

# PLC200 SLC-500 Comparison Instructions

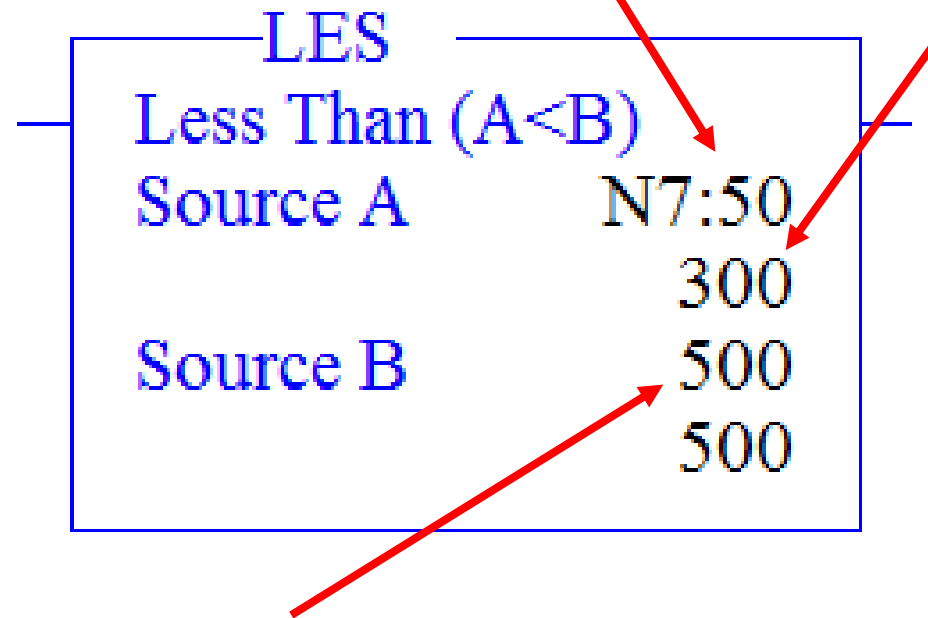
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On 3/24/16

# Module Objectives:

- Explain the purpose Integer and Floating Point data files
- Explain how the basic data comparison instructions work in the SLC-500
- Explain the operation of a basic LIM instruction
- Explain how the LIM instruction is used in circular mode

Source A is the value  
that is being compared.  
Currently there is a  
value of 300 in word  
N7:50



Source B is a  
constant, but could  
be a value stored in  
the data files

The value in  
word N7:50

A data comparison instruction will compare two data values, and if the instruction is true, it will pass logic power flow.

All Data Comparison instructions are **input type** of instructions. Source A in the instruction is compared to Source B. In the following illustration, the value in word address N7:50 is compared to see if it is less than the constant of 500.

Source A is usually the value in a location such as an Integer value (T, C, R, N, etc.) or a Floating Point value (F). Source B can be a constant number, or a location in the data files (in this case, the value in that location is the reference value).

The data comparison instructions do not have status bits associated with them.

—LES—  
Less Than ( $A < B$ )

Source B      N7:25  
400

This instruction would be true, thus passing logic power flow.

