LENNOX

INDOOR AIR QUALITY
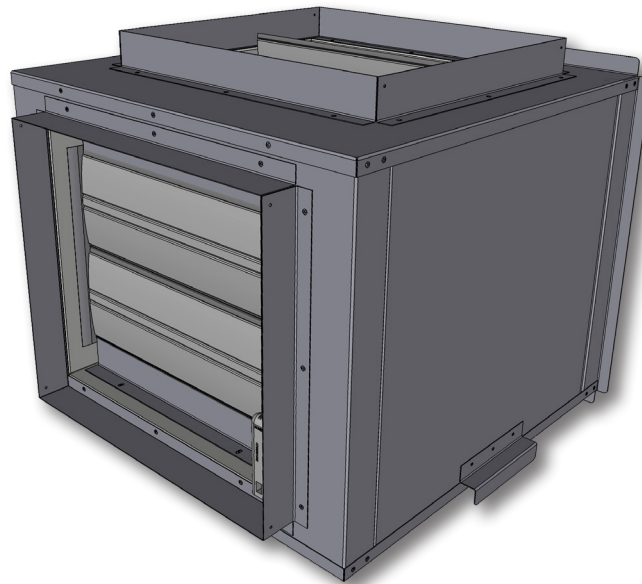
C2ECON23K
High Performance Economizer Dampers

COMMERCIAL
PRODUCT SPECIFICATIONS

Bulletin No. 210750
February 2017
Supersedes June 2016

FEATURES AND BENEFITS

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
• Flexible stainless steel jamb seals minimize air leakage

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

Cabinet
• Constructed of heavy gauge galvanized steel
• 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
• 120/24V/75VA
• Furnished for replacement of existing 40VA transformer in furnace or air handler

FEATURES AND BENEFITS

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.

NOTE - 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

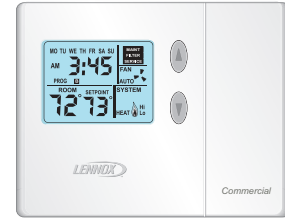| Item	Model No.	Catalog No.
Economizer Controls (Not for Title 24)		
Single Enthalpy Control	C1SNSR60FF1	**10Z75**
Differential Enthalpy Control (order 2)	C1SNSR60FF1	**10Z75**
Indoor Air Quality (CO_2) Sensors		
Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	**77N39**
Wall-mount, 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**

