REZNOR®

Dedicated Outdoor Air Systems

MODEL YDMA
Makeup Air/Ventilation

APPLICATIONS

100% Outside Air

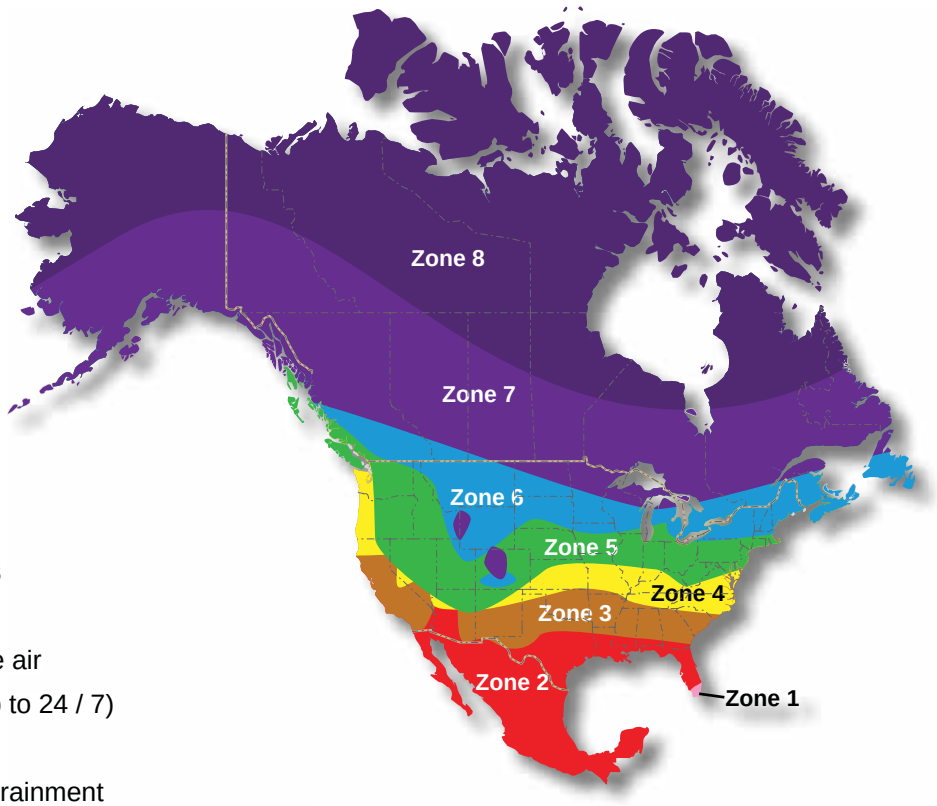
- KITCHENS
- HOTEL CORRIDORS
- LABORATORIES
- CONFERENCE CENTERS
- SCHOOLS
- PAINT BOOTHS
- MALLS/SHOPPING CENTERS

Capacities

5	-	30	Tons
50	-	800	MBH
30	-	120	kW
650	-	9,000	CFM

ReznorHVAC.com

Conditioning Outside Air is Different



Makeup & Ventilation Air Application Characteristics

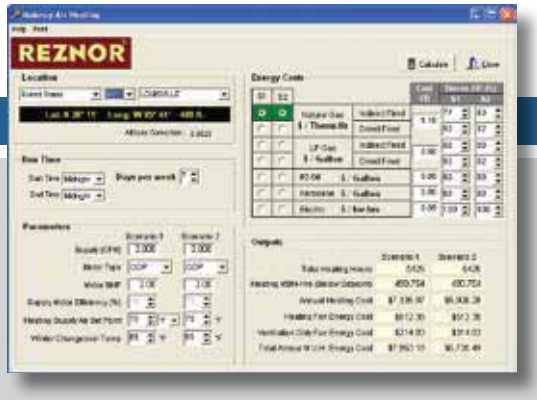
- Up to 100% outside air
- Continuous conditioning of the air
- Extended operational time (up to 24 / 7)
- Precise unit CFM delivery
- Evade rain, snow & debris entrainment
- Modulated discharge air control
- Dehumidification
- ASHRAE Standard 62.1 (IAQ)
- ASHRAE Standard 90.1

CLIMATE ZONE MAP

You need a makeup air system that can handle the extremes from a north Canadian winter to a south Florida summer.

