color touch screen	1711-P01NSVSTN12400C	—
NEMA 4X enclosure, PanelView Plus 400 3.5" color touch screen	1711-P01NSVSTN4X400C	—
NEMA 12 enclosure, PanelView Plus 6000 5.5" color touch screen	1711-P01NSVSTN12600C	1711-P03NTVSTN12600C
NEMA 4X enclosure, PanelView Plus 6000 5.5" color touch screen	1711-P01NSVSTN4X600C	1711-P03NTVSTN4X600C
NEMA 12 enclosure, PanelView Plus 6 1000 10.4" color touch screen	—	1711-P03NTVSTN121000C
NEMA 4X enclosure, PanelView Plus 6 1000 10.4" color touch screen	—	1711-P03NTVSTN4x1000C

## Product Specifications

	Single-Valve Steam Turbine	Two-Valve Steam Turbine
<b>Communications</b>		
	Ethernet (1)	Ethernet (1)
	Serial Modbus (1)	Serial Modbus (1)
<b>Panel</b>		
Weight	31kg / 68 lbs	36kg / 80 lbs
Dimensions	610(H) x 508(W) x 203(D) mm 24(H) x 20(W) x 8(D) in	762(H) x 508(W) x 203(D) mm 30(H) x 20(W) x 8(D) in
Enclosure	NEMA 12	NEMA 12
<b>Power Consumption (excludes field load)</b>		
	3.1 amps @ 24V DC	5 amps @ 24V DC
	0.9 amps @ 120V AC	1.5 amps @ 120V AC
<b>Environmental</b>		
Operating Temp	0–60°C (32-140°F)	0–60°C (32-140°F)
Relative Humidity	5–95% Non Condensing	5–95% Non Condensing

## Product Specifications (cont'd)

	Single-Valve Steam Turbine	Two-Valve Steam Turbine
<b>Inputs</b>		
Analog Inputs 4-20 mA	Remote Speed Setpoint	Inlet Pressure, Temperature, Flow
	Capacity/Load Control PanelView	Extraction Pressure, Temperature, Flow
		Exhaust Pressure, Temperature, Flow
		Remote Speed Setpoint
		Auxiliary PID PanelView
		Extraction PID Remote Setpoint
		Exhaust PID Remote Setpoint
		Auxiliary PID Remote Setpoint
		Valve 1 Positive Feedback
		Valve 2 Positive Feedback
Discrete Inputs 24V DC	Start	Start
	Raise Speed	Raise Speed
	Lower Speed	Lower Speed
	Hold Speed	Hold Speed
	EStop	EStop
	Reset	Reset
	Overspeed Test	Overspeed Test
	Remote/Local	Remote/Local
	External Permissive	External Permissive
	External Trip 1	External Trip 1
	External Trip 2	External Trip 2
	External Trip 3	External Trip 3
	Generator Breaker	Generator Breaker
	Electrical Grid Breaker	Electrical Grid Breaker
	Trip Valve Close	Trip Valve 1 Close
Trip Valve Open	Trip Valve 2 Open	
Pulse Inputs	Speed Inputs, Active or Passive (3)	Speed Inputs, Active or Passive (3)
<b>Outputs</b>		
Analog Outputs 4-20 mA	Steam Valve 1	Steam Valve 1
		Steam Valve 2
	Remote Speed Readout	Remote Speed Readout
Discrete Outputs 24V DC	Trip (relay output)	Trip 1 (relay output)
	General Alarm	General Alarm
	Running Status	Running Status
	Trip Light	Trip Light
	Running Light	Running Light
	Trip @ 24V DC	Trip 2 (relay output)

Allen-Bradley, CompactLogix, PanelView and Rockwell Automation are trademarks of Rockwell Automation, Inc. Trademarks not belonging to Rockwell Automation are property of their respective companies.

[www.rockwellautomation.com](http://www.rockwellautomation.com)

### Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846