

1756-RMS-SC Wiring

1052869 | Date Created: 06/28/2017 | Last Updated: 01/12/2018

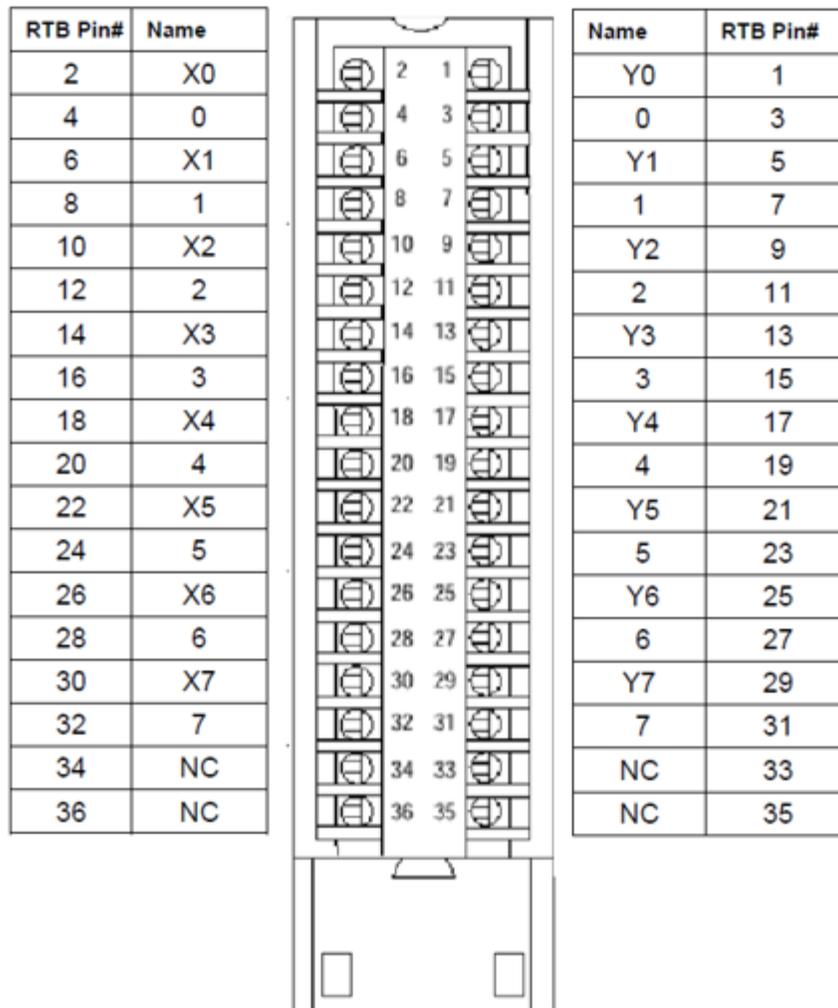
Access Level: Everyone

Question

How do you wire a 1756-RMS-SC?

