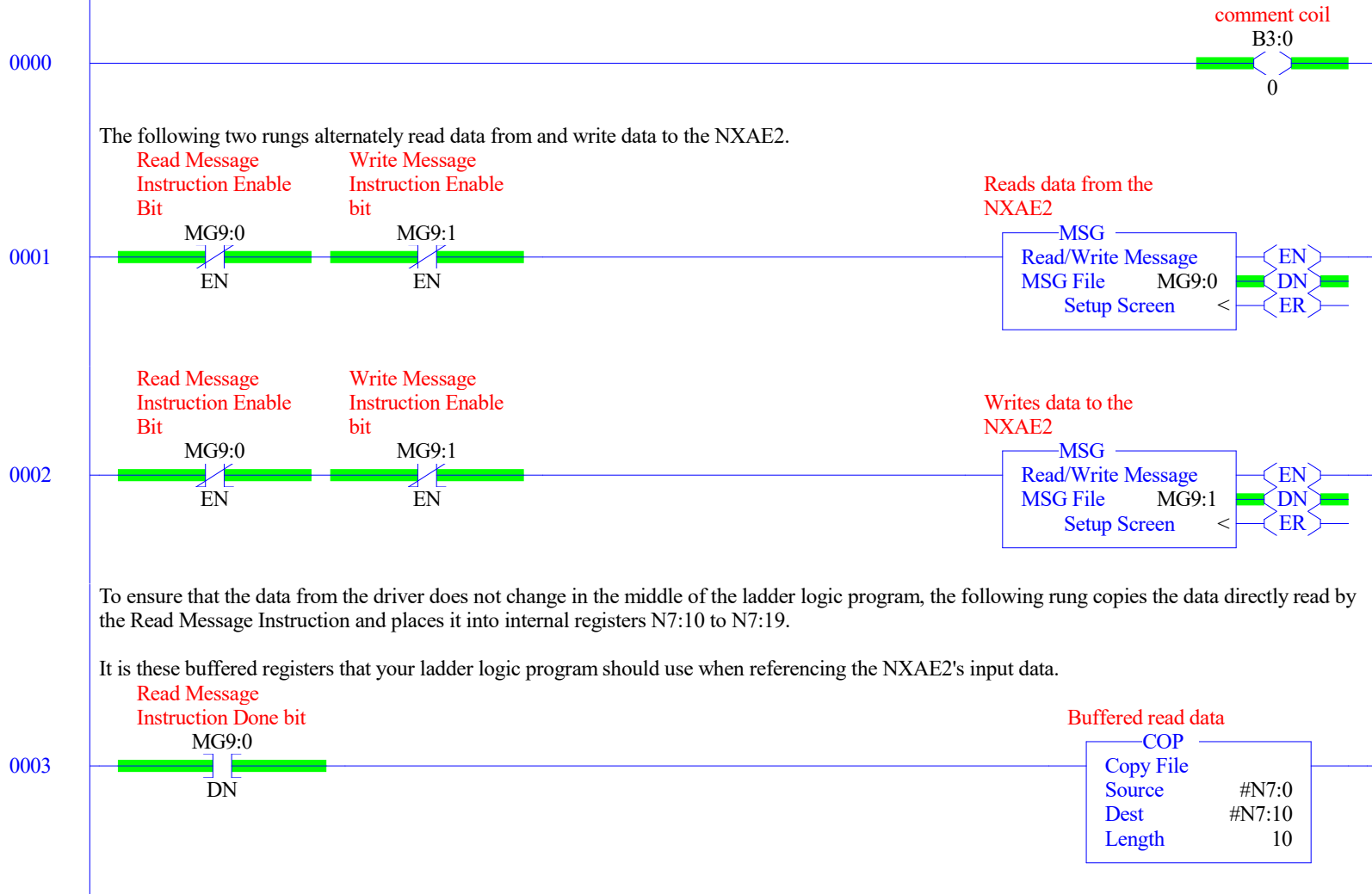


This program is written to communicate with and configure a NXAE2 resolver interface.

There is no requirement for you to use internal register N12:0. It is only used in this sample program to illustrate how the rung must go from false to true and can be replaced by any condition, such as a push button on your HMI, that works best in your application.

