

CONVERTER OPERATION UTILIZING REMOTE SENSE (GENERAL)

The function of remote sense is to compensate for power losses in output conductors (I^2R) or expressed as a voltage drop (IR). As an example if a 5v converter is being used located far enough from the load or where the size of the conductors constitutes .005 ohm each and the current at any given time =10 amps. The power dissipated in each lead (+/-) would be .5 watt and conversely .5 volts. The result at the point of use would be 4.5v during a 10a draw. The sense leads put the point of regulation at the point of use up to a given voltage drop (usually .5v).

The sense leads should be implemented as shown in figure 1. Smaller conductors from the appropriate sense pins routed to the point of desired regulation. The sense pins are isolated from the output pins by 10-ohm resistors internal to the converter. This provides a low enough impedance that the sense leads need not be connected if not used (although for optimum regulation connecting the sense pins directly to the output pins is recommended). In some applications where the sense pins are making up for relatively high losses and noise is present it may be advantageous to add bypass caps from each sense pin to ground. These caps should be small enough that the transient response is not affected by slowing down the response time of the sense function.

Caution must be used not to disconnect the power leads during operation while the sense remains connected. This will route the current drawn through the 10-ohm resistor causing catastrophic failure to the converter.

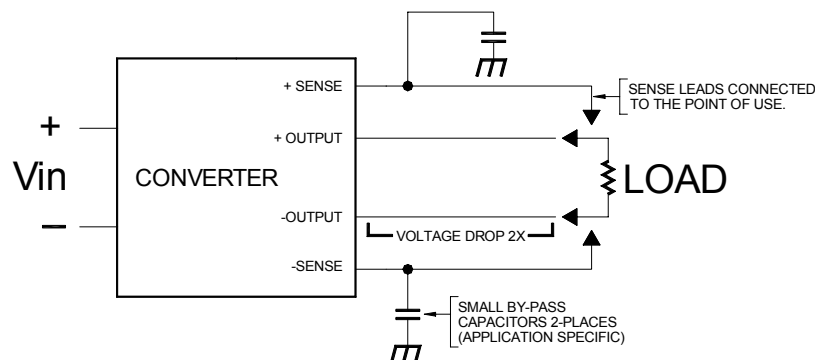


FIG-1