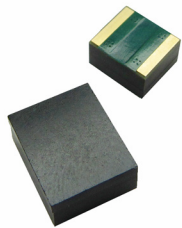


Use case
Eaton Bussmann® MOVS



Eaton MOVS provide overvoltage protection in smart meters

Electricity plays a crucial role in today's world, allowing us to operate machinery, equipment, and devices anywhere from industrial plants to commercial and residential buildings. With power grid infrastructure becoming increasingly digitized, there is a need to securely and reliably quantify the amount of power being distributed at any time and relay that information to both users and administrators.

Metering devices are integral components of smart grid infrastructure that enable real-time measurement of distributed power. Smart meters are electronic devices used for metering in a wide range of energy management and industrial applications. In these applications, smart meters track customers' energy consumption and other essential metrics,

such as current and voltage levels and power factor (PF). Communicating this information to residential, commercial, and industrial users allows them to track their energy consumption while utility companies can accurately bill their clients, identify problems in their power supply system, and monitor the power quality.

Smart meters incorporate complex electronic circuits that enable time-sensitive power measurement and communications with users and administrators. However, as more components are being integrated into smart meters to enhance their functionality, they are becoming more susceptible to circuit threats, such as high-voltage transients and power line disturbances. Different sections of smart meters require protection from unsafe energy

levels. For example, the inputs are connected directly to a mains which is susceptible to overvoltage. Microprocessors within the device responsible for processing information also contain sensor pins that may be affected by electrical fast transients (EFTs) from the power supply. Moreover, human-machine interfaces (HMIs) and communication ports are prone to electrostatic discharge (ESD).

Overvoltage protection devices, such as metal-oxide varistors can help safeguard against high voltage surge events that can damage sensitive components. Eaton's MOVS surface-mount Metal Oxide Varistors (MOVS) provide high surge overvoltage protection in a broad variety of smart meters. Eaton's MOVS have very wide operating voltages, from 11 Vac (14 Vdc) up to 510 Vac (570 Vdc). These

products are offered in compact EIA 2825 and 4032 industry sizes, which provide excellent balance of high miniaturization and surge protection in space-constrained smart meter circuits. Each product is RoHS compliant and UL approved for superior reliability and safety.

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