*PRODUCT SPECIFICATIONS*
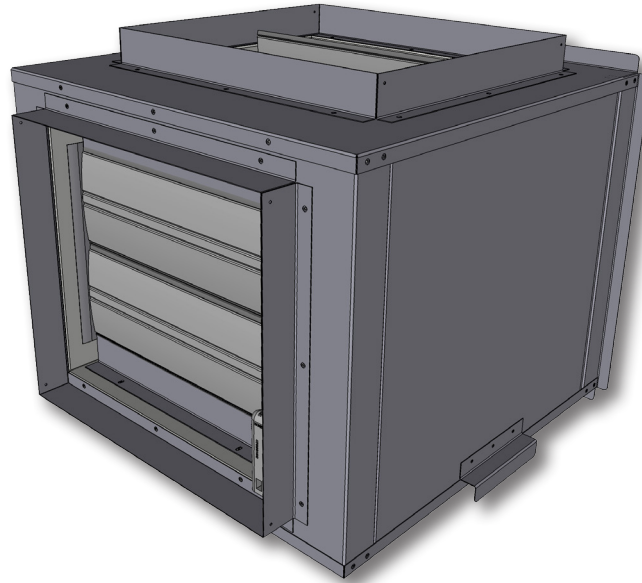
## FEATURES

### Approvals
Approved for California Title 24 building standards.

ASHRAE 90.1-2010 compliant.

### Application
Designed for applications requiring outdoor air to be utilized in a HVAC system. The economizer unit will allow the entry of fresh outdoor air for free cooling, reducing the requirement for mechanical cooling.

Economizer dampers will modulate to maintain 55°F supply air when outdoor air is suitable.

Economizer features rack and pinion operation, high torque 24-volt fully-modulating spring return damper motor, return air and outdoor air dampers, nylon bearings, enhanced neoprene blade edge seals and flexible stainless steel jamb seals to minimize air leakage.

*NOTE - Economizer is not approved for use with enthalpy controls in Title 24 applications.*

### Cabinet
Damper cabinet is constructed of heavy gauge galvanized steel and is lined with thick fiberglass insulation.

Duct Connections have flanges for ease of installation.

Large access panels on both sides of the cabinet provide complete service entry. Panels have handles for ease of removal.

### Mixed Air Sensor
Furnished for installation in the supply air duct.

### Outdoor Air Sensor
Furnished for installation in the outdoor air inlet. Sensor is a CEC approved, California Title 24 fixed dry bulb device

### Transformer
Transformer (120/24V/75VA) is furnished for replacement of existing 40VA transformer in furnace or air handler.

## FEATURES

### High Performance Economizer Control Module

Module provides inputs and outputs to control economizer based on parameter settings.

Module automatically detects sensors by polling to determine which sensors are installed in system.

Module displays any alarm messages (fault detection and diagnostics) as an aid in troubleshooting.

Non-volatile memory retains parameter settings in case of power failure.

Keypad with four navigation buttons and LCD screen is furnished for setting economizer parameters.

- Menu Up/Exit (⬆) button returns to the main menu.
- Arrow Up ▲ button moves to the previous or next parameter within the selected menu.
- Arrow Down ▼ button moves to the next parameter within the selected menu.
- Select (enter) ↵ button confirms parameter selection.

**Main Menu Structure:**
- STATUS (economizer and system operation status)
- SETPOINTS (settings for various setpoint parameters)
- SYSTEM SETUP (settings/information about the system)
- ADVANCED SETUP (freeze protection, $CO_2$ settings, stage 3 delay and additional calibration settings)
- CHECKOUT (damper positions)
- ALARMS (output signal that can be configured for remote alarm monitoring)

*NOTE - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 "Prescriptive Requirements for Space Conditioning Systems" of the California Energy Commission's 2013 Building Energy Efficiency Standards.*

Refer to Installation Instructions for complete setup information and menu parameters available.

### Options/Accessories

### Single Enthalpy Temperature Control (Not for Title 24)

Outdoor air enthalpy sensor enables Economizer if the outdoor enthalpy is less than the setpoint of the control.

### Differential Enthalpy Control (Not for Title 24)

Use two Single Enthalpy Controls. One is field installed in the return air section, the other in the outdoor air section. Allows the economizer control board to select between outdoor air or return air, whichever has lower enthalpy.

### IAQ Sensor

An IAQ sensor is used when demand control ventilation (DCV) is required. See Options/Accessories table.

