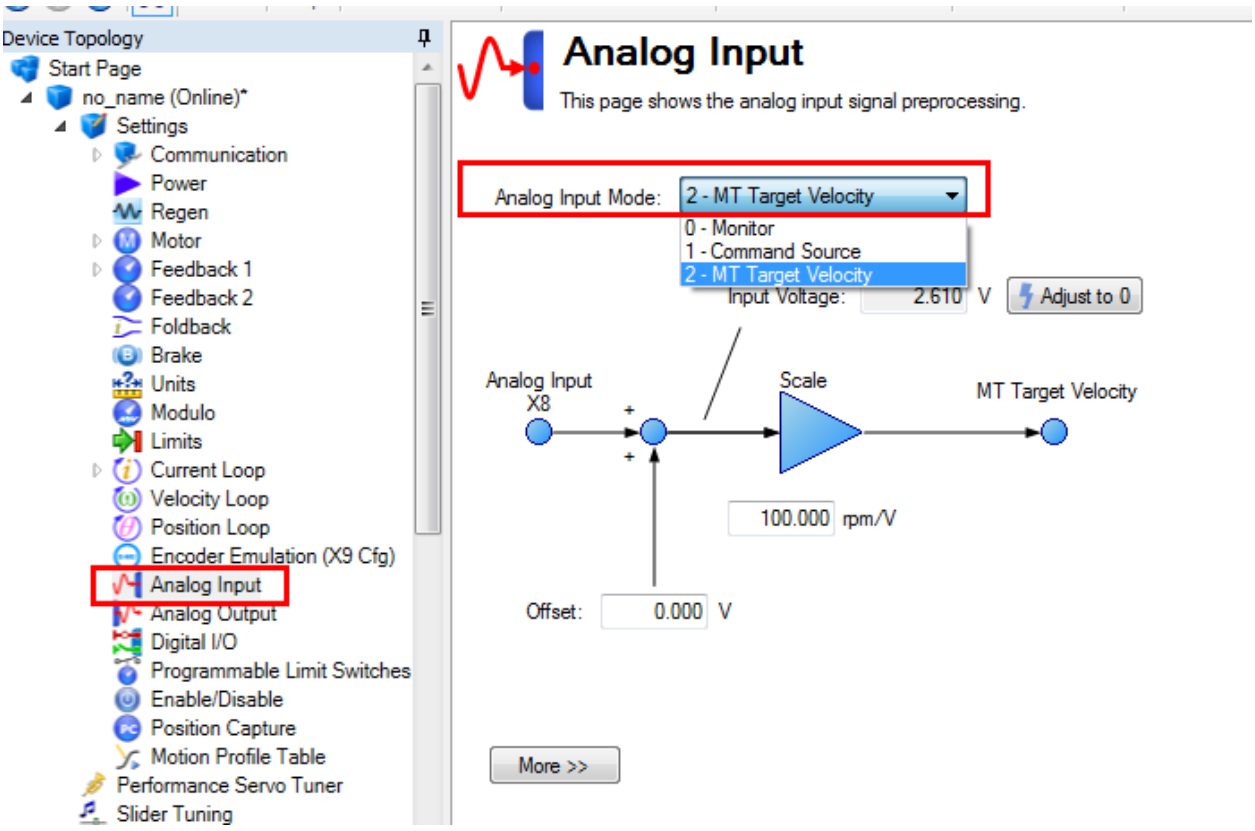
Controlling a Motion Task's target velocity using the Analog Input Rev. A 2016

