403M • Series 44 Remote Panel with ON/OFF Heating System (Modular)

Description of Temperature Control

- Maxitrol Series 44 Electronic Modulating Space Temperature Control with Remote Panel
- 55-90°F Room Thermostat to Cycle Unit on and Off-Mounted on Remote Panel
- Discharge Sensor Mounted in Blower Discharge
- Minimum Discharge Set-Point 40-80°F, Factory Set at 60°F
- Maximum Discharge Set-Point 80-140°F, Factory Set at 140°F
- Room Thermost Cycles Unit On and to Maximum Discharge Temperature
- CO Interlock Cycles Unit On and to Minimum Discharge Temperature
- Remote Panel Includes Summer/Off/Winter Switch, Thermostat, and Indicator Lights
- Modulating Temperature Control System Designed to Maintain Space Temperature Set-Point

Applications

Where hot outdoor air is required to heat a building.

Heater Type

Cycling Style Unit

Sequence of Operations

With the disconnect in the ON position and the SUMMER/OFF/WINTER switch (SW-04) in WINTER position, the unit is energized by the room thermostat (TS-05) or by the CO interlock (CO-09) and power is supplied to the damper motor (MT-02), if equipped.

When the damper motor approaches the OPEN position (approximately 70%), the damper-end switch (SW-03) closes energizing the blower motor starter contactor (ST-01) and powering the blower motor (MT-01). After the blower is energized the “Blower On” light (LT-01) will illuminate on the remote panel.

If the unit is equipped with the low-temperature limit control (TS-01), after ten minutes, the low-temperature limit control shuts down the unit if the discharge temperature does not reach the minimum set-point on the low-temperature limit control. Upon shutdown TS-01 will energize the “Low Temperature” light on the remote panel (LT-05) and the damper will close.

If the unit is equipped with a smoke detector (TS-07), the smoke detector will shut down the unit if smoke is detected.

If an exhaust fan starter coil is tied into the exhaust fan interlock (RE-E), the exhaust fan will turn on.

If the unit is equipped with a clogged filter switch (PS-05), the pressure drop across the filters will be monitored. If the pressure drop exceeds the set-point, PS-05 will illuminate the “Clogged Filter” light on the remote panel (LT-06).

The low airflow switch (PS-01) and the high airflow switch (PS-02) must be proven before the Fireye (FSC-01) can be energized. There also must be a call for heat from the intake air sensor (TS-03) and the high temperature limit switch (TS-02) must not be activated. The Fireye flame safety control will monitor the flame via the flame rod (FR-01) and send a signal to the spark plug and pilot gas valve (VA-01).

(Note: the high temperature limit switch will monitor the air temperature and shut down the burner if the temperature set point is exceeded. The high temperature limit will require a manual reset.)

(Note: when the remote panel is in SUMMER position the burner is locked out)

If equipped, the optional low and high gas pressure switches (PS-03 & PS-04) will be energized. If the gas pressure is not between the set-points the burner will turn off and require a manual reset.

After the pilot gas valve opens the “Burner On” light (LT-02) will illuminate on the remote panel. After the flame rod (FR-01) proves flame the main valve (VA-02) opens. If the flame rod does not prove after 3 ignition cycles, the burner will shut off and the “Flame Failure Light” (LT-03) will illuminate on the remote panel.

On a call for heat from the room thermostat (TS-05) the discharge air is at the high fire discharge setting. On a high fire call, the amplifier will send a high fire discharge signal to the gas valve (VA-03). The unit will stay in high fire until the room thermostat is satisfied and the unit will shut down. On a call from a CO sensor, the unit will go into low fire and send a low fire signal to the gas valve until the CO sensor is satisfied at which time the unit will shut off. The discharge air sensor (TS-04) monitors the air and keeps the discharge air temperature at 60 °F or 120 °F.