

Re: hvac control and ammeter

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I'm working on designing a thermostat that controls the heating and cooling unit in my apartment, and which in turn I can monitor and control via the computer. The current thermostat is a Honeywell T6169 line voltage (120VAC) unit. The sticker on the back shows the following ampere ratings:

Full load: 8A
Locked rotor: 48A
Resistive: 13A

48 amps seems like quite a bit! In fact, the circuit breaker for the unit (lights in the room are on the same circuit as well) is rated at 15A.

I'd like to monitor the current that the unit draws. Typically I would use a small resistor in series, but at these currents even a small resistor would burn. How is this typically done without starting a fire? I do not have a fireplace to accomodate :)

I'm also planning on using a relay (Potter & Brumfield K10P-11D15-12, rated for 15A, 1/3HP, 120VAC) to control the unit. Is this sufficient? Since the motor is an inductive part, are bleeder circuits of some sort typically included to gracefully remove current, or is the relay designed to handle a little spark?

A couple side questions:

What does AFL stand for in the context 8 AFL @ 120VAC?

How is the horsepower specification used, for instance the 1/3HP for my relay? Does it mean it can power a 1/3HP motor?

This is the tstat <http://customer.honeywell.com/techlit/pdf/63-0000s/63-9174.pdf>and you're not going to improve on that. The *real* problem is that the landlord has you locked out of adjusting it and you want to bypass it. Isn't that right?

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