

INSTALLATION AND SUBMITTAL DATA

maxitrol electronic modulating gas control system

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

The Maxitrol electronic modulating gas control systems are designed for space heating (Series 20 & 30) or for heating make-up air (Series 21 & 31). Series 20 & 21 are for single furnace operation and Series 30 & 31 are capable of handling up to four furnaces with using a single thermostat. Different valves can be provided for operation on natural or propane gas.

Components

The systems utilize modulating valve downstream from a combination gas control. The combination gas control provides 100% shut-off of the gas because the modulating valve can not close completely, does not have redundant valve seats or pilot control. The system also uses an electronic amplifier (A1010A for single furnace and A1011A for multiple furnace applications) to control the firing rate of the modulating valve.

Space Heating/Room Sensing (Series 20 & 30)

See Figure 1.1

T120 Selectrastat (Room Thermostat) - Range 60-85°F

A wall mounted Selectrastat senses space temperature and has an intergal selector.

Figure 1.1
Maxitrol Selectrastat



Make-Up Air/Duct Sensing (Series 21 & 31)

See Figure 2.1

The Maxitrol Duct Sensing System contains three components. A discharge air sensor, a mixing tube, and a Set Point Adjuster. The discharge air sensor is located inside the mixing tube. The mixing tube is then either factory mounted at the discharge of the unit or field mounted by cutting a hole in the duct several feet from heat exchanger. The Set Point Adjuster is mounted on a remote panel, control cabinet, or any other chosen location.

A room override thermostat can be used to provide space temperature control by signaling the unit to high fire when the space is below the setpoint. The room override thermostat must be used in conjunction with the remote temperature selector.

