

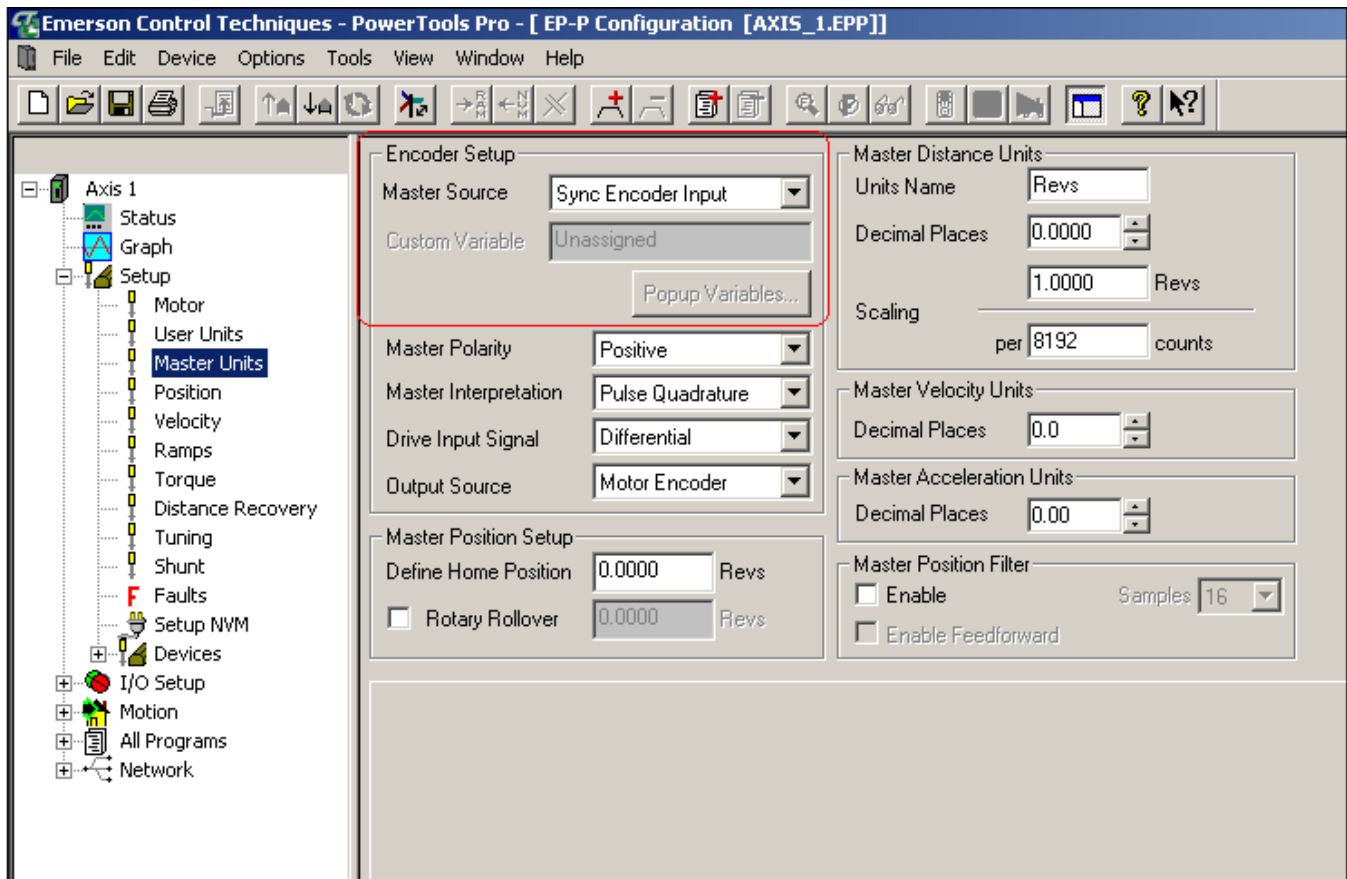
Using Alternate Master

Objective

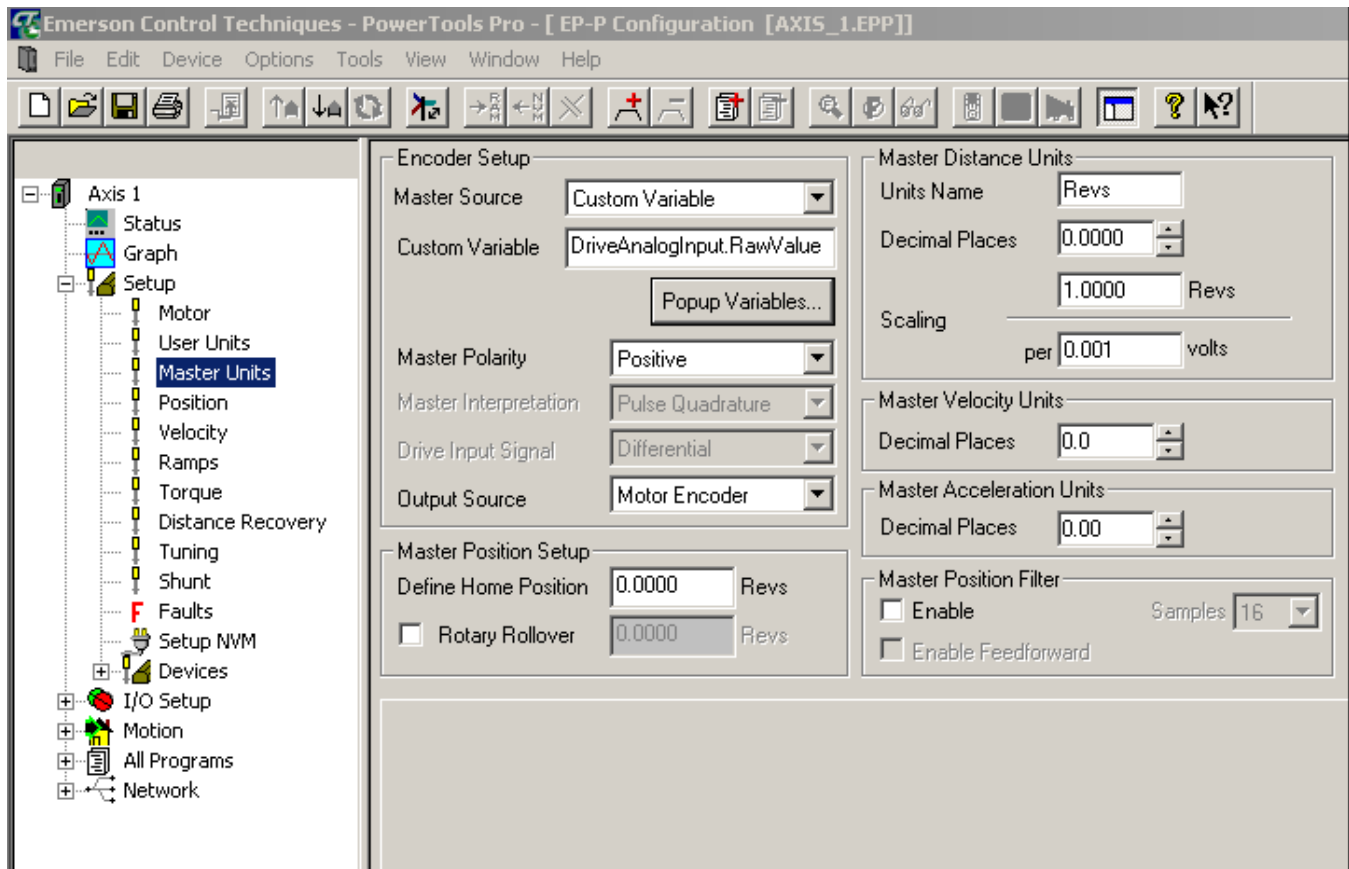
Explain how to set up alternate master for ep-p and ez-motion module.

Overview

With the Release of 4.4 PowerTools, the master source can be set to any registry parameter as well as any sp-drive parameter for the ez-motion module. Note below the new Encoder Setup selections.



If the Master Source is set to Sync Encoder Input, everything operates as it always has. But, if it is set to a parameter, the Custom Variable selection box becomes un-greyed allowing the selection of a registry parameter. Also, the denominator for the scaling now has a decimal place equal to that of the selected registry parameter and the units of that parameter as well if applicable. Note below, the selected parameter is the raw voltage of the analog input. Note that the Scaling numerator now has three decimal places and the units of volts.



For the EZ-Motion module, the following is set for the standard use.

Emerson Control Techniques - PowerTools Pro - [SM-EZMotion [AXIS_1.EZM]]

File Edit Device Options Tools View Window Help

Axis 1

- Status
- Graph
- Hardware
 - Drive/ Encoder
 - Slot 1 - EZMotion
 - Slot 2 - Universal En...
 - Slot 3 - empty
- Setup
 - User Units
 - Master Units**
 - Absolute Position
 - Position
 - Velocity
 - Ramps
 - Current
 - Tuning
 - Errors
 - Distance Recovery
 - Setup NVM
- Devices
- I/O Setup
- Motion
- All Programs
- Network

