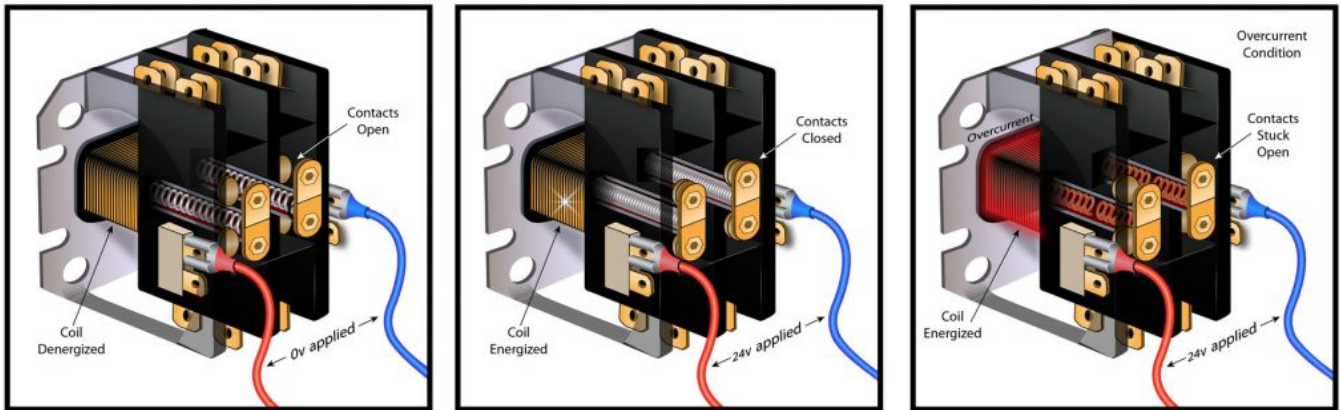


Control Voltage Overamp – The Less Usual Cause



In most cases when a low voltage circuit is blowing a fuse it's because one of the circuits is shorted to ground or common. Rubbed out wires, shorted components and boards etc...

Less commonly you will see the low voltage circuit draw high amperage because of magnetic solenoids that are energized but the mechanical pin, stem or armature is stuck.

A common example is a contactor that is stuck open. This results in high amperage because the solenoid is energized without the magnetic resistance (reactance) provided by the induced magnetic field.

Another example is a reversing valve solenoid that is not mounted or is not properly on the reversing valve stem. You can see the same effect in any magnetic switchgear such as relays, pump down solenoids etc...

This occurs because the magnetic field in the coil isn't reacting with the load so there isn't enough inductive resistance known as "inductive reactance". It's essentially the same thing as locked rotor amps on a motor, if you keep that motor from spinning the electrical resistance in the windings remains too low and the windings overheat and go out on thermal overload.

When this does occur in low voltage circuits it often won't blow a fuse / trip right away. A good way to catch it is to put an amp clamp on the low voltage wires feeding different components until you find the one pulling very high amperage in comparison with other low voltage components.

So check for short circuits first but also keep your eyes open for stuck or improperly mounted solenoids.

-Bryan