

W6210A,D and W7210A,D Solid State Economizer Logic Module

PRODUCT DATA



FEATURES

- Operates from the cooling space thermostat to provide a totally integrated control system.
- Solid state control package provides accuracy, reliability and stability.
- Combines solid state enthalpy or dry bulb changeover control, minimum damper position potentiometer and compressor staging relay functions.
- Optional differential enthalpy control provides greater economizer savings than single enthalpy control by selecting the most economical air for cooling. Differential enthalpy control uses two sensor inputs, one in return air and one in outdoor air then economizer control selects the air with the lower enthalpy.
- Housed in high-impact, glass-fiber reinforced plastic case.
- Enthalpy setpoint (A-D) on W6210 and W7210 Solid State Economizer Logic Module controls the combination of air temperature and humidity suitable for free cooling.
- All models include a built-in adjustable potentiometer to set minimum damper position and minimum amount of outdoor air admitted to meet minimum ventilation requirements. Terminals included for connecting optional S963B1128 Remote Minimum Position Potentiometer for remote damper control.
- LED indicates when free cooling is available.
- Mount on the sheet metal duct. Mounting screws included.
- W6210A and W7210A accept inputs from discharge air temperature sensors or mixed air temperature sensors, and C7400 Enthalpy Sensors or C7650A Dry Bulb Temperature Sensors and optional remote minimum position damper potentiometers.
- W6210D and W7210D return to mechanical cooling when outdoor air enthalpy reaches preset high limits.

APPLICATION

W6210A,D and W7210A,D Solid State Economizer™ Logic Modules are used with solid state C7400 Enthalpy Sensors or C7650A Dry Bulb Temperature Sensors and Honeywell Series 62 and Series 72 actuators to proportion outdoor and return air dampers for economizer control in commercial HVAC equipment.

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SPECIFICATIONS

Models: See Table 1.

Dimensions: See Fig. 1.

Electrical Ratings (W6210/W7210 with C7400):

Input Voltage: 24 Vac, 50/60 Hz.

Power Consumption:

W6210: 7 VA

W7210: 4.5 VA.

Relay Contact Rating at 24 Vac: 1.5A run, 3.5A inrush.

Temperature Ratings:

Operating Ambient: -25°F to +125°F (-32°C to +52°C).

Humidity: 5 to 95 percent relative humidity (RH).

Approvals: Underwriters Laboratories Inc.: Flammability Rating UL94V-5V.

W6210D/W7210D Maximum Outdoor Enthalpy Switching:

See Table 2.

Enthalpy Input (C7400):

2-wire (18, 20, 22 AWG) connection.

Can be mounted up to 200 ft (61m) from logic module.

Dry Bulb Temperature Input (C7650A):

Two-wire (18, 20, 22 AWG) connection.

Can be mounted up to 200 ft (61m) from logic module.

Minimum Position Potentiometer:

Resistance: 250 ohms.

Minimum Setting: 0 to 100 percent of motor stroke.

Accessories:

32004783-001 Weather Shield for Economizers.

4074EJM 620 ohm Resistor, Jumper, and 1.2K ohm Checkout Resistor.

C7046A Discharge Air Temperature Sensor.

C7150B Mixed Air Temperature Sensor.

C7400 Solid State Enthalpy Sensor.

C7650A Dry Bulb Temperature Sensor.

T675 or T6031 Remote Bulb Control for low ambient lockout.

S963B1128 Remote Minimum Position Potentiometer to provide remote control of damper position.

ST6008 Energy Management Timer for occupied/unoccupied control.

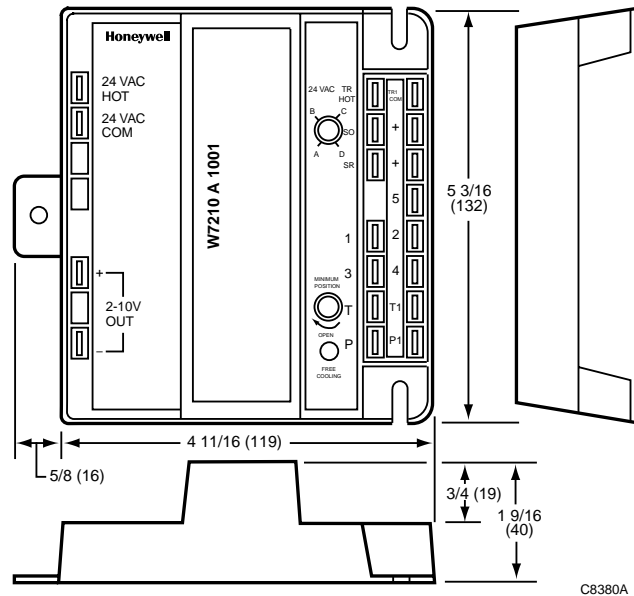


Fig. 1. W6210/W7210 dimensions in in. (mm).
[W7210 shown]

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Relations
Honeywell, 1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

Table 1. W6210 and W7210 Economizer Models.

Model	For Use with Actuator	Discharge Air Temperature Input	Minimum Position Potentiometer Adjustment	Terminals for Remote Minimum Damper Position	Output Relays
W6210A	Honeywell Series 62	C7150B or C7046A Sensor	Yes	Yes	2 spdt
W6210D ^a	Honeywell Series 62	C7150B or C7046A Sensor	Yes	Yes	2 spdt
W7210A	Honeywell Series 72	C7150B or C7046A Sensor	Yes	Yes	2 spdt
W7210D ^a	Honeywell Series 72	C7150B or C7046A Sensor	Yes	Yes	2 spdt

^a W6210D and W7210D have high enthalpy limit and default to mechanical cooling when outdoor enthalpy reaches the preset limit. Do not use a dry bulb sensor for high temperature limit. See Fig. 16 through 18 for parallel wiring options.

Table 2. W6210, W7210D Free Cooling Mode Switching.

Outdoor RH (percent)	Into Free Cooling (LED On) on Decreasing Outdoor Enthalpy	Out of Free Cooling (LED Off) on Increasing Outdoor Enthalpy
25	83°F±0.5°F	85°F±0.5°F
50	78°F±0.5°F	80°F±0.5°F
60	76°F±0.5°F	78°F±0.5°F
75	73°F±0.5°F	75°F±0.5°F

Location and Mounting

W6210/W7210 Economizer Control Package

W6210 and W7210 Economizers mount directly on the sheet metal duct. They can also be panel mounted. When planning the installation, allow enough clearance for maintenance and service. Mount W6210/W7210 Economizer Control Packages in a location protected from rain and snow. Secure the W6210/W7210 to the sheet metal using three mounting screws (supplied). See Fig. 2.

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

IMPORTANT

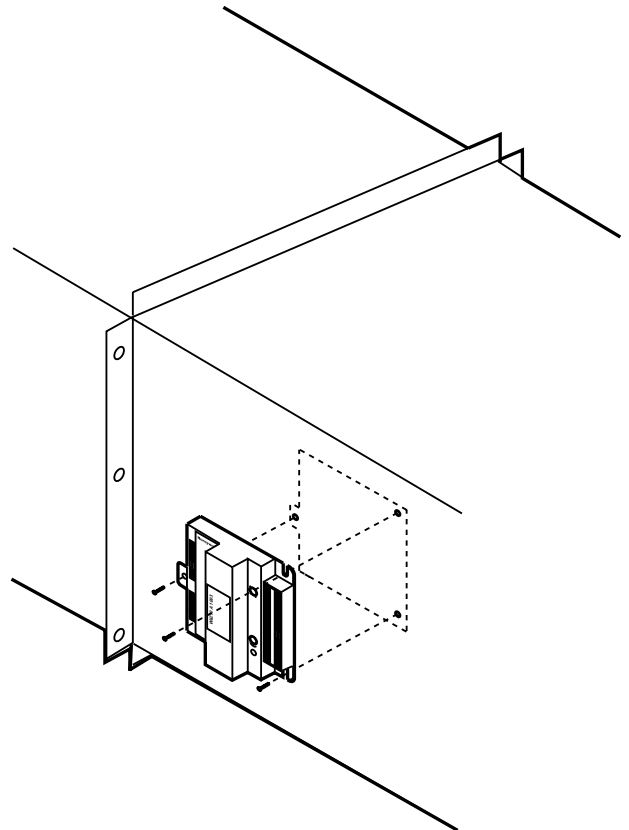
All wiring must agree with applicable codes, ordinances and regulations.



CAUTION

Electrical Shock or Equipment Damage Hazard. Can shock individuals or short equipment circuitry.

Disconnect all power supplies before installation. Motors with auxiliary switches can have more than one disconnect.



C8381A

Fig. 2. Mounting W6210/7210 on sheet metal.

C7400 Enthalpy Sensor

OUTDOOR AIR SENSING

1. Mount the C7400 Enthalpy Sensor in any orientation where it is exposed to freely circulating air and protected from rain, snow, and direct sunlight.
2. Connect it to the S_O and + terminals of the W6210A,D or W7210A,D.

RETURN AIR SENSING

1. Differential enthalpy control requires a second C7400 Enthalpy Sensor in the return air duct.
2. Connect this sensor to the S_R and + terminals of the W6210A,D or W7210A,D.

C7650A Dry Bulb Temperature Sensor

IMPORTANT

Do not use the C7650A with the W6210D or W7210D.

OUTDOOR AIR SENSING

1. Mount the C7650A Dry Bulb Sensor in any orientation that exposes it to freely circulating air and protects it from rain, snow, and direct sunlight.
2. Connect it to the S_O and + terminals of the W6210A or W7210A.

RETURN AIR SENSING

1. Differential dry bulb control requires a second C7650A Dry Bulb Temperature Sensor in the return air duct.
2. Connect it to the S_R and + terminals of the W6210A or W7210A.

Wiring



CAUTION

Electrical Shock or Equipment Damage Hazard. Can shock individuals or short equipment circuitry.

Disconnect all power supplies before installation. Motors with auxiliary switches can have more than one disconnect.

IMPORTANT

All wiring must comply with applicable local codes, ordinances and regulations.

NOTE: Refer to Fig. 7 through 20 for typical wiring diagrams.

Table 3. Applicable Wiring Diagrams.

Logic Module	Actuator	Enthalpy Changeover	Figure	Comments
W6210A,D	Honeywell Series 62	Single	7	Single-stage cooling system
			9	Two-stage cooling system
		Single or Differential	11	Single-stage cooling system
			13	T7400/W7400 System
W7210A,D	Honeywell Series 72	Single	8	Single-stage cooling system
			10	Two-stage cooling system
		Single or Differential	12	Single-stage cooling system
			14	T7400/W7400 System
			15	T775 Controller
ALL	n/a	n/a	19	W7100 Controller
			20	W973 Logic Panel
			3	S963 remote damper control
Parallel Wiring				
W7210A,D	Honeywell Series 72	Single or Differential	16	Honeywell Series 72 Direct Coupled Actuators
			17	Honeywell Series 72 Modutrol Motors
	Honeywell M7415		18	M7415 Motors

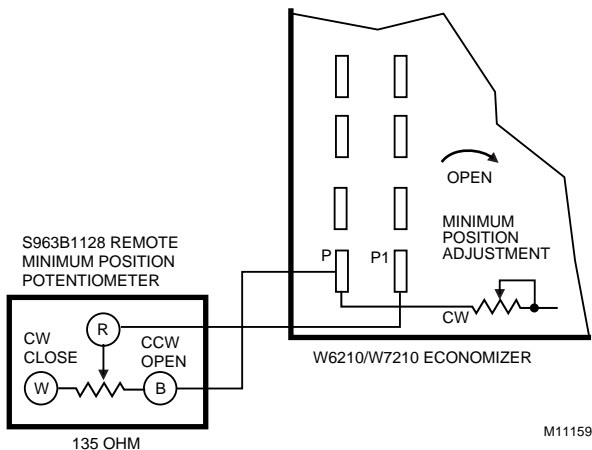


Fig. 3. S963B1128 Remote Minimum Position Potentiometer used with W6210/W7210 for remote damper control.