Standard

TS121 Discharge Air Sensor - Range 55-90°F

TD121 Set Point Adjuster - Range 55-90°F

MT-12 Mixing Tube - 12" in length

T115 Room Override Thermostat - Range 40-90°F

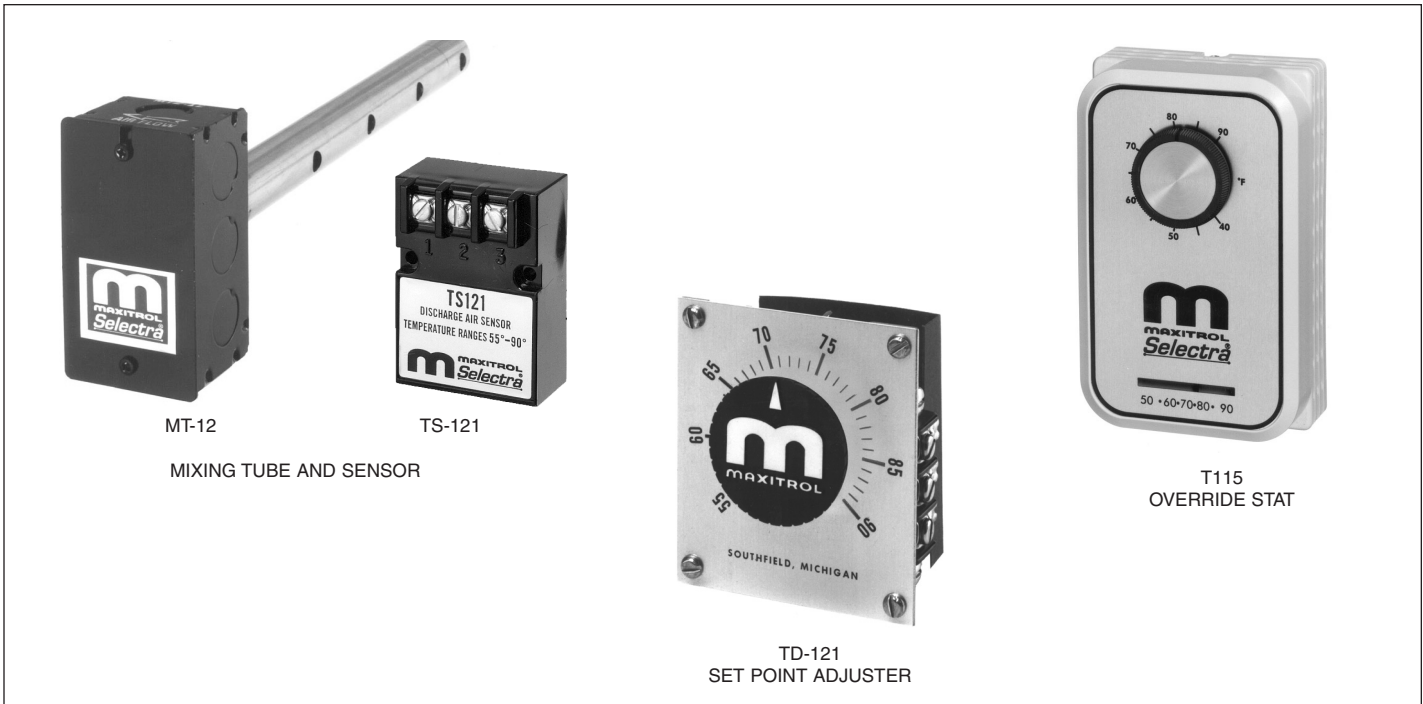
Optional

TS121A Set Point Adjuster - Range 80-130°F

TS121A Discharge Air Sensor - Range 80-130°F

MT-12 Mixing Tube - 12" in length

Figure 2.1
Maxitrol Duct Sensing Components



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.

The thermostat wiring for single furnace and multiple furnace wiring is the same. For multiple furnace units, the thermostat gets wired to the Master unit.

Figure 3.1
Wiring for the Maxitrol Selectrstat

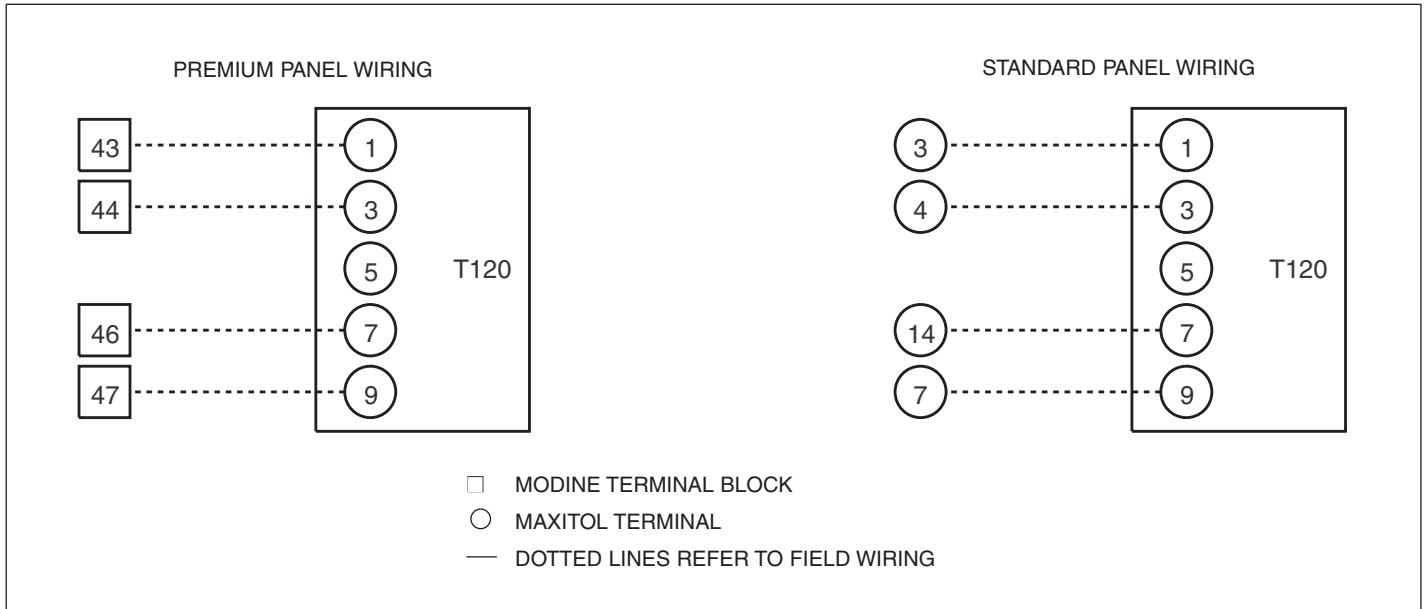


Figure 3.2
Wiring for Maxitrol Duct Sensing with Room Override

For units without the room override thermostat, the T115 would not be included.