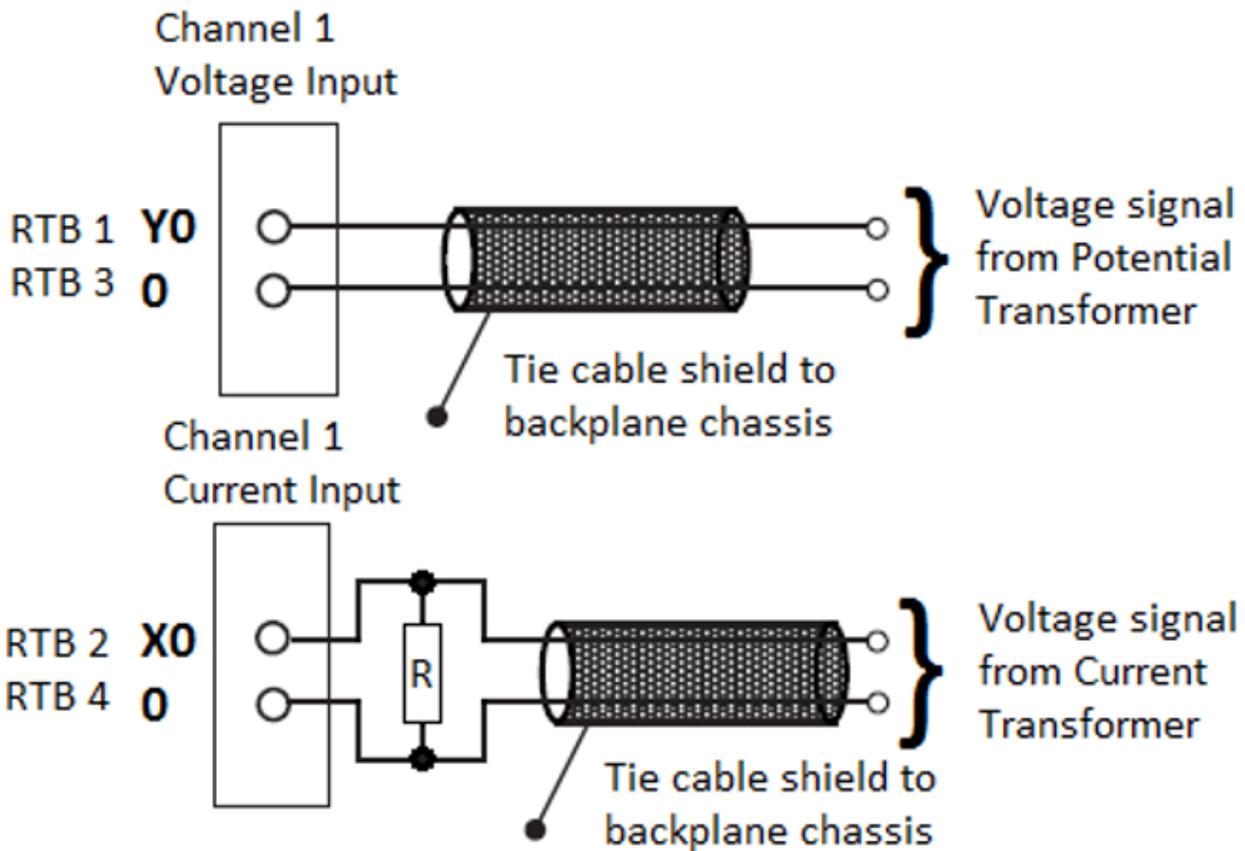
Answer

The following figure shows the general terminal block layout. The input signal type will determine which pins are used.



Voltage inputs start at the terminal block pins labeled Y0 and 0 (RTB pins 1 & 3). Current inputs start at the terminal block pins labeled X0 and 0 (RTB pins 2 & 4). Channel pairs are single ended. For the first channel, pins 3 and 4 are connected internally as the reference terminals and should be connected to the low side of the inputs.

If the input signals are DC, the 0 terminals would be the DC common. The first channel DC voltage (positive signal) would be connected to Y0 (RTB pin 1).



The 1756-RMS-SC module supports eight voltage/current input pairs connected individually to the module. Calculate the value of the load resistor ($R=V/I$) required for each current input by gathering up the following information:

- The voltage range input (V) of the current channel
- The maximum amps output (I) of the current transformer

Example

If the current transformer has a 5 amp output and the voltage range input selected is 7.071 Volts peak, then $R = 7.071/5 = 1.4142$ ohms, and the nearest readily available resistance value might be 1.25 ohms. If using a 1.25 ohm resistor than the voltage at 5 amps would be ($V=R*I$) $V = 1.25*5 = 6.25$ Volts, which would be adequate. A set of resistors in series, parallel or series/parallel would need to be used to get very close to 1.4142 ohms.

Calculate the wattage ($W=I*I*R$) requirement of the above example load resistor.

Example

If the current transformer has a 5 amp output and the selected load resistor is 1.4142 ohms, then $W = 5*5*1.4142 = 35.355$ Watts. Any resistor (or set of resistors in series, parallel or series/parallel) with a wattage value above this would be adequate.

Pay attention to the polarity of the voltage connections from the potential and current transformers. Transformer polarity uses a 'dot' convention where the dot indicates the H1 terminals on the high side of the transformer. It might also be labeled H1 & X1, where X1 is the low side which should be connected to the reference terminal (RTB terminals 3 & 4 in the channel 1 example above).