

iPLC2 OPTION M  
100 TURN ABSOLUTE SOFTWARE  
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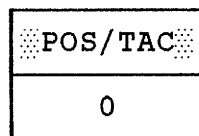
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**DESCRIPTION OF OPTION:**

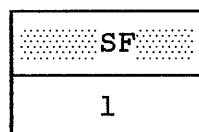
This option allows the unit to function as a multi-turn absolute limit switch. This means that the unit will always read the correct position on power up even if the transducer shaft had been rotated after power was removed from the controller. Programmable number of turns are 1, 2, 4, 5, 10, 20, 25, 50, and 100. Two different transducers can be used with this option. The HTT-20-100 is a 100 turn transducer and is the one most commonly used with this option. It offers the user up to 100 turns of the shaft full scale with a maximum resolution of 1024 counts per turn. The 1000 turn transducer, (HTT-20-1000), is identical to the HTT-20-100 but with a 10:1 gear reduction on the shaft. This offers the user up to 1000 turns full scale with a maximum resolution of 102.4 Counts per turn. Print B1016 is the outline drawing for both transducers.

**PROGRAMMING CHANGES AND ADDITIONS:**

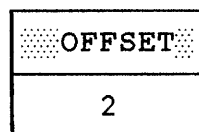
Because the unit is a single axis limit switch, its operation is very similar to the iPLC1. Most changes in programming are made to allow the user to program the larger numbers available with the multi-turn software. The function of the following keys have been changed.



This Key is still used to display Position and Tachometer information, however this key shows this information sequentially. Pressing this key while displaying POS will force the unit to display TACH data and visa versa.

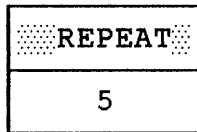


This key is still used to display and program the unit's Scale Factor. This key allows the user to program the Full Scale Turns and the Full Scale Factor. (See Example below.)

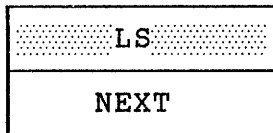


This key is still used to program the Offset but the display now shows only the offset number instead of both the Offset and the Position numbers together.

PROGRAMMING CHANGES AND ADDITIONS: (cont'd)



Repeat Setpoint Programming is not available with this unit. This key is instead used to program a Decimal Point for use with the Position, Offset, and Limit Setpoint displays. See the Programming Example below.



This key is still used to program the Limit Setpoints but the display has changed. Because the Position value for each setpoint can be up to six digits long, the FROM and TO setpoint are programmed sequentially instead of on the same display. Fine tuning of the limit setpoints with the Increment/Decrement keys is not available with this option. See the Programming Example below.

PROGRAMMING EXAMPLES:

SCALE FACTOR:

NOTE: Only those turns that produce a whole number when divided into 100 are allowed. These numbers are 1, 2, 4, 5, 10, 20, 25, 50, and 100.

It is possible that the users Full Scale Number of Turns does not equal one of the numbers that can be programmed into the Controller. However, if the number of Counts per Turn does not exceed 1024, this problem can be easily overcome as the following example illustrates.

The user has a Full Scale travel of 21 Turns and needs a Total Count of 20,500.

The first thing that the user must check is the number of Counts per Turn. He divides 20,500 by 21 and sees that the counts per turn equals 976.19. He now knows that he can program the controller to work with the system.

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The second step is to multiply the number of counts per turn (976.19) by the number of turns that he can program into the controller. The number of turns that the user programs into the controller must be greater than the number of turns that he will be using. The user chooses 25 as the number of turns that he will program into the Controller. Multiplying 976.19 by 25 gives an answer of 24,404.76 which he rounds off to 24,405. The user now has the two values that he needs to program the Scale Factor of the Controller.

Number of Turns = 25  
Full Scale Counts = 24,405

PRESS	DISPLAY	COMMENTS
*		Must be in Program Mode. See Section 12.1 of the Users Manual.
[FUNCTION]		Function LED "on".
[SF]	"N.TURNS <u>xxx</u> "	Present Number of Turns
[0,2,5, ENTER]	"N.TURNS 025"	Full Scale Turns = 25
[SF]	"F.SC 25600"	Full Scale Count display. The displayed number is the maximum count allowed for the number of turns entered. The number equals 1024 * Full Scale Turns.
[2,4,4,0,5], [ENTER]	"F.SC 24405"	Full Scale Count = 24405
[SF]	"SF 976.200"	Calculated number of Counts per Turn. (Scale Factor)

PROGRAMMING EXAMPLES: (cont'd)

DECIMAL POINT:

The user in the previous example wishes to program a Decimal Point so that his display reads with the last three digits are after the decimal point. (Example 4,321) The keystrokes are shown below.

PRESS	DISPLAY	COMMENTS
*		Must be in Program Mode. See Section 12.1 of the Users Manual.
[FUNCTION]		Function LED "on".
[REPEAT]	"DEC.POINT <u>x</u> "	Present Decimal Point.
[3], [ENTER]	"DEC.POINT 3"	Decimal Point now set to be three digits from the right.

LIMIT SETPOINTS:

The user in the above examples also wishes to program the following Limit Setpoints.

CH 1: From 10,000 To 10,010  
CH 2: From 20,000 To 20,020 and  
From 20,030 To 20,040

PRESS	DISPLAY	COMMENTS
*		Must be in Program Mode. See Section 12.1 of the Users Manual.
[FUNCTION]		Function LED "on".
[LS]	"LS, <u>xx</u> "	" Limit channel display

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PROGRAMMING EXAMPLES: (cont'd)

LIMIT PROGRAMMING: (cont'd)

PRESS	DISPLAY	COMMENTS
[0,1], [ENTER]	"01F, __, __"	CH 1 FROM Setpoint display
[1,0,0,0,0], [ENTER]	"01F, 10,000"	Limit From 10,000
[NEXT]	"01T, __, __"	CH1 TO Setpoint display
[1,0,0,1,0], [ENTER]	"01T, 10,010"	Limit To 10,010
[NEXT]	"01F, __, __"	CH1 FROM Setpoint display
[NEXT]	"02F, __, __"	CH2 FROM Setpoint display
[2,0,0,0,0], [ENTER]	"02F, 20,000"	Limit From 20,000
[NEXT]	"02T, __, __"	CH2 TO Setpoint display
[2,0,0,2,0], [ENTER]	"02T, 20,020"	Limit To 20,020
[NEXT]	"02F, __, __"	CH2 FROM Setpoint display
[2,0,0,3,0], [ENTER]	"02F, 20,030"	Limit From 20,030
[NEXT]	"02T, __, __"	CH2 TO Setpoint display
[2,0,0,4,0], [ENTER]	"02T, 20,040"	Limit To 20,040

NOTE: When Programming from existing setpoints, erase the old setpoints or write over them. Both FROM and TO setpoints must be displayed and the ENTER Key must be pressed for both of them even if only one setpoint is being changed.

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**MODEL NUMBER AND CHECKSUM:**

The following keystrokes will display the Model Number and Checksum of an IPLC2 unit with an Options M.

PRESS	DISPLAY	COMMENTS
[PROGRAM]	"PROGRAM x"	x = Number of running program.
[NEXT]	"IPLC-2M -1"	Model and Revision Number
[NEXT]	"EPROM 7A43"	Software Checksum

AMCI is constantly improving the Software it installs in its units. The Model Number and Checksum may not be the same as shown above.