MPC Version 5

New features for the Industrial and Water Utility market.

Controlled Output – Analog control type

- Firmware version 5 includes two new functions found in Settings->Monitoring functions, which are “Controlled output 1” and “Controlled output 2”.
- The function works as follow: If the monitored value is above the start level for the duration of the start delay time, then the output is commanded on until the monitored value is below the stop level for the set delay time.
- Two new digital output functions are Controlled Output 1 and Controlled Output 2. The function binds the output to the controlled output function.
- Although the function does not directly control operating mode, the digital output with function type Controlled output can be wired back to a digital input which can be programmed to stop the system; reduce operation; change setpoint or any other function assigned to a digital input.

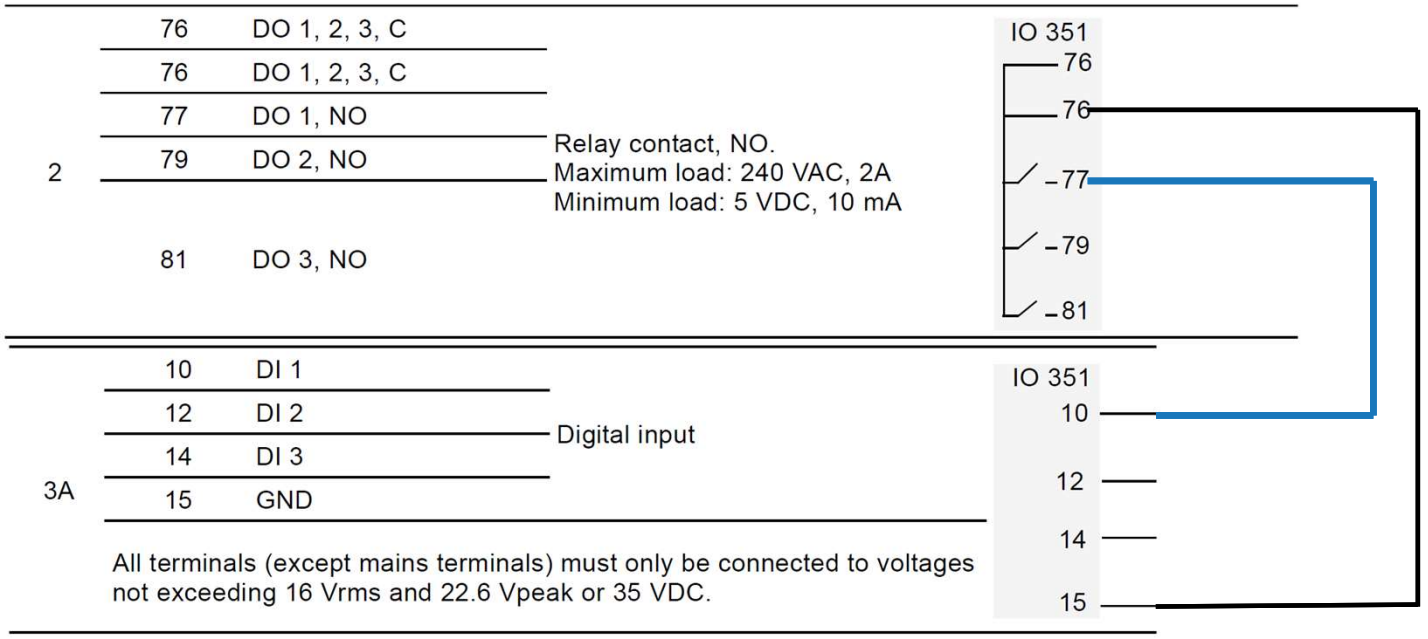
Example: Controlled Output using Analog control type for tank fill application.

Assume level sensor has been wired and analog function is set to [Tank level, outlet side].

1. Wire IO351B for control by Controller output function.
2. Program digital output function for Controller Output 1.
3. Program digital input function for Alternative setpoint 2.
4. Program Setpoint 1 for 0
5. Program Setpoint 2 for desired operating pressure
6. Enable Setpoint ramping and set the desired ramp rate.
7. Enable Controlled output 1 function and program Controller output 1 function for Measurement.
8. Set the Start level and Stop level and delay time.

How to wire the IO351B

- Below shows how digital output (DO1) can be wired to digital input (DI1) on a IO351B.



Wire terminal 77 to terminal 10.
Wire terminal 76 to terminal 15.

Program digital output function for Controller Output 1

Go to Settings->Secondary functions->Digital outputs DO1[IO351-41],[77]
Select Controlled output 1.

Program digital input function for User-defined duty.

Go to Settings->Secondary functions->Digital inputs DI1[IO351-41],[41]

Select User-defined duty.

Program digital input function for Alternative setpoint.