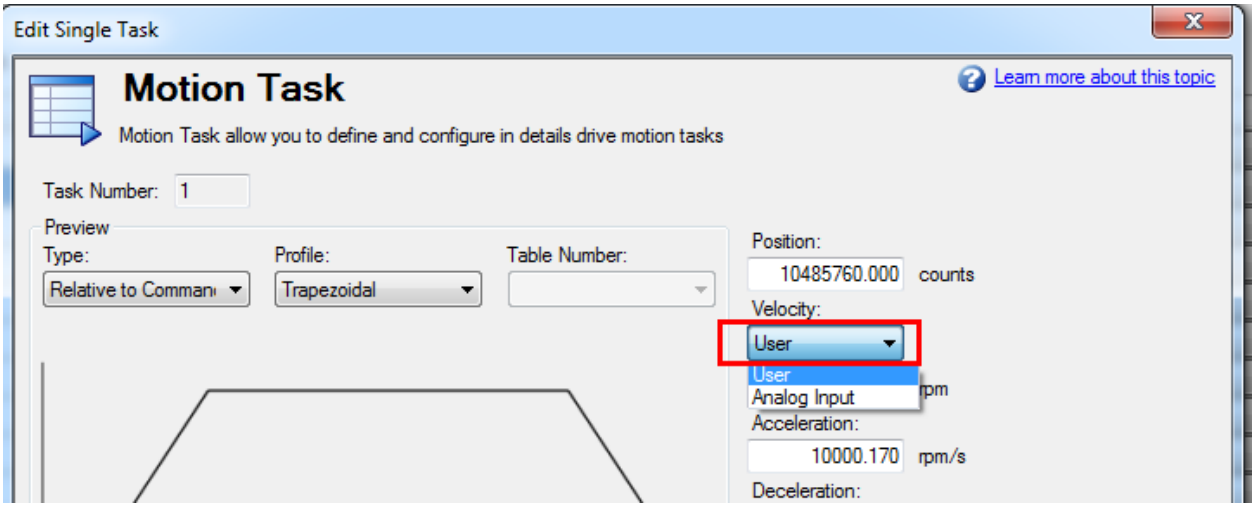
In some applications it may be desirable to set the target velocity of a motion task externally using, for example, a potentiometer or a voltage signal from another control. As implied this application note applies to the AKD-P Motion Tasking drive.

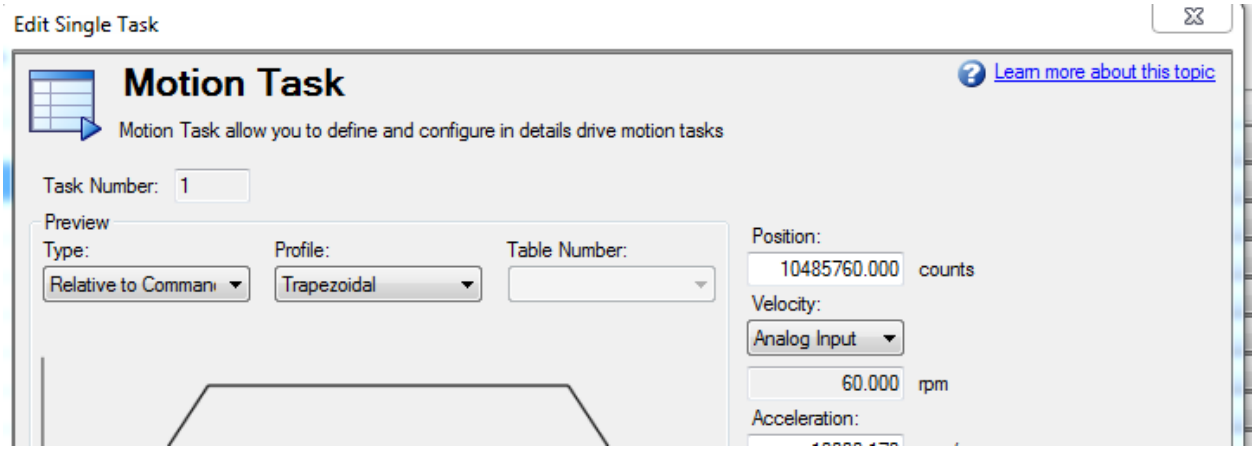
Primary settings are:

1. Setting the Analog Input Mode to 2-MT Target Velocity
2. Scaling your analog input appropriately for the application. Note the units will be used per the Units setup on the Units screen. In my case the velocity units were rpm.

