

**Myostat Motion Control Inc .
Cool Muscle 1
RT3 Application Note**

Direct Mode Notes for Cool Muscle Language



1. Direct Mode

1. Basic Point to Point Move

The basic move structure in CML is to define a position (P0), speed (S0), acceleration (A0) and optionally a torque (M0). These 4 values form the core of a basic direct mode move. They are set in read/write registers. P0 is always in absolute coordinates and all values are with respect to the current motor resolution. In this example we assume it to be default (K37=3) which defines that the motor has a resolution of 1000 pulses/rev and a speed unit of 100 pulses/sec.

CML Code Used:

P0 → position in pulses in absolute coordinates
S0 → speed in pulses/sec (x 100 as per K37).
A0 → acceleration in kilopulses/sec²
M0 → torque limit in % of peak torque

^ → execute the direct move

Example CML Code:

```
/set the direct mode registers  
P0.1=10000  
S0.1=10  
A0.1=5  
  
/execute the absolute move  
^.1
```

2. Speed control

Speed Control is set by setting P0=1000000000 (1 billion, 1 and 9 0's). To start the motion execute the dynamic move with the '^'. S0, A0 and M0 can now be changed at any time to adjust motor speed, acceleration and torque while the motor is moving.

CML Code Used:

P0 → position set to 1 billion
S0 → speed in pulses/sec (x 100 as per K37).
A0 → acceleration in kilopulses/sec²
M0 → torque limit in % of peak torque

^ → start the speed control

Example CML Code:

```
/set the direct mode registers  
P0.1=1000000000  
S0.1=10
```

A0.1=5
M0.1=100

/execute the absolute move
^1

/change the speed as required
S0.1=100