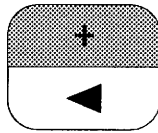


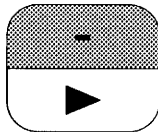
Description of Option:

This option gives the iPCE-1 Controller the ability to display and output negative position values. Instead of ranging from 0 to a maximum of 131072, position values range from a minimum of -65,536 to a maximum of 65,535. The maximum number of turns remains at 999. The Position Offset, Preset Value, and both Limit Outputs can be programmed to negative values. When a program is cleared, the Position Offset and both Limit Setpoints default to the maximum negative values. When the Scale Factor is changed, the Position Offset, Preset Value and Limit Setpoints are reset to zero.

Keyboard Changes and Additions



These keys are used when programming positive or negative values for Position Offset, Preset Value, and Limit Output values. While the Cursor is active, pressing [FUNCTION] (Green Light ON), and the proper one of these keys will change the sign of the value.



Programming Changes and Additions

Except for the examples below, programming an iPCE-11 is identical to programming a standard iPCE Controller.

In all of the following examples, the iPCE-11 Controller must be in Program Mode. Refer to Section 10.1 of the iPCE Manual.

Scale Factor

When programming the Scale Factor, the max/min number displayed will equal \pm (Full Scale Counts / 2). Therefore, you must program the Number of Turns and Full Scale Count to at least twice the maximum number of turns and counts from the zero point.

Example:

0.003937" (0.1mm) travel per turn / 0.0001" resolution = 39.37 Counts per Turn.
+0.2000" to -0.1000" travel.

The maximum number of counts from the zero point is 2000 (0.2000"). The maximum number of turns from the zero point is 50.8 (2000/39.37). Therefore, the minimum Number of Turns is 102, (50.8*2 = 101.6), and the minimum Full Scale Count is 4016, (102*39.37 = 4015.74).

Note that any value for Number of Turns or Full Scale Count that exceeds these minimums can be used. In the example above, programming 102 turns and 4016 counts yields a count/turn of 39.3725. Programming a Number of Turns of 200 and a Full Scale Count of 7874 yields a count/turn of 39.37.

Additional Instructions: iPCE-11 Rev. 1

Programming Changes and Additions (cont'd)

Position Offset

You want to decrease the count by 1000 counts. The display assumes a four digit Full Scale Count.

PRESS	DISPLAY	COMMENTS
[FUNCTION]		Green LED must be on.
[OFFSET]	"OFF, <u>0</u> 000"	Default Position Offset after Scale Factor programming.
[1]	"OFF, <u>1</u> 000"	Position Offset of 1000.
[FUNCTION], [-], [ENTER]	"OFF,- 1000"	Programmed Position Offset of -1000.

Position Preset

You want to preset the position to -1000 when the Preset Input (Input 1) is activated. The display assumes a four digit Full Scale Count.

PRESS	DISPLAY	COMMENTS
[FUNCTION]		Green LED must be on.
[B]	"PR, <u>0</u> 000"	Default Position Preset after Scale Factor programming.
[1]	"PR, <u>1</u> 000"	Position Offset of 1000
[FUNCTION], [-], [ENTER]	"PR, - 1000"	Programmed Position Preset of -1000.

NOTE: When the Preset Input is activated, the iPCE-11 calculates the offset needed to bring the position to the desired value. *THIS OFFSET IS NOT STORED ON POWER DOWN.* If power is cycled to the iPCE-11, the position will revert to its value without the offset generated by the preset. If you want this offset stored, enter Program Mode and display the Position Offset. (See example above.) The iPCE-11 will display the calculated offset. Press the [ENTER] Key to store the offset.

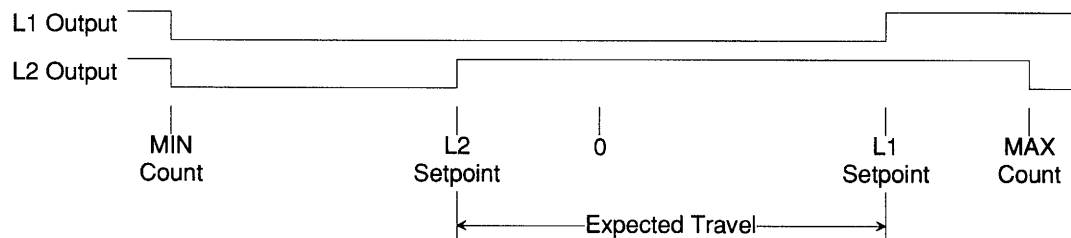
Programming Changes and Additions (cont'd)

Limit Setpoints

You want to program the first limit to 2150 and the second limit to -1000.

PRESS	DISPLAY	COMMENTS
[FUNCTION]		Green LED must be on.
[LS]	"L,1 0000"	Default Limit Setpoint after Scale Factor programming.
[2], [1], [5],[ENTER]	"L,1 2150"	Programmed Limit 1 Setpoint. The limit will be active for all values ≥ 2150 .
[LS]	"L,2 0000"	Default Limit Setpoint after Scale Factor programming.
[1], [FUNCTION], [-],[ENTER]	"L,2 - 1000"	Programmed Limit 2 Setpoint. The limit will be active for all values ≥ -1000 .

NOTE: If your application involves measuring linear distances and you are using the two limits as over/under travel limits, limits programmed to positive values will function as normally open contacts while limits programmed to negative values will function as normally closed contacts. (See figure below.)



Position Data Outputs

The iPCE-11 always outputs its position data in sign magnitude format. The iPCE-11 does not output position data in two's complement format when binary data format is selected.

The most significant bit, bit 21, (Pin 34 of the J1 connector) is now the Sign bit. All other bits output the magnitude of the position. Therefore, the only difference between outputs for 10 and -10 is the sign bit.

If Gray Code format is selected, the Sign bit and Bit 1 both change state. This is the only time two bits change state simultaneously when using Gray Code format.



**ADVANCED
MICRO CONTROLS INC.**

PLYMOUTH INDUSTRIAL PARK, TERRYVILLE, CT 06786
TEL. (203) 585-1254 FAX. (203) 584-1973