Optional Applications

Remote Minimum Position Control

Remote control of outdoor air dampers is desirable when temporary additional ventilation is required. The potentiometer in the W6210/W7210 controls the minimum position of the dampers. The addition of an S963B1128 Remote Minimum Position Potentiometer allows occupants to open dampers beyond minimum position for additional ventilation. Connect the potentiometer as shown in Fig. 3.

SETTINGS AND ADJUSTMENTS

Potentiometers with screwdriver adjustment slots, located on the face of the device, provide adjustments for minimum damper position and enthalpy changeover. See Fig. 4.

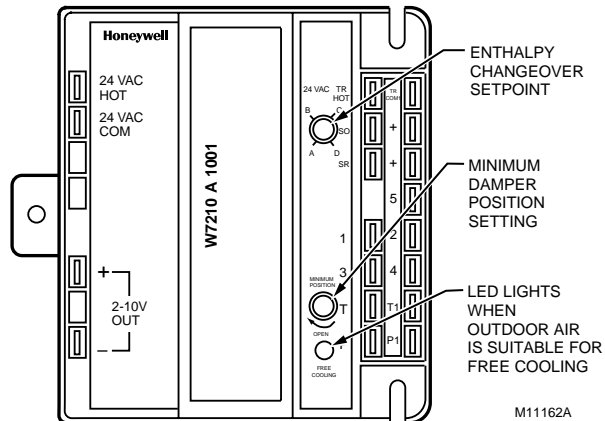


Fig. 4. Location of enthalpy setpoint potentiometer, minimum position potentiometer and LED.(W7210 shown)

Adjusting Minimum Damper Position

The minimum position potentiometer keeps the outdoor air damper from closing completely during system operation to provide ventilation.


Minimum Position Adjustment

1. Disconnect mixed air sensor from terminals T and T1.
2. Make sure either the factory-installed jumper is in place across terminals P and P1 or, if remote damper position is required, that it is wired according to Fig. 3 and turned fully clockwise .
3. Connect 24 Vac across terminals TR and TR1.
4. Adjust the potentiometer on the W6210/W7210 face with a screwdriver for desired minimum position.

Outdoor Enthalpy Changeover Setpoint

The outdoor enthalpy changeover setpoint returns the outdoor air damper to minimum position when enthalpy rises above its setpoint. Enthalpy setpoint scale markings, located in the W6210/W7210, are A, B, C, and D. See Fig. 6 for the corresponding control point. The factory-installed 620 ohm jumper must be in place across terminals S_R and +.

Differential Enthalpy Changeover Setting

Differential enthalpy control uses two C7400 Enthalpy Sensors connected to one economizer module. The economizer compares outdoor air to the return air instead of to a set point (as with single enthalpy). Turn the setpoint potentiometer fully clockwise  to the D setting. The economizer selects the lower enthalpy air (return or outdoor) for cooling; for example, when outdoor air has lower enthalpy than return air, the outdoor air damper opens to bring in outdoor air for free cooling.

High Enthalpy Limit

W6210D and W7210D Economizer Logic Modules have a high outdoor air enthalpy limit feature when used in differential enthalpy mode. The limit feature prevents using high enthalpy outdoor air when return air enthalpy is higher than that of outdoor air (see Table 2).

Integrated Economizer System (Fig. 5)

Operation: Single (Outdoor) Enthalpy

The purpose of an economizer is to use outdoor air for cooling, whenever possible, to reduce compressor operation.

The W6210/W7210 Economizer System, when wired as shown in Fig. 7 through 14, responds to a signal from the cooling thermostat. This system uses Solid State C7400 Enthalpy Changeover Sensor or the C7650A Dry Bulb Temperature Sensor. The C7400 responds to both dry bulb temperature and humidity, allowing use of outdoor air at

higher temperatures for free cooling when humidity is low. The C7650A responds to only dry bulb temperature and should be used only in dry, arid climates.

The economizer functions as a true first stage of cooling and provides maximum fuel economy during the cooling cycle. The economizer is automatically locked out during heating. It holds the outdoor air damper at the minimum position setting.

When the space thermostat calls for cooling, the system operates as follows:

Outdoor Air Enthalpy Is Below Setpoint

1. The outdoor air damper is proportioned open (and the return air damper is proportioned closed) to maintain between 50°F and 56°F at the mixed/discharge air sensor.
2. During economizer operation, mechanical cooling is operated by the second stage of cooling on the space thermostat.

Outdoor Air Enthalpy Is Above Setpoint

1. The outdoor air damper closes to its minimum position.
2. A call for cooling from the space thermostat brings on mechanical cooling.
3. During the unoccupied period, the actuator spring return moves the outdoor air damper to the fully closed position.

NOTE: See Fig. 5 for representative locations of economizer system devices.

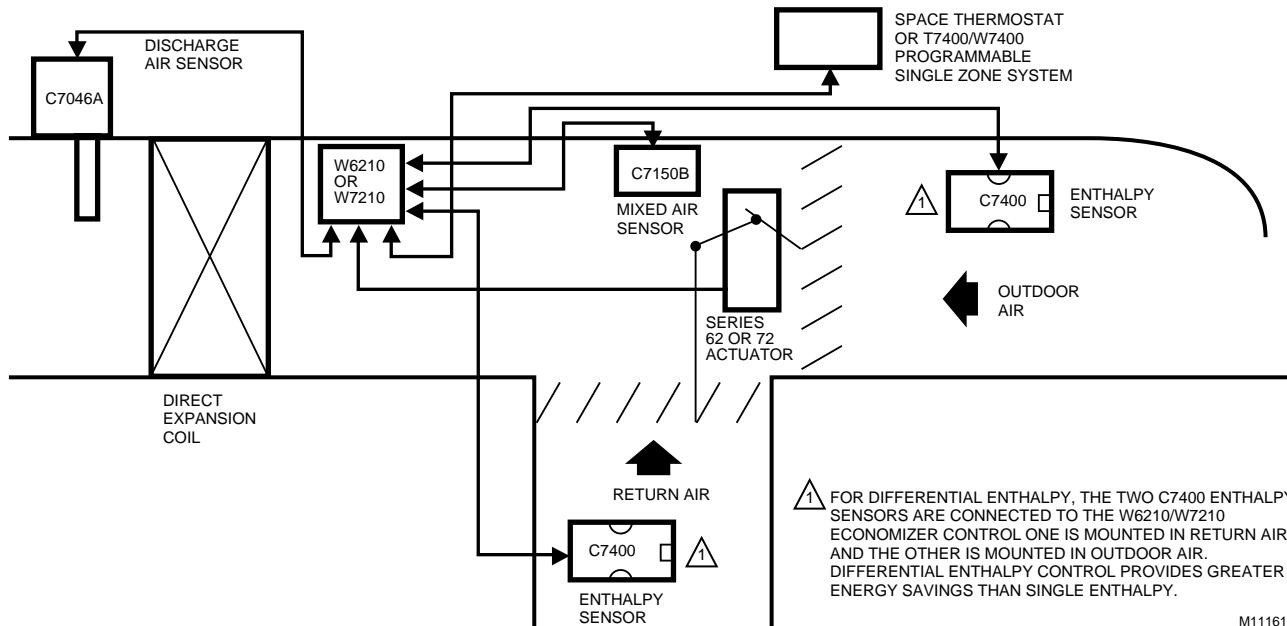


Fig. 5. Location of C7400 Outdoor and Return Air Sensors, C7150 Mixed Air Sensor, and C7046 Discharge Air Sensor in an economizer system.

