



B A S Application Note 001

Use of a Potentiometer as an Analog Input

Any potentiometer can be used as an input device. This requires the use of a voltage dropping resistor (RD) between the power supply and the pot. The purpose of this resistor is to limit the maximum analog input voltage to the maximum allowed by the RSC. The value of the dropping resistor can be determined as follows:

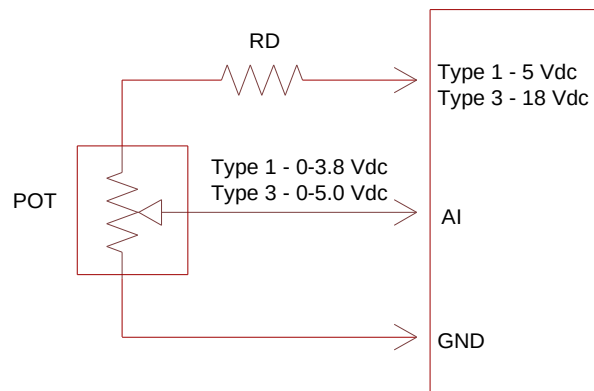
Rev 1 RSC

$RD = POT * 14,723 / (POT + 46,625)$ (Where the values of POT and RD are resistance in ohms.)

Rev 3 RSC

$RD = POT * 121,225 / (POT + 46,625)$ (Where the values of POT and RD are resistance in ohms.)

It is always a good practice to measure the actual value of the total pot resistance. Often a nominal resistance as listed by a manufacturer will vary as much as 20%. It is not usually necessary to measure each pot from a given manufacturer. The values will generally be consistent for any given product.



The below chart shows some common potentiometer values, their corresponding design dropping resistor value, and the off-the-shelf available resistor values. Always use 1% resistors for greater accuracy. Select a 25,000 ohm pot if a choice is available as to the pot value to use.

Pot Value	Rev 1		Rev 3	
	RD Value	1% Res	RD Value	1% Res
500	156	158	1286	1.30K
1000	309	309	2545	2.55K
5000	1426	1.43K	11741	11.8K
10000	2600	2.61K	21408	21.5K
25000	5139	5.11K	42312	42.2K