Go to Settings->Secondary functions->Digital inputs->DI1[IO351-41],[10] and select “Alternative setpoint 2”.

Program Setpoint 1 to 0 psi

Go to Settings->Operation and select “Set setpoint 1, closed loop”. Change to 0 psi.

Program Setpoint 2 for desired operating pressure.

Go to Settings->Primary controller->Alternative setpoints and select “Enabled”.

Program Setpoint 2 for desired operating pressure.

Go to Settings->Primary controller->Alternative setpoints->Setpoint 2 and select “Setpoint 2, closed loop” and enter the operating setpoint during tank fill.

Enable Setpoint ramping and set the desired ramp rate.

Go to Settings->Primary controller->Setpoint ramp select “Enabled” and enter the desired ramp rate.

Enable Controlled output 1 function and program Controller output 1 function for Measurement.

Go to Settings->Monitoring functions->Controlled output 1 and select “Enabled” under “Monitoring of levels” and “Measurement” under “Control type”

Set the Start level and Stop level and delay time.

If Start level < Stop level, then tank empty application.
If Start level > Stop level, then tank fill application.

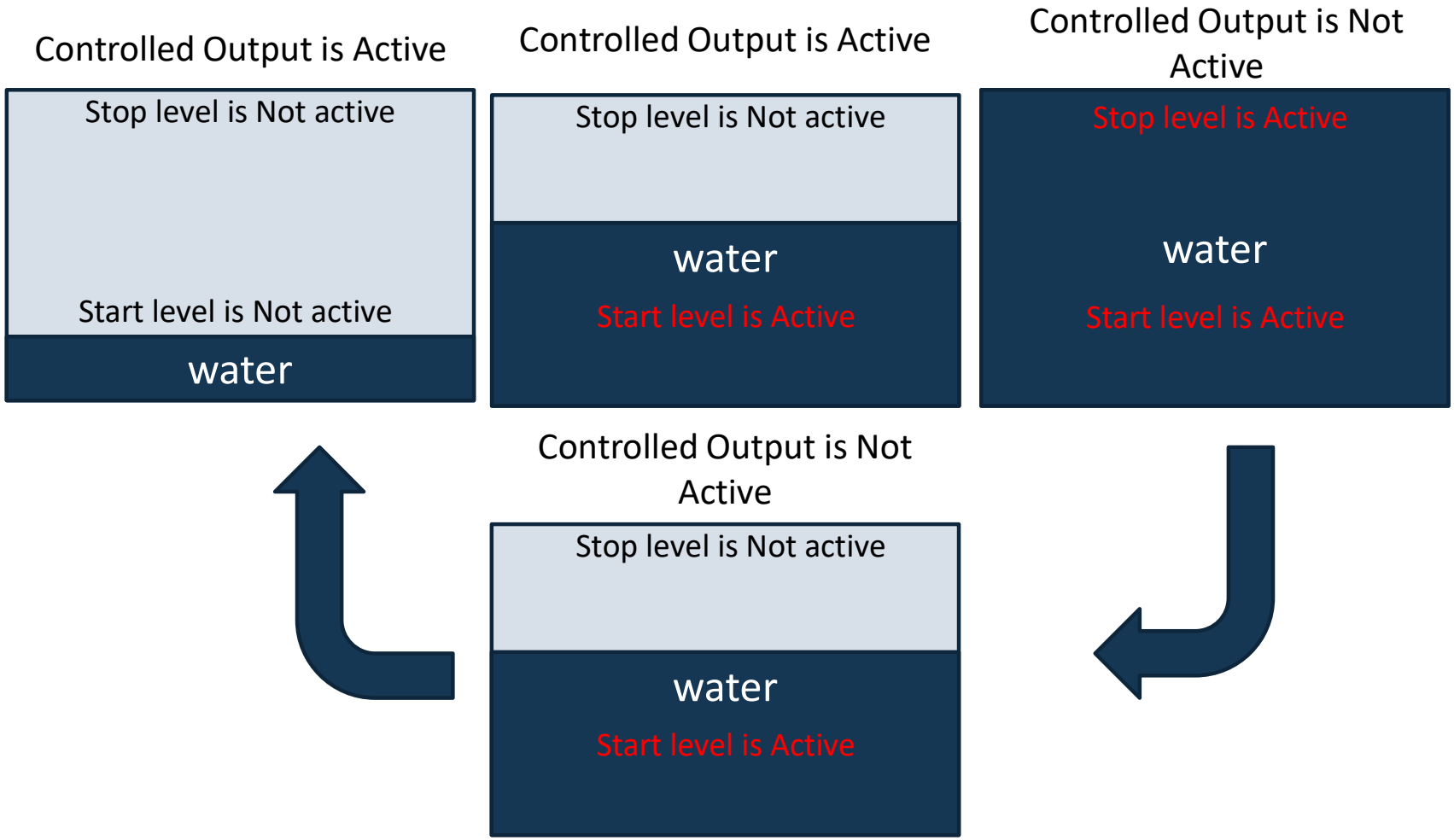
Both Start and Stop are delayed by the delay timer.
The screen shot is for a tank fill application which starts

Enable Controlled output 2 function and program Controller output 2 function for Switches.

