Forklift Fuses

Forklift Fuse - A fuse is made up of a wire fuse element or a metal strip of small cross-section compared to the circuit conductors, and is usually mounted between two electrical terminals. Generally, the fuse is enclosed by a non-combustible and non-conducting housing. The fuse is arranged in series which can carry all the current passing through the protected circuit. The resistance of the element generates heat because of the current flow. The construction and the size of the element is empirically determined to be certain that the heat produced for a normal current does not cause the element to reach a high temperature. In instances 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 which opens the circuit.

An electric arc forms between the un-melted ends of the element whenever the metal conductor parts. The arc grows in length until the voltage considered necessary to be able to sustain the arc becomes higher compared to the obtainable voltage in the circuit. This is what leads to the current flow to become terminated. Where alternating current circuits are concerned, the current naturally reverses direction on every cycle. This particular process really enhances the speed of fuse interruption. Where current-limiting fuses are concerned, the voltage required in order 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 units.

Usually, the fuse element consists if alloys, silver, aluminum, zinc or copper that will provide predictable and stable characteristics. Ideally, the fuse will carry its rated current indefinitely and melt quickly on a small excess. It is important that the element must not become damaged by minor harmless surges of current, and should not oxidize or change its behavior following possible years of service.

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

It is common for the fuse element to be surrounded by materials which are meant to speed the quenching of the arc. Air, non-conducting liquids and silica sand are some examples.