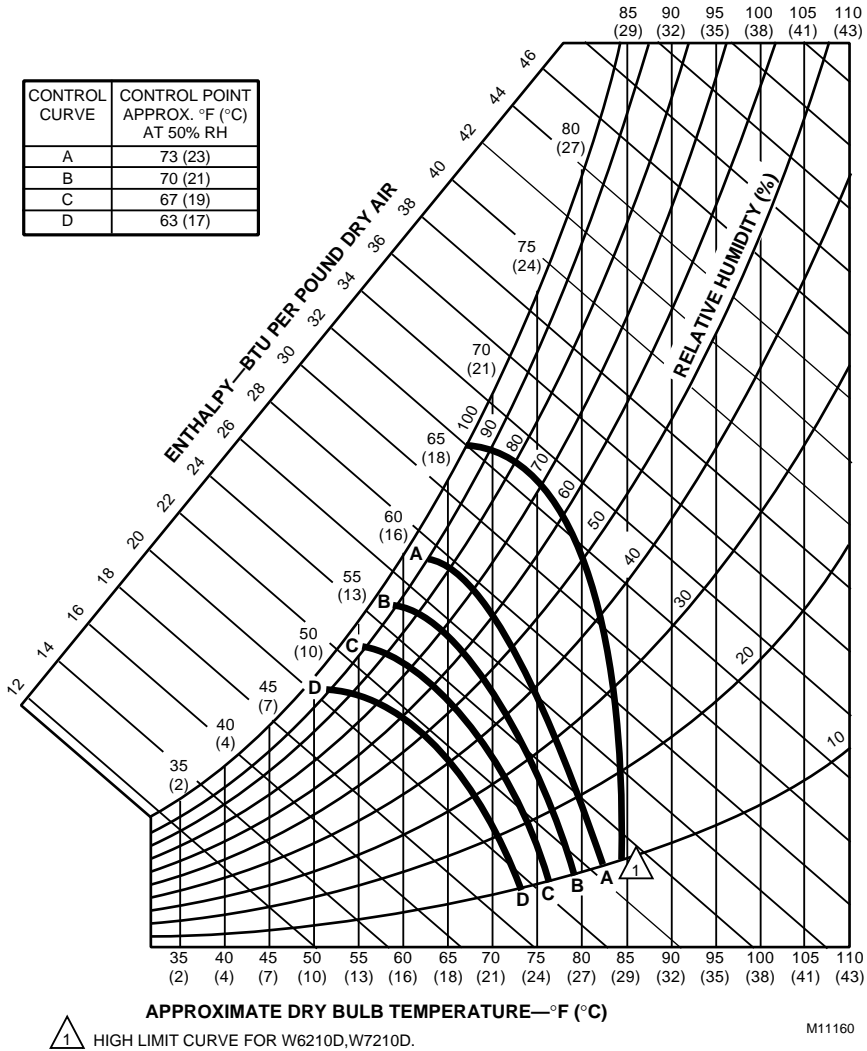
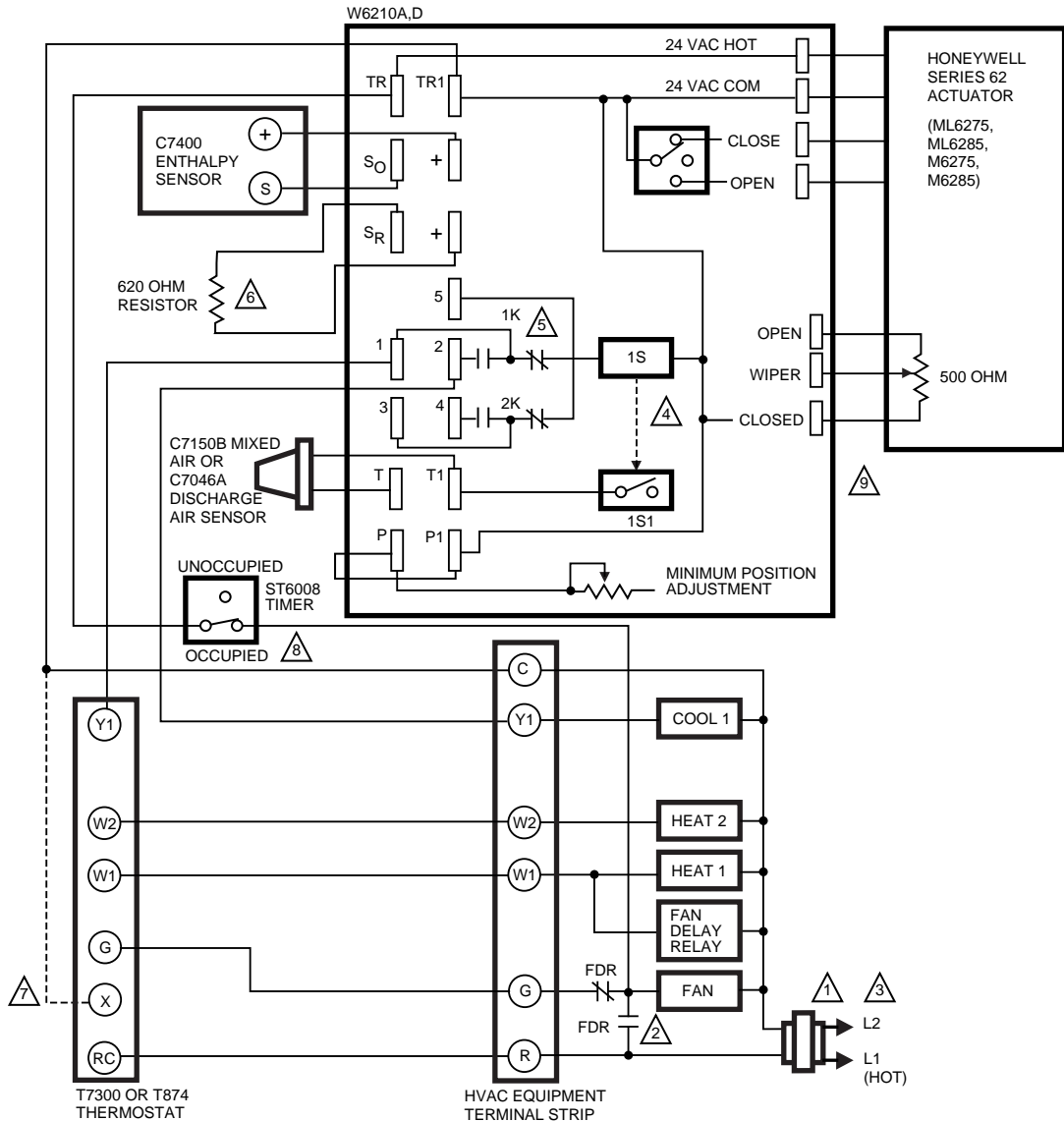


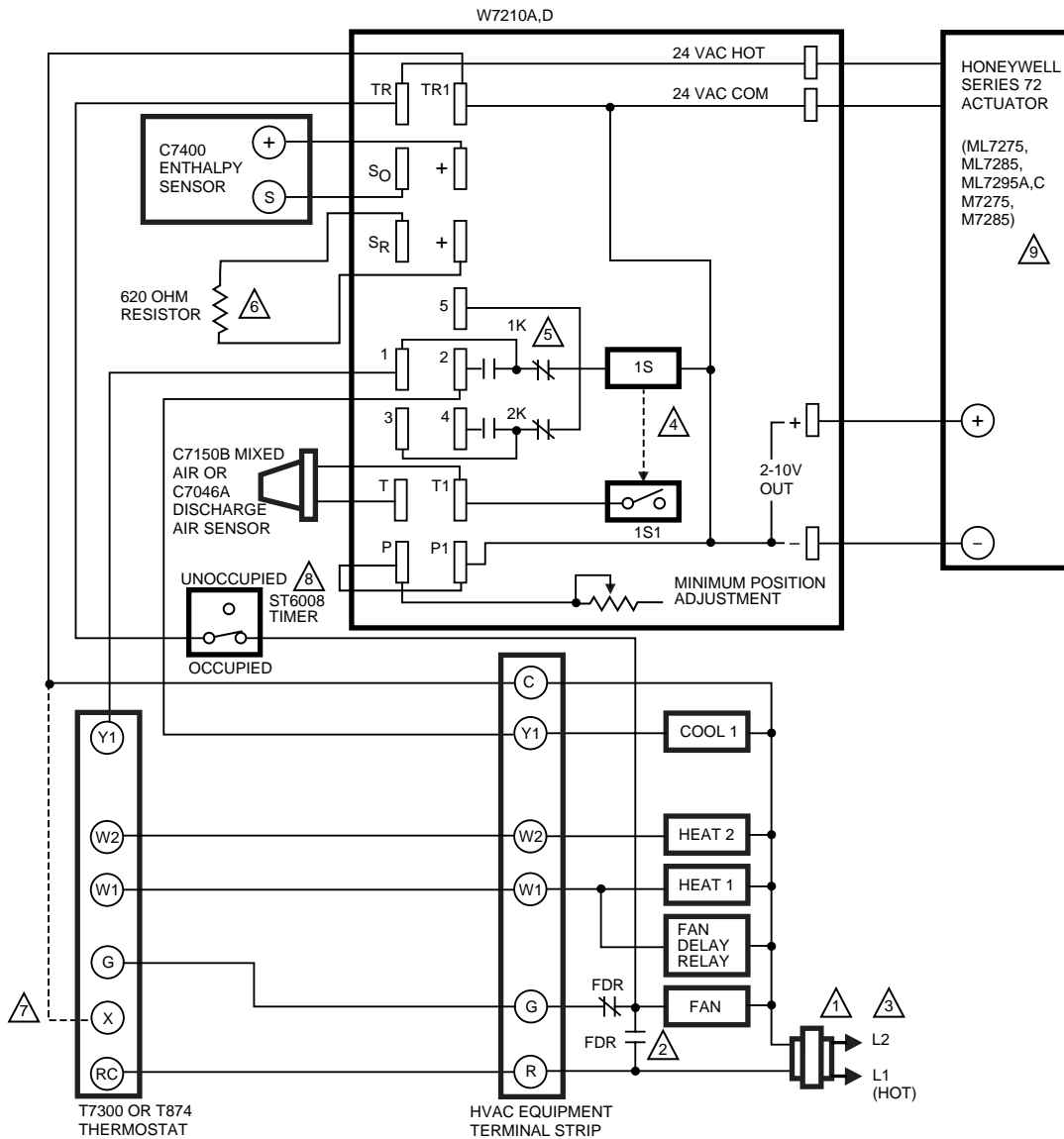
Fig. 6. W6210 and W7210/C7400 performance characteristics for enthalpy changeover settings.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED TO HANDLE THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
- 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD NOT BE REMOVED. DIFFERENTIAL ENTHALPY NOT RECOMMENDED FOR USE WITH SINGLE STAGE COOLING THERMOSTAT.
- 7 FOR T7300 ONLY.
- 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.
- 9 THE COMMON FOR THE W6210A,D IS DIFFERENT FROM THE COMMON (WIPER) FOR THE SERIES 62 ACTUATORS. BE SURE TO CONNECT EACH ONE TO A DIFFERENT CIRCUIT.

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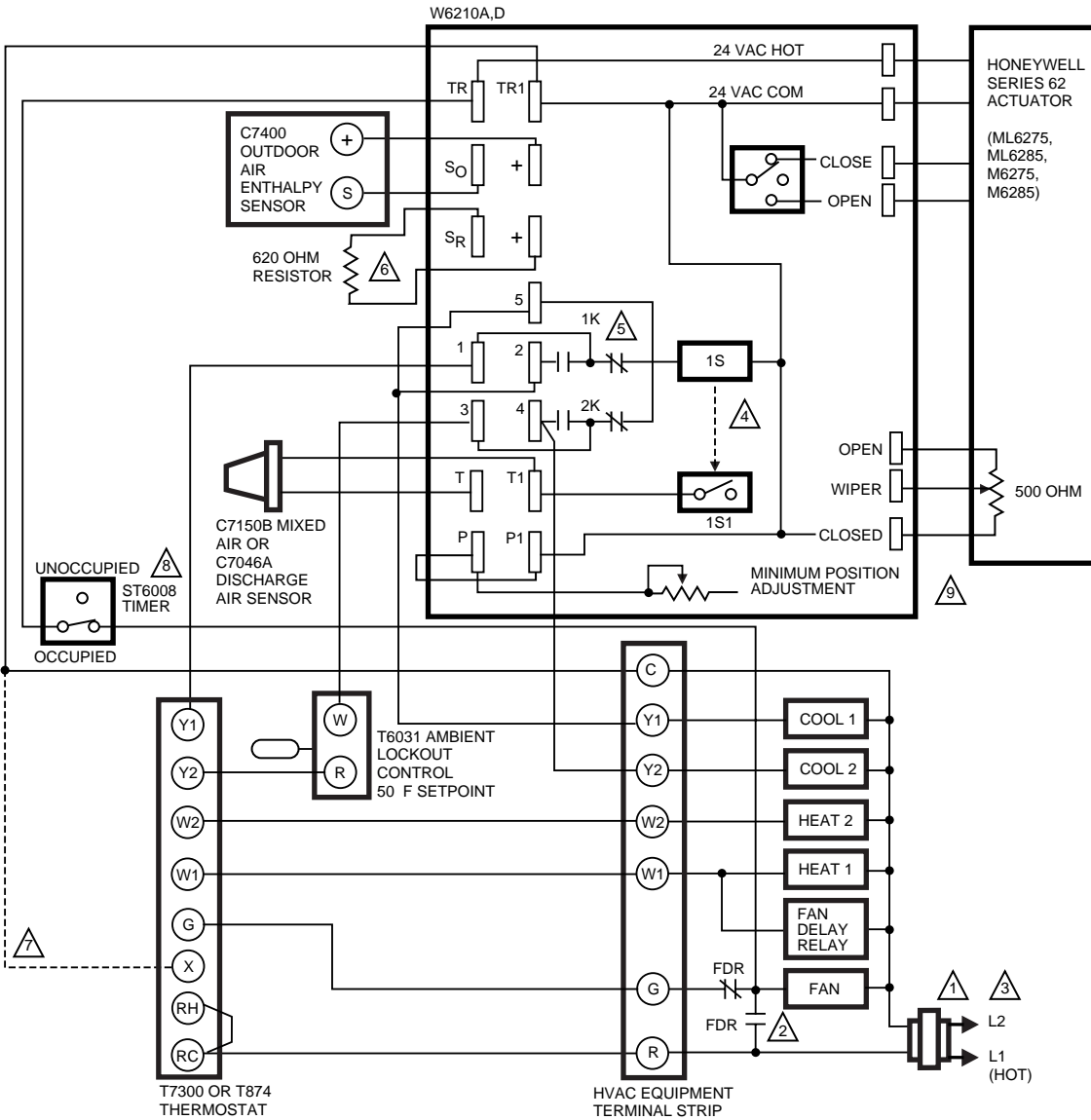
Fig. 7. W6210A,D used in single-stage cooling system with single enthalpy changeover and Honeywell Series 62 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED TO HANDLE THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
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- 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD NOT BE REMOVED. DIFFERENTIAL ENTHALPY NOT RECOMMENDED FOR USE WITH SINGLE STAGE COOLING THERMOSTAT.
- 7 FOR T7300 ONLY.
- 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.
- 9 FOR THE ML7295A,C USE THE 4-20 MA MODEL ACTUATOR. THESE MODELS HAVE 500 OHM INPUT IMPEDENCE, WHICH ALLOWS THE ACTUATOR TO ACCEPT A 2-10 VDC SIGNAL.