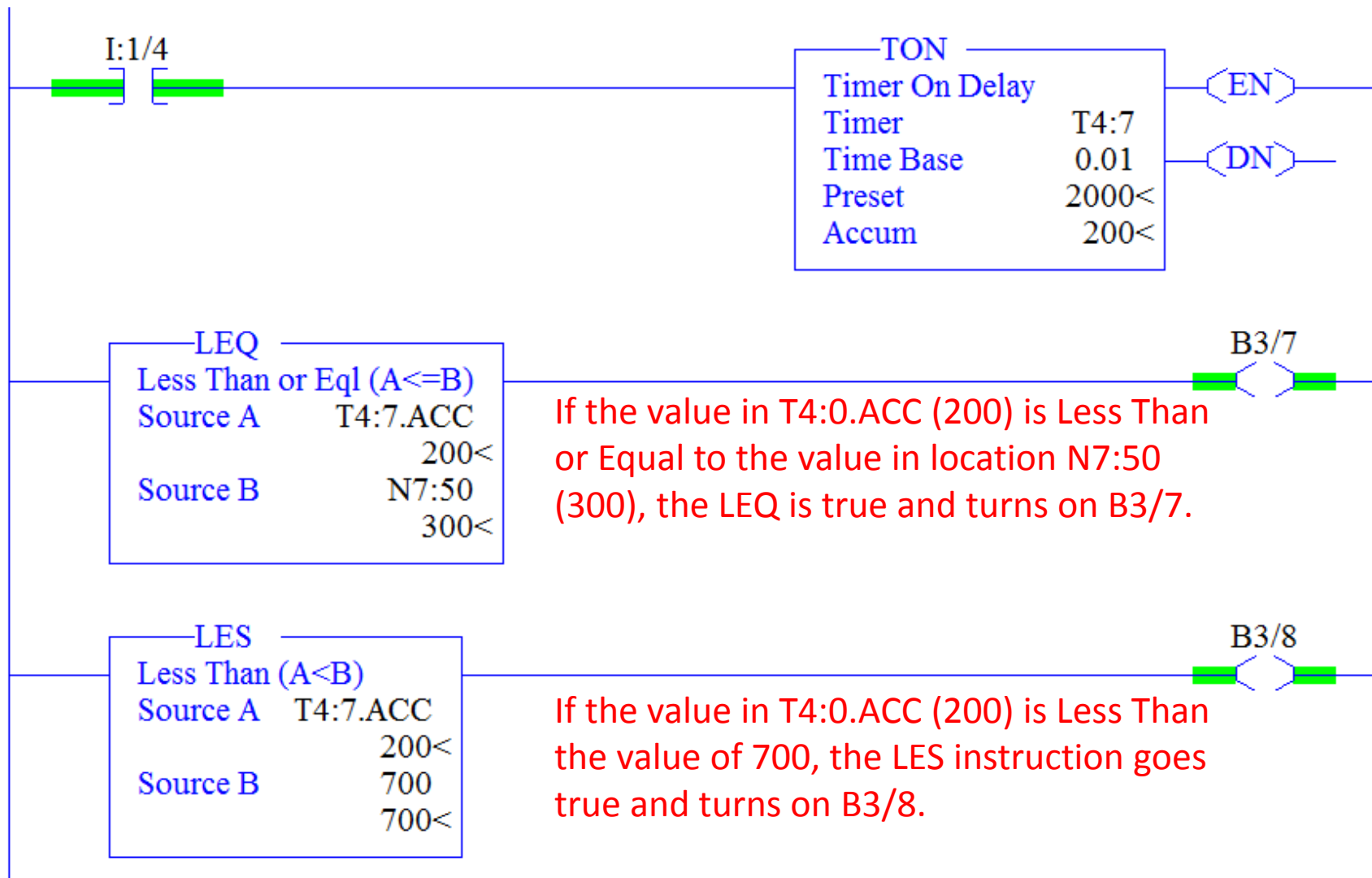
Source B is the value in N7:25.  
The lower graphic shows the  
values in data file N7.

[illegible]

<b>EQU</b>	Equal To	(Source A = Source B)
<b>LES</b>	Less Than	(Source A < Source B)
<b>LEQ</b>	Less Than or Equal to	(Source A <= Source B)
<b>GRT</b>	Greater Than	(Source A > Source B)
<b>GEQ</b>	Greater Than or Equal to	(Source A >= Source B)
<b>NEQ</b>	Not Equal to	(Source A <> Source B)

The following is a list of the basic comparison instructions.

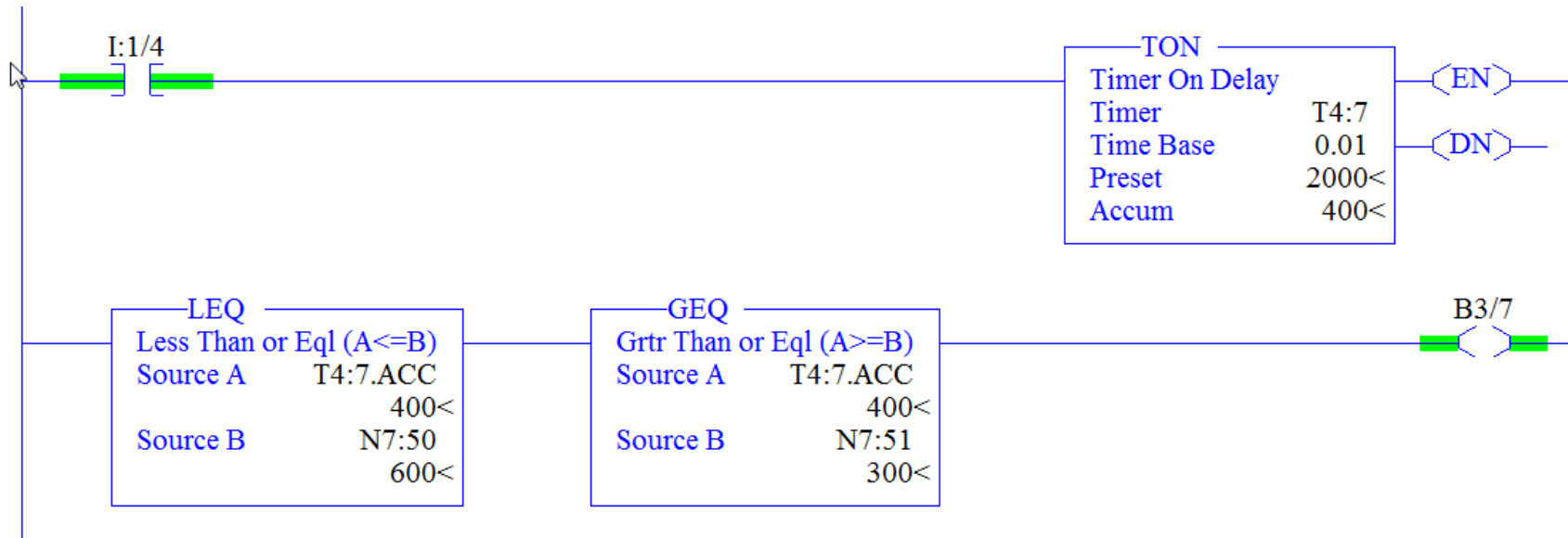
Source A is always compared to Source B.



