

# Gibson P6SD-X Package Unit Modulating Economizer Instruction Manual

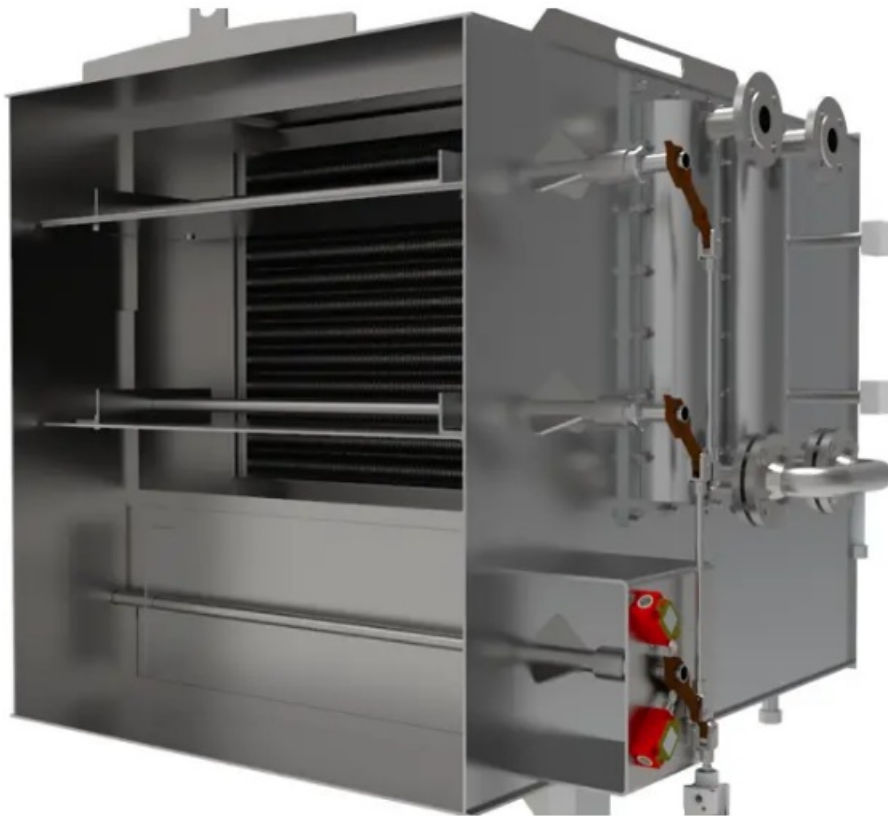
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**Gibson P6SD-X Package Unit Modulating Economizer**



## Product Information

This product is a Package Unit Modulating Economizer designed for use with 2-5T Convertible Package Units, including AC, HP, or gas-electric models. It is certified to meet California Title 24, Part 6 Low Leak and FDD requirements. The economizer comes with various components including an Economizer Assembly with Filter, Upper Adaptor Panels, Side Adaptor Panel, Outdoor Air Hood, and Hardware Package. Optional accessory kits such as CO2 Sensor Kit, Differential Enthalpy Kit, HP Isolation Relay Kit, and Power Exhaust Kit are also available.

The unit dimensions are as follows:

- Unit# 562533: Height – 47.59", Length – 37.56", Width – 18.73", Weight – 28.86"
- Unit# 563209: Height – 51.03", Length – 41.06", Width – 18.75", Weight – 32.29"

The installation instructions provided in this manual should be followed carefully to ensure proper installation and avoid injury or property damage.

## Product Usage Instructions

### • Step 1: Shutdown Unit

Before starting the installation process, ensure that the unit is shut down and disconnected from electrical power to prevent any accidents or electric shocks.

### • Step 2: Remove Return Access Panel

Remove the return access panel from the unit, making sure to save the screws for later use.

### • Step 3: Install Side Panel

Align the holes on the side panel with the return side of the divider wall, taking caution not to puncture coil tubing. Secure the side panel using the self-tapping screw provided.

- **Step 3a (Optional): Install Optional Accessories**

If desired, install optional accessories such as the differential enthalpy control and DCV (CO2) sensor according to their respective kit's instructions. Refer to the product's technical service literature for more information.

- **Step 4: Install Economizer**

Install the economizer in the unit, attaching only the left and right side mounting screws. Ensure that the economizer rails sit flush on the return air-opening lip. Take caution not to tear the insulation on the unit's side wall or floor. Use the screws that were removed in Step 2 for installation. Refer to the attached wiring diagram for proper wiring

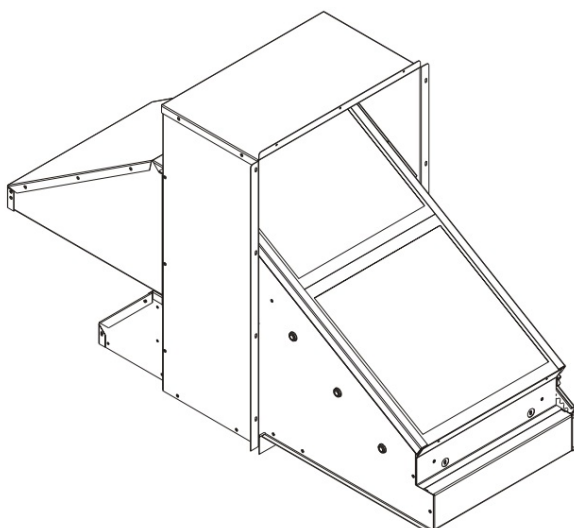
## Specifications

Unit#	Height	Length	Width	Weight
562533	47.59"	37.56"	18.73"	28.86"
563209	51.03"	41.06"	18.75"	32.29"

## FAQ

- Q: What is the purpose of this product?
- A: This product is a modulating economizer designed to improve energy efficiency and meet California Title 24, Part 6 Low Leak and FDD requirements for 2-5T Convertible Package Units.
- Q: Are there any optional accessory kits available for this product?
- A: Yes, there are optional accessory kits available including CO2 Sensor Kit (Wall Mount and Duct Mount), Differential Enthalpy Kit, HP Isolation Relay Kit (for older heat pump models), and Power Exhaust Kit.
- Q: How should I install the economizer in my unit?
- A: To install the economizer, follow the provided installation instructions carefully. Make sure to align the side panel with the return side of the divider wall, secure it with the provided screw, and ensure that the economizer rails sit flush on the return air-opening lip. Take caution not to tear the insulation on the unit's side wall or floor.

## Installation Instructions



This product is certified to meet California Title 24, Part 6 Low Leak and FDD requirements

## **Downflow Unit**

### **Warning:**

- Recognize this symbol as an indication of Important Safety Information!
  - Read all instructions before installation.
  - Disconnect electrical power to the unit before servicing.
  - Failure to do so can cause electrical shock resulting in personal injury or death.
  - Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage.
- Refer to this manual. For assistance or additional information consult a qualified installer or service agency.

DO NOT DESTROY. PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE

### **Note:**

Reference Unit Technical Service Literature for application requirements.

### **Before You Begin:**

Inspect the economizer for shipping damage and correct parts with the list below.

- 1 – Economizer Assembly w/ Filter installed Upper Adaptor Panels (See Table 1 on Page 2)
- 1 – Side Adaptor Panel
- 1 – Outdoor Air Hood (Attached to Economizer)
- 1 – Hardware Package
- 1 – Mixed Air Sensor (MAS)
- 1 – Mixed Air Sensor Wiring Harness
- 2 – 8" Wire Tie
- 3 – #10 x 16 x 1/2" Self-Tapping Screws
- 13 – #10 x 16 x 1/2" Type A Screws

