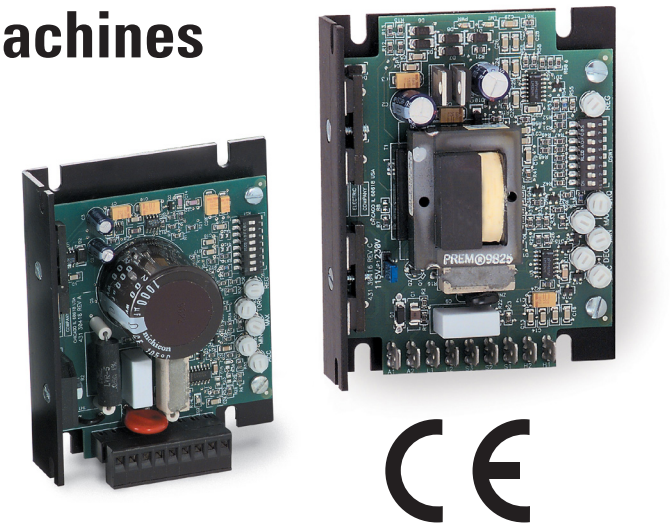
APPLICATION note

BODINE ELECTRIC COMPANY

A TECHNICAL PAPER FROM BODINE ELECTRIC COMPANY

# Filtering Tips For Bodine type WPM and UPM Controls in Industrial Machines

**Follow these guidelines when installing Bodine type WPM and UPM controls in equipment or applications that are sensitive to Electromagnetic Interference (EMI).**



## Connection Example

**ENCLOSURE**–Mount the control to a metal base using hardware that provides a good ground path between the mounting bracket and the metal base. Cover the entire control system with a metal enclosure. Openings for cables should be as small as possible. A good ground path must be maintained along the entire edge of the enclosure cover.

**LINE FILTER**–Choose a line filter with an appropriate current rating for the motor being used. Schaffner part number FN2070-6-06 frequently will work with most Bodine motors. Mount the line filter to the metal base using hardware that provides a good ground path between the line filter housing and the metal base. Use the shortest possible length of shielded cable to connect the "LINE" terminals of the line filter to the 230 VAC line and the "LOAD" terminals to "L1" and "L2" on the control. **Warning:** Bodine type WPM stock controls require 115VAC input power, please specify an appropriate transformer. See Fig. 1) Connect both ends of the drain wire to the metal base or enclosure. Connect the ground terminal of the line filter to earth ground. The metal base and enclosure will be grounded through their contact with the line filter housing.

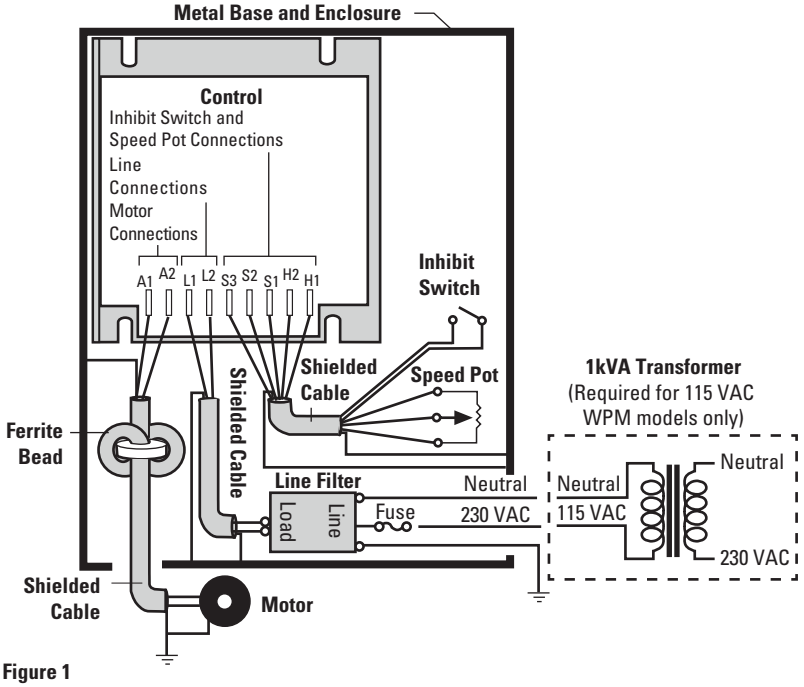



**Figure 1**
Typical control connections with a line filter and shielded cables

**MOTOR CONNECTIONS**–Use the shortest possible length of shielded cable to connect the motor to "A1" and "A2" on the control. Feed the motor cable through a ferrite bead. The more times the cable can be looped around and through the ferrite bead, the better. Fair-Rite part number 0444173551, a snap-on type ferrite bead tested with Bodine's 42A7 motor, is large enough for three passes of a shielded motor cable. Connect the drain wire at the motor end of the cable to earth ground and the other end to the metal base or enclosure. Connect the motor frame to earth ground.

**INHIBIT SWITCH & SPEED POT**–Use the shortest possible length of shielded cable to connect the inhibit switch, if used, to "H1" and "H2" on the control and the speed potentiometer to "S1", "S2", and "S3". Connect both ends of the drain wire to the metal base or enclosure.

**Click Here for Bodine DC Controls**