

# K Parameters

K #	Descriptions	Unit	Details
K20	Baud Rate	K	0: 38.4 1: 9.6 2: 19.2 3: 57.6
K21	Full/Semi Closed	0.1°	0: Full closed loop 1-36: Vector angle
K22	Time delay for Semi-closed mode	msec	Min:10 Max:1000
K23	Motor Status Events		0: Poling Only 1: Running Status, Overflow, Over speed, Over Load/Current, INPOS, circle function and pushing torque 2: Input status 3: Output status 4: Status for Start, Instop, Enable, Disable, Inpause
K24	Timed Trigger Interval	Pulses	Min:10 Max:32767 (active when K34=7)
K25	Time delay for Slow Response Signal	0.1 sec	Min:1 Max:9 i.e. K25=3133
K26	Invert Input Signal		0:True 1:False i.e. K26=1101
K27	Input function at target voltage level of Quick Response Signal		0: No Action 1: General Use 2: Origin Sensor 3: Manual Feed CW 4: Manual Feed CCW 5: Output Index signal instead of Inposition Signal 6: Execute Bank 1 7: Emergency Stop 8: Full Stop
K28	Input function at the rising edge of Quick Response Signal		0:No Action 1:Alarm reset/Pause 2:Motor Free 3:Reset Counter 4:Execute Next Step 5:Execute Previous Step 6:Execute Bank 1 7:Go Origin 8:Manual Jog CW (Execute Bank 2 when K36=2) 9:Manual Jog CCW(Execute Bank 3 when K36=2)
K29	Input function at the falling edge of Quick Response Signal		Same Functions as K28 except 2: Enable Motor
K30	Input function at target voltage level of Slow Response Signal		Same Functions as K27
K31	Input function at the rising edge of Slow Response Signal		Same Functions as K28
K32	Input function at the falling edge of Slow Response Signal		Same Functions as K28 except 2: Enable Motor
K33	Output Logic		0:Normally Open 1:Normally Closed
K34	Output Function		0:Command 1:Inposition 2:Alarm 3:CML O1/F1 4:CML O2/F2 5:Analog Output 6:Output on completion of Origin Search 7:Timed Trigger 8: Motor Free 9: Torque Limit reached - Push Mode Only

K #	Descriptions	Unit	Details
K35	Analog Output Function		0: Target position 1: Target position magnified by 8 2: Current Position 3: Current Position magnified by 8 4: Position Error 5: Position Error magnified by 8 6: Current Velocity/16 7: Current Velocity/2 8: Iq Real 9: Iq*8
K36	Pulse Interface		P type 0: CW/CCW 1: Step/Direction C type - 2: enables bank 2 and 3 execution
K37	Resolution and Speed unit	Speed Unit 100pps Speed unit 10pps	0:200, 1:400, 2:500, 3:1000, 4:2000, 5:2500, 6:5000, 7:10000, 8:25000, 10:50000, 40:300, 42:600, 43:800, 44:1200, 45:1500, 46:3000, 47:4000, 48:6000, 49:8000, 50:12000 20:200, 21:400, 22:500, 23:1000, 24:2000, 25:2500, 26:5000, 27:10000, 28:25000, 30:50000 60:300, 62:600, 63:800, 64:1200, 65:1500, 66:3000, 67:4000, 68:6000, 69:8000, 70:12000
K38	Analog Interface(V Type)		0:Speed Control 1:Position Control
K39	Voltage Filter Gain	5[rad/sec]	Min:0 Max:1028
K40	Max. speed for V Type	rpm	Max speed at 4.8V
K41	Travel Range for V Type	Pulses	Min:-32767 Max:32767
K42	Go Origin Speed	100pps	Min:1 Max:5000
K43	Go Origin/Manual feed Acceleration	kpps2	Min:1 Max:5000
K44	Deceleration Ratio	%	Min:10 Max:500
K45	Origin Direction		0: CW 1: CCW
K46	Origin Search Method		0: Stopper 1: Stopper(start origin search when powered on) 2: Origin Switch 3: Origin Switch (start search when powered on)
K47	Origin Stopper Voltage Level	%	Min:10 Max:100
K48	Offset distance between machine origin and mechanical origin	100 pulses	Min:-32767 Max:32767
K49	Manual feed speed	100pps	Min:1 Max:5000