## AIR RESISTANCE

| Air Volume - cfm | Total Resistance - in.w g. |
|---|---|
| 600 | .02 |
| 800 | .03 |
| 100 | .05 |
| 1200 | .06 |
| 1400 | .07 |
| 1600 | .10 |
| 1800 | .12 |
| 2000 | .15 |
| 2200 | .18 |
| 2400 | .23 |
| 2600 | .28 |
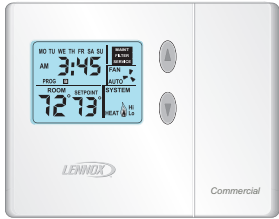
## ORDERING INFORMATION

| Description | Model No. | Catalog No. |
|---|---|---|
| Economizer | C2ECON23K | **10U53** |

### OPTIONS/ACCESSORIES

| Item | Model No. | Catalog No. |
|---|---|---|
| **Economizer Controls (Not for Title 24)** | | |
| Single Enthalpy Control | C1SNSR60FF1 | **10Z75** |
| Differential Enthalpy Control (order 2) | C1SNSR60FF1 | **10Z75** |
| **Indoor Air Quality ($CO_2$) Sensors** | | |
| Wall-mount, off-white plastic cover with LCD display | C0SNSR50AE1L | **77N39** |
| Wall-mount, off-white plastic cover, no display | C0SNSR52AE1L | **87N53** |
| Black plastic case with LCD display, rated for plenum mounting | C0SNSR51AE1L | **87N52** |
| Wall-mount, black plastic case, no display, rated for plenum mounting | C0MISC19AE1 | **87N54** |
| Aspiration Box - for duct mounting non-plenum rated sensors (**87N53** or **77N39**) | C0MISC16AE1- | **90N43** |

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

| Item | Model No. | Catalog No. |
|---|---|---|
| **COMFORTSENSE® 7500 COMMERCIAL 7-DAY PROGRAMMABLE THERMOSTAT**<br>• Four-Stage Heating / Two-Stage Cooling Universal Multi-Stage<br>• Intuitive Touchscreen Interface<br>• Remote Indoor Temperature Sensing with Averaging<br>• Outside or Discharge Air Temperature Display<br>• Full Seven-Day Programming<br>• Four Time Periods Per Day<br>• Occupancy Scheduling with Economizer Relay Control<br>• Away Mode<br>• Holiday Scheduling<br>• Smooth Setback Recovery (SSR)<br>• Performance Reports<br>• Notifications/Reminders<br>• Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units<br>• Economizer Relay Control<br>• Backlit Display<br>• Wallplate Furnished | C0STAT06FF1L | **13H15** |
| **Optional Accessories** | | |
| [1] Remote non-adjustable wall mount 20k temperature sensor | C0SNZN01AE2- | **47W36** |
| [1] Remote non-adjustable wall mount 10k temperature sensor | C0SNZN73AE1- | **47W37** |
| Remote non-adjustable discharge air (duct mount) temperature sensor | C0SNDC00AE1- | **19L22** |
| Outdoor temperature sensor | C0SNSR03AE1- | **X2658** |
| Locking cover (clear) | C0MISC15AE1- | **39P21** |

[1] Remote sensors can be applied in any of the following combinations:
   One Sensor - (1) 47W36
   Two Sensors - (2) 47W37
   Three Sensors - (2) 47W36 and (1) 47W37
   Four Sensors - (4) 47W36
   Five Sensors - (3) 47W36 and (2) 47W37

| Item | Model No. | Catalog No. |
|---|---|---|
| **COMFORTSENSE® 3000 COMMERCIAL 5-2 DAY PROGRAMMABLE THERMOSTAT**<br>• Two-Stage Heating / Two-Stage Cooling Conventional Systems<br>• Intuitive Interface<br>• 5-2 Day Programming<br>• Program Hold<br>• Remote Indoor Temperature Sensing<br>• Smooth Setback Recovery (SSR)<br>• Economizer Relay Control<br>• Maintenance/Filter/Service Reminders<br>• Backlit Display<br>• Wallplate Furnished<br>• Simple Up and Down Temperature Control. | C0STAT05FF1L | **11Y05** |
| **Optional Accessories** | | |
| Remote non-adjustable wall mount 10k averaging temperature sensor | C0SNZN73AE1- | **47W37** |
| Optional wall mounting plate | C0MISC17AE1- | **X2659** |