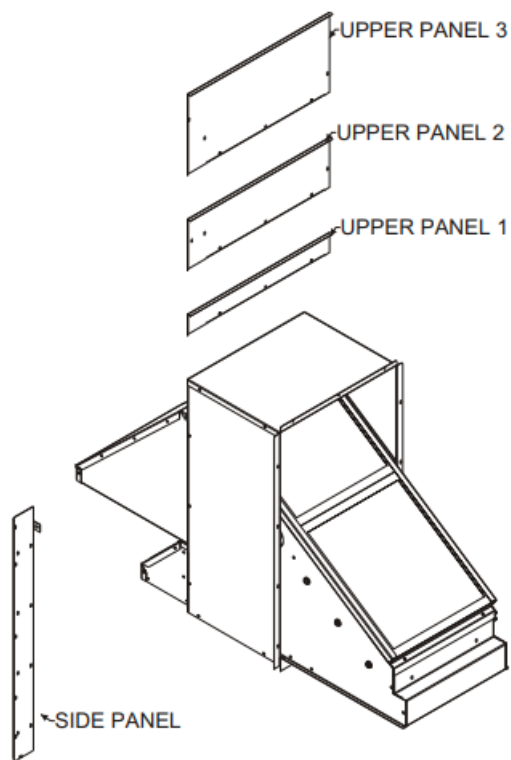
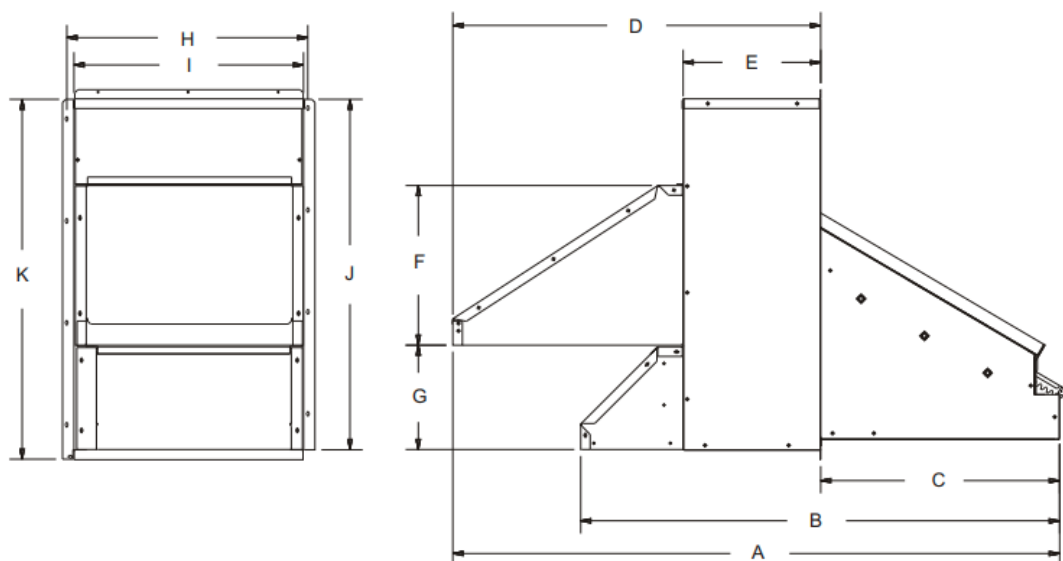


Figure 1

**Note:** For rooftop or other installations that require the economizer to be lifted or hoisted, always lift the economizer with the supplied packaging in place to prevent damage from lifting and rigging equipment.

#### Optional Accessory Kits:

- CO2 Sensor Kit, Wall Mount (920317)
- CO2 Sensor Kit, Duct Mount (920318)
- Differential Enthalpy Kit (922431)
- HP isolation relay kit (older heat pump models) (922598)
- Power Exhaust Kit (547842, 555578)



Unit #	Unit Dimensions											Shipping Information			
	A	B	C	D	E	F	G	H	I	J	K	Height	Length	Width	Weight
562533	47.59	37.56	18.73	28.86	10.79	12.54	8.18	18.90	18.00	27.50	28.25	35	57½	20½	109
563209	51.03	41.06	18.75	32.29	14.29	17.34				31.08	31.83				112

DOWNFLOW ECONOMIZER # 562533 / 563209 PACKAGE EQUIPMENT MODELS 2-5T CONVERTIBLE PACKAGE UNITS AC, HP OR GAS ELECTRIC

UNIT HEIGHT (WITH BASE RAILS)*	UPPER PANEL CLOSE-OFF	USED w/ UNIT#
35"	PANEL 1 – 22" x 3"	562533
39"	PANEL 1 – 22" x 3"	563209
43"	PANEL 2 – 22" x 7"	
47"	PANEL 3 – 22" x 11"	

UNIT HEIGHT (WITH BASE RAILS)*	UPPER PANEL CLOSE-OFF	USED w/ UNIT#
35"	PANEL 1 - 22" x 3"	562533
39"	PANEL 1 - 22" x 3"	563209
43"	PANEL 2 - 22" x 7"	
47"	PANEL 3 - 22" x 11"	

Table 1

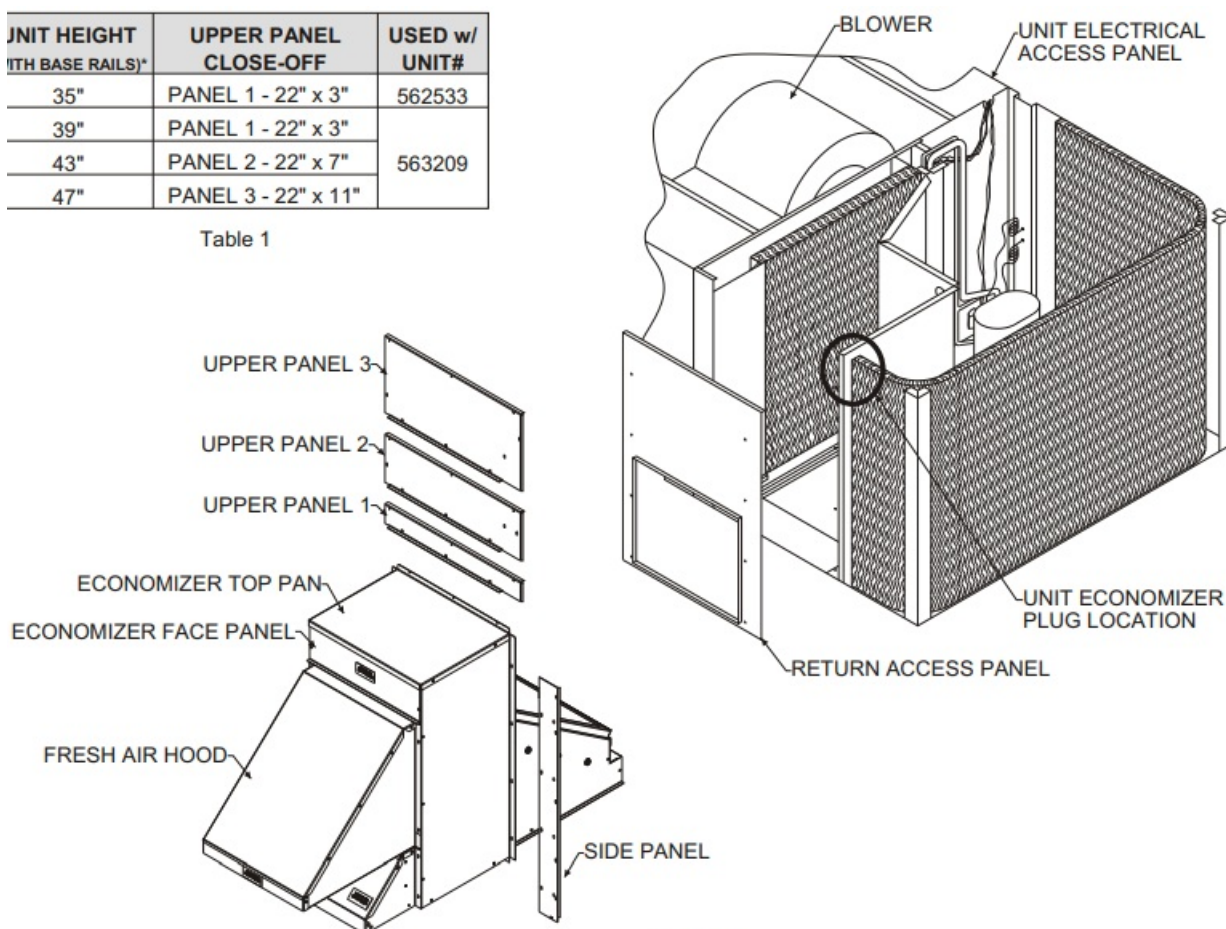


Figure 3

• **Step 1:**

Shut down the unit and disconnect from electrical power.

- **Step 2:**

Remove the return access panel. (Save screws.)

- **Step 3:**

Using CAUTION not to puncture coil tubing, align holes and place the tab on the side panel on the return side of the divider wall and secure with the self-tapping screw provided.

- **Step 3a: (Optional)**

Install differential enthalpy control and DCV (CO<sub>2</sub>) sensor according to that kit's instructions. (See products technical service literature.)

- **Step 4:**

Install economizer in the unit, attaching only left and right side mounting screws. Ensure economizer rails sit flush on the return air-opening lip. Use CAUTION not to tear insulation on unit side wall or floor. (Use screws that were removed in Step 2.) (See wiring diagram attached.)

- **Step 5:**

Screw the side panel in place.

- **Step 6:**

Remove the economizer top pan and face panels. Locate the unit economizer plug (S1) in the return air compartment (top right corner). Remove the jumper wire and zip-tie it to the economizer wiring harness. Connect the economizer plug (P1) to the unit plug (S1). Inspect all wiring and linkage connections for security and proper operation. Secure all loose wires with a 6" wire tie. Ensure that wires are protected from all sharp edges, and inadvertent grounding, and will not become entangled with filter or moveable vanes.

- **Step 6a (Optional)**

If installed, make sure differential enthalpy control and DCV (CO<sub>2</sub>) sensor wiring connections are made according to that kit's instructions.

- **Step 7:**

Remove the unit blower access panel and install the mixed air sensor in the appropriate location (as shown in Figure 4) with two #10 Type A screws provided and then make an electrical connection. Replace the blower access panel.