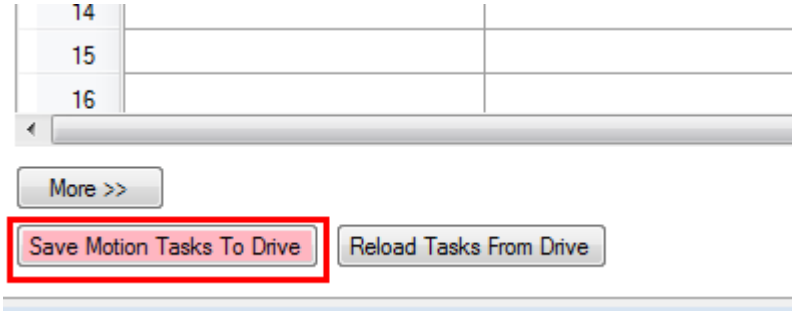


On the Motion Tasks screen double-click the row of the desired Motion Task (in the case I clicked on Motion Task 1). Click on the Velocity listbox and change the selection from User to Analog Input.

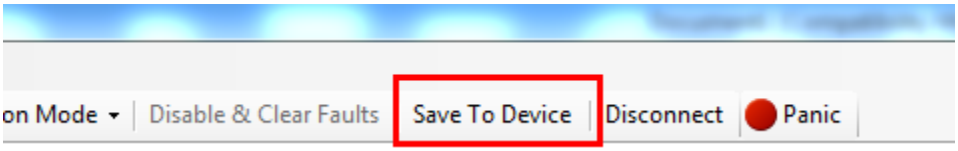




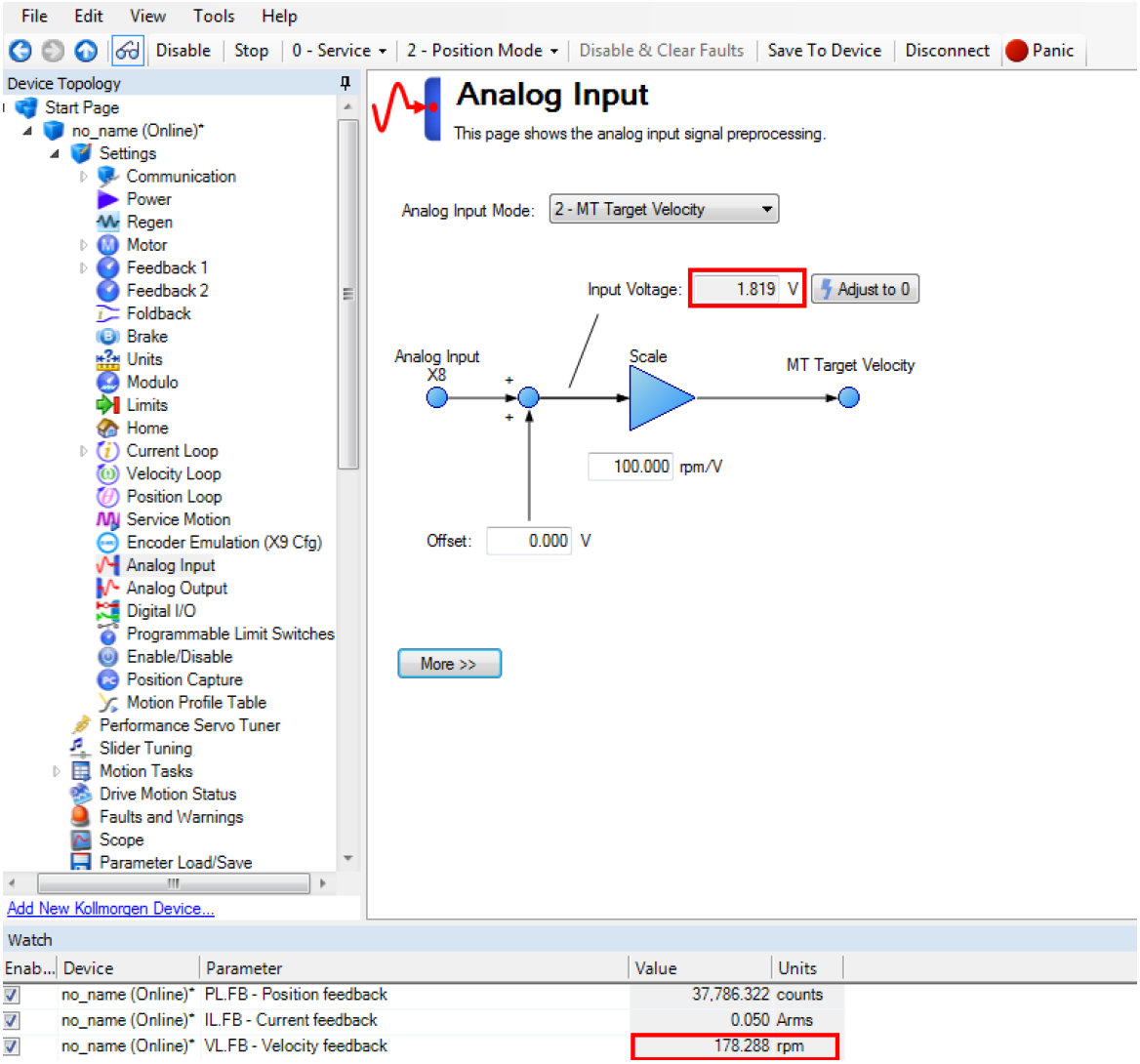
Click “OK” and then click on “Save Motion Tasks To Drive”



