CE Technical Bulletin for Watlow DIN-a-mite® and Temperature Controller Products Applications

This **Technical Bulletin** provides guidelines and recommendations relevant to the EMC Directive to help Watlow Controls' customers achieve CE compliance using Watlow components.

DIN-a-mite Series Power Controllers and EN 55011 (Conducted Emissions)

Carrier current communications are used for baby monitors and medical alert signaling in Europe and other countries. Carrier current communications should not be present in an industrial environment and should not be considered a problem.

A filter is required for all **zero cross power controllers** to pass conducted emissions (EN 55011). Watlow Controls offers two filters:

1. The Crydom filter (Watlow #14-0019 for 1 phase, 230V or #14-0020 for 3 phase, 440V) is a trap that reduces noise in the 150-180 Khz range. This filter can also trap any carrier current communications on power lines (mains); therefore, **this filter is not recommended for any application in a non-industrial environment.**

2. The Corcom filter (Watlow #14-0017 for 1 phase, 25A@230V or #14-0018 for 3 phase, 60A@440V) should not affect power line communications; therefore, **it is recommended for use in residential areas, hospitals and nursing/rest homes, and any non-industrial environment.**

DIN-a-mite Series Power Controllers and Series 93, 935, 96, 965, 988 family (981-84, 986-89, 996-99) and EN 61000-3-3 (Limitations of Voltage Fluctuations and Flicker)

Compliance with the Voltage fluctuations and flicker (EN 61000-3-3) directive is mandatory in the European Union. This standard is applicable to any controller within the scope of the *EMC Directive 89/336/EEC* that has an input current up to and including 16 Amps per phase and is intended to be connected to public low voltage distribution systems of between 220-250V at 50 Hz line to neutral. All applications of the DIN-a-mite power controller series and temperature controller series must conform to the requirements of EN 61000-3-3. **Any device that switches at a six (6) second cycle time or less can cause problems.**

Many European countries have extremely "soft" power lines (mains), meaning that voltage can vary widely from nominal. This can be due to higher impedances and/or smaller conductors. Applicable power and temperature controllers should be run at **six (6) second or greater time base** with loads that are greater than 3 Amps in order to remain outside the problem area of the flicker curve defined by EN 61000-3-3.

Power and temperature controllers with a variable time base mode (sometimes referred to as burst fire) **should not be used** if compliance with EN 61000-3-3 is mandatory for your system.

It is Watlow Controls' opinion that EN 61000-3-3 should not be applicable in any industrial environment; however, the CE testing body's decision will be final. If you have questions concerning the CE compliance of your system, always consult a Competent Body for the EMC Directive.

No problems regarding EMC immunity or radiated emissions are foreseen in any power controller

WATLOW

Watlow Controls, 1241 Bundy Blvd., P.O. Box 5580, Winona, MN 5587-5580, Ph: 507-454-5300, Fax: 507-452-4507

0600-0004-0003 Rev A
January 1998
(1244)