

# MAXITROL® Selectra® Series 92

## Electronic Gas Modulation System

### DESCRIPTION

The Selectra Series 92 system is used to obtain higher turndown on indirect fired applications.

Selectra systems maintain stable, precise temperatures. A significant improvement over mod motors and butterfly valves - M/MR valves provide instantaneous response and continual pressure adjustment.

The TD92-0509 remote temperature dial controls a 50° to 90°F range. It is similar in design to our popular TD94, but with no digital readout. It has a 6-place terminal block for lead connections. The A1092/A1192 amplifier functions similarly to an A1094, but uses standard wires (4) to connect to the TD92 instead of ribbon cable. Maximum recommended wire length is 300ft.

Duct temperature sensing is by 1,000 ohm RTD such as TS394-3B-48FQ or TS194Q (w/mixing tube).

An optional T115 room override thermostat, when used in conjunction with the remote temperature selector, provides space temperature control by raising the discharge air temperature to a pre-selected point.

Upon request, Maxitrol can configure Series 92 components for other desired temperature control ranges.

### SPECIFICATIONS

#### Pressure Limits for M420, M520, M620

Maximum Discharge Pressure.....7" w.c. (1.7 kPa)  
 Maximum Operating Inlet Pressure.....1.0 psi (7 kPa)  
 Maximum Emergency Exposure\*.....3.0 psi (21 kPa)  
 \*May not function properly at this pressure, but will suffer no internal damage.

#### Power Supply

A1092: Independent 24 VAC, 40VA, 50/60 Hz Class II transformer  
 A1192 Independent 24 VAC, 100VA, 50/60 Hz Class II transformer

**NOTE:** Transformer must have sufficient rating to cover amperage load.

#### Gases

Suitable for natural, manufactured, mixed gases, liquified petroleum gases, and LP gas-air mixtures.

#### Vent

M420, M520, M620: Vertical vent outlet 1/8" NPT - 12A06 installed

#### NOTICE

Maxitrol vent limiting devices eliminate the need to run vent piping to the outside. Vent limiting devices are designed for use indoors and in spaces where limiting the amount of gas escapement due to diaphragm failure is critical. **Vent limiting devices should not be used outdoors if they are exposed to the environment.** Vent protector 13A15 is available for all outdoor applications to ensure proper vent protection.

### SYSTEM COMPONENTS

<b>SERIES 92 Amplifier</b>	
	A1092
<b>Modulator Valves</b>	
	<i>Pipe Sizes:</i> M420.....3/8" & 1/2" M520.....1/2" & 3/4" M620.....3/4" & 1"
<b>Remote Temperature Selector</b>	
	TD92-0509 - (50° to 90°F)
<b>Discharge Temperature Sensors: use with Mixing Tube</b>	
	TS194Q
<b>Mixing Tubes: use with Sensor</b>	
	<i>Lengths:</i> MT1-9 or 2-9.....9" MT1-12 or 2-12 ..... 12" MT1-23 or 2-23 ..... 23" MT1-28 or 2-28 ..... 28" MT1-57..... 57"
<b>Temperature Sensor</b>	
	TS394-3B-48FQ
<b>OPTIONAL: Room Override Thermostat</b>	
	T115

## SPECIFICATIONS (cont.)

### Ambient Limits

Operating: 32° to 131°F (0° to 55°C)  
Non Operating: -4° to 158°F (-20° to 70°C)

### Modifications

Models M420, M520, M620 are available as “W” models - indicates covered wire terminal connections.

Models M420, M520, M620 are available with side pressure tap for reading outlet pressure - on side opposite of minimum adjustment mechanism.

### Valve Mounting

Valve must be mounted in upright position in horizontal pipe run, downstream of all other controls except high pressure cut-off switch if used.

### Optional T115 Room Override Thermostat

As an optional component, an independent room override adjustment can be provided to permit setting of the override temperature from 0° to 40°F above the TD92 setpoint. The T115 override thermostat senses room temperature and resets the discharge air to a higher temperature whenever the sensed temperature falls below the T115 setting.

The standard configuration is to connect the T115 override thermostat to the TD92 remote temperature dial. In some cases it may be more convenient to connect the T115 to the A1092 amplifier. The T115 may be connected directly by removing the jumper on the amplifier’s input terminal block and connecting the T115 in its place. The jumper must then be installed across the TD92’s override terminals for proper operation. See Wiring Diagrams (Figures 2 - 8).

