

Allen Bradley SLC-500 Training Data Comparison Instruction Lab #2

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

1. Explain the operation of an auto resetting timer program.
2. Explain the operation of the LES, GRT, LEQ and GEQ instructions.
3. Explain the data values as constants, versus data values stored in a register (N word).
4. Explain how basic comparison instructions can be used together to control an output.
5. Explain how multiple comparison instructions can be used together to control an output.

Create the following program (on Page 2) within a new RSLogix500 project. Save it to a local drive. Download it to the SLC-500 processor, go online, and then put the processor into the Run Mode to answer the following questions within this lab exercise.

1. Turn on the START_TIMER input.

Do any outputs come on immediately?

2. When will OUTPUT_1 come on?

Explain how this output responds (on/off time) within one time cycle (20 sec.)?

3. When will OUTPUT_2 come on?

How long will it stay on in one time cycle (20 sec.)?

4. When will Output3 come on?

How long will it stay on in one time cycle (20 sec.)?

5. Change the value in N7:10 to 250, and the value in N7:11 to 900. When will Output3 come on?

How long will it stay on in one time cycle (20 sec.)?

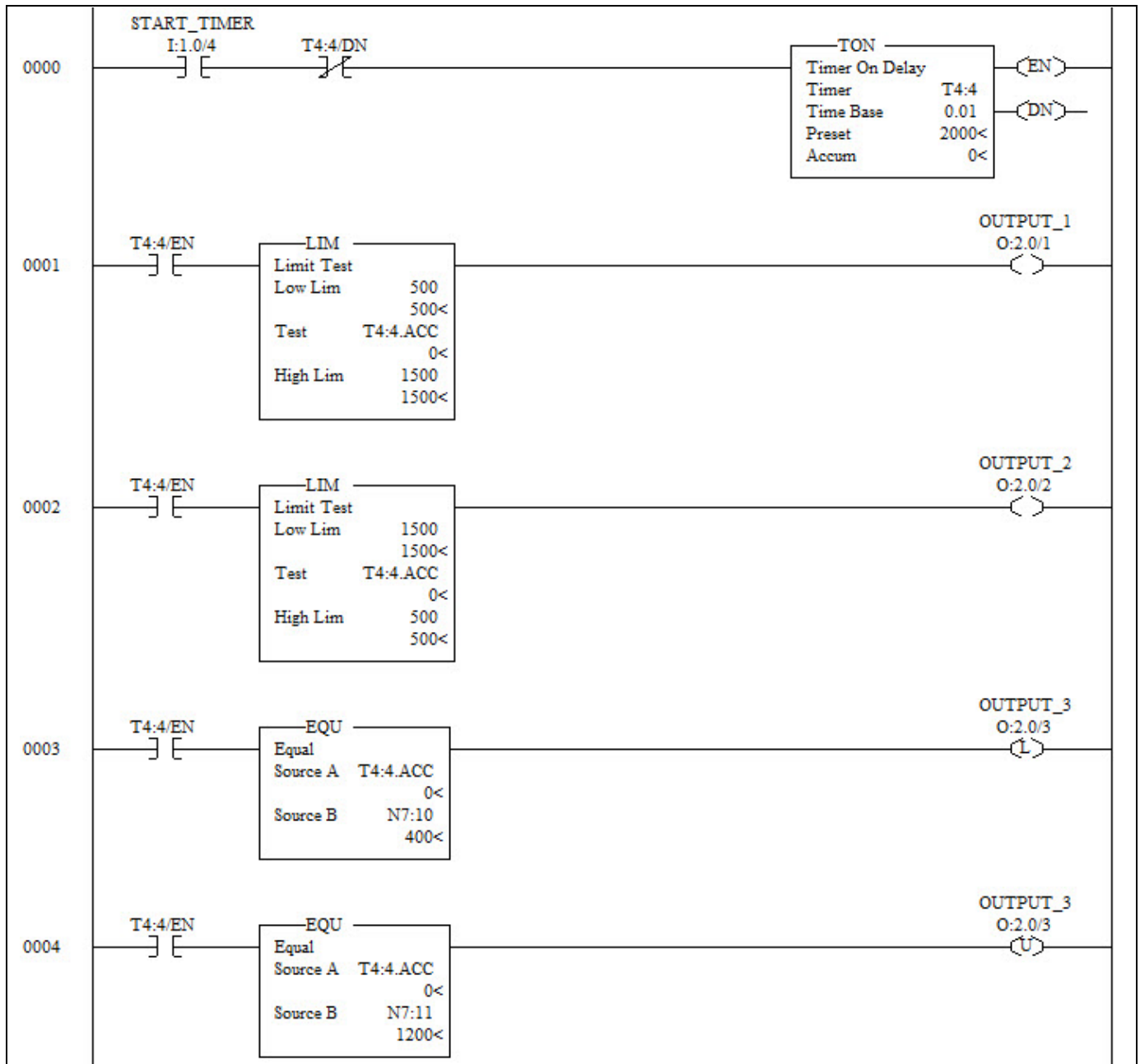


Figure 1. Ladder logic program with the LIM instruction.

Questions:

1. What is the time cycle for the timer in this lab?

2. Which rung will turn **on** it's output when the timer accumulated value is between 500 and 1500?
 - a. Rung 001
 - b. Rung 002

3. Which rung will turn **off** it's output when the timer accumulated value is between 500 and 1500?
 - c. Rung 001
 - d. Rung 002

4. In rung 003, what value in N7:10 will turn on OUTPUT_3 when the timer reaches 7 seconds?

5. When will a LIM pass power (be true) if the value in the Low Limit is a larger number than the value in the High Lim?

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