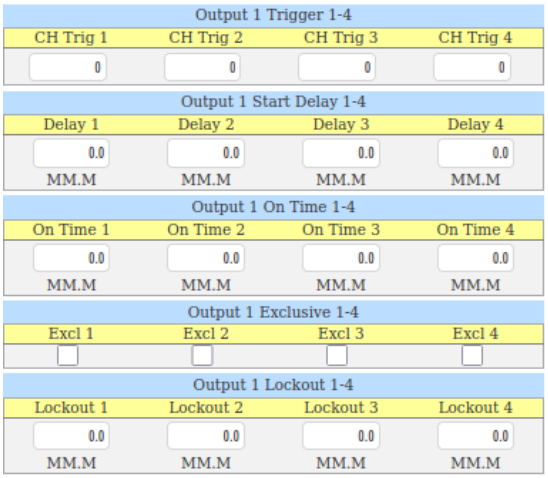
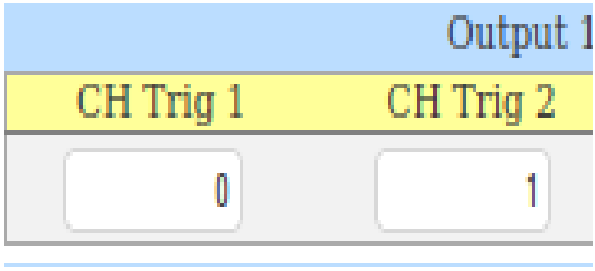
Correspondence and Receipts…PO Box 552, Grafton, MA 015019

Setting up Outputs in Harvest-Watch



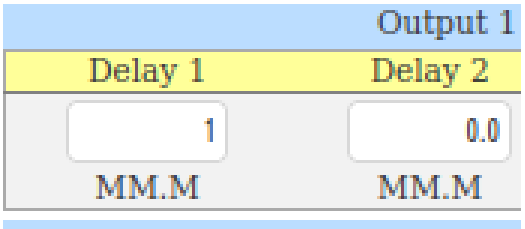
Outputs can be used for more then on and off control. They can be configured to do just about anything required by your circumstances.
To start with lets go over each of the different Output Modifiers.

Output Trigger



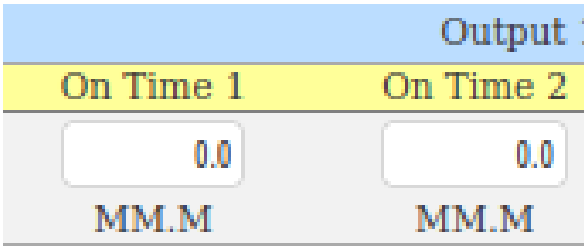
Output trigger allows users to have other outputs follow the defined output. For example if you were to write 1 into Output 2 trigger, every time Output 1's state changes Output 2 will follow it. If Output 1 turns on so will 2 and vise versa. This can be scaled to all 16 outputs if desired too. You could have one output control all 16 or 2 control 7 each. This also can be used in junction with the other Output Modifiers.

Output Delay



Output delay allows users to add a delay before a Output turns on. For example if you were to type a 1 into Output 1's delay, Output 1 would turn on 1 minute after being told to by harvest watch. This can be done to all 16 outputs. This can be used to delay a engine start so a priming pump can prime a pump. This also can be used in junction with the other Output Modifiers.

Output On Time

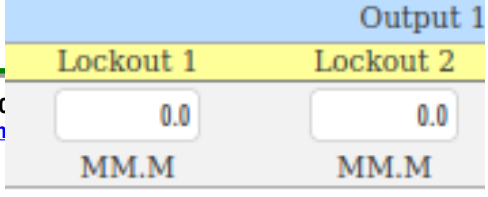


Output On Time allows users to set a on time for a given output. Without it a Output would run indefinitely until told to turn off. On Time can be used to ensure a given Output isn't on for too long, For example if a pump has a duty cycle of 50% meaning it can only run for 30 min out of a hour. You could enter a 30 in On Time preventing the output from running any longer then rated. This also can be used in junction with the other Output Modifiers.

Output Exclusive

Output exclusive allows users to prevent more then one output from being on. For example if Outputs 1 and 2 were both set to exclusive, only one output would turn on at a time. Say Output 1 turned on then output 2 was requested to turn on, it would not turn on until Output 1 has turned off. Now if both outputs were to turn on exactly at the same time, the one first in numerical order would turn on. Now if more then two Outputs were checked for exclusive, the same behavior would occur but just with multiple outputs. This could be used to prevent starvation of water if a pump isn't able to feed all zones at max GPM. This way only one zone would be on at a time even if there is multiple request for different zones. This also can be used in junction with the other Output Modifiers.

Output Lockout



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Output Lockout allows users to prevent a output from immediately turning back on after just running. For example if Output 1 had a lockout of 5 set which is 5 minutes, after Output finished running and turned off it would take 5 minutes before output 1 could turn on again. This can be used to prevent back to back runs of a given output. This also can be used in junction with the other Output Modifiers.

Example use cases.

Running a pump with a Fertigation pump
Requirements:

- Pump has duty cycle of 50%
- Fertigation pump must run for 1 min during pump start
- Fertigation pump is off 1 minute after main pump start and doesn't turn on again for the rest of the main pump cycle.
- Pump is output 1 and Fertigation pump is Output 2

First setting up Duty cycle.

Output 1 would have a On time of 30 minutes and a lockout of 30 minutes. This would give us the 50% Duty cycle.

Fertigation pump 1 minute on before pump.

Output 2 would have a on time set to 1 Minute and set Output 2 trigger to 1. This would cause it to turn on the Fertigation pump after the main pump is run.

Fertigation pump is off 1 Minute after main pump turns on.

You would add a lockout of 59 minutes to Output 2. This would allow the pump to function with the stated behavior mentioned above.