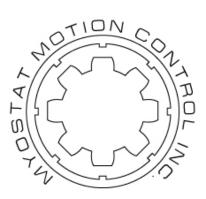
Myostat Motion Control Inc . Cool Muscle 1 RT3 Application Note

Cool Muscle Language Notes for Inputs



1. Inputs

1. Speed Control Using Multiple Digital Inputs as Binary Control

This example uses inputs 1-4 on the motor as digital inputs to set a speed. It uses a binary combination of the inputs to calculate 16 different set-points. All calculations and executions are done in three logic banks. The 1st logic bank calculates the binary combination. If it has changed the 2nd logic bank decides if the motor should be stopped or a speed is set. The 3rd logic bank sets required speed.

CML Code Used:

.1 \rightarrow sending just the motor ID allows all following commands to be sent to that ID.

 $K87=5 \rightarrow 5ms$ logic bank scan time $K85=1 \rightarrow Logic bank 1$ is started on power-up

P0=100000000 \rightarrow set direct mode to speed control S0=0 \rightarrow default speed is 0 A0=10 \rightarrow default acceleration is 10

N10-N25 \rightarrow N registers define constants to compare the binary combination too. S1-S15 \rightarrow S registers set the speed options for the binary combination

- V0=0 \rightarrow used to calculate and hold the binary combination
- V1=0 \rightarrow temporary variable used in calculations
- V2=2 \rightarrow binary multiplier for IN2
- V4=4 \rightarrow binary multiplier for IN3
- B8=8 \rightarrow binary multiplier for IN4
- L1-L3 \rightarrow indicated the start of a logic bank
- END \rightarrow indicates the end of a logic bank
- \Rightarrow save the data to the eeprom to it is retained on a power cycle

Example CML Code:

/set ID to motor 1 .1

/set logic bank scan time /and startup bank K87=5 K85=1

/clear program banks /and logic banks B100 L100

/set P0 to speed control /default speed is 0 P0=100000000 S0=0 A0=10 /assign N values to be /used as constants to compare /to the input combination N10=0 N11=1 N12=2 N13=3 N14=4 N15=5 N16=6 N17=7 N18=8 N19=9 N20=10 N21=11 N22=12 N23=13 N24=14 N25=15 /define speeds S1=10 S2=20 S3=30 S4=40 S5=50 S6=60 S7=70 S8=80 S9=90 S10=100 S11=110 S12=120 S13=130 S14=140 S15=150 /set default values for variables V0=0

V1=0

V3=0

V2=2 V4=4 V8=8

/scan inputs and calculate /binary combination /if it has changed call logic 2 L1.1 V0=I1; V1=I2*V2; V0=V0+V1; V1=I3*V4; V0=V0+V1; V1=I4*V8; V0=V0+V1; V0=V0+V1; V0=V0+V1; V0=V0+V1; V0=V3, CL2,T0 END.1

/depending on combination /stop the motor or set a speed /by calling L3 L2.1 V3=V0; V0==N10,],CL3 END.1

/set the speed and start the motor L3.1 V0==N11,S0=S1,T0 V0==N12,S0=S2,T0 V0==N13,S0=S3,T0 V0==N14,S0=S4,T0 V0==N15,S0=S5,T0 V0==N16,S0=S6,T0 V0==N17,S0=S7,T0 V0==N18,S0=S8,T0 V0==N19,S0=S9,T0 V0==N20,S0=S10,T0 V0==N21,S0=S11,T0 V0==N22,S0=S12,T0 V0==N23,S0=S13,T0 V0==N24,S0=S14,T0 V0==N25,S0=S15,T0 ^.1 END.1

/save data to eeprom \$.1

/start the logic bank [L1.1