Ladder 3 applies only when the NXAE2 has been configured to work with a dual resolver multiturn transducer and shows how to combine the two 16 bit registers of the position into one long (32 bit) data type register.



Set register N12:0 to "1" to program the channel 1 with its setup data.

The data contained in N12:10 to N12:19 includes having the save in flash bit set, meaning that the channel 1 setup data will automatically be saved in the NXAE2's flash memory.

Please note that while there is a separate Transformation Ratio for each channel, the Reference Voltage and Reference Frequency is common and is used by both channel 1 and channel 2.

Please also note that the default values of 3250 for the Reference Voltage and 2500 Hz for the Reference Frequency will work with most resolvers.

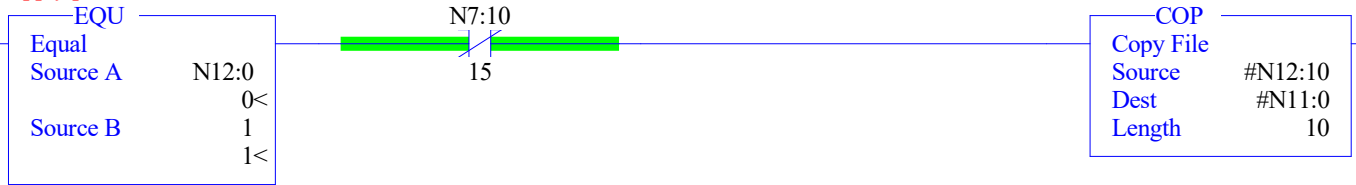
Register N12:0 is only an internal register used to illustrate how the rung must go from false to true to program the NXAE2, and is set by either manually typing the number into the register or having your ladder logic move a value into the register. IT IS NOT NECESSARY TO USE THIS TAG OR AN EQUAL INSTRUCTION TO PROGRAM THE NXAE2. You can replace it with any other condition that makes the rung true, such as a push button on a HMI terminal

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

NXAE2 ACKnowledge  
bit

Data sent NXAE2

0004



Set register N12:0 to "2" to program the channel 2 with its setup data.

The data contained in N12:20 to N12:29 includes having the save in flash bit set, meaning that the channel 2 setup data will automatically be saved in the NXAE2's flash memory.

Please note that while there is a separate Transformation Ratio for each channel, the Reference Voltage and Reference Frequency is common and is used by both channel 1 and channel 2.

Please also note that the default values of 3250 for the Reference Voltage and 2500 Hz for the Reference Frequency will work with most resolvers.

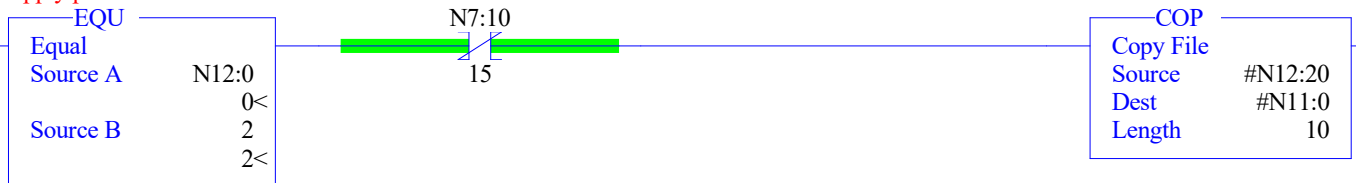
Register N12:0 is only an internal register used to illustrate how the rung must go from false to true to program the NXAE2, and is set by either manually typing the number into the register or having your ladder logic move a value into the register. IT IS NOT NECESSARY TO USE THIS TAG OR AN EQUAL INSTRUCTION TO PROGRAM THE NXAE2. You can replace it with any other condition that makes the rung true, such as a push button on a HMI terminal

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

NXAE2 ACKnowledge  
bit

Data sent NXAE2

0005



Set register N12:0 to "3" to program the NXAE2 to work with a dual resolver multiturn transducer.

The data contained in N12:30 to N12:39 includes having the save in flash bit set, meaning that the multiturn setup data will automatically be saved in the NXAE2's flash memory.

