COMMERCIAL
PRODUCT SPECIFICATIONS
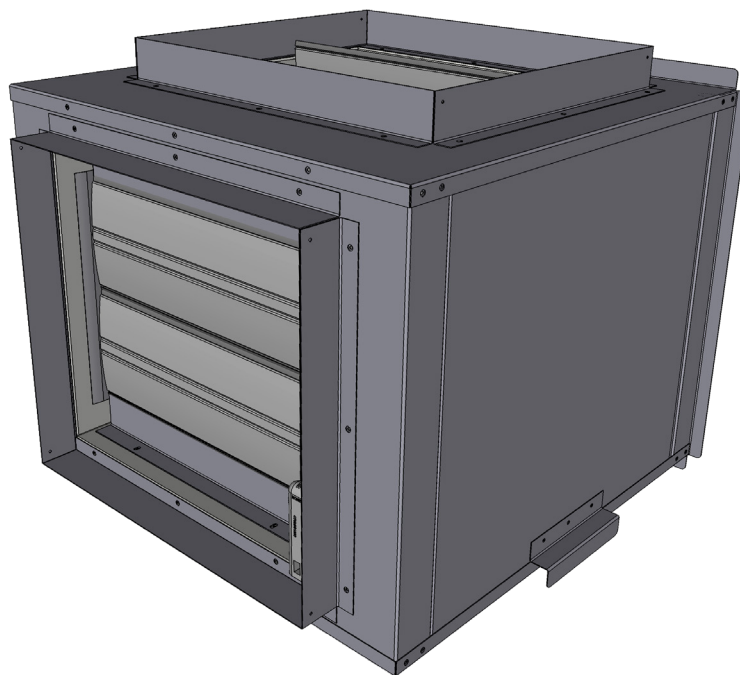
FEATURES AND BENEFITS

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	Catalog No.
Economizer	**10U53**

OPTIONS/ACCESSORIES

| Item	Catalog No.
Economizer Controls (Not for Title 24)	
Single Enthalpy Control	**11G21**
Differential Enthalpy Control (order 2)	**11G21**
Indoor Air Quality (CO₂) Sensors	
Wall-mount, off-white plastic cover with LCD display	**77N39**
Wall-mount, off-white plastic cover, no display	**23V86**
Black plastic case with LCD display, rated for plenum mounting	**87N52**
Wall-mount, black plastic case, no display, rated for plenum mounting	**87N54**
Aspiration Box - for duct mounting non-plenum rated sensors (**77N39**)	**90N43**

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

CS7500 Commercial 7-Day Programmable Thermostat

- Four-Stage Heating / Three-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

CS3000 Commercial 5-2 Day Programmable Thermostat
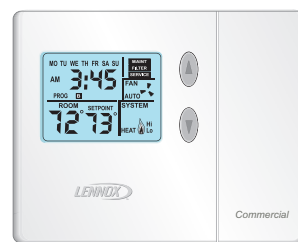
- Two-Stage Heating / Two-Stage Cooling
- Conventional Systems
- Intuitive Interface
- 5-2 Day Programming
- Program Hold
- Remote Indoor Temperature Sensing
- Smooth Setback Recovery (SSR)
- Economizer Relay Control
- Maintenance/Filter/Service Reminders
- Backlit Display
- Wallplate Furnished
- Simple Up and Down Temperature Control

Optional Accessory

Cooling Stage-Up Timer Relay
- Allows the unit to attain an additional stage of cooling without the need for extra thermostat connections
- Adjustable - 1 to 1023 seconds
- Mounts internal to unit

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

| Description		Catalog No.
CS7500 Commercial 7-Day Programmable Thermostat		
CS7500 7-Day Thermostat		**24K41**
Sensors/Accessories	² Remote non-adjustable wall-mount 20k	**47W36**
	² Remote non-adjustable wall-mount 10k	**47W37**
	Remote non-adjustable discharge air (duct mount)	**19L22**
	Outdoor temperature sensor	**X2658**
CS3000 Commercial 5-2 Day Programmable Thermostat		
CS3000 5-2 Day Thermostat		**11Y05**
Sensors/Accessories	Remote non-adjustable wall mount 10k averaging	**47W37**
	Thermostat wall mounting plate	**X2659**
Optional Accessory		
	Cooling Stage-Up Timer Relay	**24G40**
Universal Thermostat Guard with Lock (clear)		
	Inside Dimensions (H x W) 5 7/8 x 8 3/8 in.	**39P21**

