

Controlling Variables

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Variable Control		
Production Stage		Variables
Material Properties		k (spring constant)
		c (thermal constant of the polymer used to create actuator)
		ρ (resistivity of the polymer used to create the actuator)
		LCL (length contraction factor)
		ΔT
Manufacturing Process	Inputs	$l_{original}$ (string length)
		N (number of coil turns)
	Outputs	L (length of actuator)
		A (Area based on diameter)
Operation	Inputs	T (temperature of actuator)
		V (Voltage)
		I (Current)
		R (resistance)
	Outputs	d (movement of actuator; displacement)
		P (Power)
		T (Temperature of actuator)