Get your FREE custom energy analysis software

Ask your Reznor Agent for details

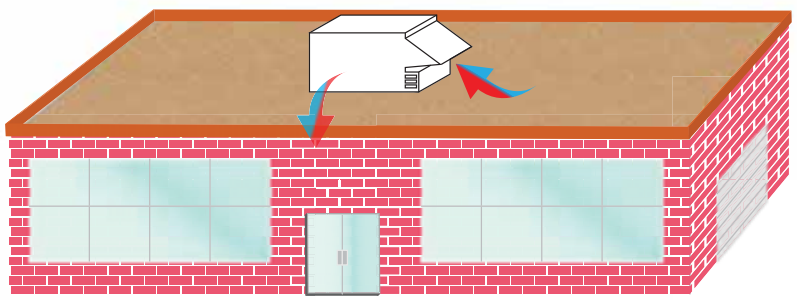


Payback Software

The Reznor edge is real world savings. Using condensing gas heat for your commercial make-up and ventilation air applications makes economic sense. The condensing technology maintains its efficiency throughout the modulated range. This increases energy saving to more than 15% over standard furnaces. The software provides reasonable prediction of energy & financial savings for makeup air applications. Ask your Reznor agent for Free custom energy analysis software.

Beyond Standard Rooftop Capabilities

YDMA



Packaged Makeup Air/Ventilation System

The Reznor brand Model YDMA meets the specific needs required to keep indoor air quality high and process air flowing into the space.

Performance

Delivers clean, dehumidified tempered air in all weather or climate conditions.

Lower Costs

No matter what the season, you get superior energy performance, and tangible energy savings (see Reznor energy analysis software to determine payback).

Reliability

Robust construction delivers more usable life expectancy than conventional equipment.

Easy Installation

Avoid hassles with more factory installed options. No need to mix-and-match bolt-on options, or adjust pulleys and belts. Most features are factory installed or adjusted by settings on the control screen.

Typical Ventilation Rates*	
Occupancy Category	**CFM/person**
Health Club /Weight Room	26
Pet Shop	26
Beauty and Nail Salon	25
Pharmacy (prep area)	23
Aerobics Room	22
Disco/Dance Floor	21
Art Classroom	19
Wood/Metal Shop	19
Day-care	17
Office Space	17
Photo Studio	17
Science Lab	17
Retail Store	16
Classroom	15
Supermarket	15
Bowling Alley	13
Music/Theater/Dance	12
Coin-operated Laundries	11
Hotel Room	11
Break Room	10
Confinement Center	10
Lobbies	10
Restaurant Dining Room	10
Bar/Cocktail Lounge	9
Booking/Waiting Room	9
Gym Spectator Area	8
Lecture Room	8
Multi-Use Assembly	8
Reception Area	7
Conference/Meeting Room	6
Courtroom	6

** See Std 62.1 for more information.*

Standards, Codes and Beyond

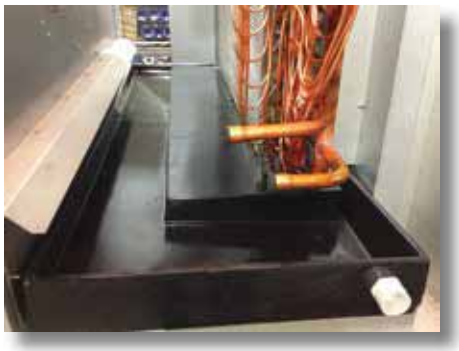
The design professional is being asked to use more energy intensive dilution ventilation air while reducing the overall building energy usage by 30%. How do you implement evolving building standards requirements while minimizing cost?

- **ASHRAE 62.1-2016 – ventilation air per building type and activity.**
- **ASHRAE 90.1-2016 – equipment efficiency.**
- **ASHRAE 189.1-2014 – high performance green buildings.**

These standards and guidelines will be codified in the coming years. The solution: Use products designed to handle the ventilation with high efficiency gas and DX options.

Features & Benefits

10:1 Gas Modulation - Stable Temperature Control



Corrosion Proof, Double Slope, Condensate Drain Pan - Exceeds Standard 62.1-2010

Supply Fan VFD - Standard

Heating

Don't worry about pipes freezing or blowing cold air on a person in extreme weather conditions. Model YDMA heating systems are designed to handle extreme weather conditions as well as spring time light-load days. The heating system can provide 100°F rise with turn down as low as 10% with gas control.

