

PLC210 Lab 6: Data Types in ControlLogix

Upon completion of this lab, the student should be able to:

1. Determine the number of bits in various data types
2. Explain how the MOV instruction moves data between different data types
3. Monitor the bits within a data Tag
4. Explain how ControlLogix rounds off the data from a REAL data type
5. Explain the rounding of a X.5 value to the nearest even number

Download the project Compact_Module_4_Ex1_Atomic.ACD, go Online and put the CompactLogix into the Run mode to do the following lab.

The I/O tag names in this lab may need to be changed to match the addresses on your hardware trainer.

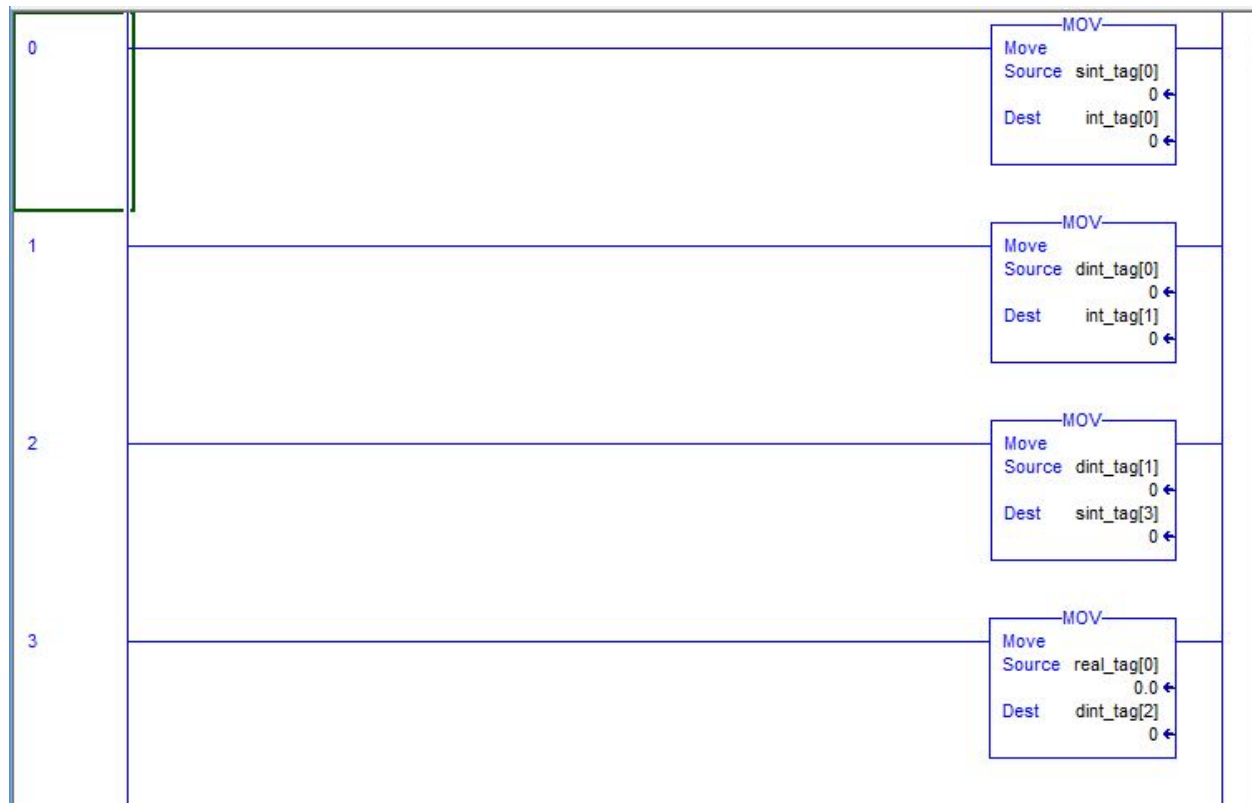


Figure 1. Different data types within the ladder logic.

1. On rung 0:

What is the Data Type for the Source Tag? _____

How many bits comprise the Source Tag? _____

What is the Data Type for the Dest Tag? _____

How many bits comprise the Dest Tag? _____

On rung 0, change the Source tag value from 0 to 32.

What value appears in the Dest tag? _____

Change the Source tag value to 300.

What value appears in the Dest tag? _____

Explain the problem:

2. On rung 1:

What is the Data Type for the Source Tag? _____

How many bits comprise the Source Tag? _____

What is the Data Type for the Dest Tag? _____

How many bits comprise the Dest Tag? _____

On rung 1, change the Source tag value from 0 to 300

What value appears in the Dest tag? _____

Change the Source tag value to 40,000

What value appears in the Dest tag? _____

Explain:

3. On rung 2:

What is the Data Type for the Source Tag? _____

How many bits comprise the Source Tag? _____

What is the Data Type for the Dest Tag? _____

How many bits comprise the Dest Tag? _____

On rung 2, change the Source tag value from 0 to 255.

What value appears in the Dest tag? _____

Explain:

4. On rung 3:

What is the Data Type for the Source Tag? _____

How many bits comprise the Source Tag? _____

What is the Data Type for the Dest Tag? _____

How many bits comprise the Dest Tag? _____

On rung 3, change the Source tag value from 0 to 6.5.

What value appears in the Dest tag? _____

On rung 3, change the Source tag value to 7.5.

What value appears in the Dest tag? _____

Explain:

5. On rung 4:

What is the Data Type for the Source Tag? _____

How many bits comprise the Source Tag? _____

What is the Data Type for the Dest Tag? _____

How many bits comprise the Dest Tag? _____

On rung 4, change the Source tag value from 0 to 23.

What value appears in the Dest tag? _____

On rung 4, change the Source tag value to 2,147,000,000.

What value appears in the Dest tag? _____

Explain:

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