## VALVE ADJUSTMENT

See Bulletin MMR\_MT\_EN for additional M/MR valve information

**NOTE:** Low Fire Adjustment should be checked whenever High Fire Adjustment is changed.

### High Fire Adjustments

Rotate selector dial to maximum temperature setting.

**NOTE:** Voltage to the valve must be at least 18VDC.

Adjust separate pressure regulator to obtain desired manifold pressure.

### Low Fire Adjustments

Disconnect a wire from M valve terminal block.

**NOTE:** Be careful not to allow wire to come in contact with any other part.

Remove by-pass cap (A) and turn screw (B) using small screwdriver to desired low fire adjustment. (See Figure 1)

**NOTE:** Clockwise Screw rotation reduces flow rate. Do not overtighten.

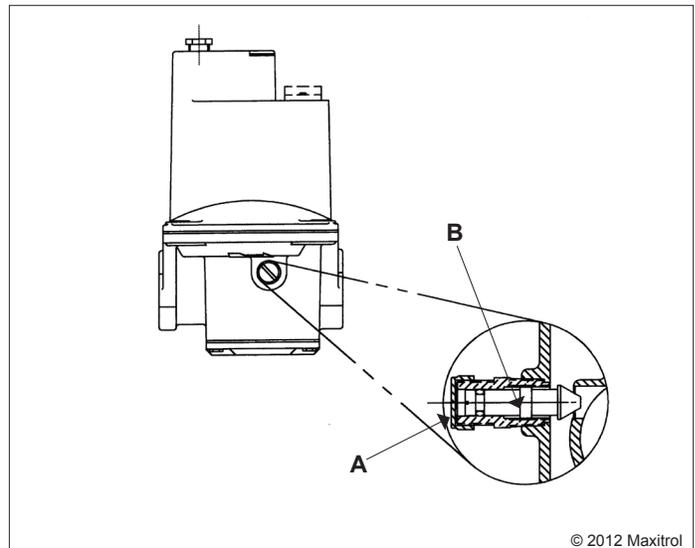


Figure 1: Valve Adjustment

## WIRING DIAGRAMS

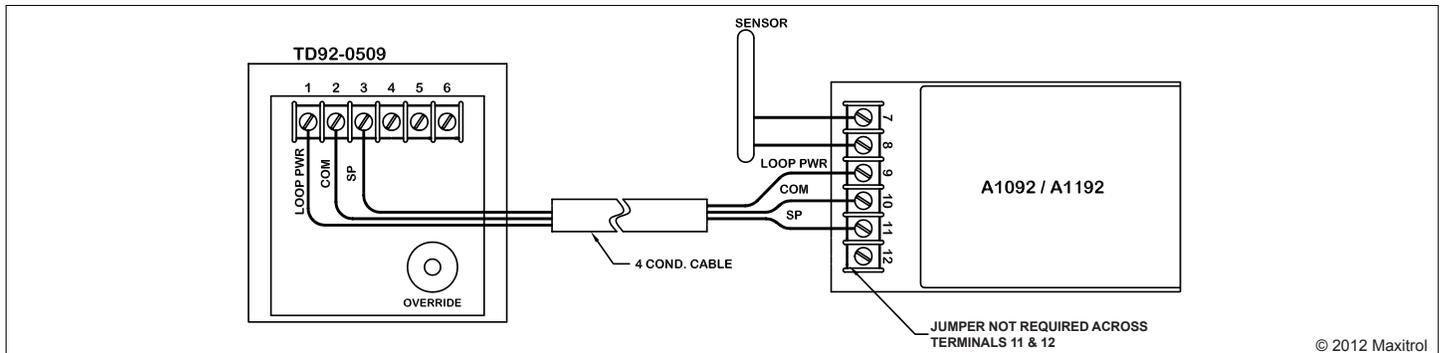


Figure 2: Standard Connection of A1092 without Override Thermostat

WIRING DIAGRAMS (cont.)

