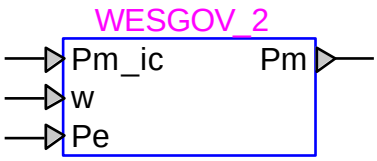
Exciters and Governors: Governor-Turbine WESGOV



Governor-Turbine WESGOV

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1 Description

This device is an implementation of WESGOV Westinghouse Digital Governor for Gas Turbine. This device is implemented as described in [1]. Implementation details can be viewed by inspecting the subcircuit of this device.

1.1 Pins

This device has 4 pins:

Pin name	Type	Description	Units
Pm_ic	Input	Steady-state mechanical power at t = 0, for initialization	pu
w	Input	Mechanical speed	pu
Pe	Input	Electrical power	pu
Pm	Output	Turbine mechanical power	pu

1.2 Parameters

The default set of parameters are obtained from **Error! Reference source not found.**.

1.2.1 Regulator tab

The parameters on the Regulator tab are:

1. **Sampling time DT_C**: Δt sample for controls
2. **Sampling time DT_P**: Δt sample for electrical power
3. **Gain DROOP:** power droop
4. **Gain K_P:** proportional gain of PI controller
5. **Time constant T_I:** PI controller time constant
6. **Time constant T_1:** time constant

7. **Time constant T_2**: time constant
8. **Sampling time limit A_{LIM}**: Limit for maximum change between sampling times
9. **Time constant T_{PE}**: Electrical power transducer time constant

2 Initial conditions

The initial output is equal to the generator mechanical power (base for power) at t = 0 s.

3 References

[1] PSS®E MODEL LIBRARY PSS®E 32.0.5, Siemens Energy, Inc.