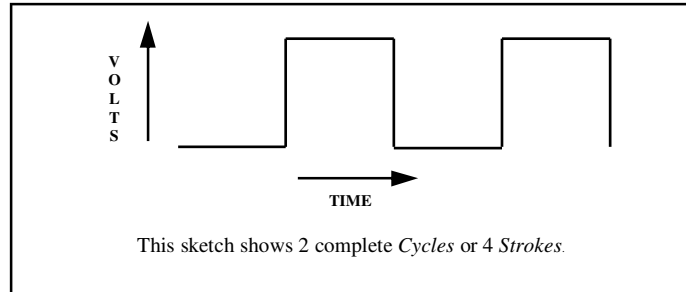


# SELECTING A PUMP CONTROLLER

Polytrace Systems offers a variety of controllers for *Solenoid Operated* AODD pumps. In these pumps, a small solenoid valve is part of the air control system of the pump and selects which chamber of the pump is filled at any given time. These pumps require what is called a “Square Wave” to be supplied to their solenoid in order to control the pumps speed. Here’s what a square wave looks like:



**There are few typical reasons for using a solenoid operated AODD pump** - Let’s look at each and determine what likely to be the best controller for each of these needs.

**The application needs to run the pump at a selectable speed with minimum influence of the heads/viscosity involved.** - If you need a controller which allows you to select and display from as many as 4 preset speeds and the ability to remotely operate the unit in one of those speeds, then the **Model SP** is the first unit to look at.

**The application requires delivering a specified number of strokes repeatedly (i.e. batching)** - If the process requires delivery of a specific volume, the **Model B2** is a good fit. Using it, you can select the pump speed, the number of strokes, the number of times the batch is repeated and the time interval between batches.

**The application requires delivery of a volume which is controlled by monitoring a process variable.**—For instance, you are delivering process effluent to a treatment facility and your effluent is always alkaline but the pH varies, you need to deliver the effluent at pH 7.0 to the treatment facility. If you monitor the pH and send a 4-20 milliamp signal from the pH sensor to a **Model 420** controller, it can adjust the speed of a pump delivering neutralizing acid to the effluent to neutralize it. The **Model 420** can be simply programmed to vary its min and max set-points and the speeds associated with both. The controller will interpolate the speed for any sensor value in between. The speed can go up or down in response to the changes and the unit can also “Jog” the pump to prime it or to add a little extra fluid. The **Model 420** uses speed units of *Strokes/Minute*. These units allow rapid calculation of pump delivery volume with no ambiguity and a highly linear output to the input signal.

All Polytrace Systems controllers are engineered to simplify their use and to minimize setup time. Our installation instructions reflect the user-friendly approach we deliver; they are short and simple. The user interface is kept as simple as possible keeping the end-use in mind and the designs discourage “tweaking” once the system is set up.

*Of course you need to evaluate all variables in your system to determine if a controller is suitable for your purposes, but Polytrace Systems will be glad to provide you with all the information you need about our products and their performance to help you in making that decision. When selecting a pump for a system, you must keep in mind that a pump which has the smallest chamber volume consistent with the fluid output range required will deliver the finest control over fluid delivery. Also remember that the pump must contain a 12 volt DC solenoid to be operated using a Polytrace Systems controller.*

**POLYTRACE SYSTEMS INC.**