FIRE CONTROL INSTRUMENTS
by Honeywell

Technical Bulletin

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To: All FCI Distributors

Protecting 7100 Control Panels from Transients and Surges

Like all electronic equipment, external transients and surges can affect the 7100 series control panel. These voltages if not prevented, can cause component damage, and/or result in system instability. Fire Control Instruments incorporates a high level of protection from these potential hazards, however in some instances these voltages can surpass the on-board protection. These instances are usually installations where wiring extends outside the protected building; i.e., telephone lines used with the on-board digital communication option, or SLC wiring extended to other buildings.

In these applications we recommend additional off-board protection. This is also addressed in the National Electric Code as follows:

NEC section 800.30 requires that a listed primary protector shall be installed on each circuit when:

- The circuit is run partly or entirely aerially
- The circuit is exposed to lightning strikes
- The aerial or underground circuit is exposed to accidental contact with electric light or power conductors operating at over 300 volts

The type of protector used should protect from transients voltages as well as surges. For telephone lines, a commercially available RJ-31X surge protected block with a clamping time of < 2ns is ideal for most applications. These products are manufactured by companies such as DITEK and EDCO and are available from component suppliers such as ADI.

Mandatory Protection

Whether or not external protection is advised the following is mandatory when terminating a 7100 panel. Besides the AC ground input, Terminal TB4-4 must be connected to an earth ground connection per Article 760 of the NEC. Failure to make a proper isolated earth ground connection to a metallic cold water pipe or driven ground rod to this terminal will result in loss of lightning protection, reduce the tolerance of the system to transients, and will adversely affect the operation of the system. PANEL NEUTRAL OR CONDUIT GROUND IS NOT ACCEPTABLE. The minimum wire size is 14 AWG.

Attention to these basic grounding practices will minimize any possibility of system damage due to external voltages and ensure longer equipment life as well as a more reliable, trouble free system.

If you have any questions regarding this or any other FCI product, please contact your regional manager at your convenience.

Regards,

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