SECTION J
FLUSH CYCLE

Revision Date: 3-14-24

The Flush Cycle is provided to periodically flush the sludge build up from the bottom of the wet well and from the discharge pipe. This is done by periodically maximizing the lift station's discharge flow rate.

Flush Cycle Steps:

1. Upon the start of the Flush Cycle, normal pump operation is suspended (all pumps turned off).
2. It then waits for the level to rise to the "Flush Cycle Start Level" set on Parameter P.73.
3. Upon reaching the "Flush Cycle Start Level" all available pumps are turned on with a delay in between.
4. The pumps stay on until the level reaches the "Flush Cycle Stop Level" set on Parameter P.74.
5. At the "Flush Cycle Stop Level" all pumps are turned off and normal pump control resumes.

Automatically Starting Flush Cycle:

A. Internal Time Delay - Expiration of the "Delay Between Flush Cycles" set on Parameter P.72.

B. External Time Clock - Closure of a Discrete Input that is assigned Function 27.

Manually Starting / Stopping Flush Cycle:

Start - Press & hold the LEVEL push-button until the "LEVEL" indicator starts to flash. To start the cycle through SCADA - Momentarily set Modbus Coil 139 (Register 40009 Bit 10).

Stop - Press & hold the LEVEL push-button until the "LEVEL" indicator stops flashing. To stop the cycle through SCADA - Momentarily set Modbus Coil 140 (Register 40009 Bit 11).

Notes:

1. The Flush Cycle Feature only works in the "Pump Down" mode (Parameter P.31 = 1).
2. Where VFDs are used the analog Speed Reference will be forced to 100% during the pump down.
3. The number of pumps called to run by the Flush Cycle logic is always limited by the following:
   A. The setting on Maximum Number of Pumps Allowed to Run At the Same Time (Parameter P.14).
   B. The closing of Discrete Inputs that are assigned as the Pump Disable inputs (Functions 1 - 4).
4. If the Flush Cycle is active, the closing of a Discrete Input assigned as the All Pump Disable input (Function 8), will abort the Flush Cycle.
5. All backup systems and level alarms must be setup so that they do not activate within the Flush Cycle operating range set on Parameters P.73 and P.74.
6. If the Flush Cycle is active, the closing of a Discrete Input assigned as the Pump Cutoff - Low-Low Level input (Function 19), will abort the Flush Cycle. Therefore, the Flush Cycle Stop Level must be set higher than the Low-Low Level Float Switch.

User / Operator Info.			SCADA	
Parameter	Default Value	Current Value	Register Address	Description of Parameters and SCADA Notes
Flush Cycle Setup				
P.71	0		40171	Flush Cycle Mode 0 = Flush Cycle Disabled 1 = Flush Cycle Enabled - Activated by the Internal Time Clock 2 = Flush Cycle Enabled - Activated by an External Time Clock
P.72	1440 min		40172	Delay Between Flush Cycles Range: 1 - 65,535 minutes
P.73	9.5 feet		40173	Flush Cycle Start Level Range: 0.2 - 231.0 feet
P.74	2.5 feet		40174	Flush Cycle Stop Level Range: 0.2 - 231.0 feet
Flush Cycle Status				
Pd.51	-		41878	Time Remaining On Internal Time Delay minutes
Flush Cycle Active Status - Modbus Coil 141 (Register 40009 Bit 12).				
Flush Cycle Active Status - Waiting For Well to Fill Up - Modbus Coil 142 (Register 40009 Bit 13).				
Flush Cycle Active Status - Calling All Pumps to Run - Modbus Coil 143 (Register 40009 Bit 14).				