# Case Study: Measuring 48 x 15mA Strain Gages

Excitation of 15mA requires the high current iNet-100<u>HC</u> device (the iNet-100/100B devices only support 4mA of excitation current), which services 8 strain gages each, therefore 48 gages would require 6 iNet-100HC's.  These could be attached to one iNet-2xx Controller card; however, this higher excitation current would require power from an external power supply since the computer is not capable of powering high current outside the computer.

The iNet-312.8 power supply connects to either 110 or 220VAC outlets; and provides 5V at 2A and +-12V at .8A.  The iNet-312.8 includes a 3 prong USA plug, and the iNet-312.8eu includes a 2 prong CE Euro plug.

Each iNet-100HC normally consumes 80/80/200mA of +12V/-12V/5V power, yet with 8x 15mA strain gages, this would increase to 140/140/200mA.  And 3 iNet-100HC devices would require 420/420/600mA total.  Therefore, one #iNet-312.8 power supply should cover 3 iNet-100HCs nicely (without getting too hot).

With 15mA loads, it is helpful to alternate the excitation voltages +5V, -5V, +5V, -5V ... so that the strain gage demand is evenly divided among the +12V and -12V power supplies.  Note that 5V / 350 ohms = 14.2mA.

Since the instruNet data transfer rate is approximately proportional to the total instruNet cable length, it is recommended that 1foot cables be used to attach the instruNet units together at the far end; therefore, it would be recommended that the instruNet units be ordered with the following note: "Please send 1 iNet-100 with a 10 foot cable, and 5 with a 1 foot cable".

This system would require the following instruNet products:

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   6 Quantity      #iNet-100HC        Device w/15mA Excitition
   2 Quantity      #iNet-300          Power Adaptors
   1 Quantity      #iNet-200          PCI Controller

   2 Quantity      #iNet-312.8        Power Supply, 110/220VAC,
5V2A, ±12V.8A
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