The Full Scale Count and Preset Values shown in this example were entered using Little Endian format.

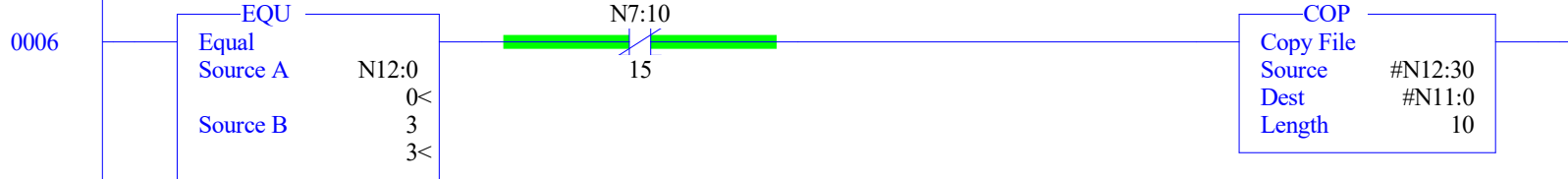
Please note that the default values of 3250 for the Reference Voltage and 2500 Hz for the Reference Frequency will work with most resolvers.

Register N12:0 is only an internal register used to illustrate how the rung must go from false to true to program the NXAE2, and is set by either manually typing the number into the register or having your ladder logic move a value into the register. IT IS NOT NECESSARY TO USE THIS TAG OR AN EQUAL INSTRUCTION TO PROGRAM THE NXAE2. You can replace it with any other condition that makes the rung true, such as a push button on a HMI terminal.

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

NXAE2 ACKnowledge  
bit

Data sent NXAE2



Set register N12:0 to "4" to offset the position data, Apply the Preset, to the Preset Value that was programmed as part of the setup data.

The Apply Preset command allows you to choose if you want to Apply the Preset of channel 1, channel 2, or both channels at the same time.

Only Apply Preset Channel 1 should be used when the NXAE2 has been configured to work with a dual resolver multiturn transducer.

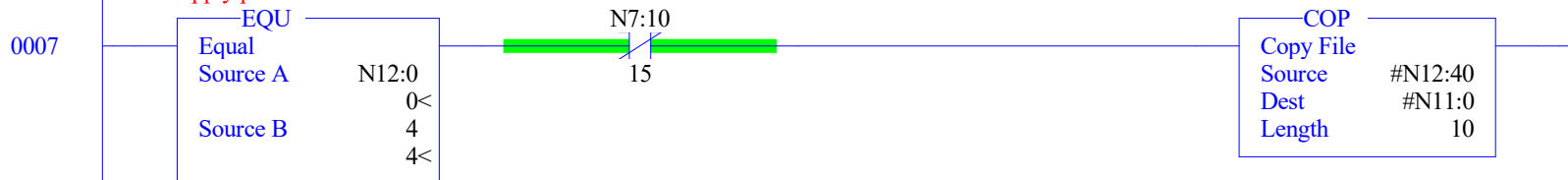
The data sent to the NXAE2 as part of the Apply preset command can include saving the offset in the NXAE2's flash memory. The flash memory device used to store parameter values and offsets has a minimum write limit of 10,000 writes so the save in flash should only be selected for setup and calibration. DO NOT SET the save in flash bit if your application requires you to constantly preset the position.

Register N12:0 is only an internal register used to illustrate how the rung must go from false to true to program the NXAE2, and is set by either manually typing the number into the register or having your ladder logic move a value into the register. IT IS NOT NECESSARY TO USE THIS TAG OR AN EQUAL INSTRUCTION TO PROGRAM THE NXAE2. You can replace it with any other condition that makes the rung true, such as a push button on a HMI terminal.

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

NXAE2 ACKnowledge  
bit

Data sent NXAE2



The NXAE2 is only programmed when the Transmit Bit, bit 15 in output word 0, transitions from 0 to 1. The following rung sets the Transmit Bit when a programming operation has been requested AND the Acknowledge Bit is reset to zero.