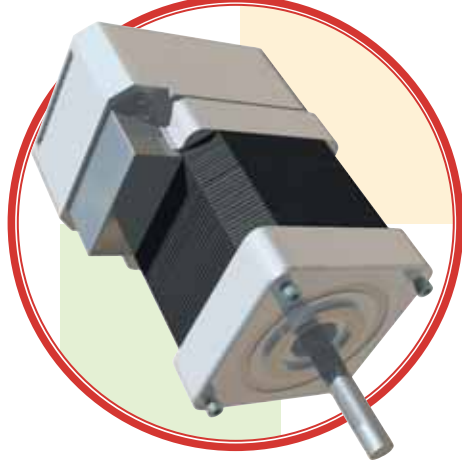
K #	Descriptions	Unit	Details
K50	Manual Jog travel distance	Pulses	Min:1 Max:100
K51	Creeping Speed	100pps	Min:1 Max:1000
K55	Inposition tolerance	Pulses	Min:1 Max:1000
K56	Overflow Alarm Level	K pulses	Min:1 Max:32767
K57	Overload Alarm Time Delay	msec	Min:100 Max:10000
K58	Software Limit(+)	100 pulses	Min:0 Max:32767
K59	Software Limit(-)	100 pulses	Min:-32767 Max:0
K60	Push Mode Current Level	%	Min:10 Max:80
K61	Push time	50msec	Min:1 Max:30001
K62	RS-485 Node ID		0: RS-232 mode 1~256: RS-485 ID -1~-256: RS-485 Node ID, no auto report function
K63	External Encoder Input		0:None 1:Phase A only 2:Phase A and B
K64	Analog Inut Function		0:None, 1:50, 2:P0, 3:S13, 4:P24 5:S14, 6:P25, 7:Speed 0-Set speed, 8:Position Multiplier 9:Analog control only, K38 4:76.8, 5:129, 6:173, 7:515 Set baud rate starting with the last motor on the network.
K65	Slave Motor-Baud Rate		0:None 1: Send back speed target 2: Send back real position 3: Send back real speed 4: Send back real current Iq 5: Position Real 6: Velocity Real 80: Torque data streaming (cNm)
K66	Data Streaming		0 - 30000
K67	Data Streaming Sample Timing	ms	0.5 Curve with fixed timing 1:5 Curve without timing
K68	S Curve Function		0 - 1024
K69	S Curve Gain		

## CML Commands

Command	Function	Example
P	Position (Pulses)	P1=12500 P2=2000 P=1000
S	Speed (100/10pps)	S1=100 S2=200
A	Acceleration (kpps <sup>2</sup> )	A1=250 A2=500
T	Timer (msec)	T1=100 T2=300
B	Program Bank	B1 X0 S1,A1,P1 P2
C	Call	B1 S1,A1,P1, C2(Call Bank 2) B2 V5 S2,A2,P3
J	Jump	B1 S1,A1,P1, I1,J2(Jump to Bank 2),C3 B2 V5 S2,A2,P3
O	Output High	S1,A1,P1 O1
F	Output Low	S1,A1,P1 F1
I	Input status	I1 C2,C3
Q	Push mode	S1,A1,P1,Q2
X	Loop	B1 X2 S1,A1,P1
Y	P without a wait	S1.1,P1.1,S1.2,P1.2 Y2.1,P2.2
Z	Q without a wait	B1 S1.1,P1.1,S1.2,P1.2 Q2.1,P2.2
T0	No Action	B,C2,T0
/	Comment	B1/begin Calibration
[	Execute Bank	[
>	Execute next line	>(Execute Line 1 in Bank1) >(Execute Line 2 in Bank1)
<	Execute previous line	>(Execute Line 2 in Bank1) >(Execute Line 1 in Bank1)
^	Dynamic Command Execution	P=1000 S=100 A=200 ^
^n	Dynamic Command Execution n=1 to 8	P3=2000 S3=100 A3=300 ^3
~	CP	P=10 ~ P=5 ~

Command	Function	Example
(bar)	Origin Search	Origin Search  !Go to Position 0  2.Set the current position to 0
E0	Set the current position to 0 (Bank only)	B1 E0 A1,S1,P1
E	Move to Sensor or Stopper For-Bank Programs ONLY	E10 - Move CW to Stopper E20 - Move CCW to stopper E1X - Move CW to Sensor on Input X E2X - Move CCW to Sensor on Input X i.e. E14 - Move CW to sensor signal on Input 4
] ]	Pause Full Stop	] ]
] (	Stop after current motion ) Enable motor Disable motor	] (
\$	Save to EEPROM	\$
D	Set Node ID in RS-485 mode. Did=serial number to ID.3	D3=103490138 Sets motor with Serial Number 103490138 to ID.3
{0	All RS-485 nodes report events automatically	{0
{n	{n (n=1 ~ 256) addressing one node with event driven report. {n (n=1 ~ 256) addressing one node without event driven report.	{998 All even number ID {999 All odd number ID {1000 All IDs
?	Query	?0-16:Program Bank ?70 :Input Status (D0-D7) ?71 :Input Status (D8-D15)reserved for expansion ?72 :Output Status (D0-D7) ?73 :Analog Input Value CH1 ?74:Analog Input Value CH2 ?75 :Counter Value CH1 ?75 :Counter Value CH2 ?77:Display all Banks ?78:Pushing Event ?79:Push Timer ?80:Torque ?90 :All parameters ?91 :Position Data ?92 :Speed Data ?93 :Acceleration Data ?94:Timer Data ?95:Position Error ?96 :Current Position ?97 :Current Speed ?98 :q Real Averaged ?99 :Motor Status 0:Running 1:Counter Overflow 2:Over Regenerated Voltage Limit 4:Over Load/Current 8:Inposition Signal

# COOL MUSCLE



## Quick Reference Card for Cool Muscle Firmware V2

EG051108



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