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pH and Flow Proportional Treatment

Add a pH Controller to Your Existing Flowmeter to Create a Simple Dual Control Treatment System

By itself, a pH controller is blind to variations in flow, which can easily lead to under- or over-treating a wastewater stream. A flowmeter, on the other hand, has no idea if pH changes occur. A treatment system that can allow for changes in either of these parameters would be ideal. For most customers, however, this goal seems unreachable due to the sophistication and expense of the necessary equipment. This typically includes individual pH and flow measurement systems that are able to communicate to either a Programmable Logic Controller (PLC) and a linked computer, or to a PID (Proportional Integral Derivative) Controller. These instruments are able to integrate the pH and flow signals to produce a single pump output to effectively correct pH for both variables.

Furrow Pump offers our customers a simple treatment approach to accomplish the integration of flow and pH -- one that minimizes the equipment required while still providing an acceptable level of pH control. All this calls for is an existing pulse or 4 to 20 mADC flow signal (or a new flowmeter to provide same), an on/off pH controller with an electrode, and a LMI externally controlled pump. The flowmeter sends its proportional signal directly to an acid and/or caustic feed pump, which responds only if it is enabled by the pH controller. The pH controller enables the pump(s) by switching on the power whenever the wastewater stream pH is outside the chosen set point range. Thus, you get a flow proportional pH treatment whenever the pH is outside of acceptable parameters. The pH goes untreated only when the pH is within its acceptable range, or there is less than a minimum measurable flow. That low flow being untreated seems like a reasonable trade-off to economically achieve the flow and pH proportional treatment of all your measurable wastewater flow. If the application requires greater accuracy than this, then more complicated equipment is available.

Example 1: [Short Form](#)

Example 2: [The Rest of the Story](#)