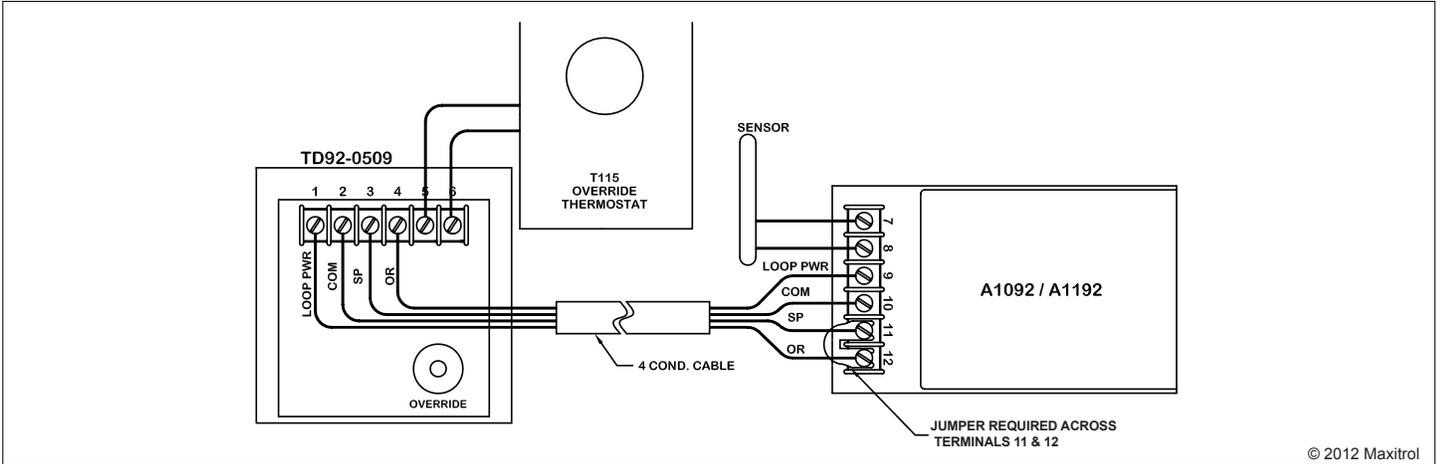


Figure 3: Standard Connection of Override Thermostat to A1092

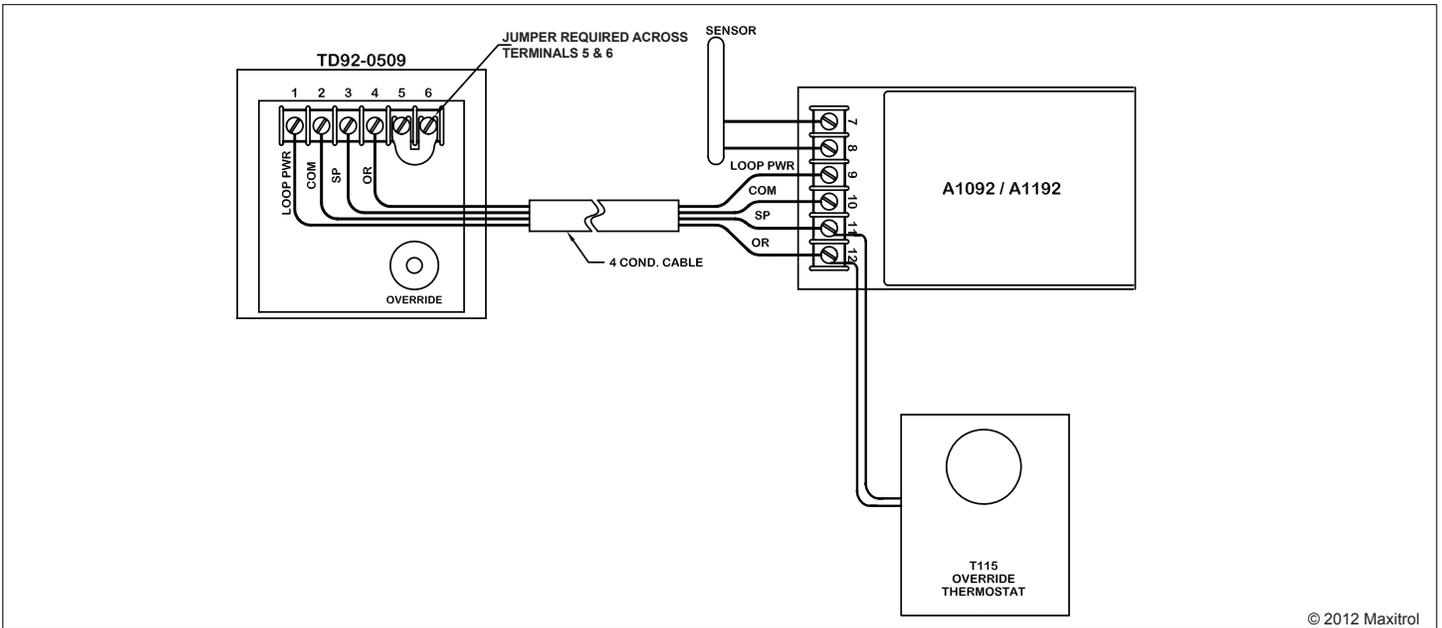


Figure 4: Optional Connection of Override Thermostat to A1092

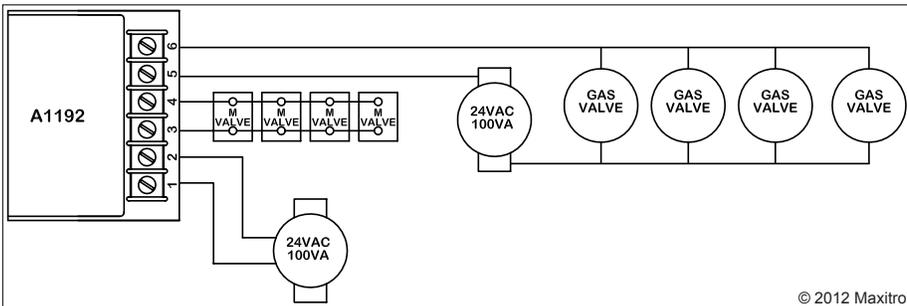


Figure 5: A1192 Independent Power Supply

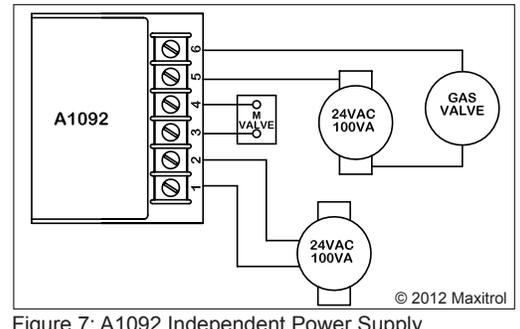


Figure 7: A1092 Independent Power Supply

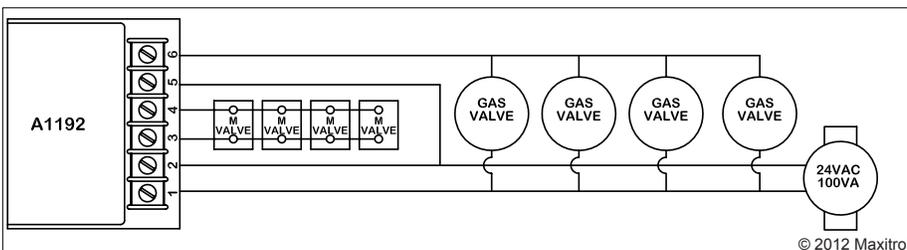