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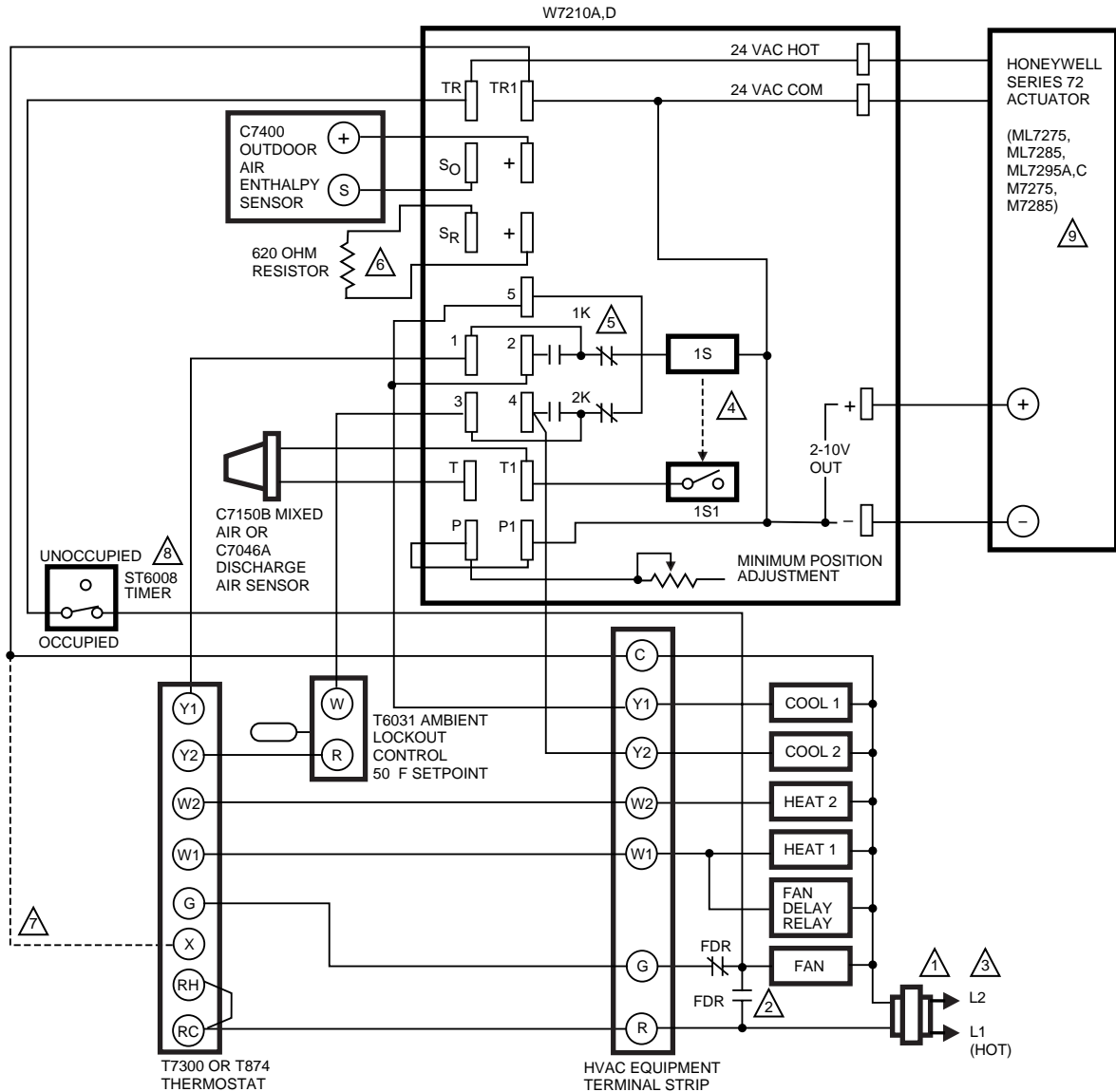
Fig. 8. W7210A,D used in single-stage cooling system with single enthalpy changeover and Honeywell Series 72 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED TO HANDLE THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
- 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD BE REMOVED ONLY WHEN A C7400 ENTHALPY SENSOR IS ADDED TO S_R AND + FOR DIFFERENTIAL ENTHALPY.
- 7 FOR T7300 ONLY.
- 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.
- 9 THE COMMON FOR THE W6210A,D IS DIFFERENT FROM THE COMMON (WIPER) FOR THE SERIES 62 ACTUATORS. BE SURE TO CONNECT EACH ONE TO A DIFFERENT CIRCUIT.

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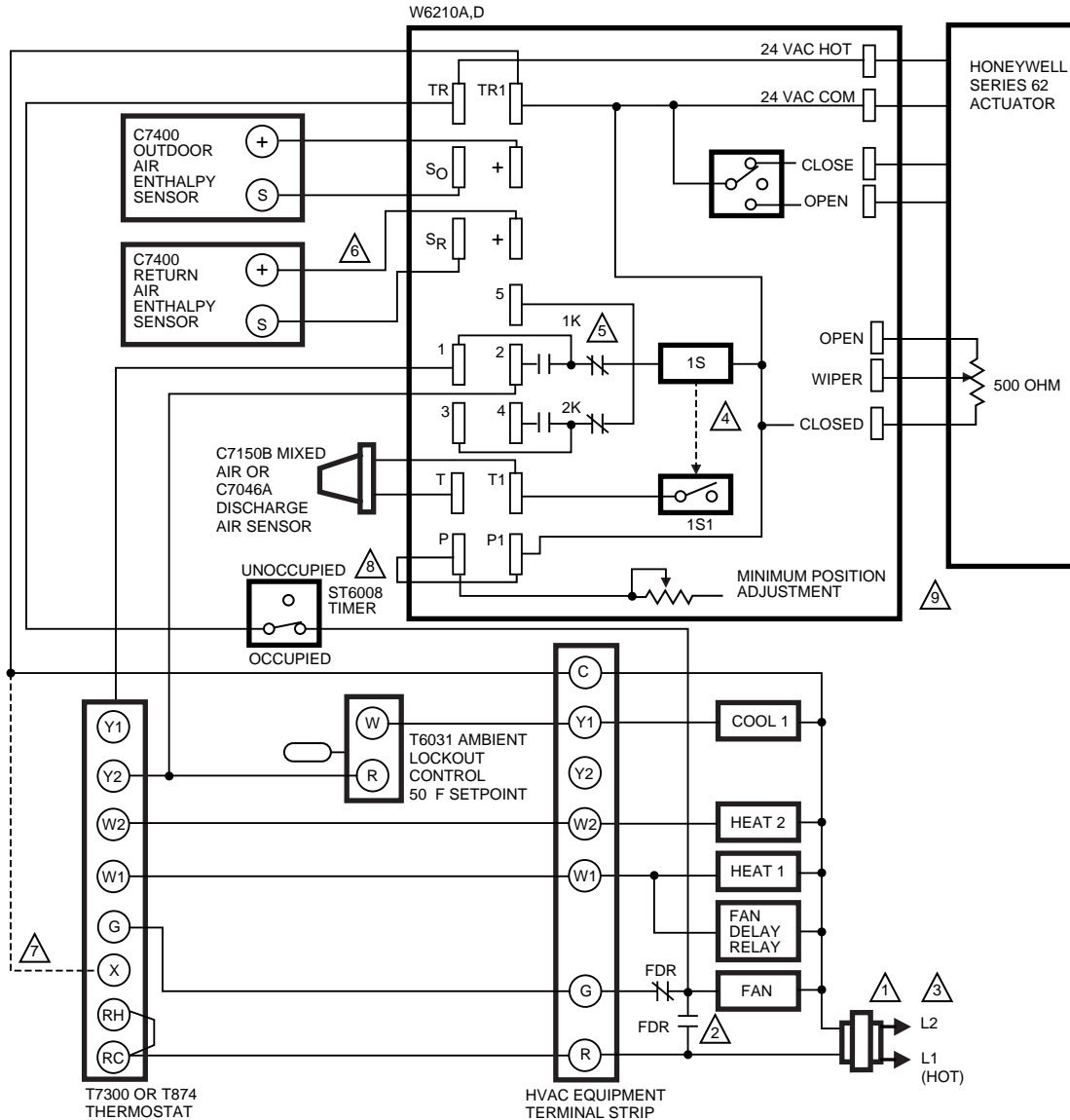
Fig. 9. W6210A,D used in two-stage cooling system with single enthalpy changeover and Honeywell Series 62 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
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- 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
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- 7 FOR T7300 ONLY.
- 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.
- 9 FOR THE ML7295A,C USE THE 4-20 MA MODEL ACTUATOR. THESE MODELS HAVE 500 OHM INPUT IMPEDENCE, WHICH ALLOWS THE ACTUATOR TO ACCEPT A 2-10 VDC SIGNAL.

