Command:PZ

MS2000 or RM2000 syntax

Format	PZ X=[1 to 255] Y=[20 to 5101] Z=[0 to 3] (pre 9.2f) PZ X=[1 to 255] Y=[1 to 255] Z=[0 to 3,+,-] F=[0 to 65000] (9.2f and above)
Units	Integer codes
Remembered	X and Y automatically, Z and F using SS Z

Tiger syntax

Format	[#Addr]PZ X=[1 to 255] Y=[25 to 5101] Z=[0 to 3] F=[0 to 100] T=[0 to 500] (pre v2.83) [#Addr]PZ X=[1 to 255] Y=[1 to 255] Z=[0 to 3,+,-] (v3.11 and above: F=[0 to 65000] R=[0 to 100] T=[0 to 500]) (v2.83-3.10: F=[0 to 100] T=[0 to 500])
Units	Integer codes
Type	Card-Addressed
Remembered	Using [addr#]SS Z

The **X** argument sets the zero adjust potentiometer of the ADEPT card. Only values between 1 and 255 are accepted. The setting is stored in non-volatile memory on the ADEPT board. This is one of the settings that are automatically picked during both long and short auto calibration. Please refer the calibration section for its usage. On Tiger controller PSG command is equivalent. One does not have an advantage over another; usage is left to user preference.

The **Y** argument sets the gain of the feedback stage. The setting is stored in non-volatile memory on the ADEPT board. This is one of the settings that is automatically picked during long auto calibration. Please refer the calibration section for its usage. On Tiger PG command is equivalent. One does not have an advantage over another; usage is left to user preference.

Pre MS2000 v9.2f & Tiger v2.83: a formula was used to convert 25-5101 to 8-bit 255. Due to rounding issues and such, we removed the formula so now user can enter the setting directly and have more control.

The **Z** argument sets the board in various modes. On Tiger controller PM command is equivalent in firmware v2.8+. One does not have an advantage over another; usage is left to user preference.

PZ Z =	**Mode of Operation**
0	Controller controlled, Closed loop (default)
1	External input, Closed Loop
2	Controller controlled, Open loop (rare)
3	External input, Open loop (rare)
PZ Z+	Fast Mode
PZ Z-	Slow Mode

The **F** argument (requires Tiger v3.11+ and MS2000 v9.2f) sets the value of the timer for Auto Sleep feature. Units of are in minutes. To maximize piezo actuators' lifetime they should to be turned off when not in use. Every time the piezo is moved (e.g. commanded move, TTL-triggered move, or with a manual input device like the wheel) the auto sleep timer is reset to 0. When the timer reaches the

value set by the **F** argument the sleep state is entered. In the sleep state piezos are moved to the sleep position and the code returned by the RS+ command (equivalent to the right status character on MS-2000 LCD screens) changes to **E**. However, the position returned by the WHERE command is not changed during sleep. Further, any move will proceed from the pre-sleep position. To disable the auto sleep feature, set the **F** argument to 0. On most firmware builds the default value is 0, i.e. disabled. However on SPIM builds the default value is 5 minutes. To exit sleep without affecting anything else, send the R <axis> command to execute a relative move of distance 0. Setting the **F** argument clears the timer but does not exit the sleep state.

Additional Tiger-only Functions

The **R** argument only applies when the piezo maintain code is set to 1. (In firmware between v2.83 and v3.10 it was the **F** argument instead.) It sets the maximum time to move towards the overshoot position, expressed in milliseconds. Refer to the documentation under MA.

The **T** argument only applies when the piezo maintain code is set to 1. It sets the overshoot amount, expressed as a percentage. For example, when set to 100 the piezo will begin the move as if the target position is twice as far away as it really is. Refer to the documentation under MA.

piezo, commands, tiger, ms2000