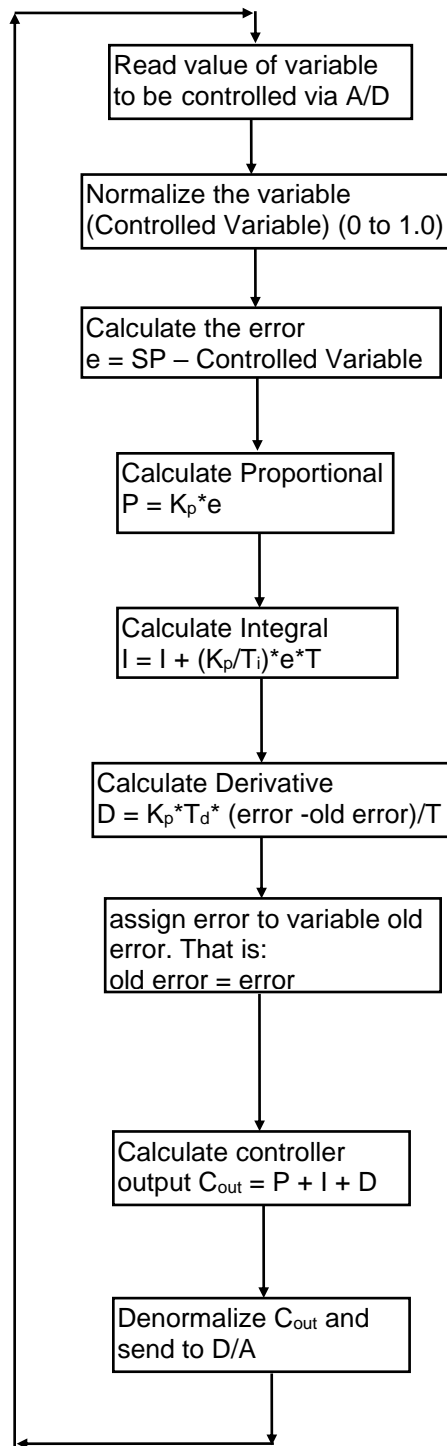


PID Pseudo Code



/* PID Function*/

float PID(float controlled_variable, float set_point, float gain, float integral_time, float derivative_time, float sample_time)

{

/* define variables*/

float error, proportional, derivative;

static float integral, olderror, output; ***/* values in these variables must retained during each iteration */***

int limiter;

error = set_point - controlled_variable;

/* integral limiting switch - limiter=0 disables integral, limiter = 1 enables integral action*/

/* If controller is at 1 (maximum) or 0 (minimum) disable integral action */

/* if integral time is >99999 or less than or equal to 0 disable integral action */

if (output >=1.0||output<=0.0|| integral_time>= 99999 || integral_time <=0)

 limiter = 0;

else

 limiter = 1;

proportional = gain*error;

integral = integral + limiter*gain/integral_time*error*sample_time;

derivative = gain*derivative_time*(error-olderror)/sample_time;

olderror=error;

output = gain*error + integral + derivative;

/* clamp output if less than 0 or greater than 1 */

if(output<0.0)

{

 output = 0.0;

}

else if (output>1.0)

{

 output = 1.0;

}

return output;

}