

INSTALLATION & SUBMITTAL DATA

programmable room thermostat gas-fired duct furnace/make-up air units model series: “D”, “H”, “I”, & “O”

! WARNING

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. All units must be wired strictly in accordance with wiring diagram furnished with the unit. Any wiring different from the wiring diagram could result in a hazard to persons and property.
3. All wiring must be done with a wiring material having a temperature rating of at least 105°C.

IMPORTANT

The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these units must be performed by a qualified installation and service agency. Modine manuals may contain excerpts from component supplier literature adapted for Modine products. Any accompanying component supplier literature is for general information.

Application

Robertshaw 300-225 is a single-stage thermostat (one-heat and one-cool) and 300-229 is a two-stage thermostat (two-heat and two-cool). Both 300-225 and 300-229 are seven-day programmable thermostats with two to four events per day.

Both 300-225 and 300-229 use the electronic circuitry, instead of the conventional mechanical anticipator, thus enable the thermostat to detect temperature changes more precisely. 300-225 and 300-229 maintain the setpoints and mode of operation, despite of the power failures of any duration, without any batteries.

Features

Room programmable thermostats include:

- Automatic or manual fan operation.
- Automatic or manual heat/cool switching capabilities.
- Celsius of Fahrenheit temperature display.
- Copy feature for fast programming.
- Electronic keypad and lockable cover to prevent unauthorized changes.
- Temperature override (for temporary or continuous override).
- Built-in short cycle equipment protection.
- Smart Fan feature for continuous fan during occupied mode.

Dimensions

300-225 and 300-229 is 4.5" high, 4" side, and 7/8" thick.

Figure 1.1
Room-programmable thermostat



Table 1.1
Specifications

Rated voltage	20 - 30 VAC, DC 24 nominal
Rated AC current	0.05 to 0.75 Amps continuous per output with surges to 3 Amps max.
Rated DC current	0 to 0.75 Amps continuous per output with surges to 3 Amps max.
Control range	Heating: 38° to 88°F in 1° increment Cooling: 60° to 108°F in 1° increment
Thermostat measurement range	28° to 124°F
Control accuracy	±1°F at 68°F
Minimum deadband between heating and cooling	2°F

Definitions

Two or Four - Events per Day - Switch #1

Two-events allows the thermostat to be programmed for DAY and NIGHT setting. Four-events allow the thermostat to be programmed for MORNING, DAY, EVENING, and NIGHT setting.

Smart Fan - Switch #2

Smart fan option allows the fan to run continuously during occupied program and automatically cycle the fan, with a call for heating or cooling, during unoccupied mode.

Two or Four Minute On/Off - Switch #3

When it is in the "ON" Position, the unit will still be running for another two minutes, even though the temperature is already satisfied. This feature will prevent the system from short cycling.

Keypad Lock - Switch #4

When the switch is in the "ON" position, the keypad can only be used for temporary override.

Plenum Fan Switch - Switch #5

This switch has to be in the "Electric" position for both the 300-225 and 300-229.

Single or Multi-stage (only on SMS-1) - Switch #6

This switch has to be in the "ON" position for SMS-1. The 300-229 has two additional switches (#7 and #8) which may be used to indicate a fault such as clogged filters.

Figure 2.1
300-225 Dipswitch settings

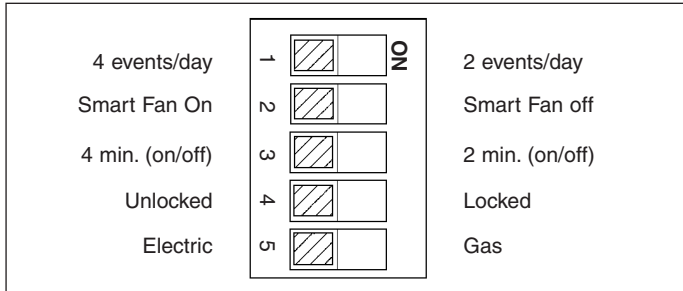
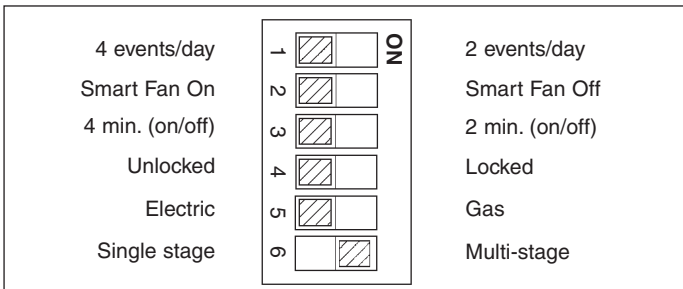


Figure 2.2
300-229 Dipswitch settings



Installation and Wiring

Installation of wiring must conform with local building codes, or in the absence of local codes, of the National Electric Code ANSI/NFPA 70 - Latest Edition. Unit must be electrically grounded in conformance to this code. In Canada, wiring must comply with CSA C22.1, Part 1, Electrical Code.

Dipswitches in the thermostat can be set to satisfy the heating needs of the building. The following figures detail the wiring for both the single stage and two stage thermostats.

Wiring Diagram Selection

- For duct furnaces (non-factory supplied blower): refer to the following figures for wiring.
- For system units (factory supplied blower): refer to the job specific unit wiring diagram provided with the unit.
- For deviations to these wiring diagrams or the job specific wiring diagrams: consult the factory.

Figure 2.3
300-225 Wiring Diagram

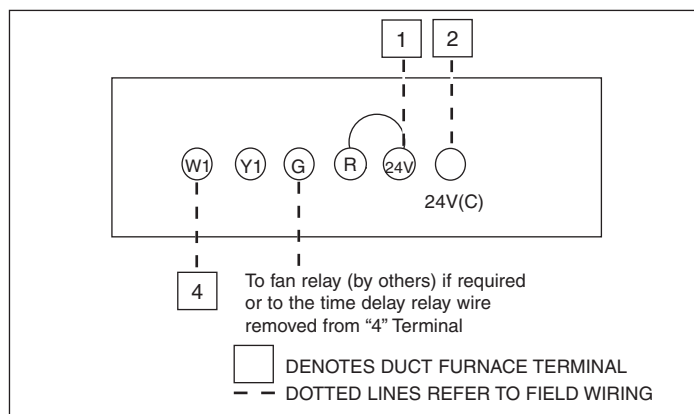
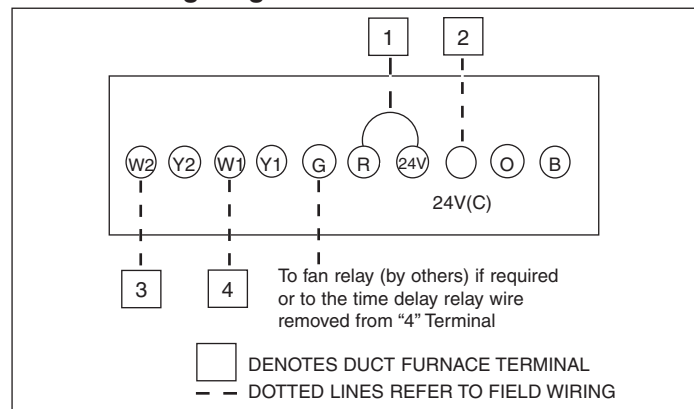


Figure 2.4
300-229 Wiring Diagram



Programming

Please refer to the component supplier literature provided with the thermostat for programming instructions.