Forklift Fuse

Forklift Fuse - A fuse consists of either a wire fuse element or a metal strip in a small cross-section which are connected to circuit conductors. These devices are typically mounted between a couple of electrical terminals and quite often the fuse is cased in a non-conducting and non-combustible housing. The fuse is arranged in series capable of carrying all the current passing through the protected circuit. The resistance of the element produces heat because of the current flow. The construction and the size of the element is empirically determined to make certain that the heat generated for a regular current does not cause the element to reach a high temperature. In cases where too high of a current flows, the element either melts directly or it rises to a higher temperature and melts a soldered joint in the fuse that opens the circuit.

An electric arc forms between the un-melted ends of the element when the metal conductor components. The arc grows in length until the voltage required to sustain the arc becomes higher as opposed to the obtainable voltage within the circuit. This is what causes the current flow to become terminated. Where alternating current circuits are concerned, the current naturally reverses direction on each and every cycle. This particular process significantly improves the speed of fuse interruption. When it comes to current-limiting fuses, the voltage needed to sustain the arc builds up fast enough to basically stop the fault current previous to the first peak of the AC waveform. This particular effect greatly limits damage to downstream protected devices.

Generally, the fuse element comprises zinc, copper, alloys, silver or aluminum which will supply stable and predictable characteristics. Ideally, the fuse would carry its rated current indefinitely and melt fast on a small excess. It is important that the element must not become damaged by minor harmless surges of current, and should not change or oxidize its behavior after potentially years of service.

The fuse elements could be shaped to be able to increase the heating effect. In larger fuses, the current could be divided among several metal strips, whereas a dual-element fuse might have metal strips that melt instantly upon a short-circuit. This particular kind of fuse may even contain a low-melting solder joint which responds to long-term overload of low values as opposed to a short circuit. Fuse elements may be supported by steel or nichrome wires. This would make sure that no strain is placed on the element however a spring could be incorporated to increase the speed of parting the element fragments.

The fuse element is usually surrounded by materials that function to be able to speed up the quenching of the arc. Several examples include non-conducting liquids, silica sand and air.