ComfortSense® 7500 Commercial 7-Day Programmable Thermostat

- Four-Stage Heating / Two-Stage Cooling
- Universal Multi-Stage
- Intuitive Touchscreen Interface
- Automatic Changeover between Heating and Cooling
- Full Seven-Day Programming
- Four Time Periods Per Day
- Temperature and Humidity Control
- One-Touch Away Mode
- Holiday Scheduling
- Smooth Setback Recovery (SSR)
- Performance Reports
- Notifications/Reminders
- Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units
- Economizer Relay Control
- Backlit Display
- Wallplate Furnished
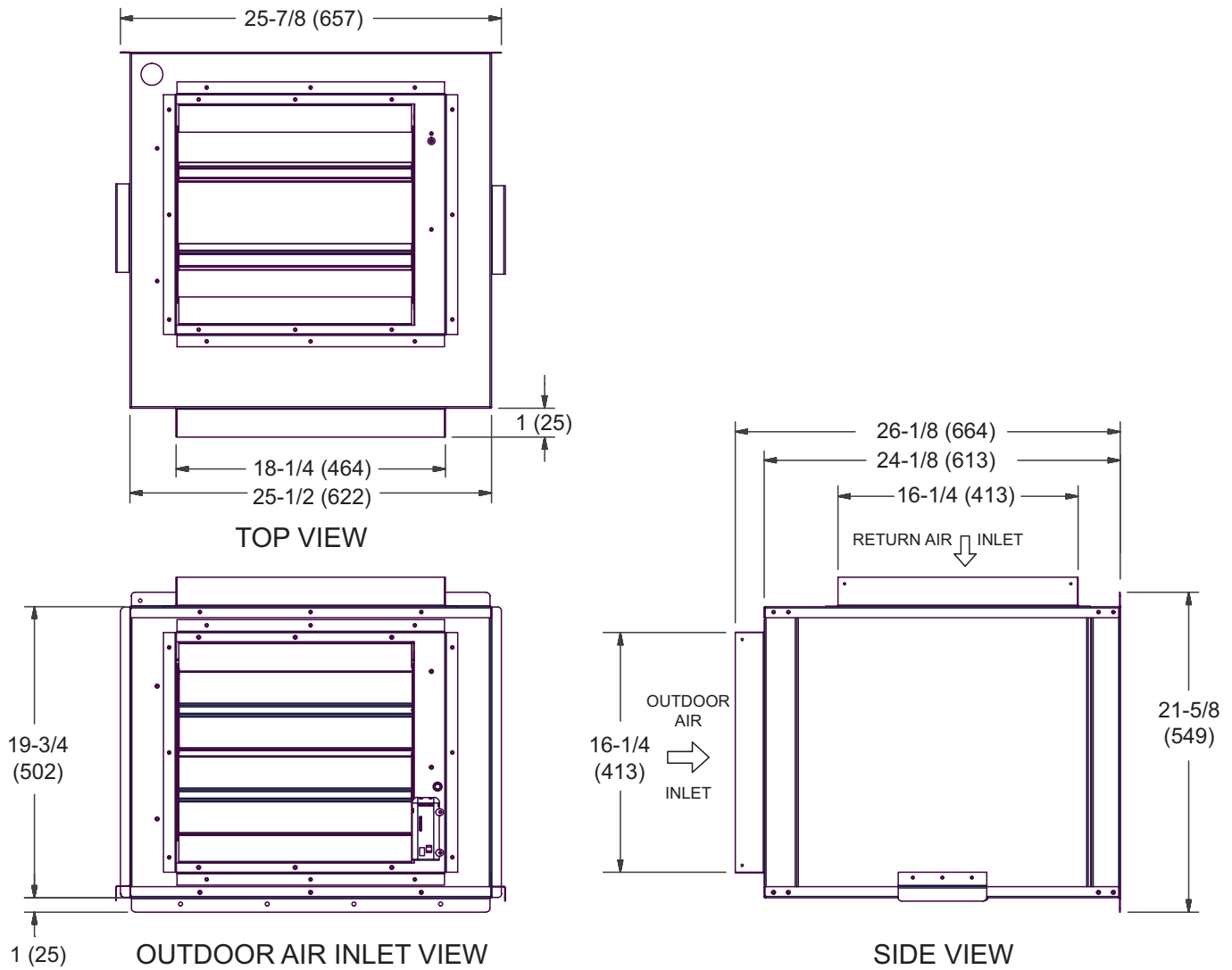- FDD, ASHRAE and IECC Compliant

ComfortSense® 3000 Commercial 5-2 Day Programmable Thermostat

- Two-Stage Heating / Two-Stage Cooling
- Conventional Systems
- Intuitive Interface
- 5-2 Day Programming
- Program Hold
- Remote Indoor Temperature Sensing
- Smooth Setback Recovery (SSR)
- Economizer Relay Control
- Maintenance/Filter/Service Reminders
- Backlit Display
- Wallplate Furnished
- Simple Up and Down Temperature Control

Description		Model No.	Catalog No.
ComfortSense® 7500 7-Day Programmable		C0STAT06FF2L	**17G74**
	Universal thermostat locking guard (clear)	C0MISC15AE1-	**39P21**
Temperature Sensors	[1] Remote non-adjustable wall-mount 20k	C0SNZN01AE2-	**47W36**
	[1] Remote non-adjustable wall-mount 10k	C0SNZN73AE1-	**47W37**
	Remote non-adjustable discharge air (duct mount)	C0SNDC00AE1-	**19L22**
	Outdoor temperature sensor	C0SNSR03AE1-	**X2658**

[1] Remote wall-mount 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

Description		Model No.	Catalog No.
ComfortSense® 3000 5-2 Day Programmable		C0STAT05FF1L	**11Y05**
	Thermostat wall mounting plate	C0MISC17AE1-	**X2659**
Temperature Sensor	Remote non-adjustable wall mount 10k averaging	C0SNZN73AE1-	**47W37**

DIMENSIONS

25-7/8 (657)

1 (25)

18-1/4 (464)

25-1/2 (622)

TOP VIEW

26-1/8 (664)

24-1/8 (613)

16-1/4 (413)

RETURN AIR ⬇ INLET

19-3/4 (502)

OUTDOOR AIR

16-1/4 (413)

INLET

21-5/8 (549)

1 (25)

OUTDOOR AIR INLET VIEW

SIDE VIEW

REVISIONS

Sections	Description of Change
Dimensions	Changed "**Outlet** Air Indoor View" to "**Outdoor** Air Inlet View".

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