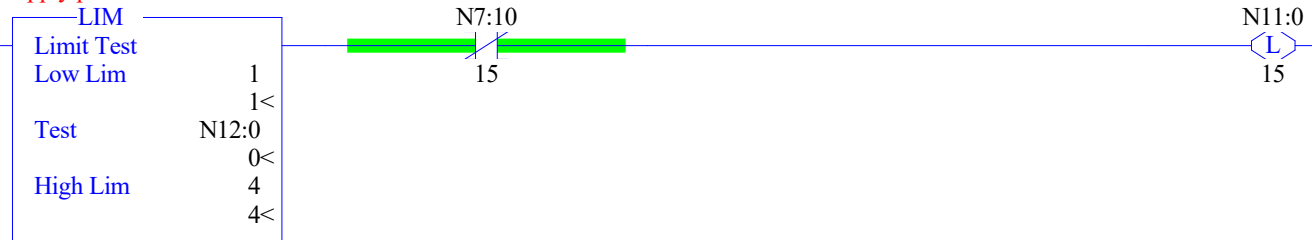
Register N12:0 is only an internal register used to illustrate how the rung must go from false to true to program the NXAE2, and is set by either manually typing the number into the register or having your ladder logic move a value into the register. IT IS NOT NECESSARY TO USE THIS TAG OR AN EQUAL INSTRUCTION TO PROGRAM THE NXAE2. You can replace it with any other condition that makes the rung true, such as a push button on a HMI terminal.

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

NXAE2 ACKnowledge  
bit

NXAE2 Transmit bit

0008



The NXAE2 will set the Acknowledge bit to indicate that it has detected the programming data sent from the PLC. If this bit is set, and register N12:0 is between 1 and 4, reset register N12:0 to zero and also reset the Transmit Bit by resetting the Command Word to zero.

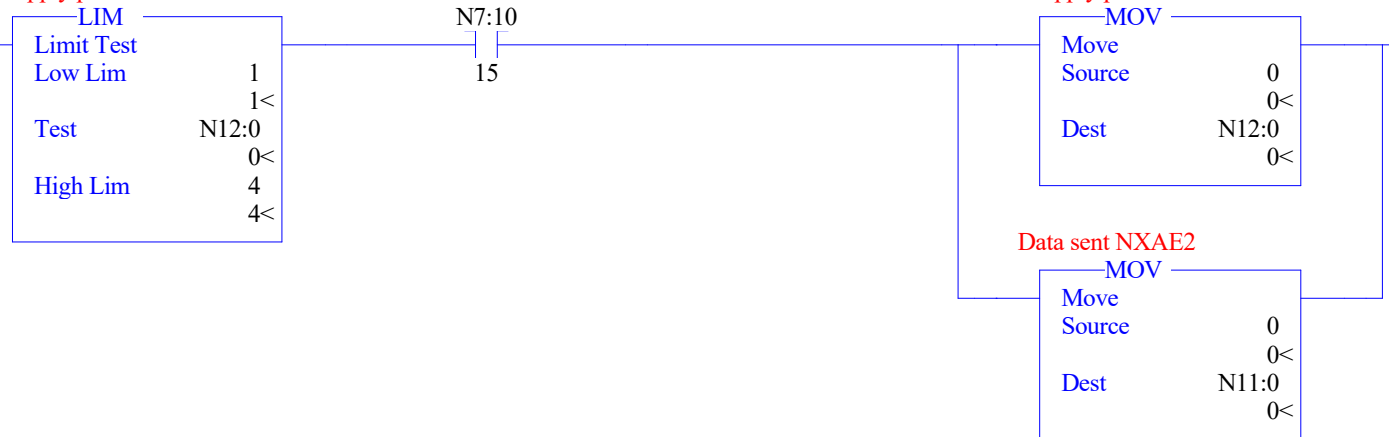
The programming cycle is now complete.

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

NXAE2 ACKnowledge  
bit

1=ch1 single  
2=ch2 single  
3=multiturn  
4=apply preset

0009



0010

END

When configured to connect to a dual resolver Multiturn resolver, the NXAE2 will transmit its position data in two words. When configured for the default data format of Little Endian, the lower 16 bits of the value will be in input word 2 and any remaining bits will be in input word 3.

The following logic combines these two words into one long (32 bit) register.

