Eaton power inductors prevent noise intrusion in industrial process control systems

For reliable and efficient process control in industrial applications, shielding of the control circuits from electrical noise intrusion is essential. Electromagnetic interference (EMI) or 'electrical noise' is a form of disturbance that can adversely impact the system efficiency of control circuits in process equipment by distorting the control signals and communications networks they utilize.

In factories, assembly plants and warehouses, the presence of a multitude of electronic devices and machines can induce "crosstalk" between components and communication channels. Noise intrusion can result from magnetic, capacitive, direct, or RF signal coupling in AC/DC machines within close proximity.

A programmable logic controller (PLC) is a ruggedized industrial computer used to control devices and machines used for manufacturing, robotics, or industrial automation. The primary objective of using one or more PLCs is to enhance the efficiency and reliability of various electromechanical processes while eliminating the human error factor. They typically contain single or multiple CPUs, I/O sections, memories, power supplies, programming devices, and more.

Eaton's HCM and HPAL line of inductors are small footprint, high power density components made of pressed powder core material in a molded construction.

When utilized in PLCs, Eaton HCM and HPAL inductors can help shield sensitive electronics from EMI. These products also feature a special anti-rusting agent surface of the part that provides excellent resistance to rusting.

Eaton HCM and HPAL inductors achieve some of the highest inductances for small-footprint surface mount components (0.10 µH to 47 µH) with peak current ratings from 1.8 A to 118 A and frequency range up to 5 MHz. They also have excellent temperature stability (–55 °C to +125 °C) on inductances with low core losses, making them ideal for harsh industrial environments. HCM and HPAL inductors are halogen and lead-free, RoHS and REACH compliant.

Eaton's MPI family of inductors are high current, compact footprint, pressed powder core material components. Like HCM and HPAL pressed powder inductors, the MPI inductors can prevent noise intrusion in PLCs owing to their magnetically shielded construction.

The MPI inductors have inductance values from 0.1 µH to 22 µH, current ratings from 1.2 A to 22 A, and can support frequencies up to 3 MHz. They also have good temperature stability (-55 °C to +125 °C) on inductances with low core losses. MPI inductors are manufactured with lead and halogen free materials and are RoHS and REACH compliant.

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