- **Step 8:**

Return power to the unit set up, and configure the economizer. (See Appendix A on page 5)

- **Step 9:**

Install the appropriate upper close-off panel and replace the face panel and top panel and secure with screws (See Table 1). Ensure all mounting screws, panels, and doors are installed.

## **Note to Installer**

- When this economizer is used in conjunction with heat pumps, unit WHITE wire from economizer plug pin #7 MUST be relocated from defrost control board "T1" to low voltage terminal board "A1".
- When this economizer is used with any 2-5 ton package unit (Gas/Electric, A/C, or Heat Pump) WITHOUT A COMMERCIAL THERMOSTAT, the GREEN wire from economizer plug pin #1 MUST be relocated from low voltage terminal board "G" to low voltage terminal board "R" to force dampers to remain in minimum position 100 percent of the time, while in heating mode, to meet the minimum fresh air requirements. When used in conjunction with a commercial thermostat, see Note 2 on wiring

Some older 2-5T package heat pumps may not be equipped with a reversing valve isolation relay, required for use

with economizers that have a Jade control system. Nordyne kit #922598 is required for these applications.

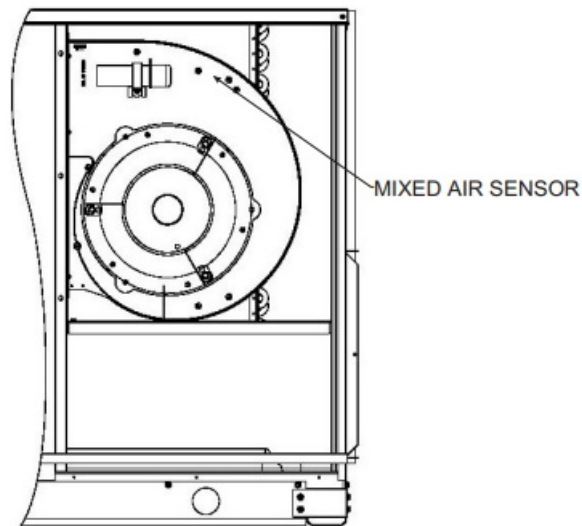
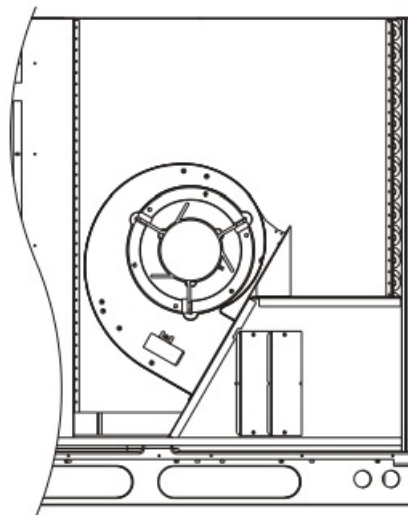


Figure 4a - Gas/Electric



## MAINTENANCE

Return Air Filter Replacement is recommended every 30 days. (16 x 16 x 1)

- **Step 1:**  
Remove the economizer face panel and side screws of the top pan.
- **Step 2:**  
Slide filters out (2) and replaces them with new filters.
- **Step 3:**  
Replace the face panel and secure all screws.

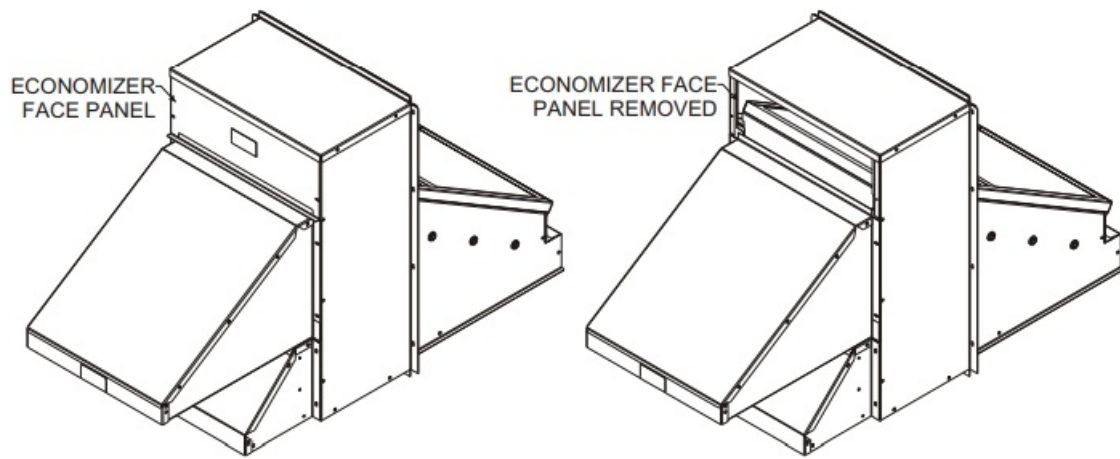


Figure 5

Fresh air filter cleaning is recommended every 3 months.

- **Step 1:**

Remove the lower section of the fresh air hood to access washable filters. (4 screws)

- **Step 2:**

Remove filters (2) and clean with water and a mild detergent.

- **Step 3:**

Taking note of the “Air Flow Direction” marking on the filter frame, reinstall the filters and fresh air filter access cover, securing all screws.

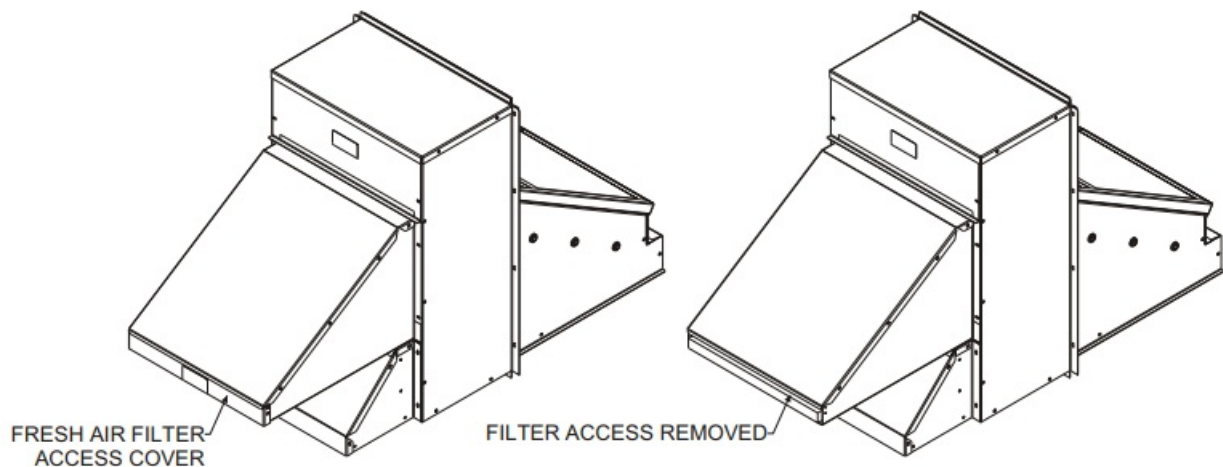


Figure 6

## User Interface

The user interface consists of an LCD and a 4-button keypad on the front of the Economizer module. The LCD is a 16-character by 2-line dot matrix display.

## Power Up Cycle

All setpoints and advanced settings are restored after any power loss (a power loss is assumed if voltage falls below 18 Vac). Normal operation is restored when power returns above 18 Vac.

## Initial Menu Display

On initial startup, Honeywell displays on the first line and Economizer W7220 on the second line. After a brief pause, the revision of the software appears on the first line (the second line is blank). It then displays W7220 .J on the first line and STATUS on the second line

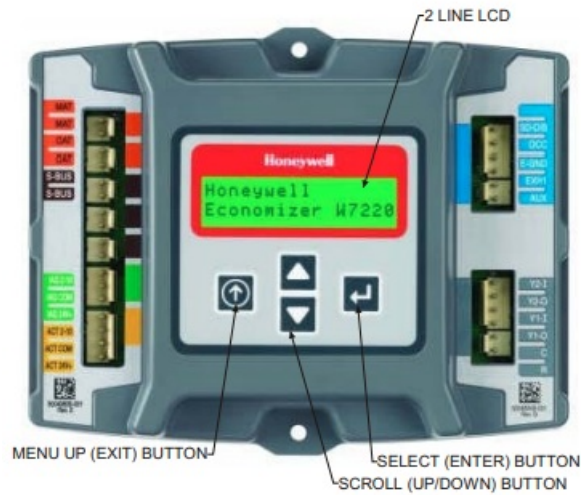






Figure 7

## Keypad

The four navigation buttons illustrated in Figure 7 are used to scroll through the menus and menu items, select menu items, and change parameter and configuration settings.










