Externally Powering Port Converters

Some host RS-232 ports are unable to provide enough power for a "port powered" converter to work effectively. Some of those situations include:

- Battery-powered handheld computing devices with low-voltage RS-232 ports
- Converters connected to heavily loaded or terminated RS-485 networks
- Host RS-232 ports that do not have output handshake lines connected

In situations like these, B&B Electronics recommends the purchase of an externally powered converter. However, if you already have a port-powered converter, the following describes how to inject an external power source that will safely power a port powered converter.

This document applies to all B&B Electronics port powered serial converters and isolators with the exception of model 9SPOP2. (When the connected ports are unable to power the 9SPOP2, model 9POP4 with a 232PS power is recommended).

Instructions

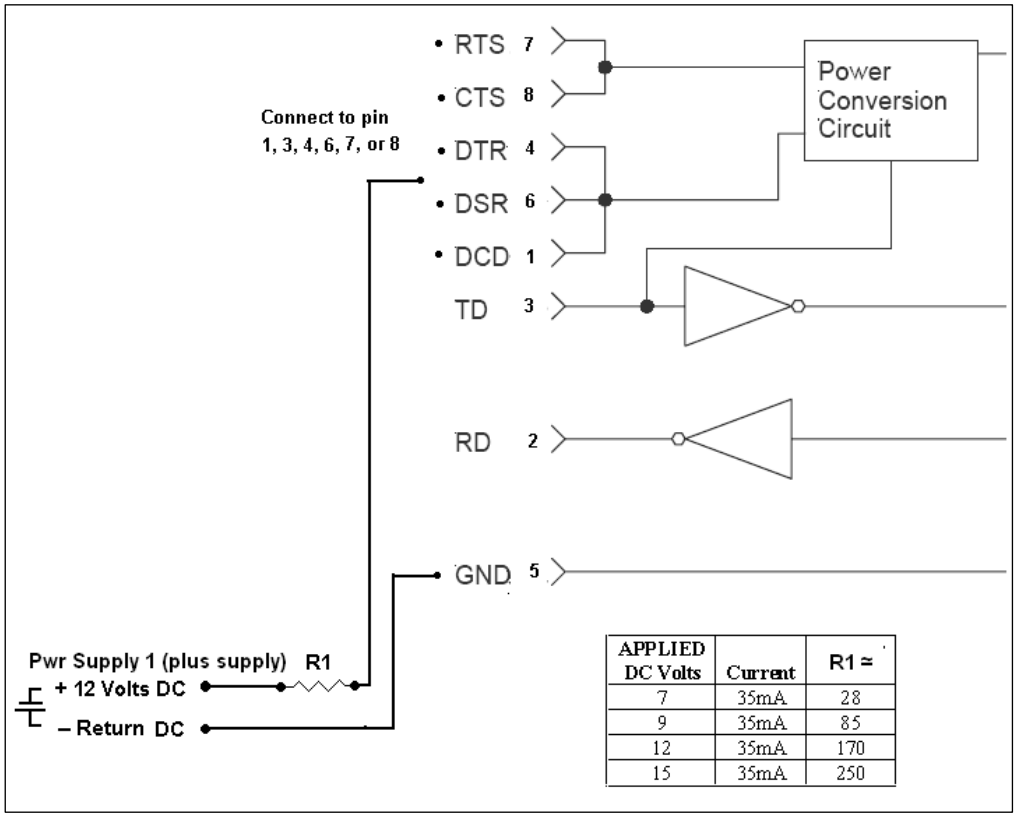
- Only one pin in the charts listed below will require power.
- Power supply ground on a DB9 is pin 5 and for DB25 is pin 7.

Using formula: R = (input voltage – 6V) / (.035mA)

User Supplied DC Voltage	Current	Resistor Ohms
7	35mA	28
9	35mA	85
12	35mA	170
15	35mA	250

Table 1

Table 1 shows how different applied voltages are used to power the converters. The approximate resistor values current limit the circuit to 35 mA. Wire the resistor in series between the voltage source and the handshake line of the port powered converter.



APPLIED DC Volts	Current	R1 =
7	35mA	28
9	35mA	85
12	35mA	170
15	35mA	250

For the following models, the current limited supply may be connected to pins 1, 4, 6, 7 or 8 of the converter's RS-232 DB9 connector. Connect ground to pin 5.

Models: 485SD9R, 485SD9TB, 485DRJ, 485SD9RJ, 485BAT3, 422PP9R, 422PP9TB

For the following models, the current limited supply may be connected to pins 4, 5, 6, 8 or 20 of the converter's RS-232 DB25 connector. Connect ground to pin 7.

Models: 422LPCOR, 422LP25R, 422LPCOR