Feedback Setup

Master Feedback Source: Slot2

Module Variable: Unassigned

Drive Parameter: 3.29

Encoder Polarity: Positive

Master Distance Units

Units Name: Revs

Decimal Places: 0.0000

Scaling: 1.0000 Revs per 1 revs

Master Velocity Units

Decimal Places: 0.0

Master Acceleration Units

Decimal Places: 0.00

Master Position Setup

Define Home Position: 0.0000 Revs

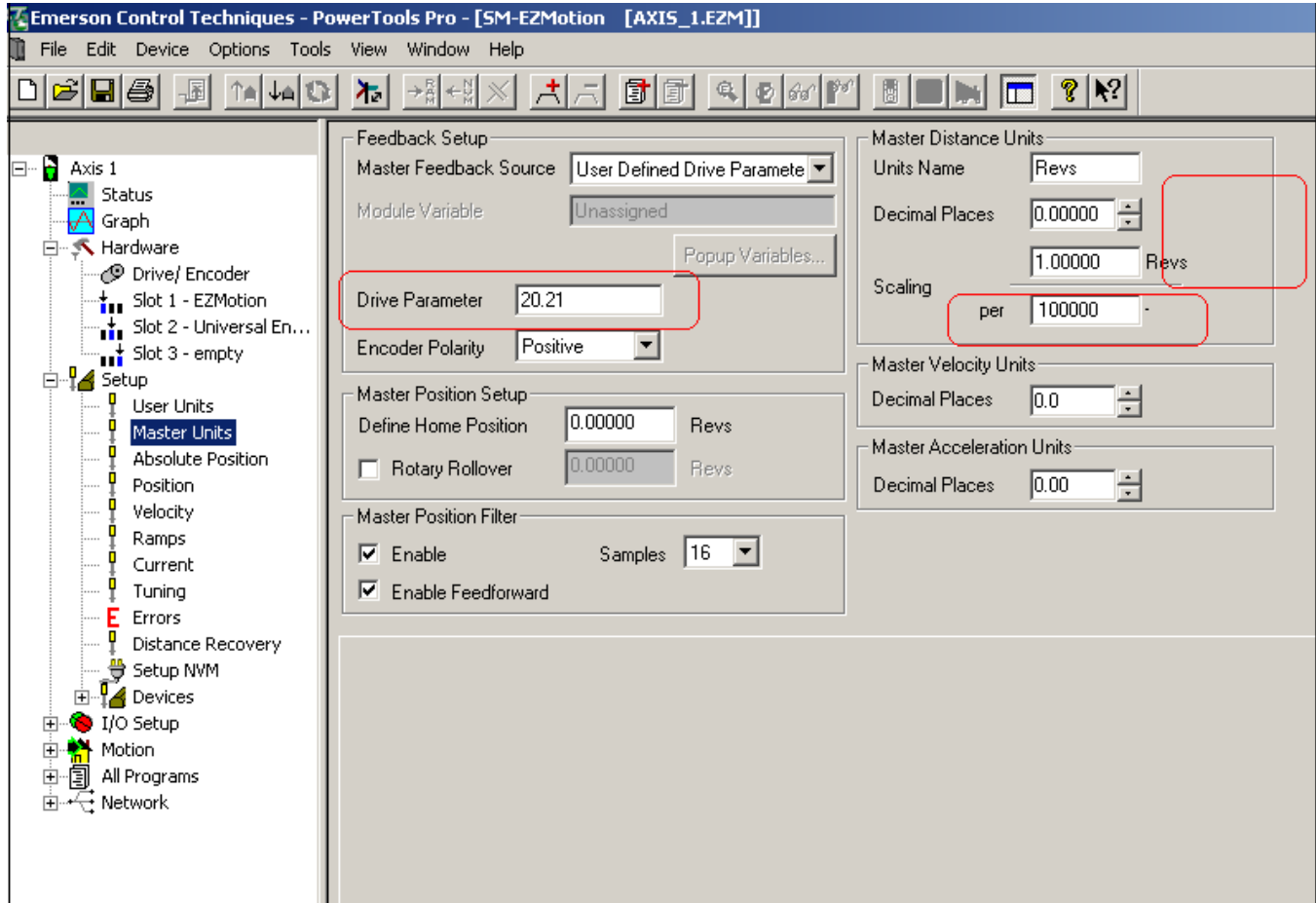
Rotary Rollover: 0.0000 Revs

Master Position Filter

Enable: ☒ Samples: 16

Enable Feedforward: ☒

The ez-motion module can be set to a registry parameter as the ep-p. But, it can also be set to use a drive parameter as shown below. Note that drive parameter is 20.21. Also note that the automated decimal point feature is disabled. (It is disabled for a registry parameter as well.)



Emerson Control Techniques - PowerTools Pro - [SM-EZMotion [AXIS_1.EZM]]

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Feedback Setup

Master Feedback Source: User Defined Drive Parameter

Module Variable: Unassigned

Drive Parameter: 20.21

Encoder Polarity: Positive

Master Distance Units

Units Name: Revs

Decimal Places: 0.00000

Scaling: 1.00000 Revs

per 100000

Master Position Setup

Define Home Position: 0.00000 Revs

Rotary Rollover: 0.00000 Revs

Master Position Filter

Enable: ☒ Samples: 16

Enable Feedforward: ☒

Example

The goal for this example is to have the master source be a user variable. We will use user variable zero and set it to have a decimal place of four. We will set the scaling such that one master rev is equal to a value of one for the user variable. Below shows the set-up for this example. Note that because user variables do not have any unit value, a question mark appears after the numerator in the scaling.

Encoder Setup		Master Distance Units	
Master Source	Custom Variable	Units Name	Revs
Custom Variable	Var.Var0	Decimal Places	0.0000
	Popup Variables...		1.0000 Revs
Master Polarity	Positive	Scaling	per 1.0000 ?

In order to have a smooth running master, it must be updated every control loop. A possible way to update the user variable in this manner would be the real time program.




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