Description of Controller Operation

The pneumatic controller is used to control the operation of a control loop automatically. The measured variable, set point value, integral and derivative values are connected to an arrangement of bellows that measures, compares and computes the correct output to a control device depending on the setup of the actions. Depending on the application the controller can either have PB, P+I or PID control. The integral and derivative actions are set by altering small variable restrictors that allow air into the respective bellows. A small flapper nozzle arrangement on the top of the bellows assembly produces an output that is then volume boosted to drive the control device.

The electronic controller works in a similar fashion to the pneumatic controller except that it can be more sophisticated and everything is done electronically. The measured value is converted into digital signal and functions are then performed depending on the setup of the controller. Integral action and derivative action are added as required. Because the system is software driven, the system is a lot more flexible and quicker. A lot more functions can be performed such as automatic loop tuning and bumpless transfer.