## DIMENSIONS - INCHES (MM)

25-7/8 (657)

1 (25)

18-1/4 (464)

25-1/2 (622)

TOP VIEW

19-3/4 (502)

1 (25)

OUTLET AIR INLET VIEW

26-1/8 (664)

24-1/8 (613)

16-1/4 (413)

RETURN AIR INLET

OUTDOOR AIR

16-1/4 (413)

INLET

21-5/8 (549)

SIDE VIEW
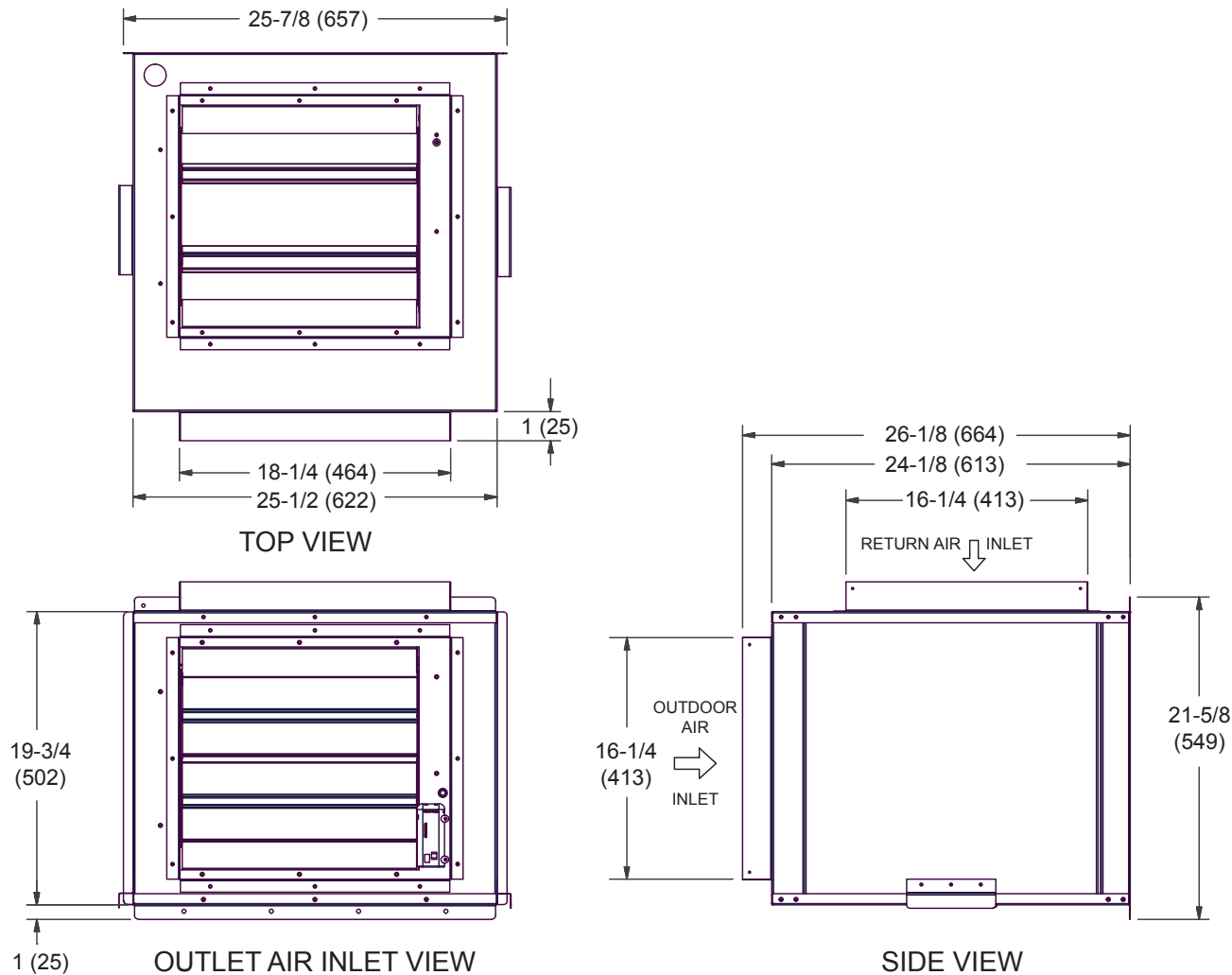
## REVISIONS

| Sections | Description of Change |
|---|---|
| Air Resistance | Added. |