### Using the Keypad with Menus

To use the keypad when working with menus:

- Press the  button to move to the previous menu.
- Press the  button to move to the next menu.
- Press the  button (Enter) to display the first item in the currently displayed menu.
- Press the  button (Menu up) to exit a menu item and return to the list of menus.

### Using the Keypad with Settings and Parameters

To use the keypad when working with Setpoints, System and Advanced Settings, Checkout tests, and Alarms:

- Navigate to the desired menu.
- Press the  button (Enter) to display the first item in the currently displayed menu.
- Use the  and  buttons to scroll to the desired parameter.
- Press the  button (Enter) to display the value of the currently displayed item.
- Press the  button to increase (change) the displayed parameter value.
- Press the  button to decrease (change) the displayed parameter value.
- Press the  button to accept the displayed value and store it in non-volatile RAM.
- When the value is accepted, CHANGE STORED is displayed on the LCD.
- Press the  button (Enter) to return to the current menu parameter.
- Press the  button (MenuUp/Exit) to return to the previous menu.

When values are displayed, pressing and holding the  or  button causes the display to automatically scroll.

## Menu Structure

The following tables illustrate the complete hierarchy of menus and parameters for the JADE™ Economizer system.

The Menus in display order are:

- STATUS
- SETPOINTS
- SYSTEM SETUP
- ADVANCED SETUP
- CHECKOUT
- ALARMS

## IMPORTANT

Your menu parameters may be different depending on your configuration.

For example, if you do not have a DCV (CO2) sensor, then none of the DCV parameters appear and only MIN POS will display. If you have a CO2 sensor, the DCV MIN and DCV MAX will appear, AND if you have a 2-speed fan DCV MIN (high and low speed) and DCV MAX (high and low speed will appear).

## SETUP AND CONFIGURATION

Before being placed into service, the JADE™ Economizer module must be set up and configured for the installed system. Use the System Setup menu, the Advanced Setup menu (if necessary), and the Setpoints menu to accomplish this.

## Time-out and Screen saver

When no buttons have been pressed for 10 minutes, the LCD is a screen saver, which cycles through the Status items. Each Status item displays in turn and cycles to the next item after 5 seconds.

## STATUS MENU

## APPENDIX A

Parameter	Parameter Default Value	Parameter Range and Increment	Notes
ECON AVAIL	NO	YES/NO	YES = economizing available; the system can use Outdoor Air for free cooling when required.
ECONOMIZING	NO	YES/NO	YES = Outdoor Air being used for 1st stage cooling.
OCCUPIED	NO	YES/NO	YES = OCC signal received from space thermostat or unitary controller. YES = 24 Vac on terminal OCC No = 0 Vac on terminal OCC.

HEAT PUMP	COOL	COOL/HEAT	Displays COOL or HEAT when SYSTEM is set to heat pump (non-conventional)
COOL Y1-IN	OFF	ON/OFF	Y1-I signal from space thermostat input for cooling stage 1 or heat pump heating stage 1. ON = 24 Vac on terminal Y1-I OFF = 0 Vac on terminal Y1-I
COOL Y1-OUT	OFF	ON/OFF	Cool Stage 1 Relay Output to Stage 1 mechanical cooling (Y1-OUT terminal).
COOL Y2-IN	OFF	ON/OFF	Y2-I signal from space thermostat input for second stage cooling or heat pump heating stage 2. ON = 24 Vac on terminal Y2-I OFF = 0 Vac on terminal Y2-I
COOL Y2-OUT	OFF	ON/OFF	Cool Stage 2 Relay Output to mechanical cooling (Y2-OUT terminal).
MA TEMP	—.—.°F	-40 to 150°F	Displays value of measured mixed air from MAT sensor. Displays -.- if not connected, short, or out-of-range.
DA TEMP	—.—.°F	-40 to 150°F	Displays when Discharge Air Sylk Bus sensor is connected and displays measured discharge air temperature. Displays -.-°F if sensor sends invalid value, if not connected, short or out-of-range.
OA TEMP	—.—.°F	-40 to 140°F	Displays measured value of outdoor air temperature. Displays -°F if the sensor sends an invalid value if not connected, short or out-of-range.
OA HUM	—.%	0 to 100%	Displays measured value of outdoor humidity from OA Sylkbus sensor. Displays -% if not connected, short, or out-of-range.
RA TEMP	—.—.°F	0 to 140°F	If the field-installed Dual Enthalpy sensor is connected, displays the measured value of return air temperature. Displays -°F if the sensor sends an invalid value if not connected, short or out-of-range.
RA HUM	—.%	0 to 100%	If the field-installed Dual Enthalpy sensor is connected, displays the measured value of return air humidity. Displays -% if sensor sends invalid value if not connected, short or out-of-range.
IN CO2	—.— ppm	“0 to 2000 (3500) ppm”	If the field-installed CO2 sensor is connected, displays the value of measured CO2. Invalid if not connected, short or out-of-range. May be adjusted in the Advanced menu by Zero offset and Span.
DCV STATUS	n/a	n/a	If the field-installed CO2 sensor is connected, displays ON if above the setpoint and OFF if below the setpoint.
DAMPER OUT	—.%	0 to 100%	Displays output position to the damper actuator. When used with Honeywell communicating actuator the damper out is in XX.X%
ACT POS.	n/a	0 to 100%	Displays the actual position of the actuator.
ACT COUNT	n/a	1 to 65,535	Displays the number of times the actuator has cycled. 1 Cycle equals 180° of movement in any direction.
ACTUATOR	n/a	OK/Alarm	Displays Error on ALARM MENU if voltage or torque is below actuator range.

EXH1 OUT	OFF	ON/OFF	Output of EXH1 terminal. Displays ON when damper position reaches programmed percentage setpoint. ON = 24 Vac Output; OFF = No Output.
EXH2 OUT	OFF	ON/OFF	The output of the AUX1 O terminal Displays ON when the damper position reaches the programmed percentage setpoint ON = 24 Vac Output, OFF = No Output; displays only if AUX1 O = EXH2
ERV	OFF	ON/OFF	Output of AUX1 O terminal, ON = 24 Vac Output, OFF = No Output; displays only if AUX1 O = ERV
MECH COOL ON	0	0, 1, or 2	Displays the number of mechanical cooling stages that are active.
FAN SPEED	n/a	LOW/HIGH	Displays the speed of the fan on a 2-speed fan unit
W (HEAT IN)	n/a	ON/OFF	Displays the status of heat on a 2-speed fan unit.

## SETPOINTS MENU

Parameter	Parameter Default Value	Parameter Range and Increment	Notes
ECON AVAIL	NO	YES/NO	YES = economizing available; the system can use Outdoor Air for free cooling when required.
ECONOMIZING	NO	YES/NO	YES = Outdoor Air being used for 1st stage cooling.
OCCUPIED	NO	YES/NO	YES = OCC signal received from space thermostat or unitary controller. YES = 24 Vac on terminal OCC No = 0 Vac on terminal OCC.
HEAT PUMP	COOL	COOL/HEAT	Displays COOL or HEAT when SYSTEM is set to heat pump (non-conventional)
COOL Y1-IN	OFF	ON/OFF	Y1-I signal from space thermostat input for cooling stage 1 or heat pump heating stage 1. ON = 24 Vac on terminal Y1-I OFF = 0 Vac on terminal Y1-I
COOL Y1-OUT	OFF	ON/OFF	Cool Stage 1 Relay Output to Stage 1 mechanical cooling (Y1-OUT terminal).





COOL Y2-IN	OFF	ON/OFF	Y2-I signal from space thermostat input for second stage cooling or heat pump heating stage 2.  ON = 24 Vac on terminal Y2-I OFF = 0 Vac on terminal Y2-I
COOL Y2-OUT	OFF	ON/OFF	Cool Stage 2 Relay Output to mechanical cooling (Y2-OUT terminal).
MA TEMP	— — . — °F	-40 to 150°F	Displays value of measured mixed air from MAT sensor. Displays -.- if not connected, short, or out-of-range.
DA TEMP	— — . — °F	-40 to 150°F	Displays when Discharge Air Sylk Bus sensor is connected and displays measured discharge air temperature. Displays -.-°F if sensor sends invalid value, if not connected, short or out-of-range.
OA TEMP	— — . — °F	-40 to 140°F	Displays measured value of outdoor air temperature. Displays -°F if the sensor sends an invalid value if not connected, short or out-of-range.
OA HUM	— — %	0 to 100%	Displays measured value of outdoor humidity from OA Sylkbus sensor. Displays -% if not connected, short, or out-of-range.
RA TEMP	— — . — °F	0 to 140°F	If the field-installed Dual Enthalpy sensor is connected, displays the measured value of return air temperature. Displays -°F if the sensor sends an invalid value if not connected, short or out-of-range.
RA HUM	— — %	0 to 100%	If the field-installed Dual Enthalpy sensor is connected, displays the measured value of return air humidity. Displays -% if sensor sends invalid value if not connected, short or out-of-range.
IN CO2	— — — ppm	“0 to 2000 (3500) ppm”	If the field-installed CO2 sensor is connected, displays the value of measured CO2. Invalid if not connected, short or out-of-range. May be adjusted in the Advanced menu by Zero offset and Span.
DCV STATUS	n/a	n/a	If the field-installed CO2 sensor is connected, displays ON if above the setpoint and OFF if below the setpoint.
DAMPER OUT	— — %	0 to 100%	Displays output position to the damper actuator. When used with Honeywell communicating actuator the damper out is in XX.X%
ACT POS.	n/a	0 to 100%	Displays the actual position of the actuator.
ACT COUNT	n/a	1 to 65,535	Displays the number of times the actuator has cycled. 1 Cycle equals 180° of movement in any direction.
ACTUATOR	n/a	OK/Alarm	Displays Error on ALARM MENU if voltage or torque is below actuator range.