Features:

- 5:1 or 10:1 gas modulation
- 92% & 80% gas heating efficiency
- Constant thermal efficiency gas heating during modulation
- 409 stainless steel heat exchangers
- SCR electric heat modulation
- ANSI 283.8 certified
- Anti-cycle program
- Safeties and alarms
- Condensate neutralizer
- Slide-out service & inspection

Cooling

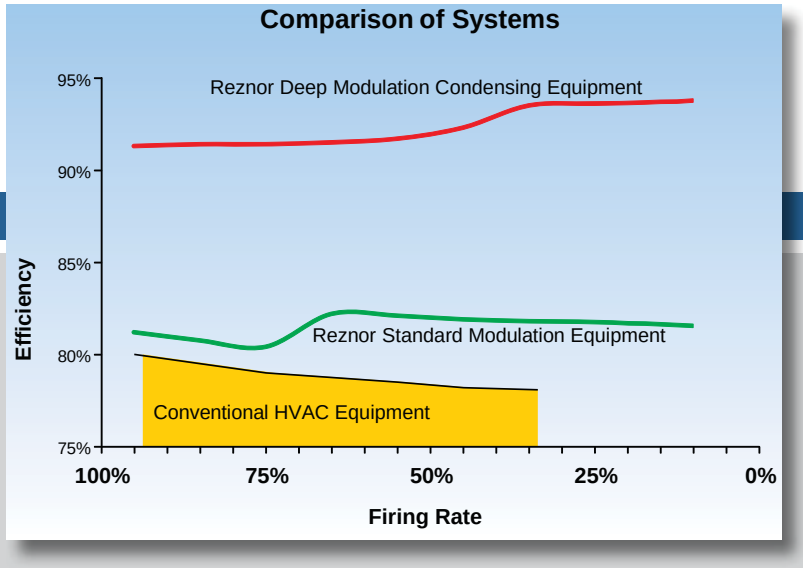
Allowing large volumes of hot untreated air to enter a conditioned space will cause occupant discomfort and loss of environmental control. Therefore, 100% outside air means treating the air in all weather conditions. From 55°F through 115°F the mechanical cooling system operates to properly condition the air, meeting the needs of your application.

Features:

- Energy efficient digital scroll compressors
- 10%-100% capacity control
- ECM condenser fans
- Low ambient operation
- Corrosion-proof, double sloped drain pan
- Sound blankets
- Coil coating - 6,048 hours salt spray effectiveness
- Ozone friendly R410A
- Frostat, high and low pressure switch
- Anti-cycle programs
- Hot gas reheat

Gas Modulation Efficiency

Total cost of ownership is the truest measure of value for your HVAC investment. The ability to modulate input allows greater control over constantly changing load conditions. Most heating systems lose over 6.25% of their thermal efficiency when modulating. Reznor models start with high efficiency and maintain that efficiency throughout the modulation range to maximize your HVAC investment dollars.



Dehumidification Circuit - Meets Standard 62.1 & 90.1

Filtered Intake Hood - Exceeds Standard 62.1

Dehumidification ReHeat Pump™

There are times when the space temperature is satisfied, yet the air needs to be dehumidified and delivered to the space without affecting the space temperature. This is commonly referred to as Neutral Air.

The Reznor Dehumidification ReHeat Pump delivers dehumidified air at temperature values that will not affect the overall space condition. The independent system produces overall year-round energy savings and great part-load performance during mild spring and fall conditions.

Features:

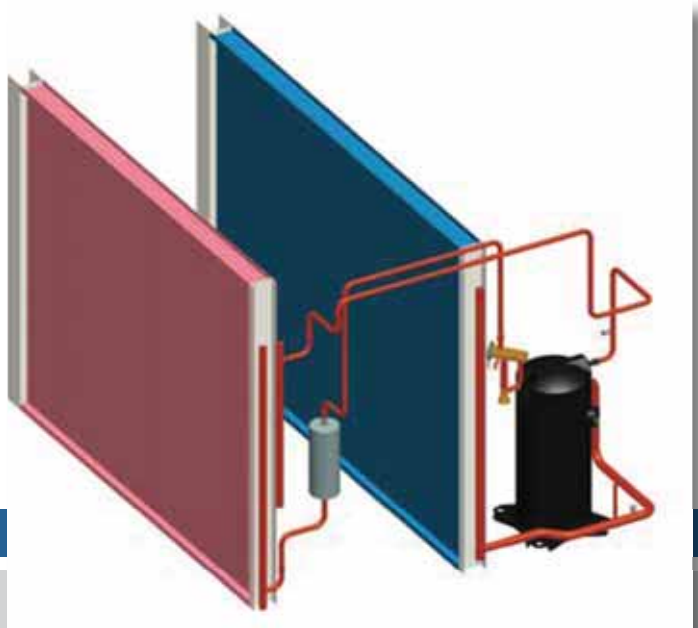
- Standard hot gas reheat coil (5 & 7.5 ton units only)
  - » Modulated capacity
  - » ASHRAE Standard 90.1 compliant system
- ReHeat pump section
  - » 15°F - 17°F minimum temperature rise (standard)
  - » Modulated capacity
  - » COP > 20
  - » Verifiable and predictable performance
  - » ASHRAE Standard 90.1 compliant system
  - » High and low refrigerant pressure switches
  - » Low ambient operation

Construction

Makeup air and Ventilation applications place a strain on equipment because of the extended run times. In fact, for typical hotel corridor applications, the units run 24 hours a day 7 days a week. The YDMA is robustly designed for extended use.