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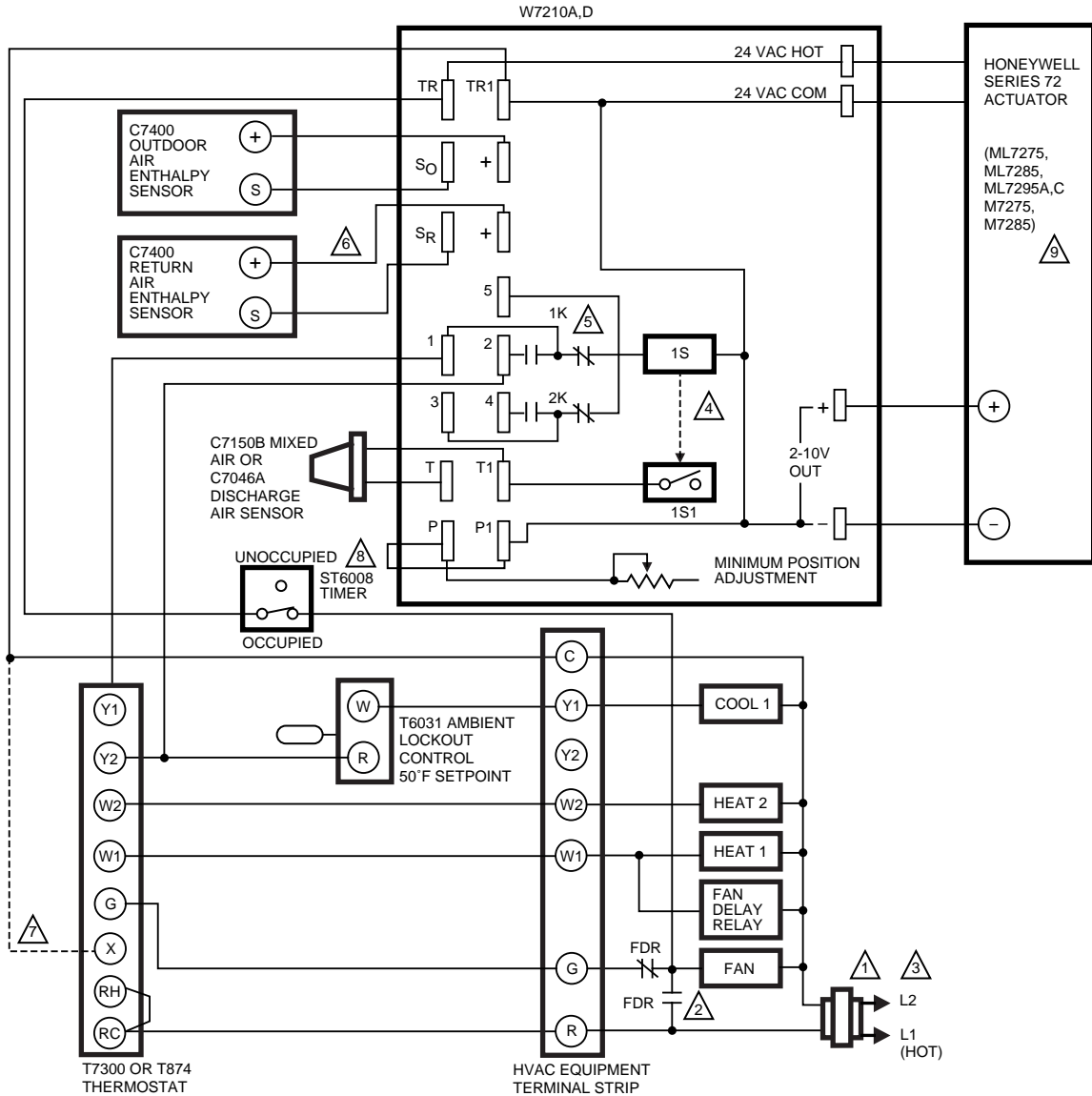
Fig. 10. W7210A,D used in two-stage cooling system with single enthalpy changeover and Honeywell Series 72 Actuator.



- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- ⚠️ 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED TO HANDLE THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
- ⚠️ 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- ⚠️ 5 RELAYS 1K AND 2K ACTUATE WHEN THE OUTDOOR AIR ENTHALPY IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- ⚠️ 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD BE REMOVED ONLY WHEN A C7400 ENTHALPY SENSOR IS ADDED TO S_R AND + FOR DIFFERENTIAL ENTHALPY.
- ⚠️ 7 FOR T7300 ONLY.
- ⚠️ 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.
- ⚠️ 9 THE COMMON FOR THE W6210A,D IS DIFFERENT FROM THE COMMON (WIPER) FOR THE SERIES 62 ACTUATORS. BE SURE TO CONNECT EACH ONE TO A DIFFERENT CIRCUIT.

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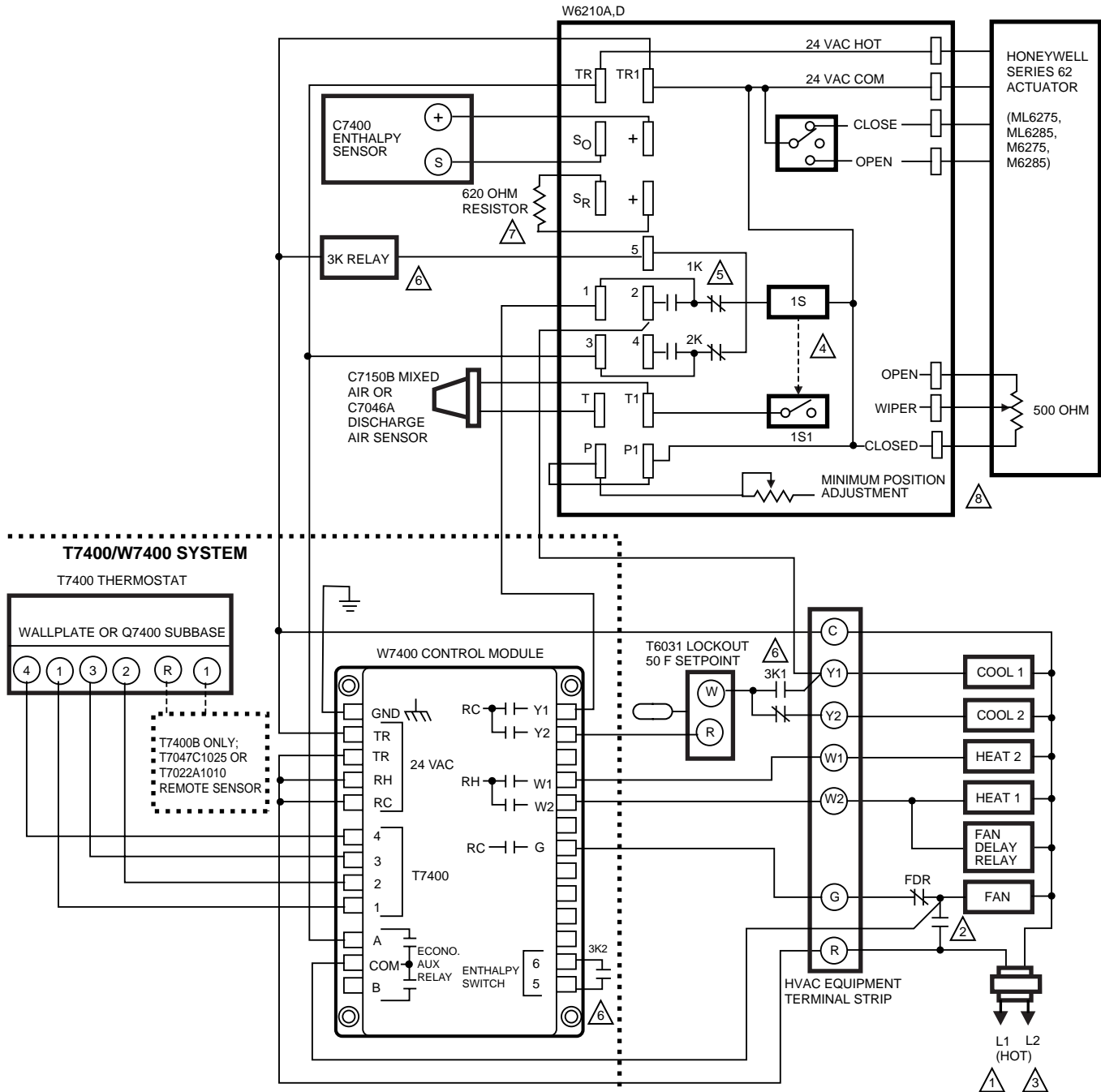
Fig. 11. W6210A,D used in single-stage cooling system with differential enthalpy changeover and Honeywell Series 62 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED TO HANDLE THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
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- 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.
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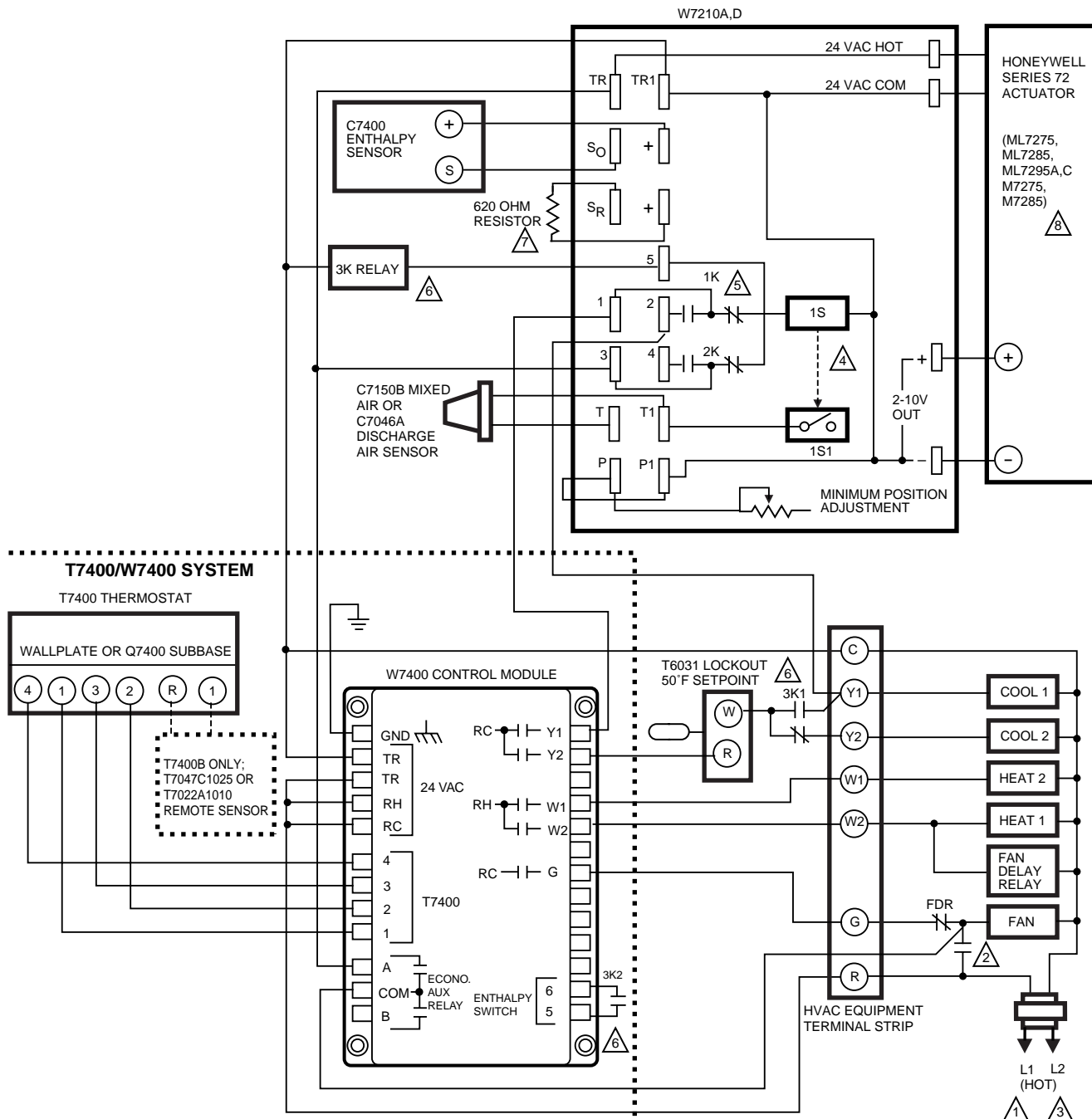
Fig. 12. W7210A,D used in single-stage cooling system with differential enthalpy changeover and Honeywell Series 72 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED TO HANDLE THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
- 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- 6 USE R8222N WITH PILOT DUTY CONTACTS FOR 3K. CONTACTS 3K1, 3K2 MAKE WHEN ENTHALPY IS BELOW SETPOINT AND ECONOMIZER IS USED FOR FIRST STAGE OF COOLING.
- 7 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD BE REMOVED ONLY WHEN A C7400 ENTHALPY SENSOR IS ADDED TO S_R AND + FOR DIFFERENTIAL ENTHALPY.
- 8 THE COMMON FOR THE W6210A,D IS DIFFERENT FROM THE COMMON (WIPER) FOR THE SERIES 62 ACTUATORS. BE SURE TO CONNECT EACH ONE TO A DIFFERENT CIRCUIT.

