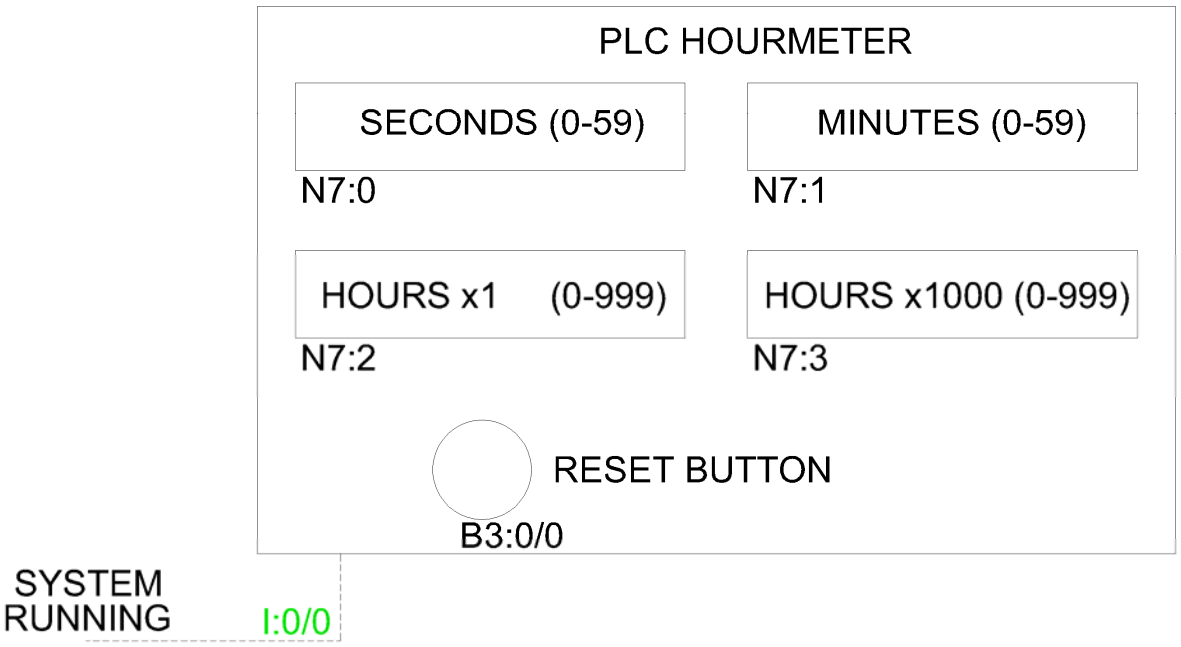
Project 6

PROCESS:



SUMMARY:

Today we're making a system to track the runtime of a host plant. When the plant is running, it will send us a signal (running). We will simply measure and store the time that the plant runs. As a nice convenience for our end-user, we're including a reset button which will wipe out all of the time that has been accumulated allowing for a fresh start.

IO / ASSIGNED MEMORY:

I:0/0 - System running
N7:0 - Seconds
N7:1 - Minutes
N7:2 - 100's of hours
N7:3 - 1000's of hours
B3:0/0 - Reset button

TEST CRITERIA:

To start, run your program on Emulate. N7:0-N7:3 should all be sitting at zero. These values should not be moving. Not at all. Not even a little bit.

Next, force the system running input on (closed). Now we should see N7:0 accumulating seconds. It should go from 0 to 59 over and over again. Each time N7:0 counts a minute, N7:1 should go up by one. Eventually N7:1 should hit 59 and then go back to 0 itself. When it does, N7:2 should go up by one. Not that we'll be leaving it running that long, but after N7:2 reaches 999, it should go back to 0 and N7:3 should go up by one. And on and on it goes. To test that N7:2 and N7:3 work, you can manually change N7:1 and N7:2 setting each at its limit to make sure everything accumulates correctly.

Third, force the system running input back off (open). All of your accumulators (N7:0-N7:3) should freeze right where they are.

Fourth, force the system running input back on (closed) one last time. The accumulators should keep counting from exactly where they left off.

Finally, toggle B3:0/0 on and then back off. N7:0-N7:3 should all return to 0.

NOTES:

Most of the systems you program will have hourmeters. People will need to know how long certain components have been running because they require replacement or inspections, the system will be under a warranty or service agreement based on hours of runtime, and for various other reasons. As such, learning how to accomplish this within your PLC program will prove invaluable to you in the field. This is an everyday kind of thing. Some systems will even have multiple, independent hourmeters in them. The fun never ends…

Admit it - keeping time is trickier than you thought! ☺