¹ Up to nine of the same type remote temperature sensors can be connected in parallel.
² 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

DIMENSIONS

TOP VIEW

OUTDOOR AIR INLET VIEW

SIDE VIEW
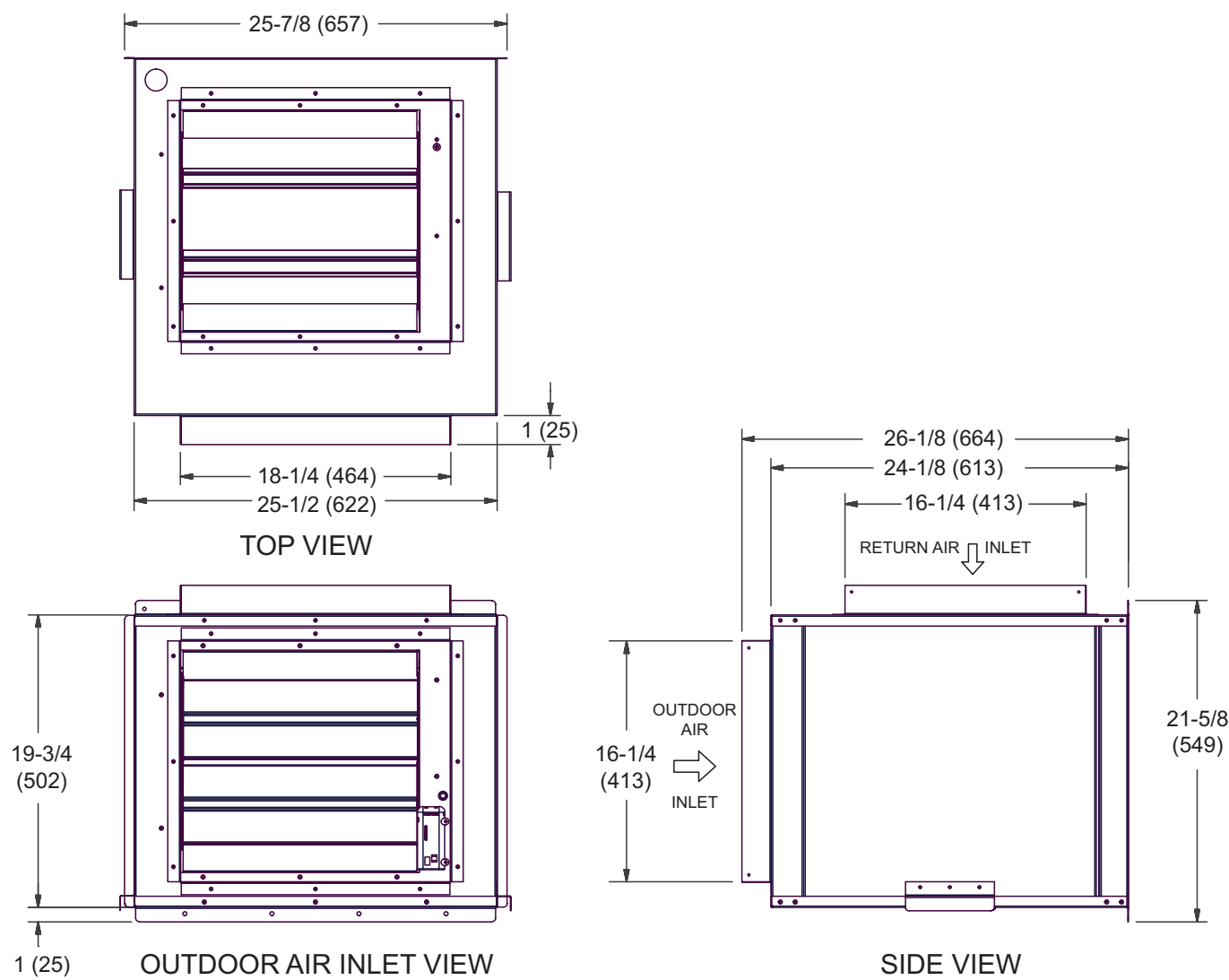
REVISIONS

Sections	Description of Change
Options/Accessories	10Z75 Enthalpy Sensor Kit discontinued - replaced with 11G21 Kit.

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