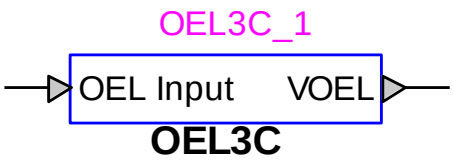
Exciters and Governors: Over Excitation Limiter OEL3C



Exciters and Governors: Over Excitation Limiter OEL3C....1
1 Description....1
1.1 Pins....1
1.2 Parameters....1
1.2.1 Data tab....1
2 Initial conditions....2
3 References....2

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1 Description

This device is an implementation of the IEEE type OEL3C summation point over excitation limiter 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 2 pins:

Pin name	Type	Description	Units
OEL Input	Input	Generator field current or generator field voltage or exciter field current	pu
VOEL	Output	Over Excitation Limiter signal	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. **Field current limiter I_{TFpu}**: OEL timed field current limiter pick up level
2. **Scaling factor K_{SCALE}**: OEL input signal scaling factor
3. **Time constant T_{F1}**: OEL field current measurement time constant
4. **Exponent K_1**: Exponent for OEL error calculation
5. **Gain K_{OEL}**: OEL gain
6. **Time constant T_{OEL}**: OEL integral time constant
7. **Gain K_{POEL}**: OEL proportional gain
8. **Maximum output $V_{OELmax1}$**: OEL integrator maximum output
9. **Minimum output $V_{OELmin1}$**: OEL integrator minimum output
10. **Maximum output $V_{OELmax2}$**: OEL maximum output

11. **Minimum output $V_{OELmin2}$**: OEL minimum output

2 Initial conditions

The OEL is supposed to be inactive during the steady-state conditions.

3 References

[1] "IEEE Recommended Practice for Excitation System Models for Power System Models for Power System Stability Studies," IEEE Standard 421.5-2016.