

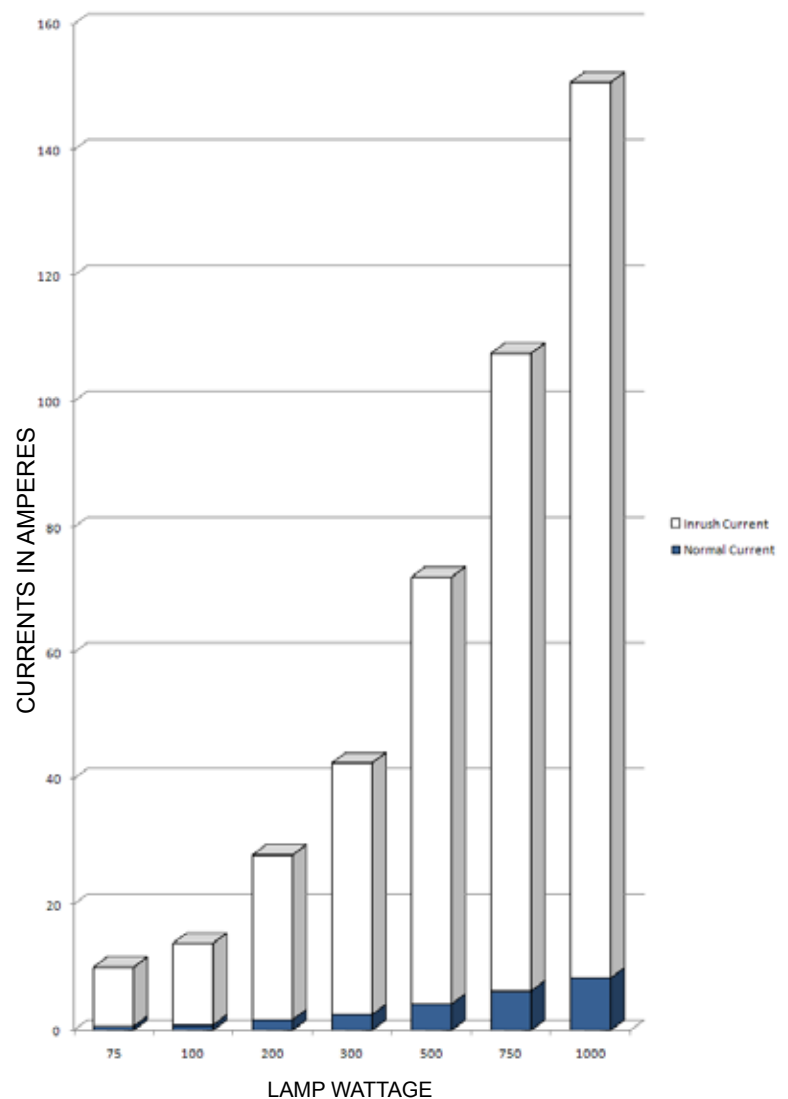
Current Surge of Tungsten Gas Filled Lamps

Why an Initial Current Surge?

The ratio of the initial current to normal running current on any type of lamp is proportional to the cold vs. hot resistance.

For vacuum lamps, the cold resistance is generally about 1/11 to 1/13 of the hot resistance depending on whether the filament is straight wire or coiled. But for gas-filled lamps the cold resistance is only 1/15 to 1/17 of the hot resistance. This means that theoretically, initial current will be 15 to 17 times normal running current.

Lamp Wattage	Time for Current to:	
	Reach Maximum Amps	Fall to Normal Value
	Seconds	Seconds
75	.0004	.07
100	.0007	.10
200	.0008	.10
300	.0011	.13
500	.0014	.15
750	.0021	.17
1000	.0031	.23



For safe operation, switching equipment designed for usage in connection with tungsten lamp loads, must be engineered to withstand the maximum possible inrush current.

Payne Engineering's solid state controls are designed to withstand inrush currents 20 times the normal full load rating. This gives them ample capacity for gas-filled or vacuum lamps. Only a controller designed for high inrush currents should be used for switching tungsten lamp loads.

Payne Engineering's 18D-H series controller is specifically engineered for high inrush applications. Featuring oversized semiconductors, soft-start and specific fusing, 18D-H controllers are ready for the task.

For more information on Payne Engineering and our products visit www.payneng.com