

bigAMP™ Inrush Current Limiters



File No. CA 110861



File No. E209153

How does the bigAMP Inrush Current Limiter work?

How to specify the right bigAMP Inrush Current Limiter for your application:

Ametherm's bigAMP™ Inrush Current Limiters are specially designed to withstand up to 36 amperes of continuous current and 260 joules of input energy.

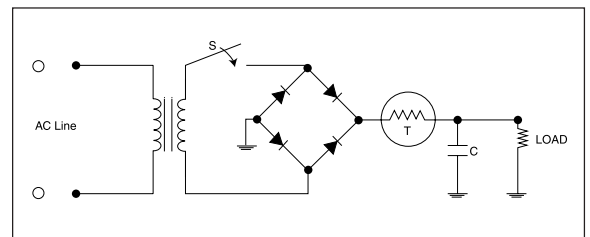
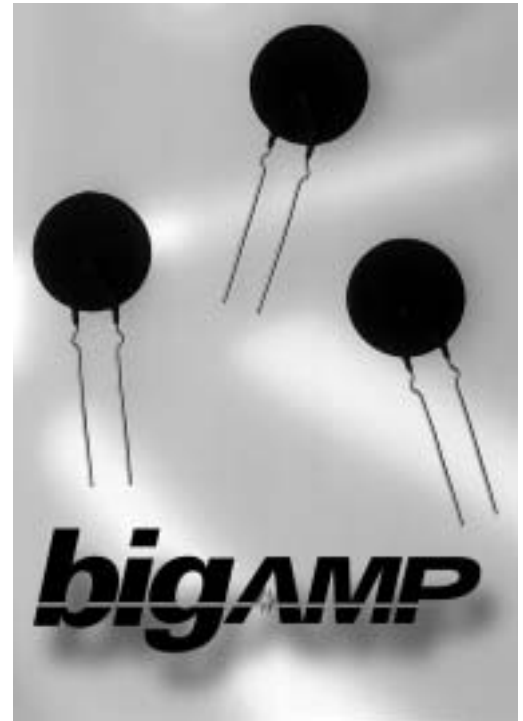
The bigAMP Inrush Current Limiter is useful in:

- Switching power supplies
- AC Motors
- Uninterruptible Power Supplies
- Frequency Generators
- Other equipment that can be improved with inrush current protection

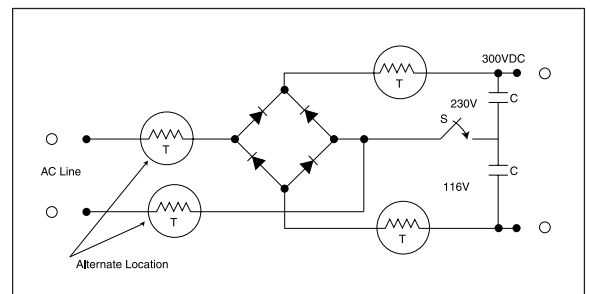
When electrical equipment is turned on, the bigAMP Inrush Current Limiter absorbs high amounts of inrush current by offering a high resistance to current and quickly decreasing in resistance once steady state current begins to flow through the thermistor. In a switching power supply, the instantaneous surge energy is caused by the large input filter capacitors and AC input voltage.

During the absorption of energy, the initial high resistance of the thermistor drops within milliseconds to a negligible resistance in preparation of allowing high levels of steady state current to flow with a minimal loss of power through the circuit. The bigAMP™ Inrush Current Limiter will absorb up to 260 joules of input energy and carry 36 amperes of steady state current.

- Use the maximum allowable inrush current and Ohm's Law to determine the least allowable resistance at turn on for your application.
- Using the formula $J = \frac{1}{2}CV^2$, determine how much input energy the thermistor will absorb when the device is turned on.
- Determine the maximum steady state current that will flow through the Inrush Current Limiter.
- Select the Inrush Current Limiter that will work for your application.



One example of a typical circuit for limiting inrush current.



Another example of a typical circuit for limiting inrush current.

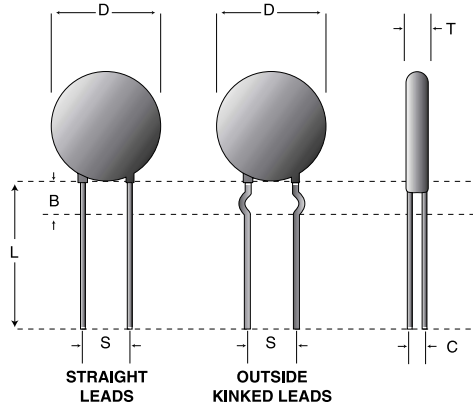
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Inrush Current Limiting for:

- Switching Power Supplies
- AC Motors
- UPSs
- Frequency Generators

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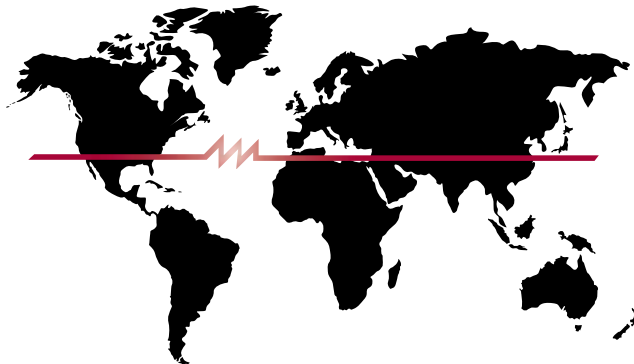
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bigAMP Inrush Current Limiter Electrical Specifications

Part Number	R @ 25°C	Max SSI	Max Joules	Resistance at % of Max Steady State Current					
				100%	90%	80%	70%	60%	50%
SL32 0R230	0.2	30.0	100	0.010	0.013	0.015	0.018	0.021	0.025
SL32 0R530	0.5	30.0	180	0.013	0.014	0.016	0.019	0.023	0.028
SL32 0R536	0.5	36.0	250	0.010	0.011	0.012	0.015	0.018	0.023
SL32 1R030	1.0	30.0	175	0.014	0.015	0.016	0.018	0.024	0.030
SL32 1R036	1.0	36.0	250	0.010	0.012	0.013	0.015	0.018	0.024
SL32 2R023	2.0	23.0	180	0.022	0.025	0.029	0.034	0.041	0.052
SL32 2R025	2.0	25.0	220	0.016	0.023	0.026	0.031	0.037	0.049
SL32 5R020	5.0	20.0	200	0.034	0.037	0.043	0.056	0.069	0.082
SL32 10015	10.0	15.0	150	0.048	0.058	0.064	0.074	0.089	0.102

bigAMP Inrush Current Limiter Mechanical Specifications

Lead Configuration	D Max (mm)	T Max (mm)	Lead Dia. (mm)	S Nom (mm)	L Nom (mm)
SL32 Straight Lead	32	4	1.0	7.9	38
SL32 Outside Kink	32	4	1.0	9.5	38



AMETHERM

Circuit Protection Thermistors

— ISO 9001: 2000 Certified —