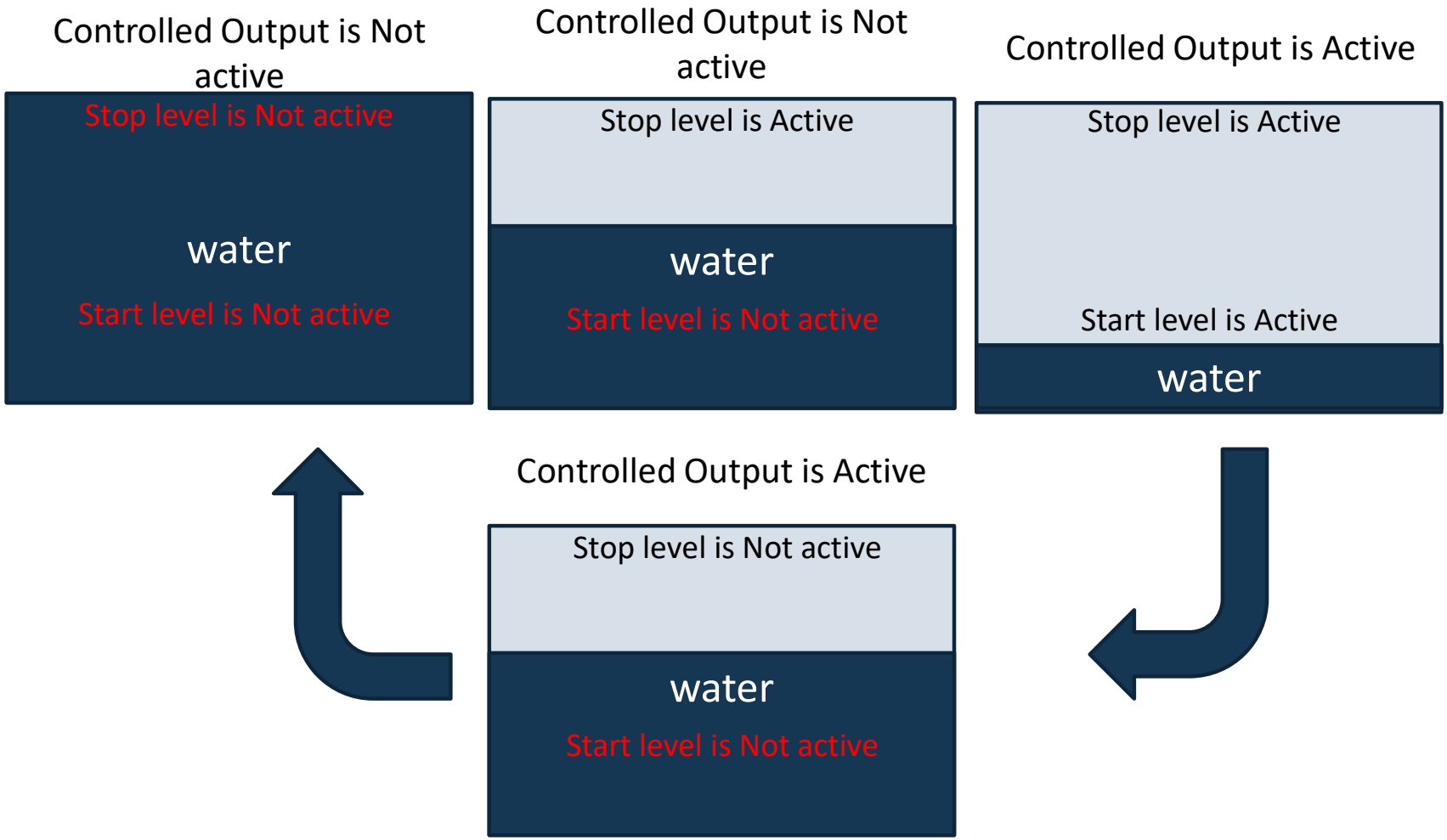
Go to Settings->Monitoring functions->Controlled output 2 and select “Enabled” under “Monitoring of levels” and “Switches” under “Control type”

Two digital inputs required:
Controlled output 2, start is the start level.
Controlled output 2, stop is the stop level.

Output response to start and stop switches.



Output response to start and stop switches (inverted mode enabled).



Example of tank fill application.