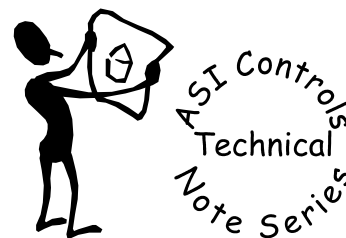




ASIC/2-8540 Transient Protection

Affects: ASIC/2-8540

Date: 16 February 2007



Note No. TN-036

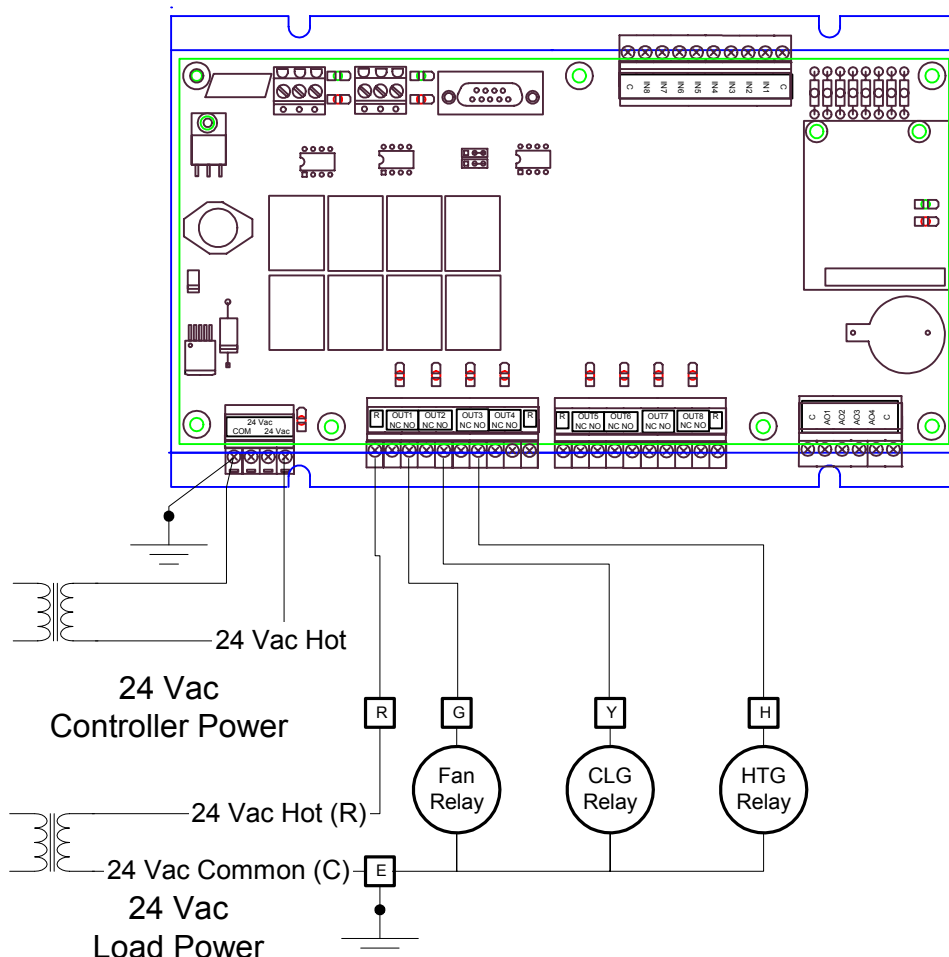
ASIC/2-8540 Controller Power

Some customers have reported problems with the ASIC/2-8540 resetting when loads are switched. This technical note describes ways to protect the ASIC/2-8540 controller from electrical noise and transients.

Ideally the controller should be powered from its own 24 Vac transformer. The 24 Vac controller power must be connected directly to 24 Vac screw terminals, J8, and must NOT share a common circuit path with any relay circuits.

Power to the controller must be free of electrical noise. The relays and contactor coils loads should be powered from a separate 24 Vac transformer, so that the relay outputs and common return, R, are isolated from the controller.

Voltage spikes are generated when an inductive load is switched off and the magnetic field collapses. When contacts open, electrical noise can also be generated and radiate along the wires. Using a separate load transformer ensures that any transients generated by the external relays are isolated from the controller.

