i[kTo] = i[kT]

e[kTo] = e[kT]

Calculate derivative term

d[kT] = c\*e[kT] – c\*[kTo]

Calculate integral term

i[kT] = b\*e[kT] + i[kTo]

Set point

r[kT]

Sample signal y[kT]

Calculate error

e[kT] = r[kT] - y[kT]

r[kT]

Calculate PID controller output

u[kT] = a\*e[kT] + i[kT] + d[kT]