

# Manual boiler control during testing

## APPLICATION A142

Type of Company: [Manufacturer, Burner Systems](#)

Location: [Wisconsin](#)

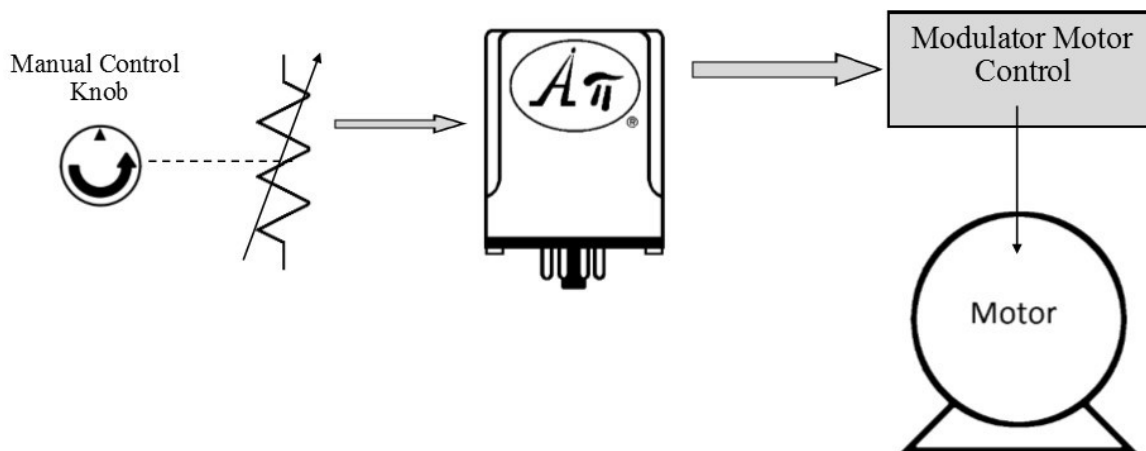
Forced-draft burners use combustion air blowers to provide pressurized air to oxidize the fuel and to produce different flame patterns. These combustion air blowers pull air through the heat exchanger which greatly increases fuel efficiency while allowing the heat exchangers to become smaller. The blowers run continuously, increasing electrical usage, and require a means to proportion airflow to the rate of fuel flow. By keeping tighter control of the air/fuel ratio, one can better control the combustion reaction.



Photo by R-office

## The Engineering Issue

- The engineer requires control of the burner jack shaft for manual boiler control in testing situations.
- The manual control system requires that they convert a potentiometer slide wire to a 4-20 mA input signal for a Honeywell modulator motor controller.



The engineer used an API 4003 G I. The 4003 G I accepts the slide wire input and converts it to a 4-20mA signal for the motor controller. The modulator motor will adjust the jack shaft, which is mechanically linked to the damper box (air flow), fuel control (gas) and oil pump.

**Problem. Solved.**