

need to send. The second byte specifies the lowest channel number in the block. The subsequent bytes contain the target values for each of the channels, in order by channel number, in the same format as the Set Target command above. For example, to set channel 3 to 0 (off) and channel 4 to 6000 (neutral), you would send the following bytes:

0x9F, 0x02, 0x03, 0x00, 0x00, 0x70, 0x2E

The Set Multiple Targets command allows high-speed updates to your Maestro, which is especially useful when controlling a large number of servos in a chained configuration. For example, using the Pololu protocol at 115.2 kbps, sending the Set Multiple Targets command lets you set the targets of 24 servos in 4.6 ms, while sending 24 individual Set Target commands would take 12.5 ms.

Set Speed

Compact protocol: **0x87, channel number, speed low bits, speed high bits**

Pololu protocol: **0xAA, device number, 0x07, channel number, speed low bits, speed high bits**

This command limits the *speed* at which a servo channel's output value changes. The speed limit is given in units of $(0.25 \mu\text{s})/(10 \text{ ms})$, except in special cases (see **Section 4.b**). For example, the command 0x87, 0x05, 0x0C, 0x01 sets the speed of servo channel 5 to a value of 140, which corresponds to a speed of $3.5 \mu\text{s}/\text{ms}$. What this means is that if you send a **Set Target** command to adjust the target from, say, $1000 \mu\text{s}$ to $1350 \mu\text{s}$, it will take 100 ms to make that adjustment. A speed of 0 makes the speed unlimited. Setting the *target* of a channel that has a speed of 0 and an acceleration 0 will immediately affect the channel's *position*. Note that the actual speed at which your servo moves is also limited by the design of the servo itself, the supply voltage, and mechanical loads; this parameter will not help your servo go faster than what it is physically capable of.

At the minimum speed setting of 1, the servo output takes 40 seconds to move from 1 to 2 ms.

The speed setting has no effect on channels configured as inputs or digital outputs.

Set Acceleration

Compact protocol: **0x89, channel number, acceleration low bits, acceleration high bits**

Pololu protocol: **0xAA, device number, 0x09, channel number, acceleration low bits, acceleration high bits**

This command limits the *acceleration* of a servo channel's output. The acceleration limit is a value from 0 to 255 in units of $(0.25 \mu\text{s})/(10 \text{ ms})/(80 \text{ ms})$, except in special cases (see **Section 4.b**). A value of 0 corresponds to no acceleration limit. An acceleration limit causes the speed of a servo to slowly ramp up until it reaches the maximum speed, then to ramp down again as *position* approaches *target*, resulting in a relatively smooth motion from one point to another. With acceleration and speed limits, only a few target settings are required to make natural-looking motions that would otherwise be quite