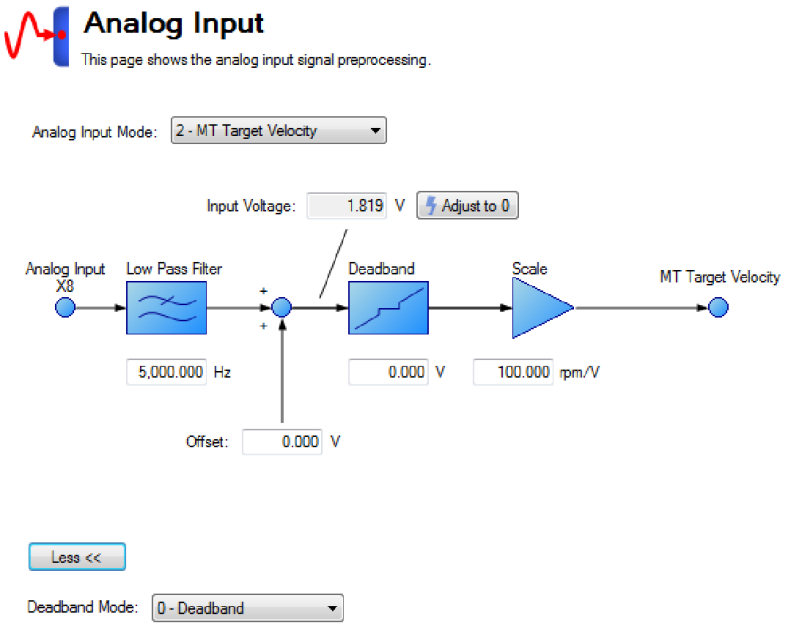
Also save your setup and parameter settings to nonvolatile memory by clicking on the toolbar “Save To Device” button.



As the motion task runs you can monitor both the Analog Input (from the Analog Input screen) and also the velocity command or feedback from the Watch window and see the velocity vary as the input voltage changes or when the voltage is constant see the velocity constant during the steady state part of the move.



Note on the Analog Input screen if you click on the “More” button, other settings/features appear such as a low pass filter and deadband threshold and mode. See the Workbench Help or AKD User’s Guide for more details as to how these work.


Analog Input
This page shows the analog input signal preprocessing.
Analog Input Mode:
2 - MT Target Velocity
Input Voltage:
1.819
V
Adjust to 0
Analog Input X8
Low Pass Filter
Deadband
Scale
MT Target Velocity
5,000.000
Hz
0.000
V
100.000
rpm/V
Offset:
0.000
V
Less <<
Deadband Mode:
0 - Deadband