# Process Controller User Guide

The Automation Direct Solo SL4824-LR process controllers in AbsolutAire units are used to control the profile pressure drop by moving the profile damper.  The profile pressure is converted to a 0 to 10 VDC signal using a Dwyer Magnesense MS-311 pressure transmitter, and this pressure is displayed in larger red numbers on the left.  0 VDC indicates 0 inches water column and 10 VDC indicates 2 inches water column.  The set point for the process control is displayed in green on the right, factory set at around 0.70.  Both the set point and the current pressure use the range from 0.00 to 2.00 to represent a pressure differential of 0 to 2 inches of water column.

The controller is powered by 120 VAC.  The pressure input is 0 to 10 VDC measured between "Com" and "Vo" on the pressure transmitter.  The output to the damper is limited to 2 to 10 VDC.  The output is continually updated depending on the relative values of the pressure reading and the set point using a PI loop.  If the pressure transmitter reading is less than the set point then the damper should move to close the burner profile.  The damper will continue to move until the set point is satisfied or an end-stop is reached.

# Maintenance and Troubleshooting

It is recommended that the Magnesense pressure transmitter be zeroed out once a year to prevent problems with drifting readings.  This must be done with the pressure transmitter powered, and having the process controller powered gives verification that that procedure has worked.  First, remove the front cover of the pressure transmitter and remove both of the tubes from the transmitter, noting where the tubes were connected.  There are two buttons, and the button farther from the pressure connections will zero the output when pressed for about 5 seconds.  The process controller should now read 0.00 on the left side, and a voltage of 0 VDC should be found at the pressure transmitter output and the process controller input.  Reinstall the tubing and the transmitter cover when done.