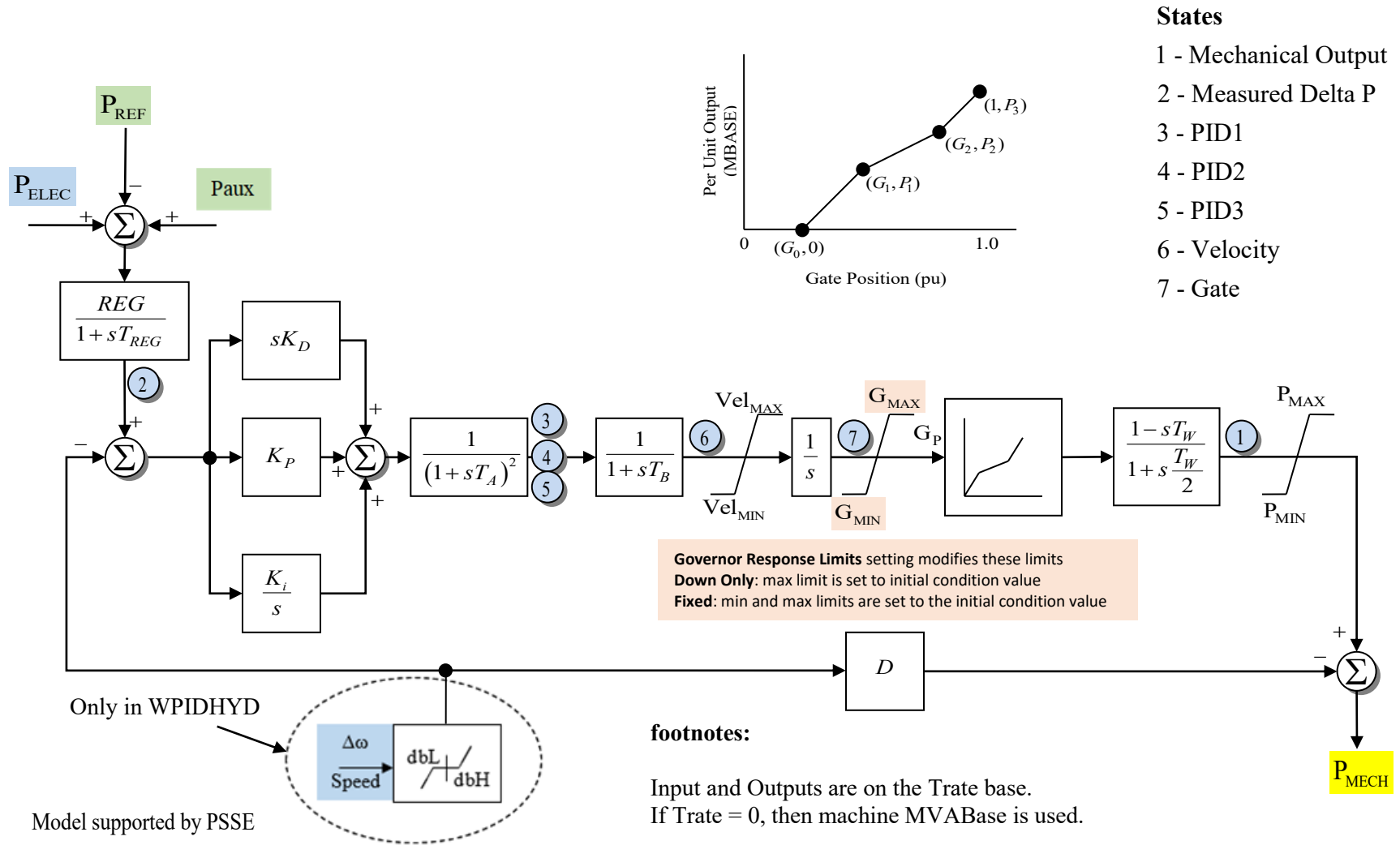


Governor WPIDHY and WPIDHYD

Governor WPIDHY and WPIDHYD Woodward PID Hydro Governor Model



Parameters for WPIDHY:

Treg	Input time constant of governor, sec
Reg	Reg Gain
Kp	Proportional gain, pu
Ki	Integral gain, pu
Kd	Derivative gain, pu
Ta	Governor high frequency cutoff time constant
Tb	Gate servo time constant
Velmax	Max gate opening velocity, pu/sec
Velmin	Min gate opening velocity, pu/sec
Gmax	Maximum gate velocity, pu of mwcap
Gmin	Minimum gate velocity, pu of mwcap
Tw	Water inertia time constant, sec
Pmax	Maximum gate opening, pu of mwcap
Pmin	Minimum gate opening, pu of mwcap
D	Turbine damping coefficient
G0	Gate opening at speed no load, pu
G1	Intermediate gate opening
P1	Power at gate opening G1, pu
G2	Intermediate gate opening
P2	Power at gate opening G2, pu
P3	Power at full opened gate, pu

Parameters for WPIDHYD:

Treg	Input time constant of governor, sec
Reg	Reg Gain
Kp	Proportional gain, pu
Ki	Integral gain, pu
Kd	Derivative gain, pu
Ta	Governor high frequency cutoff time constant
Tb	Gate servo time constant
Velmax	Max gate opening velocity, pu/sec
Velmin	Min gate opening velocity, pu/sec
Gmax	Maximum gate velocity, pu of mwcap
Gmin	Minimum gate velocity, pu of mwcap
Tw	Water inertia time constant, sec
Pmax	Maximum gate opening, pu of mwcap
Pmin	Minimum gate opening, pu of mwcap
D	Turbine damping coefficient
G0	Gate opening at speed no load, pu

G1	Intermediate gate opening
P1	Power at gate opening G1, pu
G2	Intermediate gate opening
P2	Power at gate opening G2, pu
P3	Power at full opened gate, pu
dbH	Deadband High (pu)
dbL	Deadband Low (pu)
Trate	Turbine rating, MW