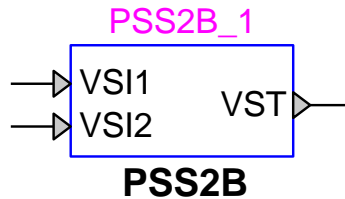


Exciters and Governors: Power System Stabilizer PSS2B



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1 Description

This device is an implementation of the IEEE type PSS2B (M =5 and N = 1) power system stabilizer model. 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 3 pins:

Pin name	Type	Description	Units
VSI1	Input	Speed	pu
VSI2	Input	Electrical power	pu
VST	Output	PSS output (equivalent of terminal voltage)	pu

1.2 Parameters

The default set of parameters can be found in [1].

1.2.1 Data tab

The parameters on the Data tab are:

1. **Time constant T_{w1}** : transducer time constant
2. **Time constant T_{w2}** : transducer time constant
3. **Time constant T_6** : time constant
4. **Time constant T_{w3}** : transducer time constant
5. **Time constant T_{w4}** : transducer time constant
6. **Time constant T_7** : time constant
7. **Gain K_{S1}** : power system stabilizer gain
8. **Gain K_{S2}** : power system stabilizer gain
9. **Gain K_{S3}** : power system stabilizer gain

10. **Maximum input V_{SI1MAX} :** signal #1 maximum input limit
11. **Minimum input V_{SI1MIN} :** signal #1 minimum input limit
12. **Maximum input V_{SI2MAX} :** signal #2 maximum input limit
13. **Minimum input V_{SI2MIN} :** signal #2 minimum input limit
14. **Filter time constant T_8 :** filter constant
15. **Filter time constant T_9 :** filter constant
16. **Lead time constant T_1 :** lead time constant
17. **Lead time constant T_3 :** lead time constant
18. **Lead time constant T_{10} :** lead time constant
19. **Lag time constant T_2 :** lag time constant
20. **Lag time constant T_4 :** lag time constant
21. **Lag time constant T_{11} :** lag time constant
22. **Maximum output V_{STMAX} :** PSS maximum output signal
23. **Minimum output V_{STMIN} :** PSS minimum output signal

2 Initial conditions

The initial output signal is zero from the steady-state solution.

3 References

- [1] "IEEE Recommended Practice for Excitation System Models for Power System Models for Power System Stability Studies," IEEE Standard 421.5-2005.