temperzone climate innovations

applications notice

To: AUTHORISED DEALERS/DISTRIBUTORS
N.Z. APPROVED INSTALLERS
H.O., REG'L & AUST. MANAGERS
APPLIC. NOTICE GENERAL LIST

Issue No.: 02/06
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From: T King/K Edwards

Subject: HANDLING OF ELECTRONIC CIRCUIT BOARDS TO AVOID DAMAGER
Units: VARIOUS (Note: This supersedes the now obsolete Issue 10/90)

Most of our units these days have one or more electronic printed circuit boards in them containing silicon chips which can very easily suffer damage if touched by an 'electrically charged' body. We take a great deal of care in the handling and fitting of these in our factory. Rarely these items may have to be returned to us and would be more often than not re-useable or available as seconds/spares once repaired or re-programmed providing they are returned without damage. To this end we recommend the following:

When removing allegedly faulty electronic controllers and/or fitting new ones please take precautions against static damage. To assist in this campaign you should have in your tool kit, an "Anti-Static Wrist Band" and some Anti-Static bags. (If you don't have any A/S bags then a roll of kitchen tin foil is a good alternative as a static barrier, but care needs to be taken when using it to wrap controllers, if the device has a battery on it. The Tin foil could short out the battery.) Anti-static bags or tin foil provide the static protection, they do not provide physical protection during shipping. Never use plain plastic bags or bubble wrap to enclose the controller without first placing the controller in an Anti-Static shielding bag or tin foil. Plain plastics are a good source of static. The controller must be protected from this by the use of a static barrier, before it is wrapped in bubble wrap. There are special bubble wraps (generally pink in colour), available for physical protection of electronic devices. It may be wise to carry some of this material as well.

Static discharge and fields can damage sensitive electronic equipment. All of us carry a static charge the ferocity of which is dependant on our activity, the relative humidity, the materials we are in contact with and when we last earthed ourselves. A prime candidate for such damage is the "Microcontroller" used at the heart of many electronic controls. Microcontrollers contain hundreds of thousands of transistors. The risk of static damage (which is only visible under a powerful microscope) is easy to ignore because the damage seldom causes immediate failure. The device affected usually limps on in a weakened state for a considerable period of time, possibly failing "inexplicably" a year or two later. In the interest of improved reliability, **temperzone** encourages all service personnel to take this matter seriously for the benefit of all concerned, especially the end user.

Before removing or fitting a controller, turn off the power to the unit. Remove any cover plates/panels. If you have an "Anti-Static Wrist Band" put it on and clip the lead to the unit's earth stud. If you do not have an "Anti-Static Wrist Band", touch a piece of unpainted, earthed metal to discharge any static charge present on your body.

Only then open the bag that the new/replacement controller was supplied in. Carry out the intended work, disconnecting any wires or connecting them whichever the case may be. Store removed controllers immediately in an Anti-Static bag such as the one that the replacement controller is supplied in. The grey colouration of the bag is due to a metallization layer (usually Nickel) within the plastic of the bag. This makes the bag conductive and both dissipates and shields the device inside from static fields.

Adopting Static safe working practices like this will help improve the life of electronic controls. This can't help but improve your client's satisfaction and impressions of both us as manufacturers and yourselves as Installers / Service Agents.

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