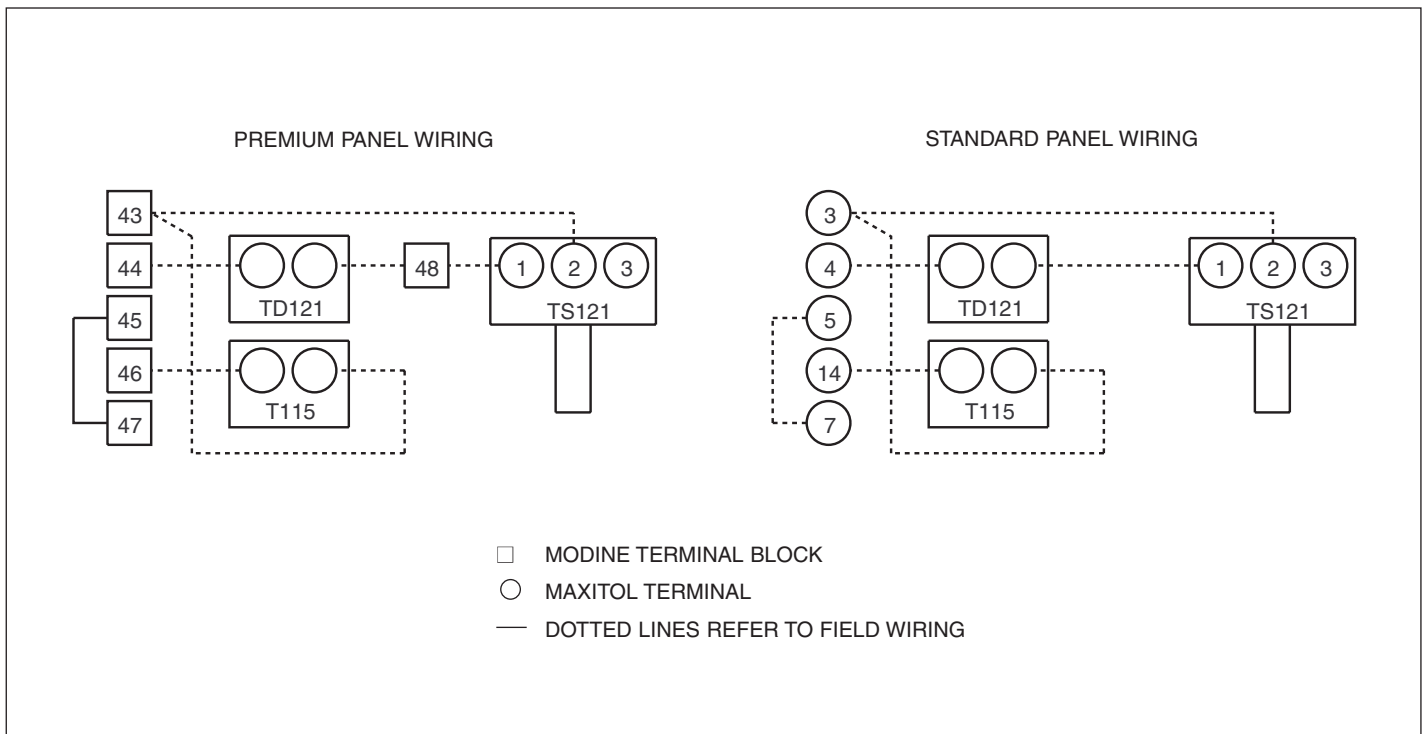


Figure 4.1
Dimensions of Selectrastat

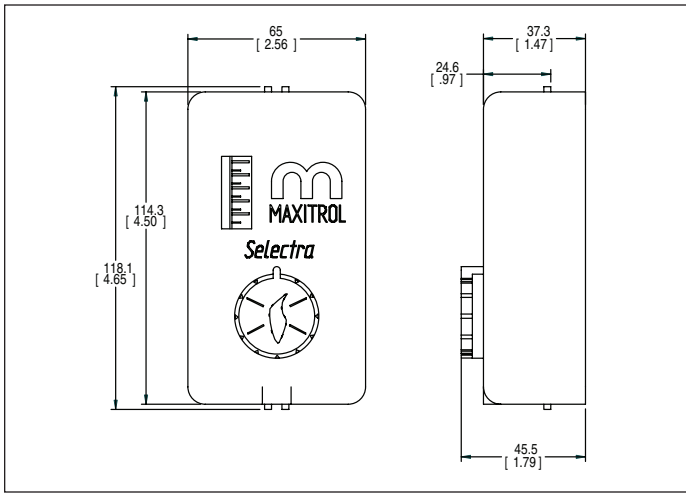


Figure 4.2
Dimensions of Duct Sensor with Mixing Tube

