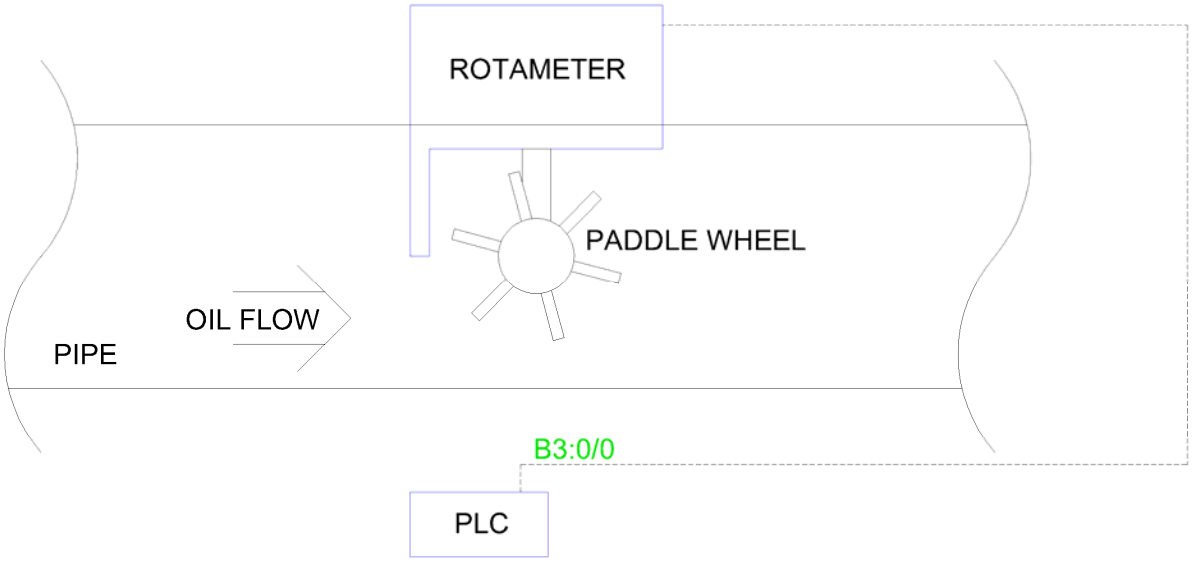
Project 5

PROCESS:



SUMMARY:

In order to measure oil flowing through a pipeline, a digital rotameter was installed which sends our system a single pulse for every 6.3 gallons of oil that flow past it. This is referred to as the digital rotameter's "k-factor." We have the rotameter on a bit address instead of an actual input so that we can control it with a timer. Create timer logic which pulses the bit every 12 seconds and store the flow to the given float address. We also want to update the flow rate every 12 seconds. How fast is the oil flowing?

IO / ASSIGNED MEMORY:

B3:0/0 - Rotameter

F8:0 - Flow (gpm)

TEST CRITERIA:

To start, run your program on Emulate. F8:0 should be equal to 0 at first, but after a minute or so it should settle down at 31.5.

Lastly, change your pulse timer preset from 12 seconds to 2 seconds. After a minute or so F8:0 should settle down at 189.

NOTES:

This is a deceptively simple app which will end up being a chore for a lot of people. If you happened to get it right the first time – WOW! That's impressive and rare. If you struggled for a bit, no worries – most of us did. Analog flow sensors are so nice in that all we have to do is scale a signal and get our flow, but then these digital guys come along and really try to sling manure all over our automation parade. And in the field, you'll generally see MORE digital rotameters than analog, so get comfortable with this kind of programming now.

Because tomorrow might be too late. ☹