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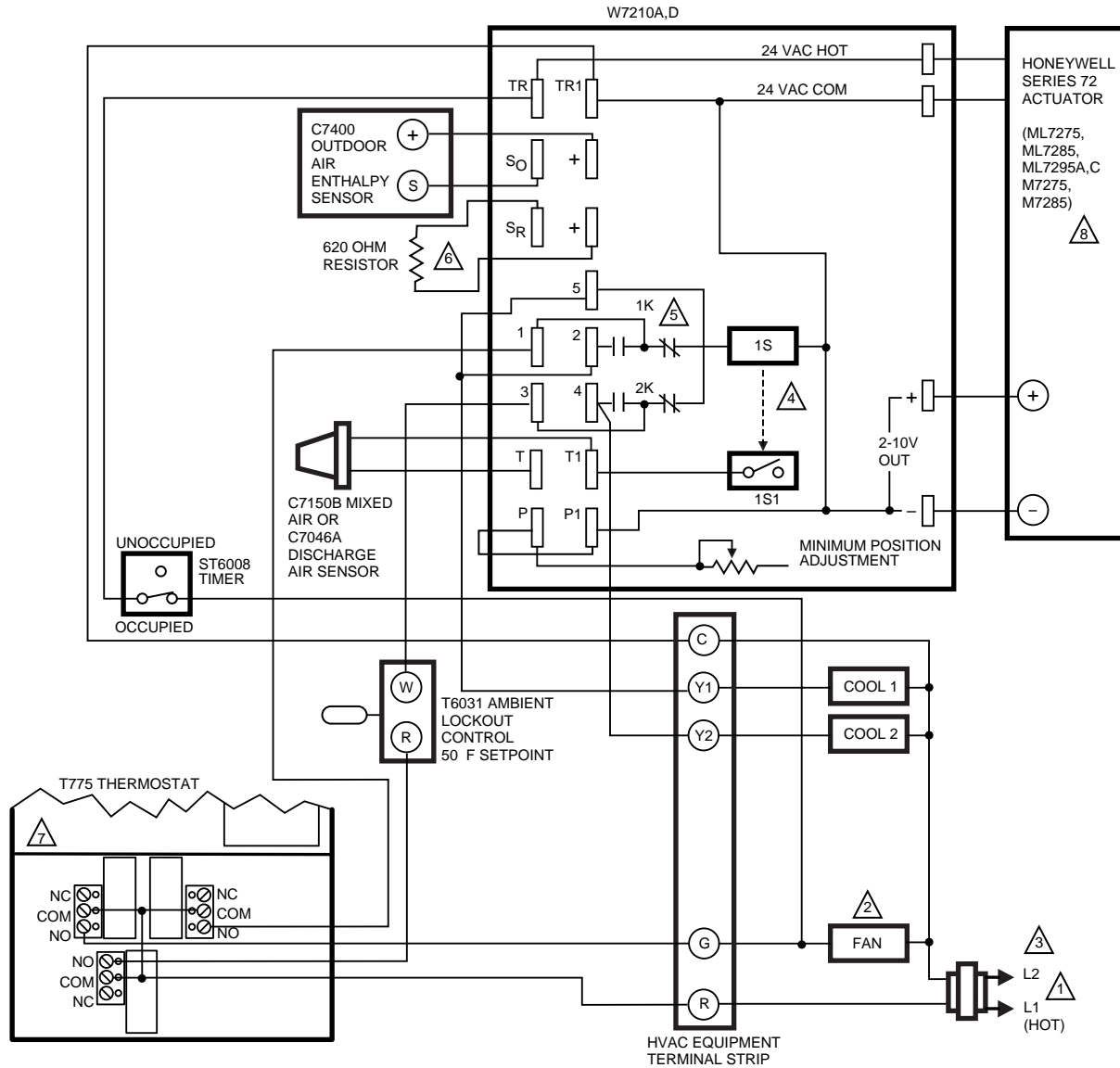
Fig. 13. W6210A,D used with T7400/W7400 System and Honeywell Series 62 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
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- 7 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD BE REMOVED ONLY WHEN A C7400 ENTHALPY SENSOR IS ADDED TO S_R AND + FOR DIFFERENTIAL ENTHALPY.
- 8 FOR THE ML7295A,C USE THE 4-20 MA MODEL ACTUATOR. THESE MODELS HAVE 500 OHM INPUT IMPEDENCE, WHICH ALLOWS THE ACTUATOR TO ACCEPT A 2-10 VDC SIGNAL.

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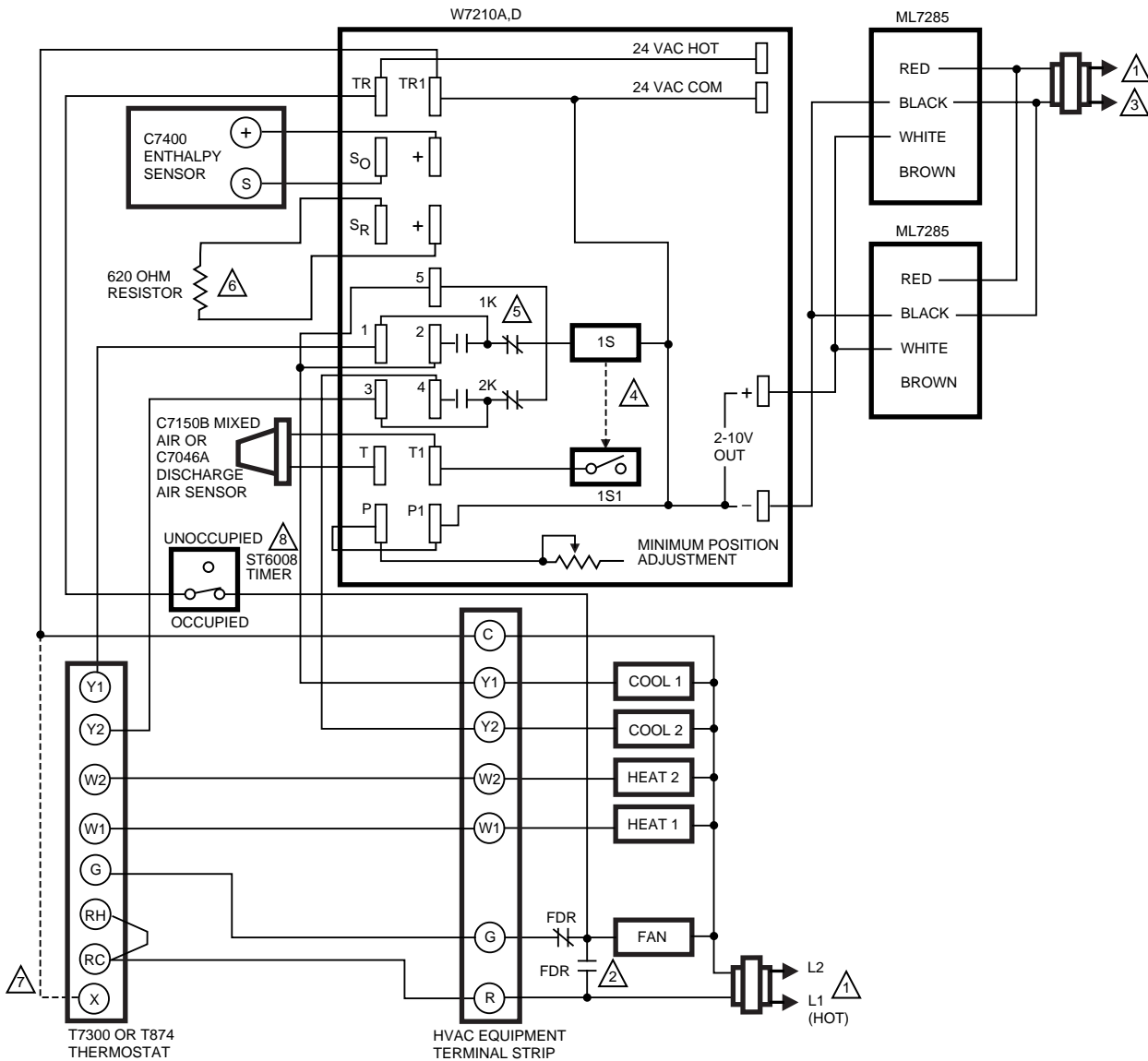
Fig. 14. W7210A,D used with T7400/W7400 System and Honeywell Series 72 Actuator.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT EQUIPMENT TRANSFORMER IS SIZED FOR THE EXTRA LOAD OF THE ECONOMIZER AND ACTUATOR.
- 4 1S IS AN ELECTRONIC SWITCH, WHICH CLOSES WHEN POWERED BY A 24 VAC INPUT.
- 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD BE REMOVED ONLY IF A C7400 ENTHALPY SENSOR IS ADDED TO S_R AND + FOR DIFFERENTIAL ENTHALPY.
- 7 T775 REQUIRES A MINIMUM OF THREE RELAY OUTPUTS: TWO FOR COOLING AND ONE FOR FAN CONTROL. A MAXIMUM OF ONE STAGE OF HEATING IS POSSIBLE WHEN THE SYSTEM IS WIRED IN THIS FASHION.
- 8 FOR THE ML7295A,C USE THE 4-20 MA MODEL ACTUATOR. THESE MODELS HAVE 500 OHM INPUT IMPEDENCE, WHICH ALLOWS THE ACTUATOR TO ACCEPT A 2-10 VDC SIGNAL.