Figure 6: A1192 Common Power Supply

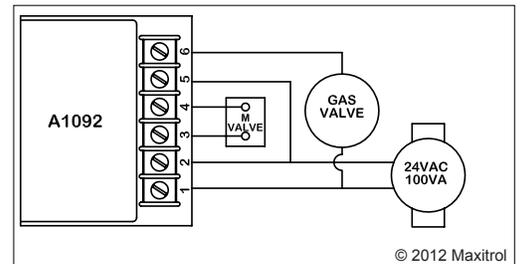


Figure 8: A1092 Common Power Supply

**DIMENSIONS**

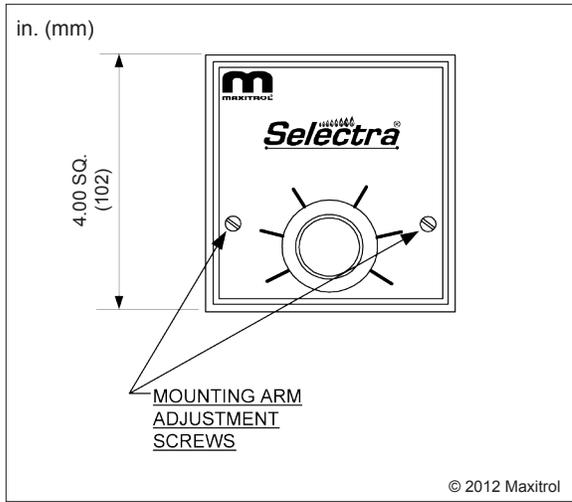


Figure 9: TD92-0509

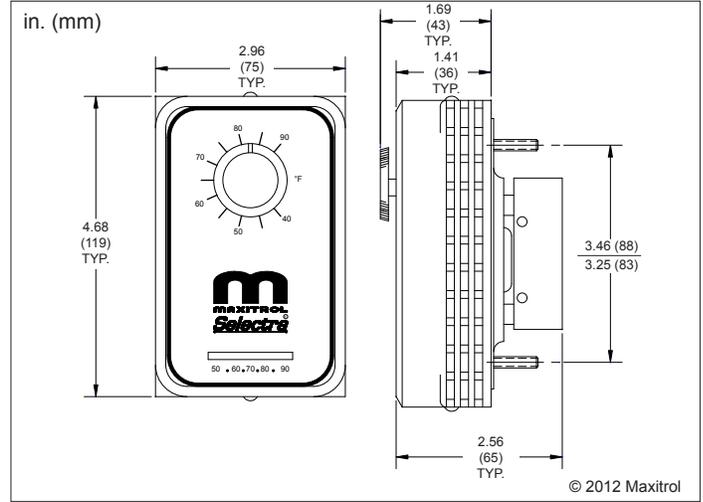


Figure 10: Optional T115 Room Override Thermostat

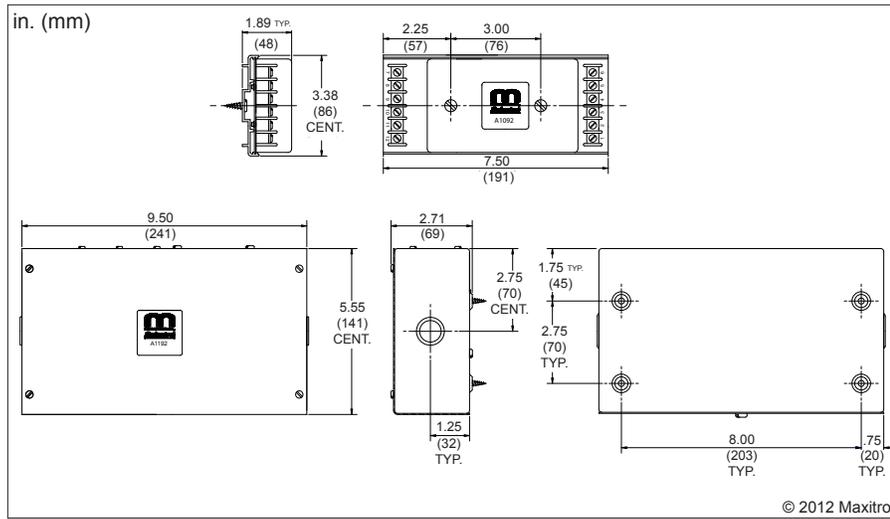


Figure 11: A1092

**Valve Dimensions**

Model Number	Swing Radius	Dimensions			
		A	B	C	D
