

## Description of Option:

This option gives the iPLC-1 Controller the ability to independently advance the FROM and TO Setpoints of Limits 1 through 5 based on the speed of the transducers' shaft. This allows the iPLC to compensate for turn on and turn off delays in the loads attached to the outputs. Each Limit has its own set of FROM and TO advances. Up to 25.5 mSec of delay in turn on and turn off times can be compensated for.

## Specifications:

Shaft Position Update: 200 µSec  
 Limit Status Update: 200 µSec.  
 Shaft Speed Update  
 for Auto Advance  
 calculations: 12.8 mSec.  
 Motion Detector Update: 204.8 mSec.  
 Tachometer Settling  
 Time on Power Up: 1.024 Sec.

## Limitations of Advanced Limits (LS1-5):



The advances will only function when the position is **INCREMENTING**. Using the standard CT-(x) cable, position data will increment when the shaft rotates clockwise. In order to increment the count when the shaft rotates in a counter-clockwise direction, reverse the CT-(x)'s Green/Blk pair of wires.



In order to function correctly, the time between consecutive setpoints of a Limit switch must be greater than or equal to 800 µSec.

The formula for calculating the number of counts traversed in 800 µSec is:

$$((\text{RPM} * \text{SF}) / 60) * 800 \cdot 10^{-6}$$

RPM = Speed in Revolutions per Minute

SF = Programmed Scale Factor.

The following table gives minimum number of counts between setpoints for common speeds and Scale Factors (Counts per Turn). Note that advances must be considered when determining minimum number of counts between setpoints.

	100 RPM	200 RPM	300 RPM	400 RPM	500 RPM	600 RPM	700 RPM	800 RPM	900 RPM	1000 RPM
360 C/T	1	1	2	2	3	3	4	4	5	5
500 C/T	1	2	2	3	4	4	5	6	6	7
720 C/T	1	2	3	4	5	6	7	8	9	10
1000 C/T	2	3	4	6	7	8	10	11	12	14

**12/8/93****Functional description:**

1. REP function is not available on the Limits 1 through 5
2. All other functions remain as in IPLC1
3. Additional function :

Programmable individual and independent From/To advances applicable to Limits 1 through 5.

This function is accessed through the " A " key and its display is as follows:

Limit x:

Ax. ff.f-tt.t

where: ff.f is the limit From advance in milliseconds with maximum value of 25.5 mSec

tt.t is the limit To advance in milliseconds with maximum value of 25.5 mSec

4. Additional Key functions :

Pressing the " A " key with the Func Led illuminated will bring the following display:

A1. ff.f-tt.t

one exception is when the previous display was:

Lx. fff - ttt

where Lx is a Limit number and fff - ttt are the Limit set points.

In this case the " A " key will cause the following display:

Ax. ff.f-tt.t

where ( Ax. ff.f-tt.t ) are the From/To advances corresponding to the previously displayed Limit Lx.

Consecutively pressing the " A " key will cause the display to show the Advances A1 through A5 associated with Limits 1 - 5.

The " + " and " - " keys are functional with the Advance displays in the same manner as with the Limit From/To displays.


The values of the ( ff.f ) and/or ( tt.t ) can be incremented or decremented by 0.01 when the cursor is positioned on the least significant digit of the ( ff.f ), ( tt.t ) numbers or on the " - " separating the two numbers.

**Example:**

In Program Mode press the " A " key

Display:


Ax. ff.f-tt.t

Move the cursor to 

Display:

Ax. ff.f-tt.t


Press the " Func " key so that the " Func " LED is illuminated. Pressing the " + " or " - " keys will increment or decrement the value of ( ff.f ) by 0.01. There is no need to press the " Enter " key, the new value of ( ff.f ) is stored automatically in the Nonvolatile EEROM memory.

Move the cursor to 

Display:

Ax. ff.f-tt.t

Repeat the above procedure for the ( tt.t ) value.

Move the cursor to 

Display:

Ax. ff.f-tt.t

Repeat the same procedure and both values ( ff.f and tt.t ) will be incremented or decremented by 0.01.