

# TS300

SELF-POWERED DIGITAL GOVERNOR



# TS300

## SELF-POWERED DIGITAL GOVERNOR

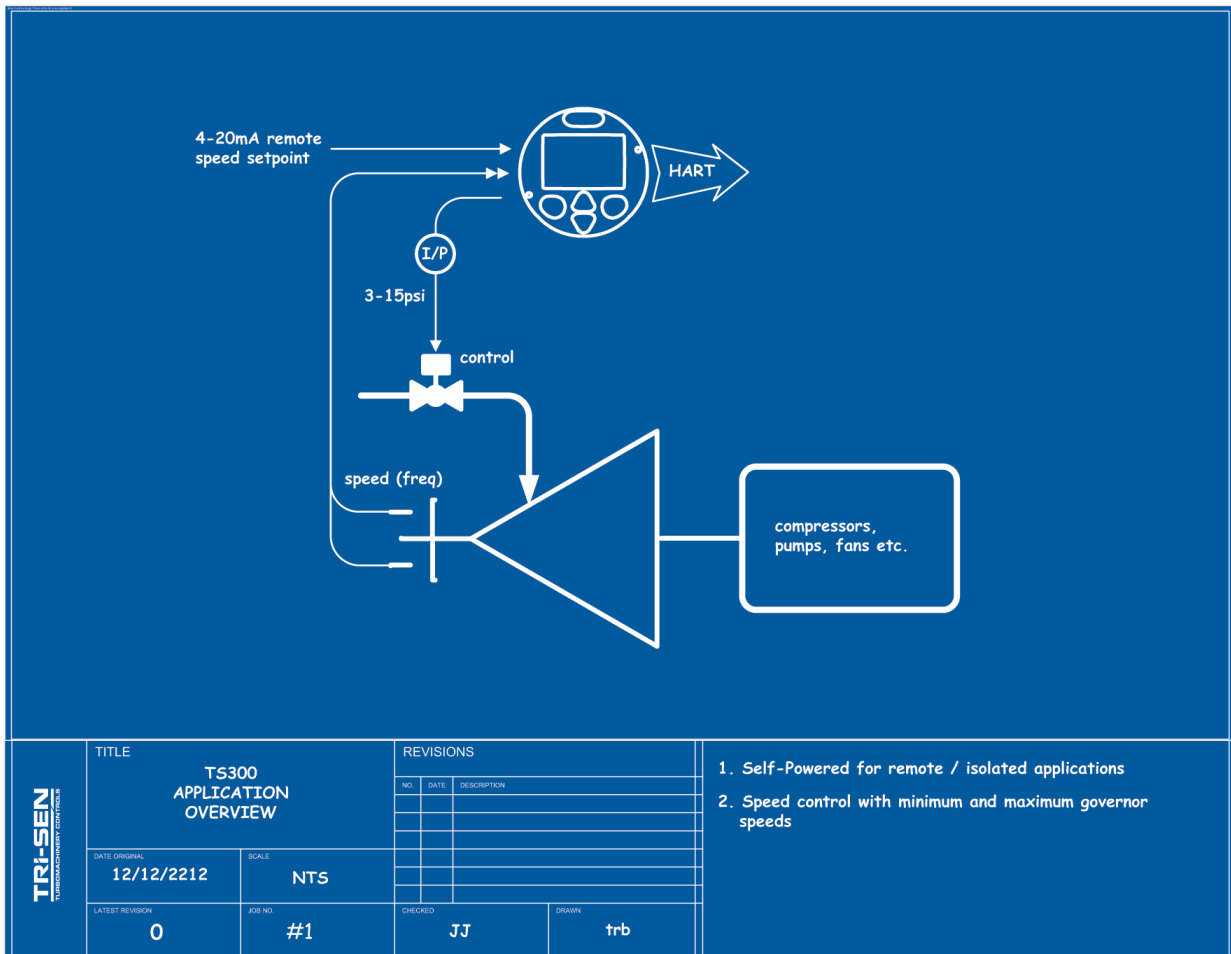
### APPLICATION

The TS300 is a low-cost, ultra-compact, self-powered digital controller providing automatic start-up and speed control for API-611 single valve general purpose steam turbines driving a mechanical load.

For applications where 24 vdc power is not available the TS300 can be operated in self-powered mode; where the power used to run all of the TS300 electronics is generated from two speed probes. The TS300 also makes use of a back-up battery, providing power when the turbine is stopped or operating at low RPM in the self-powered configuration.

The TS300 can also be used for simple turbine applications where 24vdc power is available.

**Operating the TS300 is easy.** You simply press the start button and the controller accelerates the turbine through the start sequence to a configurable idle speed. Once idle speed is reached, the turbine can be operated within the user configurable minimum and maximum governor speeds using either “local” or “remote” speed setpoints.



# TS300

## SELF-POWERED DIGITAL GOVERNOR



### FEATURES

- Self-Powered for remote / isolated applications
- Configurable start acceleration ramp rate
- Auto Start
- Speed control with minimum and maximum governor speeds
- USB configuration interface
- Front panel menu-driven configuration
- Valve-test
- Overspeed Trip / Test
- 10 year LiON battery backup
- UL (Class 1, Div 1), CL, ATEX (Ex d) Certification (Fall 2012)

### I/O

- (4) configurable 24vdc digital inputs
- (1) 4-20mA analog input (remote speed setpoint)
- (2) pulse (frequency) inputs
- (2) 24vdc, inherently fail-safe, digital output contacts
- (1) configurable analog output (1-6 mA self-powered or 4-20mA with external 24vdc power supply)

### ENCLOSURES

- Aluminum explosion proof “hockey puck” housing
- Stainless Steel explosion proof “hockey puck” housing
- GMA-735 retrofit enclosure

