

Figure 3

Transfer Functions of the Closed Loop System

Plant

$$1*s^1 + 1$$

$$b_m*s^m + \dots + b_1*s^1 + b_0$$

$$1*s^1 + 1$$

$$G_p(s) = \frac{\quad}{\quad}$$

$$1*s^2 + 1*s^1 + 1$$

$$a_n*s^n + \dots + a_1*s^1 + a_0$$

$$G_l(s) = \frac{\quad}{\quad}$$

$$1*s^2 + 1*s^1 + 1$$

Measuring Element

$$1$$

Input Converter

$$1$$

Final Control Element

$$1$$

$$G_m(s) = \frac{\quad}{\quad}$$

$$0.1*s^1 + 1$$

$$G_t(s) = \frac{\quad}{\quad}$$

$$0.1*s^1 + 1$$

$$G_v(s) = \frac{\quad}{\quad}$$

$$0.2*s^1 + 1$$

Controller

☒ PID

$$C(s) = K_r(1 + 1/T_I s + T_D s)$$

☒ P Mode

$$1$$

☒ I Mode

$$1$$

☐ D Mode

$$0$$

☐ Compensator

$$1*s^1 + 1$$

$$G_c(s) = \frac{\quad}{\quad}$$

$$0.1*s^1 + 1$$

OK