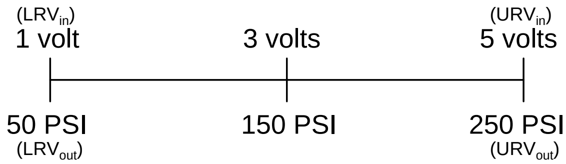
Example scaling for a 50-250 PSI pressure transmitter, with 4-20 mA output (dropping across a 250 ohm resistor), for a 1-5 VDC analog signal



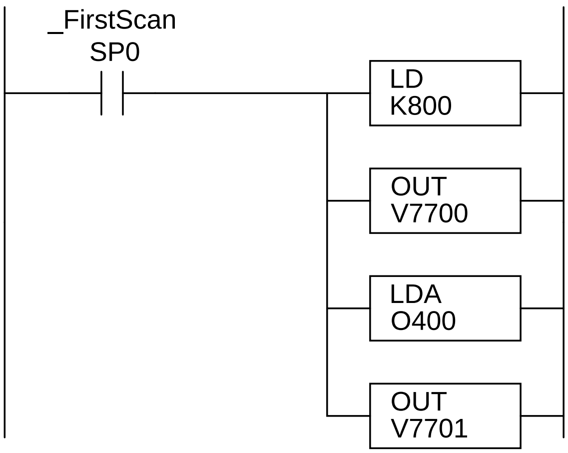
LRV_{count} = 13,107 URV_{count} = 65,535

$Span_{count} = URV_{count} - LRV_{count}$ = 52,428

$Factor = Span_{count} / Span_{out}$

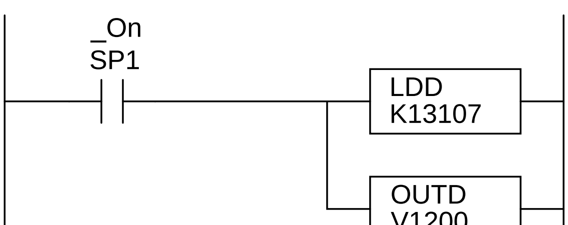
$Output = ((Count - LRV_{count}) / Factor) + LRV_{out}$

This set of stack operations sets up the analog input card for 8 channels, BCD data format, pointing to memory location V400.



Channel 1 = V400, V401 (double word BCD)
Channel 2 = V402, V403 (double word BCD)
Channel 3 = V404, V405 (double word BCD)
Channel 4 = V406, V407 (double word BCD)
Channel 5 = V410, V411 (double word BCD)
Channel 6 = V412, V413 (double word BCD)
Channel 7 = V414, V415 (double word BCD)
Channel 8 = V416, V417 (double word BCD)

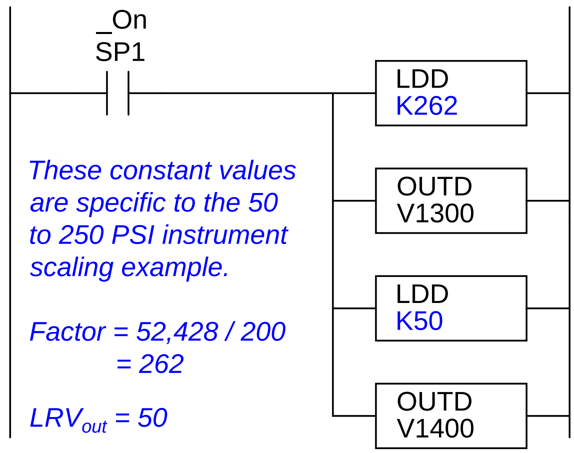
This loads the BCD (double word) value 13107 into memory location V1200+V1201, where it will be available for future calculations.



LRV_{count} = 13,107

13107 is exactly one-fifth of 65535, which corresponds to the analog card's count for 1 volt, if 5 volts = 65,535 (full count).

This set of stack operations loads the scaling factor into V1300+V1301, and the LRV_{out} value into V1400+V1401, for later calculations.



If the input is not below 1 volt (count < 13,107) we calculate the scaled output and load it into V2000+V2001. Otherwise, we set V2000+V2001 to be equal to the LRV_{out}