# TS300

## SELF-POWERED DIGITAL GOVERNOR

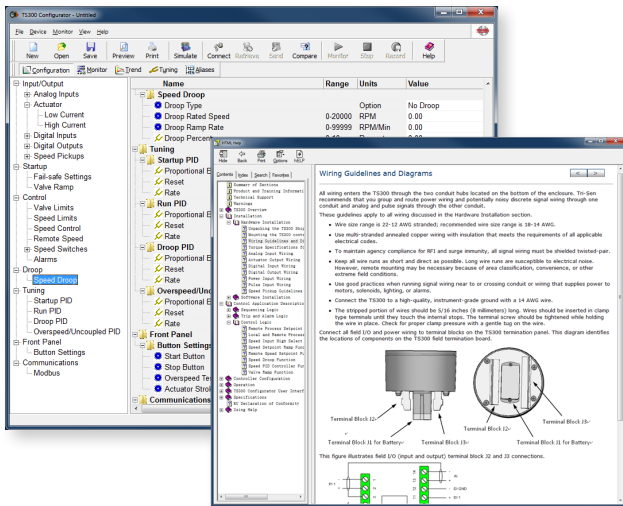
### SOFTWARE

#### Powerful PC Configurator

The TS300 Configurator is a Windows-based software application that allows the user to configure the controller from a PC.

The Configurator makes setup easy with features like an expandable parameter view, drop down menus and checkboxes.

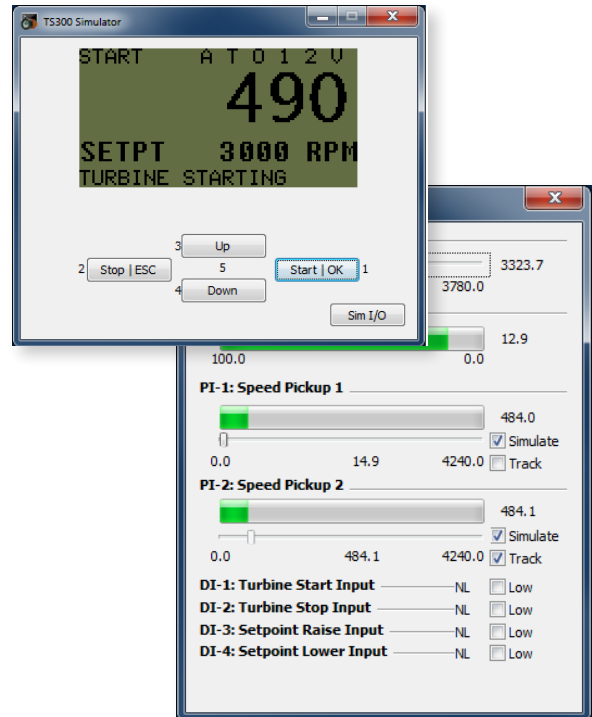
Detailed online help minimizes the need to refer to the User's Guide during configuration. Configurations can be easily downloaded or uploaded to or from the TS300 and a comparison feature makes it easy to identify differences between two configuration files.



#### Simulator

One of the most powerful features of the Configurator is the Simulate mode, which allows the user to test a configuration on the PC without running the turbine or even connecting to the TS300 controller.

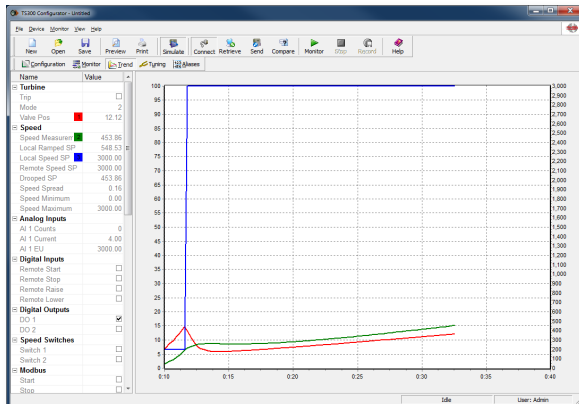
The user can simulate a turbine startup and confirm configured speed ranges, ramp rates and digital I/O functions without leaving the shop or the office.



#### Real-Time Monitoring and Trending

The TS300 Configurator allows real-time monitoring of I/O values and states, calculated values and alarm and trip history.

Selectable real-time trending and recording are also included.



# TS300

## SELF-POWERED DIGITAL GOVERNOR

### SPECIFICATIONS

#### Inputs

Pulse	2 passive inputs, 20-20,000 Hz, 1 to 10Vrms sinusoidal, $\pm 0.5$ RPM accuracy
Analog	1 input, 4-20mA
Digital	4 inputs, optically isolated with common return, 5V or 10V DC

#### Outputs

Analog	1 output, (self powered: 0-5mA), (24V DC external power: 0-20mA)
Digital	2, isolated, normally open contact, solid state relays

#### Power Supply

External Power	18 to 30V DC 0.5A typical @ 24V DC
----------------	------------------------------------

#### Environmental Specifications

Temperature	-20°C-70°C
Humidity	0%-90%, non-condensing
Shock	15G for 11ms, half sine, in each axis
Vibration	Per axis: sinusoidal, 2.0G acceleration, 10 to 150Hz

#### Enclosure

Aluminum	Explosion proof (Class1 Div1 ABCD), Ex d, NEMA4x, IP66)
Stainless Steel	Explosion proof (Class1 Div1 ABCD), Ex d, NEMA4x, IP66)

#### Note: Pending Certifications

UL Certification expected 9/12

CL certification expected 9/12

ATEX certification expected 9/12

## DIMENSIONS

(TS300 IN ALUMINUM ENCLOSURE)