EXH1 OUT	OFF	ON/OFF	Output of EXH1 terminal. Displays ON when damper position reaches programmed percentage setpoint. ON = 24 Vac Output; OFF = No Output.
EXH2 OUT	OFF	ON/OFF	The output of the AUX1 O terminal Displays ON when the damper position reaches the programmed percentage setpoint ON = 24 Vac Output, OFF = No Output; displays only if AUX1 O = EXH2
ERV	OFF	ON/OFF	Output of AUX1 O terminal, ON = 24 Vac Output, OFF = No Output; displays only if AUX1 O = ERV
MECH COOL ON	0	0, 1, or 2	Displays the number of mechanical cooling stages that are active.
FAN SPEED	n/a	LOW/HIGH	Displays the speed of the fan on a 2-speed fan unit
W (HEAT IN)	n/a	ON/OFF	Displays the status of heat on a 2-speed fan unit.

MAT SET	53°F	38 to 70°F; increment by 1	The economizer will modulate the OA damper to maintain the mixed air temperature at the setpoint.
LOW T LOCK	32°F	-45 to 80°F; increment by 1	Setpoint determines outdoor temperature when the mechanical cooling cannot be turned on. Commonly referred to as the Compressor lockout. At or below the setpoint the Y1-O and Y2-O will not be energized on the controller.
DRYBLB SET	63°F	48 to 80°F; increment by 1	Setpoint determines where the economizer will assume outdoor air temperature is good for free cooling; e.g.; at 63 °F setpoint unit will economize at 62 °F and below and not economize at 64 °F and above. There is a 2 °F deadband.
ENTH CURVE	ES3	ES1, ES2, ES3, ES4, or ES5	Does not display if a field-installed Dual Enthalpy kit is connected. Enthalpy boundary “curves” for economizing using single enthalpy comparison between outdoor air enthalpy and setpoint.
DCV SET	1100 ppm	500 to 2000 ppm increment by 100	Displays ONLY if the field-installed CO2 sensor is connected. Setpoint for Demand Control Ventilation of Space. Above the setpoint, the OA dampers will modulate open to bring in additional OA to maintain a space ppm level below the setpoint.

MIN POS	2.8 V	2 to 10 Vdc	Displays ONLY if a CO2 sensor is NOT connected.
			With 2-speed fan units MIN POS L (low speed fan) and MIN POS H (high speed fan) settings are required. The default for MIN POS L is 3.2V and MIN POS H is 2.8V
VENTMAX	2.8 V	2 to 10 Vdc	Displays only if a field-installed CO2 sensor is connected. Used for Vbz (ventilation max cfm) setpoint. VENTMAX is the same setting as MIN POS would be if you did not have the CO2 sensor.
		100 to 9990 cfm increment by 10	If OA, MA, RA, and CO2 sensors are connected and DCV CAL ENABLE is set to AUTO mode, the OA dampers are controlled by CFM and display from 100 to 9990 cfm.
		2 to 10 Vdc	With 2-speed fan units VENTMAX L (low speed fan) and VENTMAX H (high speed fan) settings are required. Default for VENTMAX L is 3.2V and VENTMAX H is 2.8V.
VENTMIN	2.25 V	2 to 10 Vdc	Displays only if the field-installed CO2 sensor is connected. Used for Va (ventilation min cfm) setpoint. This is the ventilation requirement for less than maximum occupancy of the space.
		100 to 9990 cfm increment by 10	If OA, MA, RA, and CO2 sensors are connected and DCV CAL ENABLE is set to AUTO mode, the OA dampers are controlled by CFM and display from 100 to 9990 cfm.
		2 to 10 Vdc	With 2-speed fan units VENTMIN L (low speed fan) and VENTMIN H (high speed fan) settings are required. The default for VENTMIN L is 2.5V and VENTMIN H is 2.25V.
ERV OAT SP	32°F	0 to 50°F; increment by 1	Only when AUX1 O = ERV
EXH1 SET	50%	0 to 100%; increment by 1	Setpoint for OA damper position when exhaust fan 1 is powered by the economizer. With 2-speed fan units Exh1 L (low-speed fan) and Exh1 H (high-speed fan) settings are required. The default for Exh1 L is 65% and Exh1 H is 50%.

EXH2 SET	75%	0 to 100%; increment by 1	Setpoint for OA damper position when exhaust fan 2 is powered by the economizer. Only used when AUX1 O is set to EHX2.  With 2-speed fan units Exh2 L (low speed fan) and Exh2 H (high speed fan) settings are required. The default for Exh2 L is 80% and Exh2 H is 75%.
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- When values are displayed, pressing and holding the  or  button causes the display to automatically increment.
- When values are displayed, pressing and holding the  or  button causes the display to automatically increment.

**ERV Operation:** When in Cooling mode AND the conditions are NOT OK for economizing – the ERV terminal will be energized. In the Heating mode, the ERV terminal will be energized when the OA is below the ERV OAT setpoint in the setpoint menu.

## SYSTEM SETUP MENU

Parameter	Parameter Default Value	Parameter Range and Increment	Notes
INSTALL	01/01/2011		Display order = MM/DD/YY. Setting order = DD, MM, then YY.
UNITS DEG	°F	°F or °C	Sets economizer controller in degrees Fahrenheit or Celsius.
EQUIPMENT	CONV	CONV HP	CONV = conventional.  HP O/B = Enables Heat Pump mode. Use AUX2 I for Heat Pump input from the thermostat or controller.
AUX2 I	N/A	Shutdown (SD) Heat (W1) HP(O)  HP(B)	In CONV mode:  SD = Enables configuration of shutdown (default);  W = Informs controller that system is in heating mode.   NOTE: If using the 2-speed fan mode, you must program CONV mode for W. Shutdown is not available in the two-speed fan mode.   In HP O/B mode:  HP(O) = energize heat pump on Cool (default); HP(B) = energize heat pump on Heat.

FAN TYPE	1 speed	1 speed/ 2 speed	Sets economizer controller for operation of 1-speed or 2-speed supply fan. The controller does not control the fan but positions the OA and RA dampers to the heating or cooling mode.  NOTE: The 2-speed fan option also needs Heat (W1) programmed in AUX 2 In.
FAN CFM	5000cfm	100 to 15000 cfm; increment by 100	This is the capacity of the RTU. The value is found on the label from the RTU manufacturer. The cfm of the fan is only used with DCV CAL ENABLE AUO
AUX1 OUT	NONE	NONE ERV EXH2 SYS	NONE = not configured (output is not used)  ERV= Energy Recovery Ventilator  EXH2 = second damper position relay closure for second exhaust fan.  SYS = use output as an alarm signal
OCC	INPUT	INPUT or ALWAYS	When using a setback thermostat with occupancy out (24 Vac), the 24 Vac is input "INPUT" to the OCC terminal. If no occupancy output from the thermostat then change the program to "ALWAYS" OR add a jumper from terminal R to the OCC terminal.
FACTORY DEFAULT	NO	NO or YES	Resets all set points to factory defaults when set to YES. LCD will briefly flash YES and change to NO but all parameters will change to factory default values.

When values are displayed, pressing and holding the ...\_ or T button causes the display to automatically increment.

## ADVANCE SETUP MENU

Parameter	Parameter Default Value	Parameter Range and Increment	Notes
MA LO SET	45°F	35 to 55°F increment by 1°	Temp to activate Freeze Protection (close damper or modulate to MIN POS if temp falls below set value)
FREEZE POS	CLO	CLO MIN	Damper position when freeze protection is active (closed or MIN POS).

