Environmental Considerations

Temperature

The instruNet 100/100B/100HC products operate between 0C and 70C (32F to 158F), provided there is no condensation. The offset errors produced by temperature variations are corrected to 0 when the unit automatically calibrates; therefore, it is important to calibrate the unit if the temperature has changed more than 5C since its last calibration. A gain error does occur due to temperature variation of +/-7ppm/C max, from the factory calibration temperature of 25C. Therefore, if the temperature changes by 50C from 25C to 75C, then a max gain error of 50 * 7ppm = 350ppm (0.035%) will occur. For example, on a 5V range, one could expect less than a 5 * 0.00035 = 1.75mV error due to a 50C variation from room temperature.

Condensation

Moisture can build up on the instruNet printed circuit board if the temperature inside the instruNet box is colder than the temperature outside the box, in a humid environment. This is sometimes referred to as condensation. This will not cause damage, yet might cause the instruNet box to not operate properly.

External Gases and Liquids

The instruNet box is not water or air tight. If one needs to protect the instruNet pcb further, we would recommend conformally coating the pcb in a resin. This would seal the pcb and components to external gases and liquids.

Can I get a -40C to 70C instruNet that is condenstation proof ?

An instruNet box could be modified with -40 to 70C components, and then conformally coated with a resin to shield the pcb from external gases and liquids. This would make it condensation proof, and able to operate anywhere on the planet (well, almost anywhere). Please consult the factory for details.

Shock and Vibration

The instruNet products have not been tested for shock or vibration. However, they do reside in strudy alumninum boxes, and the surface mount and through-hole components are securely soldered to the printed circuit board.