M15298

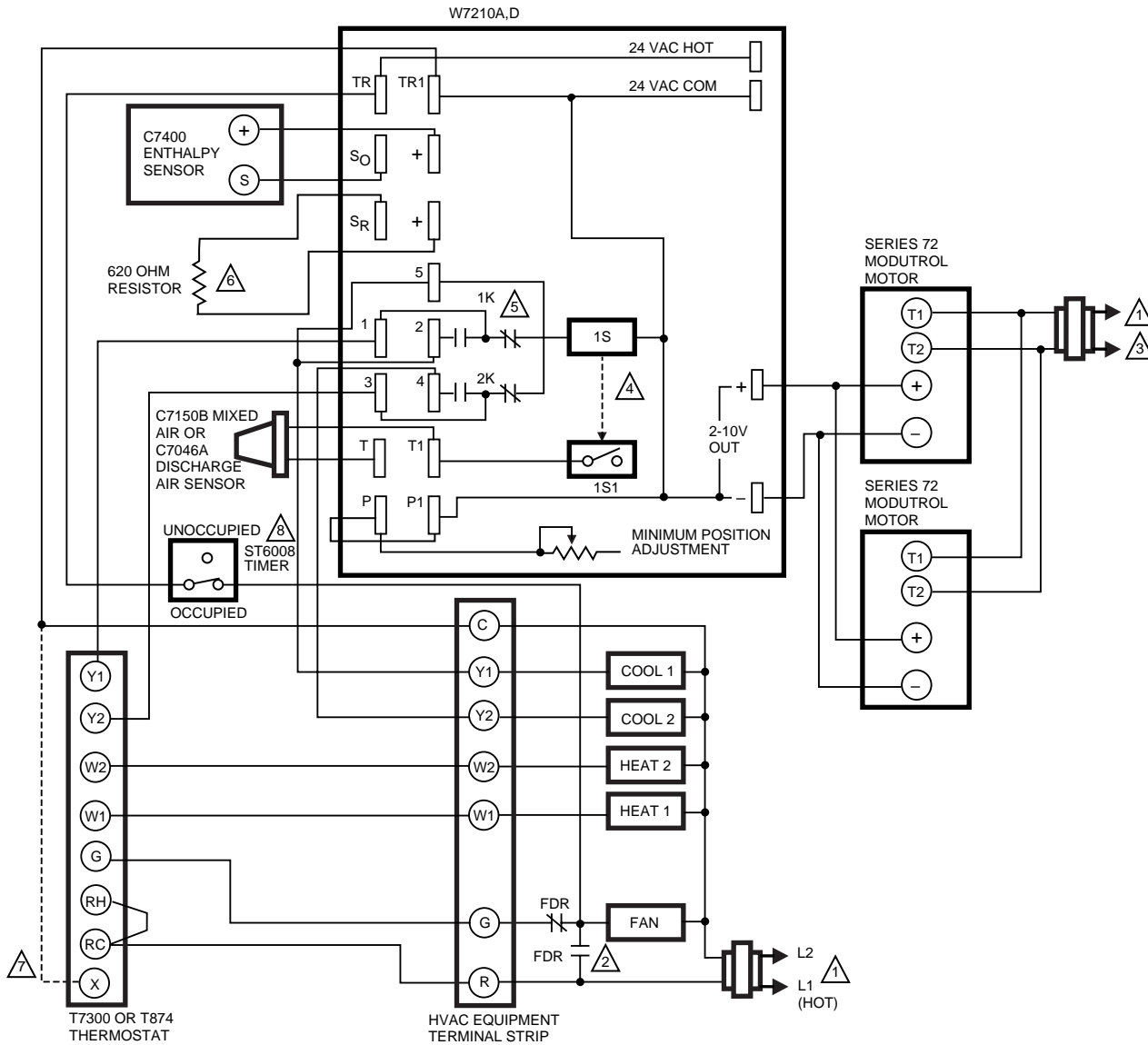
Fig. 15. W7210A,D used with T775 Controller and Honeywell Series 72 Actuator.



- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- ⚠️ 3 ENSURE THAT TRANSFORMER IS SIZED TO HANDLE THE LOAD OF ALL ACTUATORS.
- ⚠️ 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- ⚠️ 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- ⚠️ 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD NOT BE REMOVED. DIFFERENTIAL ENTHALPY NOT RECOMMENDED FOR USE WITH SINGLE STAGE COOLING THERMOSTAT.
- ⚠️ 7 FOR T7300 ONLY.
- ⚠️ 8 FOR T7300, USE CONTACTS A1 AND A2 INSTEAD OF THE TIMER.

M15299

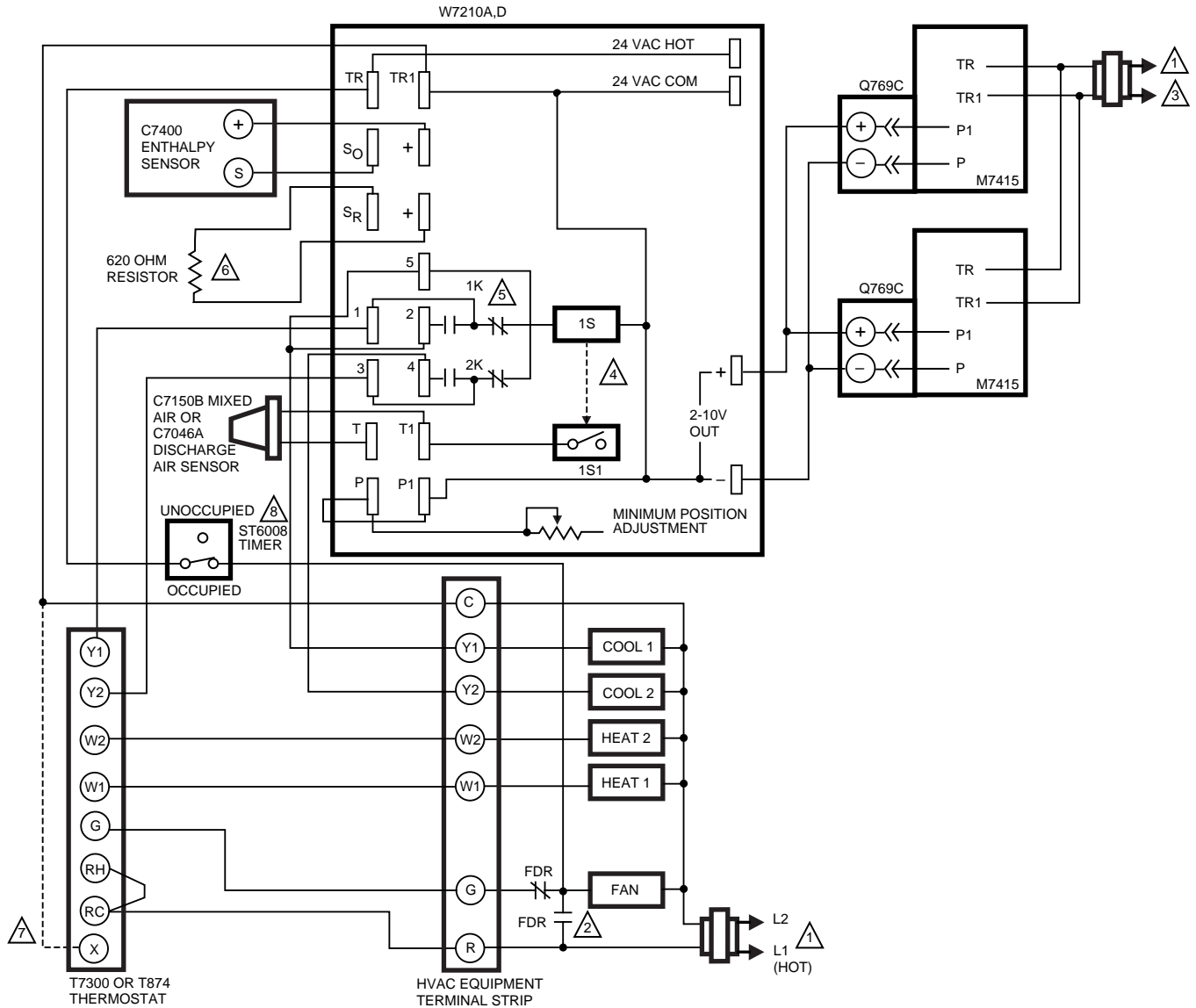
Fig. 16. W7210A,D controlling parallel wired Honeywell Series 72 Direct Coupled Actuators.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- 3 ENSURE THAT TRANSFORMER IS SIZED TO HANDLE THE LOAD OF ALL ACTUATORS.
- 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD NOT BE REMOVED. DIFFERENTIAL ENTHALPY NOT RECOMMENDED FOR USE WITH SINGLE STAGE COOLING THERMOSTAT.
- 7 FOR T7300 ONLY.
- 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.

M15300

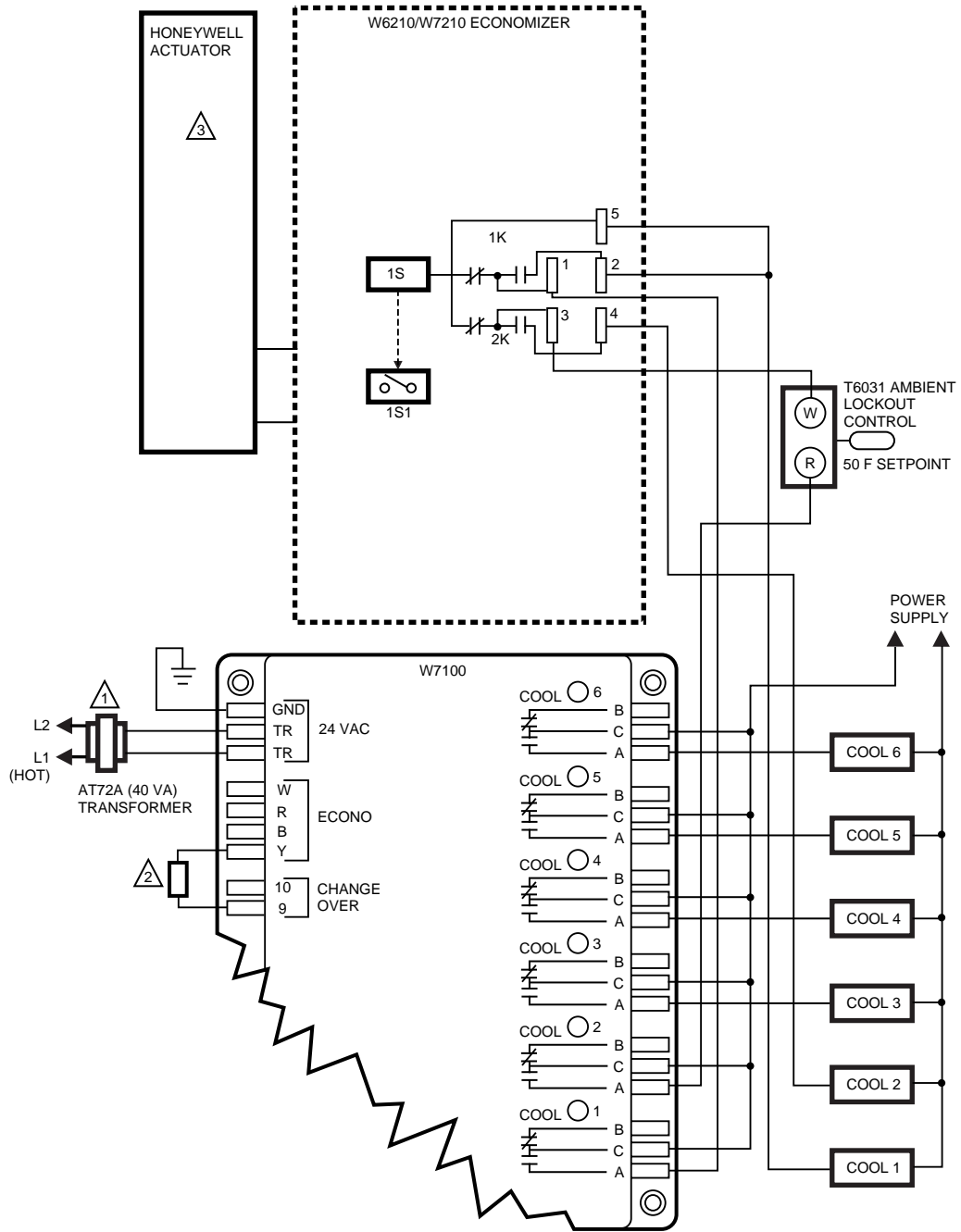
Fig. 17. W7210A,D controlling parallel wired Honeywell Series 72 Modutrol™ Motors.



- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ACTUATOR SPRING-RETURNS CLOSED WHEN FAN IS NOT RUNNING.
- ⚠️ 3 ENSURE THAT TRANSFORMER IS SIZED TO HANDLE THE LOAD OF ALL ACTUATORS.
- ⚠️ 4 1S IS AN ELECTRONIC SWITCH THAT CLOSSES WHEN POWERED BY A 24 VAC INPUT.
- ⚠️ 5 RELAYS 1K AND 2K ACTUATE WHEN THE ENTHALPY SENSED BY THE C7400 IS HIGHER THAN THE ENTHALPY SETPOINT A-D.
- ⚠️ 6 FACTORY INSTALLED 620 OHM, 1 WATT, 5% RESISTOR SHOULD NOT BE REMOVED. DIFFERENTIAL ENTHALPY NOT RECOMMENDED FOR USE WITH SINGLE STAGE COOLING THERMOSTAT.
- ⚠️ 7 FOR T7300 ONLY.
- ⚠️ 8 FOR T7300, USE CONTACTS A₁ AND A₂ INSTEAD OF THE TIMER.

M15301

Fig. 18. W7210A,D controlling parallel wired M7415 Economizer Motors.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 510 OHM 1/4 WATT, 5 PERCENT RESISTOR (CONTAINED IN 4074EFV BAG ASSEMBLY) ELIMINATES ECONOMIZER DELAYS.

3 ACTUATOR MODEL DEPENDENT ON LOGIC MODULE MODEL.

M20058

Fig. 19. W6210, W7210 used with W7100 Controller.

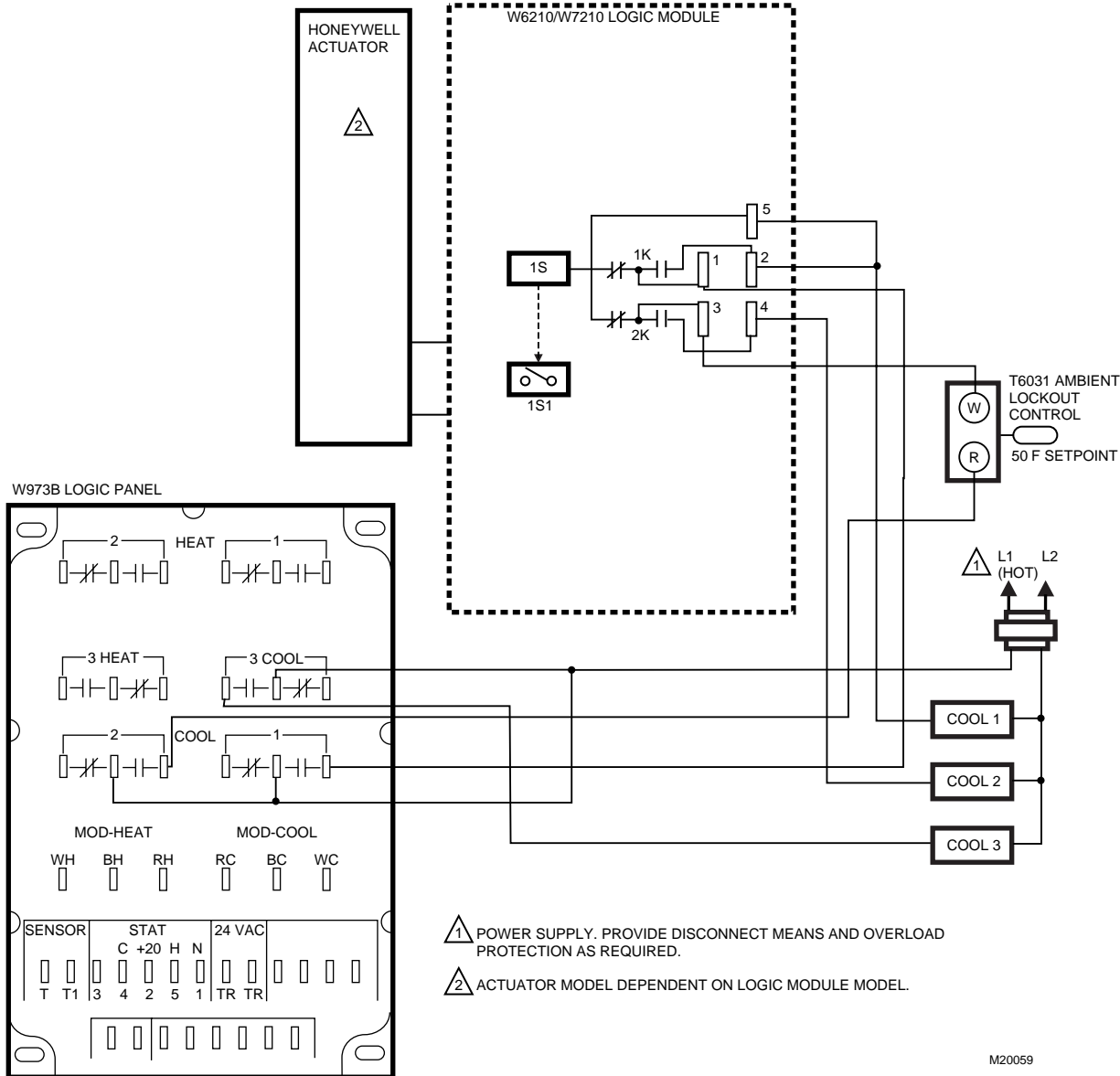


Fig. 20. W6210, W7210 used with W973 Logic Panel.

M20059

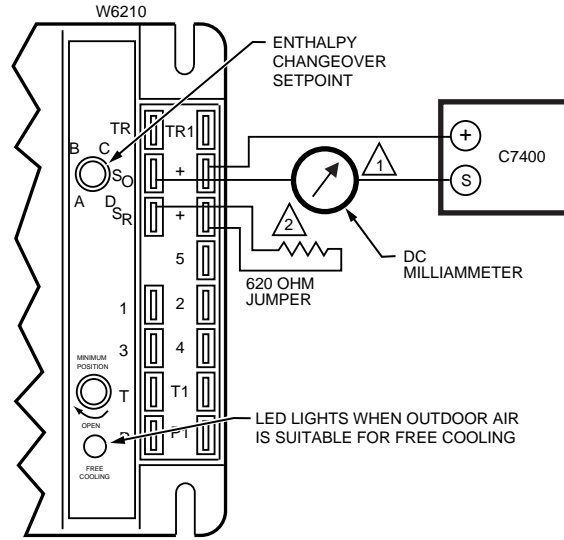
CHECKOUT AND TROUBLESHOOTING


CAUTION

Equipment Damage Hazard.
Excessive force can damage potentiometer controls.
 Use a small screwdriver when adjusting enthalpy changeover and minimum damper position controls.

To check the motor, jumper T to T1 to bypass the mixed air sensor.

Use Table 4 and Fig. 21 for checkout.



 INSERT DC MILLIAMMETER BETWEEN S_O AND S FOR CHECKOUT AND TROUBLESHOOTING.

 JUMPER USED FOR SINGLE ENTHALPY CONTROL. M11163A

Fig. 21. Meter location for checkout and troubleshooting.

Table 4. W6210A,D and W7210A,D Economizer Connected to Honeywell Actuator.

Checkout Procedure		Proper Response
1.	a. Disconnect power at TR and TR1.	—
	b. Disconnect P to P1 jumper.	
	c. Jumper TR to 1.	
	d. Jumper T1 to T.	
	e. If connected, remove C7400 Enthalpy Sensor from terminals S _O and +. Ensure factory-installed 620 ohm resistor is connected to terminals S _R and +.	• LED is off.
	f. Apply power (24 Vac) to terminals TR and TR1.	• Motor is in closed position.
2.	Disconnect factory-installed 620 ohm resistor from terminals S _R and +.	• LED turns on (A models only; for D models, go to step 3). • Motor drives toward open.
3.	Simulate high and low enthalpy (single enthalpy sensor):	
	a. Reconnect factory-installed 620 ohm resistor across terminals S _R and +. Connect 1.2K ohm 4074EJM Checkout Resistor across terminals S _O and +.	—
	b. Turn enthalpy setpoint potentiometer to A.	• LED turns on, indicating low enthalpy. • Motor drives toward open.
	c. Turn enthalpy setpoint potentiometer to D.	• LED turns off, indicating high enthalpy. • Motor drives toward closed.
	d. Disconnect the 1.2K ohm checkout resistor.	—
4.	a. To verify sensor operation, reconnect the + lead of the outdoor enthalpy sensor to the + terminal of the W6210/W7210 Economizer.	—
	b. Connect a dc milliammeter between terminals S _O of the W6210/W7210 and terminal S of the enthalpy sensor. (Connect the positive meter lead to terminal S of the enthalpy sensor.)	• Milliammeter indicates between 3 and 25 mA when the sensor is operating properly. • If the milliammeter indicates zero, the sensor may be wired backward.
	c. When using differential enthalpy, check the return air enthalpy sensor by connecting a dc milliammeter between terminal S _R of the W6210/W7210 and terminal S or the return air enthalpy sensor. (Connect the positive meter lead to terminal S of the return air enthalpy sensor.)	• Milliammeter indicates between 3 and 25 mA when the sensor is operating properly. • If the milliammeter indicates zero, the sensor may be wired backward.

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