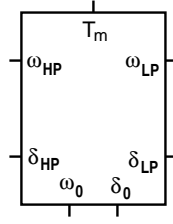


turbine_gnrl.ece



Attributes

```

mainvars:
+ delta
+ omega
+ delta_hp
+ delta_lp
+ omega_hp
+ omega_lp
+ tm
stparams:
+ delta_sv=0
+ omega_sv=0
iparms:
+ i_compute_strt=1
+ i_flag_turbine=1
rparams:
+ h0=0.05
+ d0=0.1
+ k_hp=20
+ k_lp=20
+ d_hp=0.3
+ d_lp=0.3
+ fb=50
+ f0=50

```

Description

turbine_gnrl.ece is a turbine model satisfying the following equations:

$$\frac{d\delta}{dt} = \omega\omega_B - \omega_0,$$

$$\frac{d\omega}{dt} = w_p T_m - K'_{HP} (\delta - \delta_{HP}) - K'_{LP} (\delta - \delta_{LP}) - D' \omega - D'_{HP} (\omega - \omega_{HP}) - D'_{LP} (\omega - \omega_{LP}).$$

In the above equations,

$$w_p = D_0/2H_0, K'_{HP} = K_{HP} w_p, K'_{LP} = K_{LP} w_p, D' = D_0 w_p, D'_{HP} = D_{HP} w_p, D'_{LP} = D_{LP} w_p.$$

When the integer parameter `i_compute_strt` is specified as 1, the start-up values of the state variables are computed in the synchrosnous machine template and are supplied to `turbine_gnrl.gce` through a Fortran common block. The integer parameter `i_flag_turbine` specifies the position of the turbine (IP, LA, or LB).

AC behaviour is not implemented.