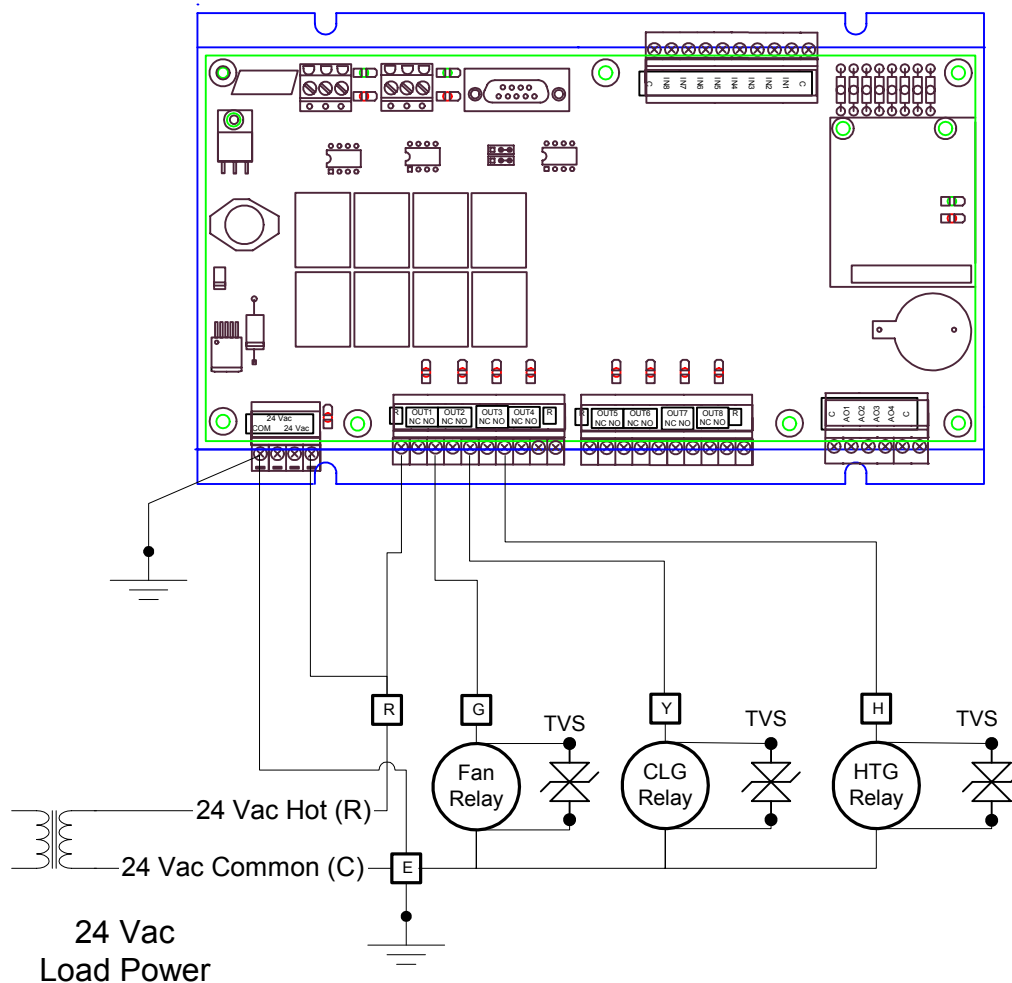


Building Ground

The controller must be solidly connected to the building electrical ground through screw terminals 24 Vac Common (J8-1, J8-2) to ensure proper operation of the controller. The ground wire should be made of copper.

Single Transformer

If it is not possible to use separate transformers to power the controller and the loads, then transient voltage suppressors, TVS, may be necessary to protect the controller from voltages and currents that may be induced when contactor relays open.



The controller power 24 Vac Hot and Common should be run directly to J8. The load power should be run separately. A TVS should be placed across each 24 Vac load relay. When a voltage spike appears across the relay coil, the TVS conducts and the excess energy is shunted to the return path. Induced currents are prevented from getting to the controller.

TVS, 1.5KE56CA, Voltage Protection Devices 1500W, 56Vdc Bi-directional

For Further Information

For further details on power, grounding, and transient protection consult the ASIC/2-8540 Installation Manual, (DOC-1661, 2007-01-31)

If you have any further questions please contact: ASI Controls Technical Support
support@asiccontrols.com, or call 925-866-8808