

Detect High Voltage in Open Circuit Current Transformers

The OCP series Open Circuit Protector is designed to detect and prevent dangerously high voltage in current transformers if a secondary terminal is inadvertently opened while the primary current is “on load”.

The OCP is a voltage sensing device using high speed shorting SCR switches. When the secondary peak voltage exceeds the clamping voltage value, the SCR switch trips shorting the current transformers output and reducing the voltage to roughly 2 volts in less than ¼ cycle. This process repeats each current polarity reversal and the protection is activated each half cycle.

The single element open circuit protector comes with two terminals and the three-element open circuit protector includes six terminals for connection across the secondary terminals of the current transformers and in parallel with the metering devices or protective relays. The OCP does not affect the operation of the protective relay, metering device or other current operated devices. Note - the secondary polarity connection of the OCP to the current transformer is not critical.

Open circuit protectors also provide protection against high secondary voltage transients which may damage the burden or secondary winding of the current transformer. The leakage current of the OCP is insignificant and will not affect the ratio or phase angle error of the connected current transformer. OCPs can handle short time fault currents of 100 Amps for 1 sec and 80 Amps for 2 sec. The OCP series can also handle maximum continuous current of 10 Amps through one element or 7.5 Amps through all three independent elements.

The selection of the OCP, whether single element or three element, is based on the current transformer relay class or, if given, based on the excitation curve of the current transformer that is going to be protected. For example, the P/N 780-102, 1000:5A has a C100 relay class. The appropriate OCP single element will be 1-OCP-100 and for three element, this will be 3-OCP-100. The clamping peak voltage limit of the 1-OCP-100 and the 3-OCP-200 is 200 VAC peak nominal.

Related models

- [Model# OCP Open Circuit Protector](#)