CO2 ZERO	0 ppm	0 to 500 ppm increment by 10	Displays only if the field-installed CO2 sensor is connected. CO2 ppm level to match CO2 sensor start level.
CO2 SPAN	2000 ppm	1000 to 3000 ppm; increment by 50	Displays only if the field-installed CO2 sensor is connected. CO2 ppm span to match CO2 sensor; e.g.; 500-1500 sensor output would be 500 CO2 zero and 1000 CO2 span. See note on page 6 for the C7632 CO2 sensor.
STG3 DAY	2.0h	0 min, 5 min, 15 min, then 15 min intervals. Up to 4 hours or OFF	Delay after stage 2 for cool has been active. Turns on the 2nd stage of mechanical cooling when the economizer is the 1st stage call and mechanical cooling is the 2nd stage call. Allows three stages of cooling, 1 economizer and 2 mechanical.  OFF = no Stage 3 cooling.
SD DMPR POS	CLO	CLO OPN	Indicates shutdown signal from space thermostat. When the controller receives 24 Vac input on the SD terminal in conventional mode, the OA damper will open if programmed for OPN, and the OA damper will close if programmed for CLO. All other controls, e.g., Y1-O, Y2-O, EXH1, etc. will shut off.
DCVCAL ENA	MAN	MAN (manual) AUTO	Turns on the DCV automatic control of the dampers. Resets ventilation based on the RA, OA, and MA sensor conditions. Requires all sensors (RA, OA, MA and CO2).  This operation is not operable with a 2-speed fan unit.
MAT T CAL	0.0 F°	+/-2.5F°	Allows for the operator to adjust for an out-of-calibration mixed air temperature sensor.
OAS T CAL	0.0F°	+/-2.5F°	Allows for the operator to adjust for an out-of-calibration outdoor air temperature sensor.
OAS H CAL	0% RH	+/-10% RH	Allows for the operator to adjust for an out-of-calibration outdoor air humidity sensor.
RA T CAL	0.0F°	+/-2.5F°	If field-installed Dual Enthalpy sensor is connected, allows for the operator to adjust for an out-of-calibration temperature sensor.
RA H CAL	0% RH	+/-10% RH	If field-installed Dual Enthalpy sensor is connected, allows for the operator to adjust for an out-of-calibration humidity sensor.
DA T CAL	0.0 F°	+/-2.5F°	Allows for the operator to adjust for an out-of-calibration Discharge Air Sylk Bus temperature sensor.
2SP FAN DELAY	5 Minutes	0 to 20 minutes in 1 minute increments.	When in economizing mode this is the delay for the high-speed fan to try to satisfy the call for second-stage cooling before the first-stage mechanical cooling is enabled.

When values are displayed, pressing and holding the **..\_** or **T** button causes the display to automatically increment.

## CHECKOUT MENUc

Parameter	Parameter Default Value	Parameter Range and Increment	Notes
DAMPER VMIN-HS	n/a	n/a	Positions damper to VMIN position
DAMPER VMAX-HS	n/a	n/a	Positions damper to VMAX position.
DAMPER VMAX-LS			With 2-speed fan units, the damper will position to VMAX low-speed fan.
DAMPER OPEN	n/a	n/a	Positions damper to the full open position. Exhaust fan contacts are re-enabled during the DAMPER OPEN test. Make sure you pause in this mode to allow for exhaust contacts to energize due to the delay in the system.
DAMPER CLOSE	n/a	n/a	Positions outside air damper to the fully closed position.
CONNECT Y1-O	n/a	n/a	Closes the Y1-O relay (Y1-O). See the CAUTION below
CONNECT Y2-O	n/a	n/a	Closes the Y2-O relay (Y2-O). See the CAUTION below
CONNECT AUX1-O	n/a	n/a	Energizes the AUX1-O output. If the AUX1-O setting is:  NONE – no action taken  ERV – 24 Vac out. Turns on or signals an ERV that the conditions are not good for economizing but are good for ERV operation.  SYS – 24 Vac out. Issues a system alarm.
CONNECT EXH1	n/a	n/a	Closes the power exhaust fan 1 relay (EXH1)

When values are displayed, pressing and holding the **p** or **q** button causes the display to automatically increment.

**ERV Operation:** When in Cooling mode AND the conditions are NOT OK for economizing – the ERV terminal will be energized. In the Heating mode, the ERV terminal will be energized when the OA is below the ERV OAT setpoint in the setpoint menu. After 10 minutes without a command or mode change, the controller will change to normal operation.

## CHECKOUT

Inspect all wiring connections at the Economizer module's terminals, and verify compliance with the installation wiring diagrams. For checkout, review the Status of each configured parameter and perform the Checkout tests.

**Note:** See “Interface Overview” on page 5. for information about menu navigation and use of the keypad.

**WARNING:** Electrical Shock Hazard.

Can cause severe injury, death, or property damage. Disconnect the power supply before beginning wiring or making wiring connections, to prevent electrical shock or equipment damage. If any wiring changes are required, first be sure to remove power from the Economizer module before starting work. Pay particular attention to verifying the power connection (24 Vac).

**Power Up**

After the module is mounted and wired, apply power.

**Power Up Delay**

Upon power-up (or after a power outage or brownout), the W7220 controller module begins a 5-minute power-up delay before enabling mechanical cooling.

**Power Loss (Outage or Brownout)**

All setpoints and advanced settings are restored after any power loss or interruption.

**Note:** If power goes below 18 Vac, the W7220 controller module assumes a power loss and the 5-minute power-up delay will become functional when power returns above 18 Vac.

All settings are stored in non-volatile flash memory.






**Status**

Use the Status Menu to check the parameter values for the various devices and sensors configured.

**Checkout Tests**

Use the Checkout Menu to test the damper operation and any configured outputs. Only items that are configured are shown in the Checkout menu.

To perform a Checkout test:

1. Scroll to the desired test in the Checkout menu using the  and  buttons.
2. Press the  button to select the item.
3. RUN? appears on the display.
4. Press the  button to start the test.
5. The unit pauses and then displays TEST RUNNING.
6. Press the button  (Menu up) to end the test (e.g. turn off the relay). Test stops automatically after 10 minutes without a command or mode change, and will resume normal operation.

The checkout tests can all be performed at the time of installation or any time during the operation of the system as a test that the system is operable.

**CAUTION:** Equipment damage may result.

Be sure to allow enough time for compressor startup and shutdown between checkout tests so that you do not short-cycle the compressors.

**ALARM MENU**

Parameter	Parameter Default Value	Parameter Range and a Increment	Notes
MA T SENS ERR	n/a	n/a	Alarms display only when they are active. The menu title “ALARMS ( )” includes the number of active alarms in parenthesis ( ).
CO2 SENS ERR	n/a	n/a	
OA T SENS ERR	n/a	n/a	
DA ENTHL ERR	n/a	n/a	
SYS ALARM	n/a	n/a	When AUX1 O is set to SYS and there is any alarm (e.g., failed sensors, etc.), the AUX1 O terminal has 24 Vac out.
ACT UNDER V	n/a	n/a	The voltage received by the Actuator is above the expected range
ACT OVER V	n/a	n/a	The voltage received by the Actuator is below the expected range
ACT STALLED	n/a	n/a	The actuator stopped before achieving the commanded position

When values are displayed, pressing and holding the p or q button causes the display to automatically increment.

### Alarms




The Economizer module provides alarm messages that are displayed on the 2-line LCD.

**NOTE:** Upon power up, the module waits 60 minutes before checking for alarms. This allows time for all the configured devices (e.g. sensors, actuator) to become operational. The exception is the MA sensor which will alarm immediately.

If one or more alarms are present and there has been no keypad activity for at least 5 minutes, the Alarms menu displays and cycles through the active alarms. You can also navigate to the Alarms menu at any time.

### Clearing Alarms

Once the alarm has been identified and the cause has been removed (e.g. replaced faulty sensor), the alarm can be cleared from the display. To clear an alarm, perform the following:

1. Navigate to the desired alarm.
2. Press the  button.
3. ERASE? displays.
4. Press the  button.
5. ALARM ERASED displays.
6. Press the button  (MenuUp/Exit) to complete the action and return to the previous menu. NOTE: If an alarm

still exists after you clear it, it redisplay within 5 seconds.

