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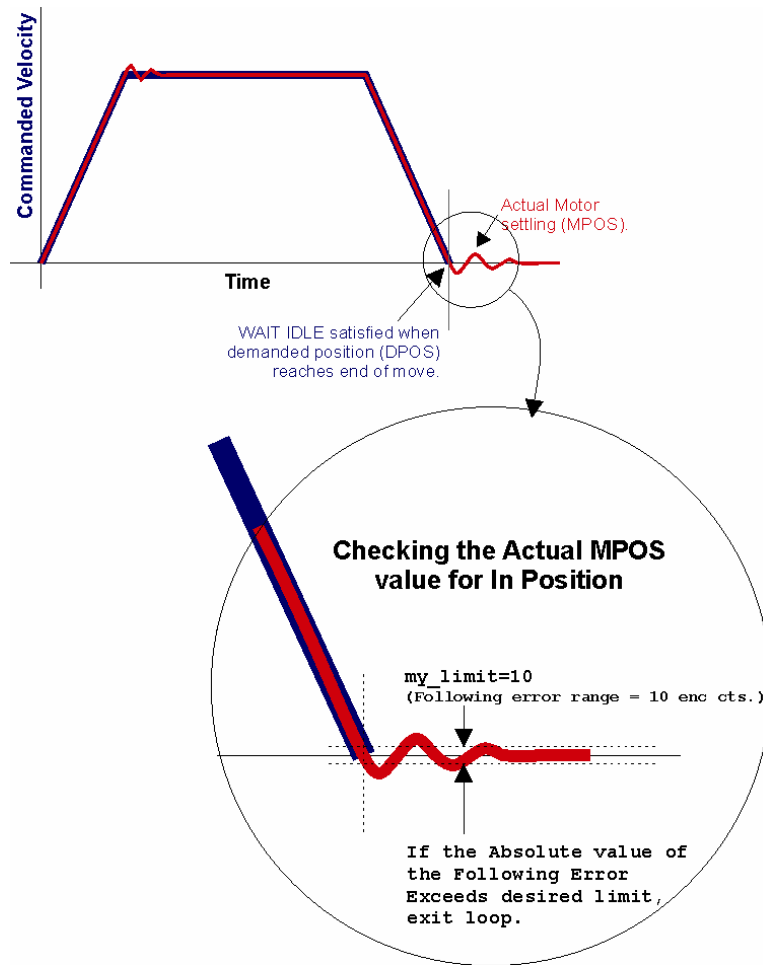Fx: 412.968.9746
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A P P L I C A T I O N   N O T E

Doc No.:	**TN30-27**
Date:	**Jan 2003**
Version:	**1.0**
Subject:	**Settling Time – Commanded Position (DPOS) vs. Actual Position (MPOS)**

In some applications, it is desired to have a Trio BASIC program wait for the servo's 'actual' position (MPOS) to be settled before going on.

In normal operation a MOVE is considered complete when the Trio BASIC parameter DPOS (Demanded Position) reaches its target. The WAIT IDLE is satisfied when DPOS finishes. This is acceptable in most applications. However if the actual measured position (MPOS) is the criteria for motion complete, a simple Trio BASIC routine can be used.

The example below uses a predetermined settling time (in ms) and looks at the absolute value of the following error (FE). When the magnitude of the FE value stays within the set limit, and within the time, the motion is consider complete.

Commanded Velocity / **Time**

Actual Motor settling (MPOS).

WAIT IDLE satisfied when demanded position (DPOS) reaches end of move.

Checking the Actual MPOS value for In Position

`my_limit=10`
(Following error range = 10 enc cts.)

If the Absolute value of the Following Error Exceeds desired limit, exit loop.

Example Trio Basic code for sampling the

Following Error (FE) to determine In Position.:

```
time=5 'sample time in ms
MOVE(1500)
WAIT IDLE
settling_position=ABS(FE)
WHILE settling_position > my_limit
   sample1=ABS(FE)
   WA(time)
   sample2=ABS(FE)
   WA(time)
   IF sample1>sample2 THEN settling_position=sample1
   IF sample2>sample1 THEN settling_position=sample2
WEND
.
.
```