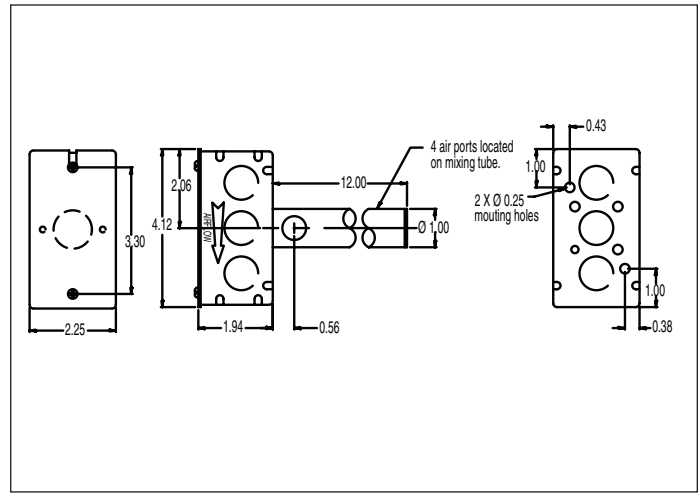


Figure 4.3
Dimensions of Set Point Adjuster

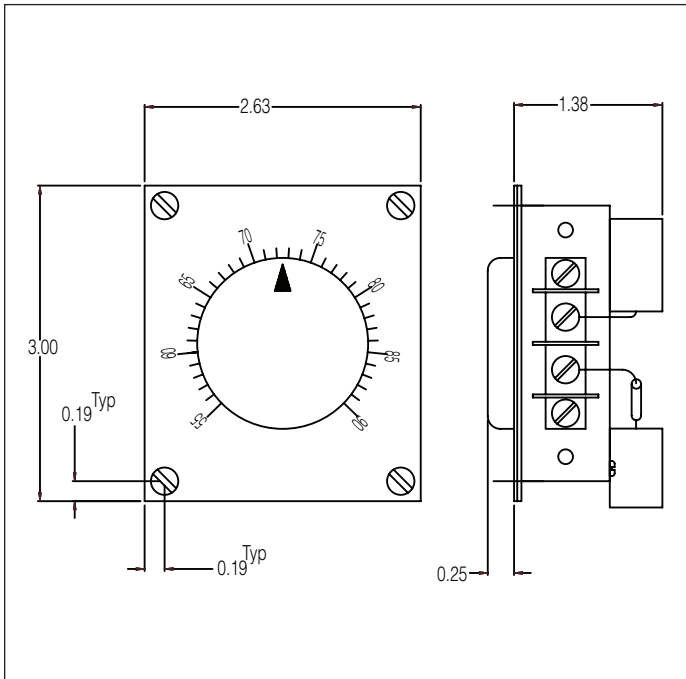


Figure 4.4
Dimensions of Room Override Thermostat

