

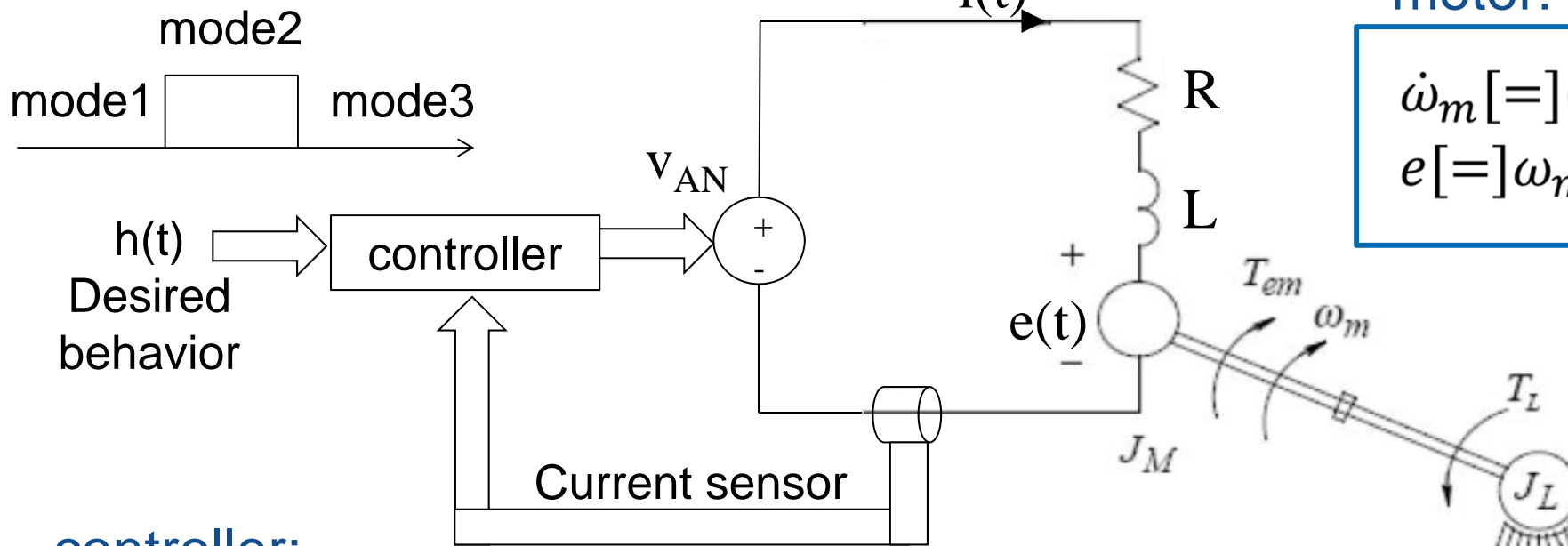
Electric motor

RL circuit:
$$\dot{i} [=] (V_{AN} - e - Ri)/L$$

motor:

$$\dot{\omega}_m [=] (k_T i - T_L)/J_{eq}$$

$$e [=] \omega_m k_E$$



controller:

$$V_{AN} [=] k_{PWM} \left\{ k_p (h - i) + k_i \int (h - i) dt \right\}$$

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Connecting the classes:

$$\begin{aligned}\text{circuit.v}_{AN} & [=] \text{controller.v}_{AN} \\ \text{circuit.e} & [=] \text{motor.e} \\ \text{motor.i} & [=] \text{circuit.i} \\ \text{controller.i} & [=] \text{circuit.i}\end{aligned}$$