## SEQUENCE OF OPERATION

Dry Bulb Operation No DCV (CO2 sensor) – 1 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
None	No	Off	Off	High	0-v/Off	0-v/Off	MIN POS	Closed
		On	Off	High	24-v/On	0-v/Off	MIN POS	Closed
		On	On	High	24-v/On	24-v/On	MIN POS	Closed
None	Yes	Off	Off	High	0-v/Off	0-v/Off	MIN POS	Closed
		On	Off	High	0-v/Off	0-v/Off	MIN POS to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	0-v/Off a	MIN POS to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

Dry Bulb Operation With DCV (CO2 sensor) – 1 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
Below CO2 set	No	Off	Off	High	0-v/Off	0-v/Off	VENTMIN	Closed
		On	Off	High	24-v/On	0-v/Off	VENTMIN	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN	Closed
	Yes	Off	Off	High	0-v/Off	0-v/Off	VENTMIN	Closed
		On	Off	High	0-v/Off	0-v/Off	VENTMIN to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	0-v/Off a	VENTMIN to Full-Open	Closed to Full-Open
Above CO2 set	No	Off	Off	High	0-v/Off	0-v/Off	VENTMIN to VENT MAX	Closed
		On	Off	High	24-v/On	0-v/Off	VENTMIN to VENT MAX	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN to VENT MAX	Closed
	Yes	Off	Off	High	0-v/Off	0-v/Off	VENTMIN to VENT MAX	Closed
		On	Off	High	0-v/Off	0-v/Off	VENTMIN to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	0-v/Off a	VENTMIN to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

Enthalpy Operation No DCV (CO2 sensor) – 1 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
None	No	Off	Off	High	0-v/Off	0-v/Off	MIN POS	Closed
		On	Off	High	24-v/On	0-v/Off	MIN POS	Closed
		On	On	High	24-v/On	24-v/On	MIN POS	Closed
None	Yes	Off	Off	High	0-v/Off	0-v/Off	MIN POS	Closed
		On	Off	High	0-v/Off	0-v/Off	MIN POS to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	24-v/Off	MIN POS to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

Enthalpy Operation With DCV (CO2 sensor) – 1 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
Below set	No	Off	Off	High	0-v/Off	0-v/Off	VENTMIN	Closed
		On	Off	High	24-v/On	0-v/Off	VENTMIN	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN	Closed
	Yes	Off	Off	High	0-v/Off	0-v/Off	VENTMIN	Closed
		On	Off	High	0-v/Off	0-v/Off	VENTMIN to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	0-v/Off a	VENTMIN to Full-Open	Closed to Full-Open
Above set	No	Off	Off	High	0-v/Off	0-v/Off	VENTMIN to VENTMAX	Closed
		On	Off	High	24-v/On	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN H to VENTMAX	Closed
	Yes	Off	Off	High	0-v/Off	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	Off	High	0-v/Off	0-v/Off	VENTMIN to Full-Open	Closed to Full-Open
		On	On	High	DELAY (b) 24-v/On	a 0-v/Off	VENTMIN to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

Dry Bulb Operation No DCV (CO2 sensor) – 2 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
None	No	Off	Off	Low	0-v/Off	0-v/Off	MIN POS L	Closed
		On	Off	Low	24-v/On	0-v/Off	MIN POS L	Closed
		On	On	High	24-v/On	24-v/On	MIN POS H	Closed
None	Yes	Off	Off	Low	0-v/Off	0-v/Off	MIN POS L	Closed
		On	Off	Low	0-v/Off	0-v/Off	MIN POS L to Full-Open	Closed to Full-Open
		On	On	High	b DELAY 24-v/On	a 0-v/Off	MIN POS H to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

Dry Bulb Operation No DCV (CO2 sensor) – 2 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
None	No	Off	Off	Low	0-v/Off	0-v/Off	MIN POS L	Closed
		On	Off	Low	24-v/On	0-v/Off	MIN POS L	Closed
		On	On	High	24-v/On	24-v/On	MIN POS H	Closed
None	Yes	Off	Off	Low	0-v/Off	0-v/Off	MIN POS L	Closed
		On	Off	Low	0-v/Off	0-v/Off	MIN POS L to Full-Open	Closed to Full-Open
		On	On	High	b DELAY 24-v/On	a 0-v/Off	MIN POS H to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in the Advanced setup, the menu can turn on the 2nd stage of mechanical cooling

Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

With 2SP FAN DELAY (Advanced Setup Menu) when in the economizing mode there is a delay for the high-speed fan to try to satisfy the call for second-stage cooling by turning on the fan to high and opening the OA damper 100% before the first stage mechanical cooling is enabled.

Dry Bulb Operation With DCV (CO2 sensor) – 2 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
Below set	No	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L	Closed
		On	Off	Low	24-v/On	0-v/Off	VENTMIN L	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN H	Closed
	Yes	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L	Closed
		On	Off	Low	0-v/Off	0-v/Off	VENTMIN L to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	0-v/Off a	VENTMIN H to Full-Open	Closed to Full-Open
Above set	No	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	Off	Low	24-v/On	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN H to VENTMAX	Closed
	Yes	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	Off	Low	0-v/Off	0-v/Off	VENTMIN L to Full-Open	Closed to Full-Open
		On	On	High	b DELAY 24-v/On	a 0-v/Off	VENTMIN H to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in the Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

With 2SP FAN DELAY (Advanced Setup Menu) when in the economizing mode there is a delay for the high-speed fan to try to satisfy the call for second-stage cooling by turning on the fan to high and opening the OA damper 100% before the first stage mechanical cooling is enabled.

Enthalpy Operation No DCV (CO2 sensor) – 2 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
NO CO2 SENSOR	No	Off	Off	Low	0-v/Off	0-v/Off	MIN POS L	Closed
		On	Off	Low	24-v/On	0-v/Off	MIN POS L	Closed
		On	On	High	24-v/On	24-v/On	MIN POS H	Closed
	Yes	Off	Off	Low	0-v/Off	0-v/Off	MIN POS L	Closed
		On	Off	Low	0-v/Off	0-v/Off	MIN POS L to Full-Open	Closed to Full-Open
		On	On	High	b DELAY 24-v/On	a 0-v/Off	MIN POS H to Full-Open	Closed to Full-Open

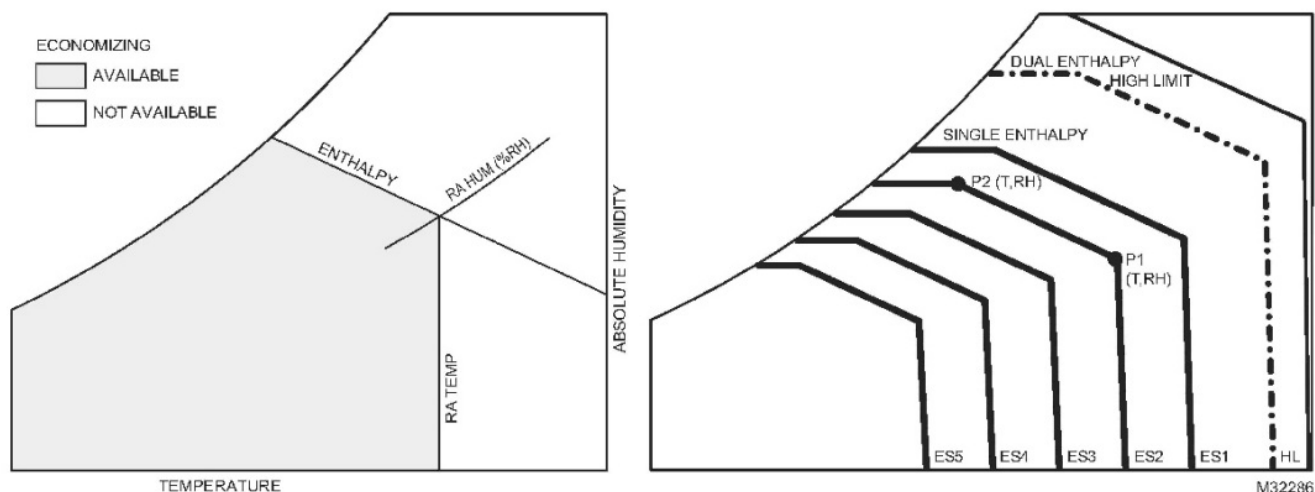
With stage 3 delay (STG3 DLY) in the Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

With 2SP FAN DELAY (Advanced Setup Menu) when in the economizing mode there is a delay for the high-speed fan to try to satisfy the call for second-stage cooling by turning on the fan to high and opening the OA damper 100% before the first stage mechanical cooling is enabled.

Dry Bulb Operation With DCV (CO2 sensor) – 2 Speed Fan.								
DCV	Is OA Good to economize?	Y1-I	Y2-I	FAN SPD	Y1-O	Y2-O	Occupied	Unoccupied
Below set	No	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L	Closed
		On	Off	Low	24-v/On	0-v/Off	VENTMIN L	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN H	Closed
	Yes	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L	Closed
		On	Off	Low	0-v/Off	0-v/Off	VENTMIN L to Full-Open	Closed to Full-Open
		On	On	High	24-v/On	0-v/Off a	VENTMIN H to Full-Open	Closed to Full-Open
Above set	No	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	Off	Low	24-v/On	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	On	High	24-v/On	24-v/On	VENTMIN H to VENTMAX	Closed
	Yes	Off	Off	Low	0-v/Off	0-v/Off	VENTMIN L to VENTMAX	Closed
		On	Off	Low	0-v/Off	0-v/Off	VENTMIN L to Full-Open	Closed to Full-Open
		On	On	High	b DELAY 24-v/On	a 0-v/Off	VENTMIN H to Full-Open	Closed to Full-Open

With stage 3 delay (STG3 DLY) in the Advanced setup, the menu can turn on the 2nd stage of mechanical cooling Y2 –O after the delay if the call for Y1-I and Y2-I have not been satisfied.

With 2SP FAN DELAY (Advanced Setup Menu) when in the economizing mode there is a delay for the high-speed fan to try to satisfy the call for second-stage cooling by turning on the fan to high and opening the OA damper 100% before the first stage mechanical cooling is enabled.