In this program, when input I:1/4 goes true, the timer get logic power flow. It has timed to 2 seconds (of a 20 second time cycle).

In the second rung, the LEQ is true, since the timer accumulated value is less than the value of 300 that is stored in N7:50.

In the third rung, the LES is true since the timer accumulated value is less than the value of 700, turning on B3/8.



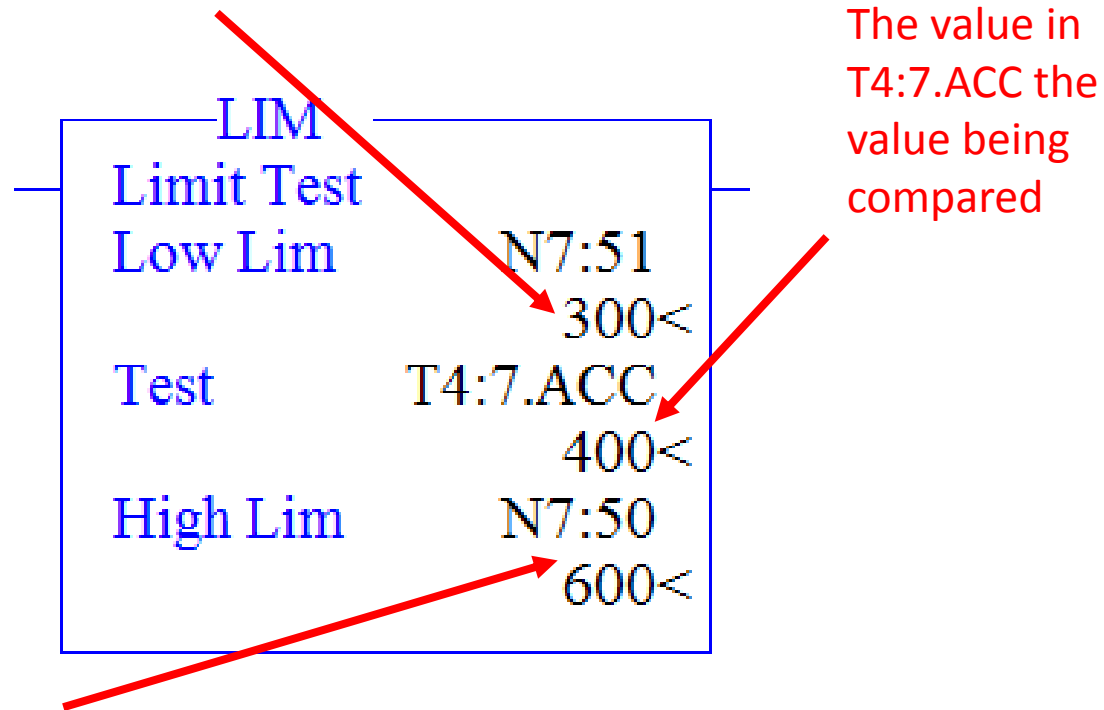
The comparison instructions can be programmed in series.

In this logic, the LEQ is true when the value in the timer accumulated value is less than or equal to 300, which is 3 seconds into the time cycle.

The GEQ is true when the value in the timer accumulated value is greater than or equal to 300.

The OTE for B3/7 will come on at 3 seconds into the time cycle, and shut off at 6 seconds into the time cycle.

The Low Lim is the low limit value that the Test value is compared to. This can be a constant or a data file word.



The value in T4:7.ACC the value being compared

A LIM instruction is used to determine if a value (Test) is between a Low Limit value and a High Limit value. If the Test value is between the limits, the instruction will pass power flow.

The LIM can also be used in Circular mode, which means that if the Low Lim value is greater than the High Lim value, then the instruction will power power flow when the Test value is outside the limits.

High Lim can be a constant or the value in a storage word in the data files





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