M420	3.1" (79 mm)	3.9" (100 mm)	2.0" (51 mm)	2.1" (54 mm)	0.9" (24 mm)
M520	4.3" (109 mm)	5.3" (135 mm)	3.25" (83 mm)	3.4" (86 mm)	1.2" (30 mm)
M620	5.7" (146 mm)	7.1" (180 mm)	3.9" (99 mm)	4.0" (102 mm)	1.5" (37 mm)

**NOTE:** Dimensions are to be used only as an aid in designing clearance for the valves. Actual production dimensions may vary somewhat from those shown.

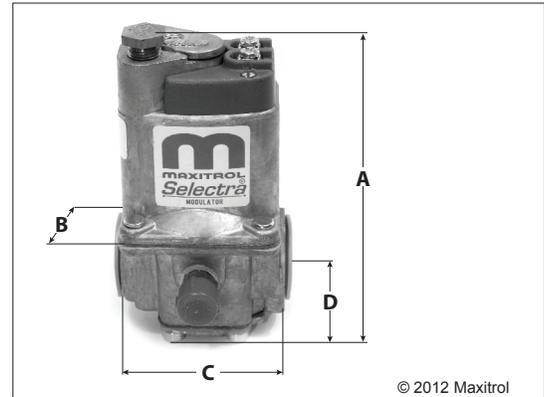


Figure 12: M420, M520, AND 620 Modulating Valves