**Single Enthalpy and Dual Enthalpy High Limit Curves**

Enthalpy Curve	Temp. Dry-Bulb (°F)	Temp. Dewpoint (°F)	Enthalpy (BTU/lb/da)	Point P1		Point P2	
				Temp. °F	Humidity %RH	Temp. °F	Humidity %RH
ES1	80.0	60.0	28.0	80.0	36.8	66.3	80.1
ES2	75.0	57.0	26.0	75.0	39.6	63.3	80.0
ES3	70.0	54.0	24.0	70.0	42.3	59.7	81.4
ES4	65.0	51.0	22.0	65.0	44.8	55.7	84.2
ES5	60.0	48.0	20.0	60.0	46.9	51.3	88.5
HL	86.0	66.0	32.4	86.0	38.9	72.4	80.3

## Enthalpy Settings

When the OA temperature, enthalpy, and dew point are below the respective setpoints, the Outdoor Air can be used for economizing. Fig. 18 shows the new single enthalpy boundaries in the W7220. There are 5 boundaries (setpoints ES1 through ES5), which are defined by dry bulb temperature, enthalpy, and dew point.

Refer to the Table above for the ENTH CURVE setpoint values.

To use enthalpy the W7220 must have a C7400S Sylbus sensor for OA. The W7220 calculates the enthalpy and dew point using the OA temperature and humidity input from the OA sensor. When the OA temperature, OA humidity, and OA dew point are all below the selected boundary, the economizer sets the economizing mode to YES, economizing is available. When conditions are above the selected boundary, the conditions are not good to economize and the mode is set to NO. Figure ## shows the 5 current boundaries. There is also a high-limit boundary for differential enthalpy. The high limit boundary is ES1 when there are no stages of mechanical cooling energized and HL when a compressor stage is energized.

The table above provides the values for each boundary limit.

## Two-Speed Fan Option

The later versions of the W7220 Jade controller can work with a system using a 2-speed supply fan. The W7220 does not control the supply directly but uses the following input status to determine the speed of the supply fan

and controls the OA damper to the required position.

State	Fan Speed
OCC	Low
Y1	Low
Y2	High
W	High

The W (heating mode) is not controlled by the W7220 but it requires the status to know where to position the OA damper for the minimum position for the fan speed.

The 2-speed fan delay is available when the system is programmed for a 2 2-speed fan (in the System Setup menu item). The 2-speed fan delay is defaulted to 5 minutes and can be changed in the Advanced Setup menu item. When the unit has a call for Y1 In and in the free cooling mode and there is a call for Y2 In, the 2-speed fan delay starts and the OA damper will modulate 100% open, the supply fan should be set to high speed by the unit controller. After the delay one of two actions will happen:

- The Y2 In call will be satisfied with the damper 100% open and the fan on high speed and the call will turn off
- If the call for additional cooling in the space has not been satisfied then the first stage of mechanical cooling will be enabled through Y1 Out or Y2 Out

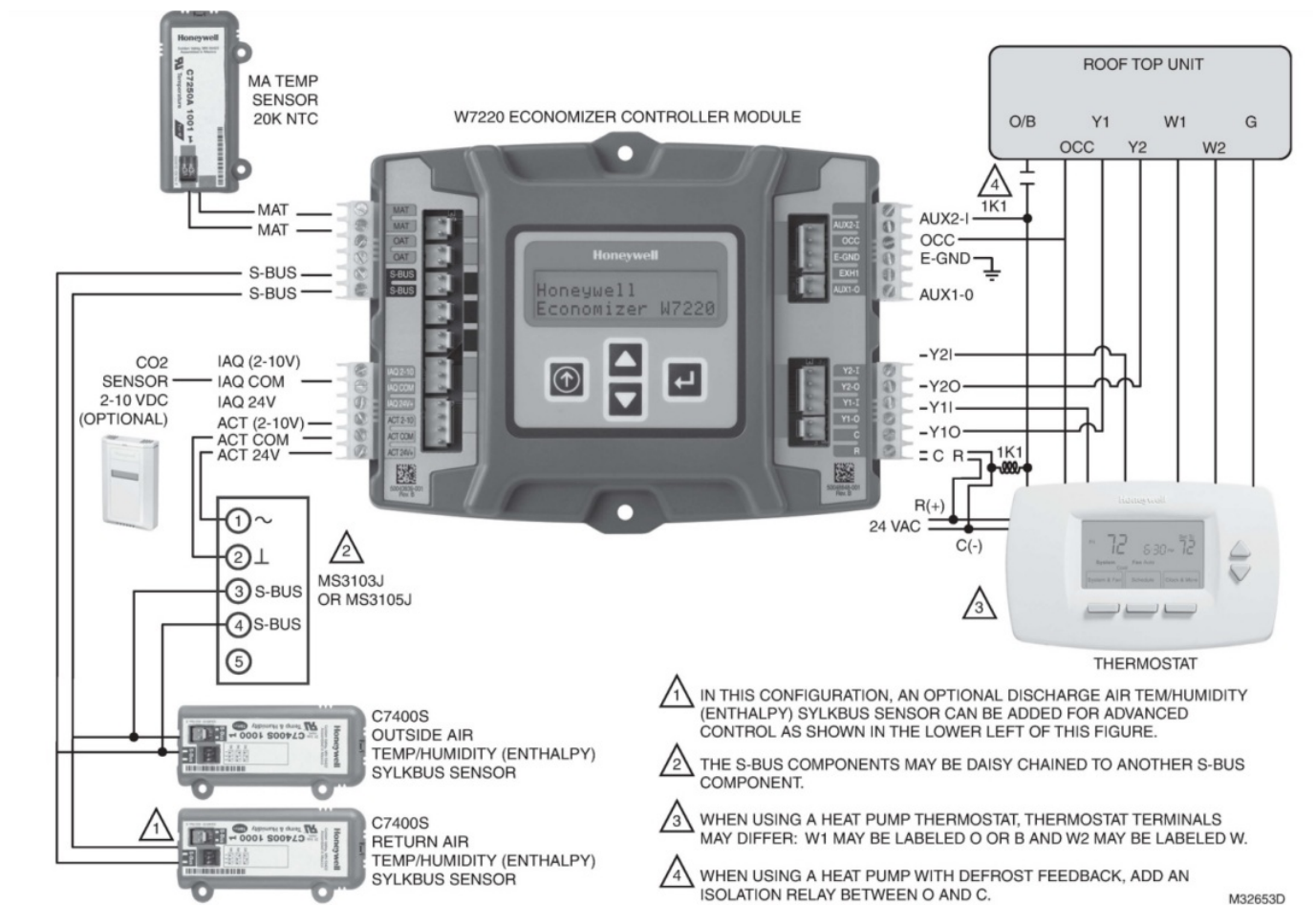
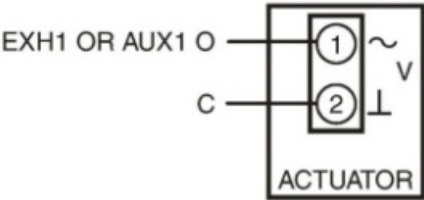


Figure 8

Economizer with Sylk Bus sensors for enthalpy configuration with a Honeywell MS3103J or MS3105J

communicating actuators.



NOTE: ON/OFF ACTUATORS CAN BE USED ON THE EXH1 OR AUX1 O TERMINAL WITH GROUND TO THE C TERMINAL. WHEN PROGRAMMING THE EXH1 OR AUX1 O, THE % IS THE PERCENT OPEN POSITION OF THE OUTDOOR AIR DAMPER WHEN THE EXH1 OR AUX1 O TERMINAL IS ENERGIZED AND THE 2-POS DAMPER GOES OPEN. IF USING THE AUX1 O TERMINAL PROGRAM AUX1 O FOR EXH2.

M33409


Figure 9  
2-position actuator

HARNESS ENDS AT P1

COMPONENT CODE			WIRE COLOR CODE		Revision	Change	Date
Nordyne#	Honeywell#	Description					
622754	MS3105J3030	Damper Actuator 24v	BLK	Black	BLU	Blue	
626621	W7220A1000	Logic Module	BRN	Brown	GRN	Green	
626622	C7400S1000	Fresh Air Enthalpy Sensor	GRY	Gray	ORG	Orange	
626623	C7250A1001	Mixed Air Temperature Sensor	PNK	Pink	RED	Red	
-----	P1	Male Interface Unit Plug	TAN	Tan	VIO	Violet	
-----	S1	Male Interface Unit Plug	WHT	White	YEL	Yellow	



Documents / Resources

	<p><a href="#">Gibson P6SD-X Package Unit Modulating Economizer</a> [pdf] Instruction Manual P6SD-X Package Unit Modulating Economizer, P6SD-X, Package Unit Modulating Economizer, Unit Modulating Economizer, Modulating Economizer, Economizer</p>
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References

- [menus.U](#)s
- [Result | Visibility, ROI, Relationships](#)
- [TCPDF](#)
- [User Manual](#)