# FAQ# 940-1F030

# **AMCI Frequently Asked Question**

## How Do I Offset the Resolver Position in the PLC?

Most AMCI modules store their parameters, such as the Scale Factor and Circular Offset, in non-volatile memory. If your module uses an EEPROM for this function, then you must take care not to write to the memory continuously because EEPROM's can only be written a certain number of times. The exact number is given in your users manual. If you exceed this number, the EEPROM can be permanently damaged and the module will have to be returned for repair.

If your application requires that you preset the position data every machine cycle, consider calculating a position offset with your ladder logic and applying it to the position data read from the AMCI module.

The ladder logic is written for Allen-Bradley PLC's. However, the code can be converted to any processor system that AMCI manufactures product for.

### **Memory Needed**

The ladder logic requires three 16 bit data words of memory and one bit for use as a flag. The data words should be *signed integer words* as it is the most efficient and supported by all processors.

- > N7:0: Current Position. This is the position data read from the AMCI module this scan.
- **>** N7:1: Internal Offset. This is the position offset calculated by the PLC.
- ► N7:2: Offset Position. This is position with the offset applied that is used by the rest of the ladder logic program for all compare purposes.
- **B3:0/0: Flag Bit.** Set this bit to trigger a offset operation in the ladder logic.

#### Ladder Logic

	Internal bit B3:0/1must be set to trigger the offset operation. When this bit is set, subtract the desired Position Value, 120 in this example, from the module's position data contained in N7:0. The result of this operation is the Internal Offset and is placed in N7:1. The ladder logic program must reset bit B3:0/1 before another Internal Offset value can be calculated. set to calculate offset value B3:0 B3:0 B3:0 B3:0 B3:0 B3:0 B3:0 B3:0		
0000	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Subtract Source A	N7:0
		Source B	200< 120 120<
		Dest	N7:1 80<
	If the Internal Offset is negative, modify it by adding the module's Scale Factor, 360 in this example, to it.	tamal Offact	
	internal Offset in	ADD	
0001	Less Than (A <b)< td=""><td>Add</td><td></td></b)<>	Add	
	Source A N7:1 80<	Source A	N7:1 80<
	Source B $0$	Source B	360 360≤
		Dest	N7:1 80<
0002	Calculate the Offset Position data by subtracting the Internal Offset value, contained in N7:1, from the module's position d Offset Position is stored in N7:2 and must be used by the ladder logic program for all compare purposes.	ata contained in ffset Position Da SUB Subtract Source A Source B	N7:0. The ta N7:0 200< N7:1 80< N7:2
		Dest	N7:2 120<
	If the Offset Position data is negative, it must be modified by adding the module's Scale Factor, 360 in this example, to it. Offset Position Data Offset Position Data		
0000		ADD -	
0003	Less Than (A <b) Source A N7:2</b) 	Add Source A	N7:2
	Source B 0	Source B	360
		Dest	N7:2 120<