

Technical Information

How to Use Ferrite Cores with Instrumentation

OMEGA's thermocouple and RTD connectors with built-in nickel-zinc ferrite cores are used where it is desired to suppress electro-magnetic, interference commonly known as EMI. Suppression of EMI has become a major concern in the instrumentation and control field. It is particularly important in handling and transmitting electronic data, as well as signals from transducers, such as thermocouples, thermistors and RTD's. This is because lead wires, extension wires, and signal wires often act as antennae. OMEGA offers a family of nickel-zinc ferrites in our new OMEGA® ferrite connectors. This allows the user to reduce the "antenna effect", which allows undesired signals to enter the instrumentation and controls.

Ferrite Connectors

The effectiveness of any ferrite core is based upon the material selection, number of wire turns around the core, and overall wire length. OMEGA's ferrite connectors listed here have been developed for a multitude of general applications. The use of additional ferrite cores, as well as a specific selection of ferrite material, will provide a significant improvement in EMI suppression. While the OMEGA® ferrite connectors are designed for a multitude of applications, the amount of EMI suppression will vary from application to application.

Please consult the factory for those applications where the standard OMEGA's ferrite connectors may not be sufficient.

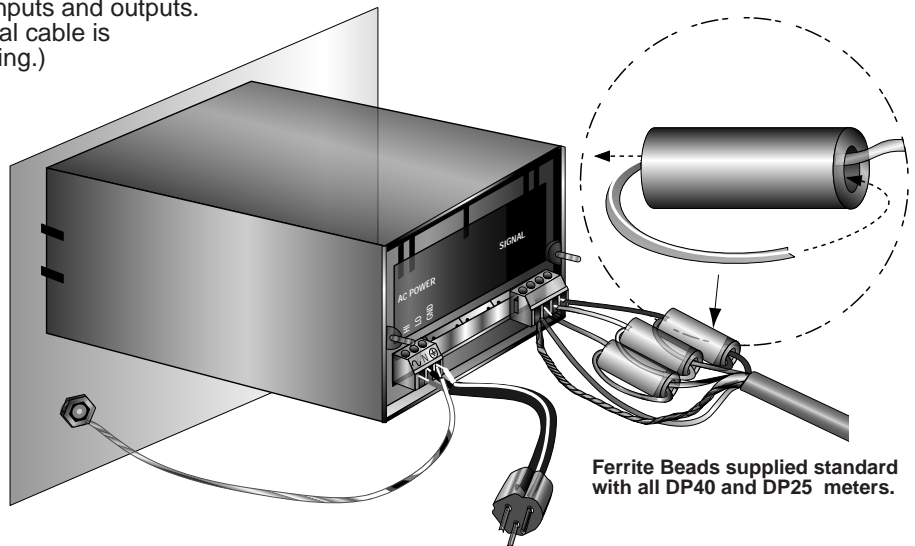
Note: Built-in ferrite cores are available in male miniature connectors and both male and female standard size connectors.



OMEGA® Panel Meters and Controllers

- 1) OMEGA® Panel Meters and Controllers are intended for installation in metal panels which should be connected to Earth Ground. (Standard rack panels are available from OMEGA Engineering. In environments with extreme electromagnetic radiation, shielded EMI cabinets offer additional protection.)
- 2) NEVER run signal wires and power in the same conduit.
- 3) Whenever electromagnetic compatibility is an issue, always use SHIELDED CABLES for all inputs and outputs. (A vast selection of shielded signal cable is available from OMEGA Engineering.) Connect the shield to the analog signal ground if appropriate or to earth ground.
- 4) Install one (or more) FERRITE BEADS on each signal input wire close to the meter.

Patent applications pending in various countries



Omega's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.