POWER FLAME, INC.

DC-4 Draft Control System

WHY DRAFT CONTROL?

Draft control is essential to both fire tube and water tube boiler applications. Boilers with stack heights of 25–30 feet (or even boilers with stub stacks) benefit from proper draft control and monitoring; it improves heat transfer and combustion efficiency, reduces room heat loss, improves flame stability and flame retention. Efficiency improves dramatically when a Power Flame DC-4 Draft Control System is applied!

FEATURES & BENEFITS

- Saves fuel and improves safety.
- Multiple draft control functions.
- Optional flue gas temperature indicator/control.
- Electronic draft indication.
- Menu-driven setup.
- Low draft/high pressure cutoff switch.
- Economical: long-term returns on low initial investment.
- CUL & UL Listed. DEP approval pending
- Modbus Serial Communications.
- Field configurable for all control & monitoring functions.
- Input/output diagnostic LED's.

INTRODUCTION

The Power Flame DC-4 Draft Control System is a state of the art product that combines, in one package, all the components of draft control, flue gas monitoring and safety:

- High performance microprocessor for accurate draft control.
- Damper status readout.
- Draft range signal for monitoring.
- Electronic draft reading.
- Flue gas temperature reading. (Optional)
- Flue gas temperature alarm. (Optional)
- Low draft or high pressure cutoff switch.

STANDARD PACKAGE

The DC-4's many standard features provide a simple operator interface and accurate control. The unit is field-configured by means of the front panel pushbuttons (Up, Down, Enter, Escape) and simple jumper changes on the PLC.

Draft control logic functions include, sequencing, pre- and post-purge, and adjustable start. The two-line, liquid crystal display (LCD) shows the control parameters, alarms and draft value as inches of water column ("w.c.). Only one draft sampling line is required for connection to the boiler. A 3-mode selector switch (open/close/auto) allows manual damper positioning. Modbus communications are standard, showing settings, input & output states & draft value.

The draft sensor is capable of measuring positive or negative pressure directly. The sensor produces an electrical signal directly proportional to the pressure in the boiler. The controller output is selectable for bi-directional switched 120 VAC or 24 VAC to operate the damper's electric actuator. Adjustable dead band and damping circuits filter out process noise which helps reduce motor hunting.

The DC-4 interfaces with most burner management systems. The 10 amp burner interface relays ensure reliable service. Programmable logic controller LCD display is employed for troubleshooting, alarms and operations. The PLC includes LEDs which show many DC-4 status functions such as processor running, increase/ decrease control action, alarms and status with burner management system.