Features

- Foam panel double wall construction
- R13 insulation value
- Renewable/organic insulation material
- Safe bottom lifting
- Pre-painted G90 galvanized steel
- Hinged doors
- Lockable doors

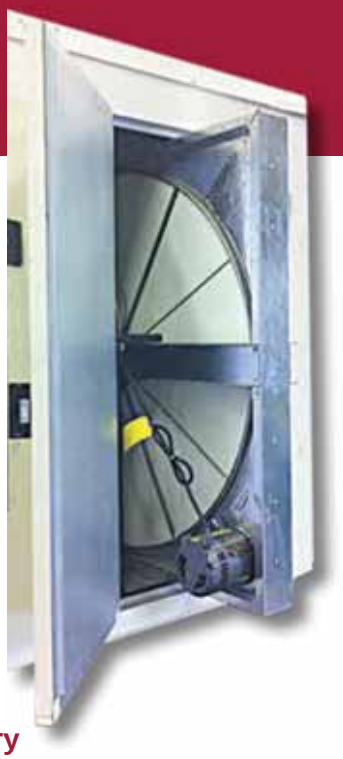


ReHeat Pump Operation

Model YDMA dedicated reheat system, provides stable and predictable year round performance. The independent circuit design allows superior part load efficiency without the hassle of low ambient control. The digital capacity control reliably maintains a stable 52°-55°F discharge air during the spring, summer and fall months from the pre-cool DX coil and primary DX coils. The independent reheat circuit then applies reheat back into the airstream as needed. The table shows actual unit performance during fall & spring conditions.

Reheat Performance	Entering Air Conditions dB/wB/dP		DX Capacity	Reheat Capacity	Leaving Unit dB/Wb	dP
Warm Spring Day	83/69	62.5	31%	100%	72/59.8	52
Rainy Fall Day	68/64	62	31%	87%	72/59.9	52
Cold & Raining	60/60	60	OFF	100%	72/60.8	53

Note: Dry bulb and wet bulb temperatures show dewpoint.



Supply Fan

The supply fan is the heart of the system. We made ours long lasting.

Reznor brand offers units with plenum fans with direct drive motors. The units can also be selected with plenum fans and EC motors.

Features:

- Direct drive plenum fan
- VFD or EC motor
  - » Duct pressure control
  - » Building pressure control
  - » Constant volume
- Slide-out servicing
- Phase loss protection
- Power exhaust (optional)
  - » Adjustable constant volume
  - » Building static pressure
  - » Supply fan tracking
- CFM monitoring

Energy Recovery

Energy recovery systems recover exhaust air energy and re-introduce it into the conditioned space. Model YDMA, with the energy recovery module, integrates this savings allowing greater application flexibility.

Features:

- Integrated power, controls, and mechanical
- ARI rated enthalpy wheel
- Superior sensible and latent performance
- Minimal cross contamination (less than 5%)
- Slide out servicing
- Optional low ambient control kit for temperatures below 10°F
- Electric preheat
- Standard filtration (MERV8)
- Standard barometric relief exhaust damper
- Can handle unbalanced air flows
- CFM monitoring

Enhanced Capacity Selection

The YDMA allows for more combinations of heating and cooling than traditional units. For northern climates requiring extra heat or southern climates needing more cooling, the YDMA can handle it.

Gas Heat Input (MBH)		DX Capacity Size (Tons)								
80%	92%	5	-7.5	10	12.5	15	17.5	20	25	30
50	--	✓								
75	--	✓	✓	✓						
100	--	✓	✓	✓	✓					
120	--	✓	✓							
125	--	✓	✓	✓	✓	✓				
150	--	✓	✓	✓	✓	✓	✓			
--	150	✓	✓	✓	✓	✓	✓	✓		
175	--	✓	✓	✓	✓	✓	✓	✓		
200	225	✓	✓	✓	✓	✓	✓	✓	✓	✓
300	--		✓	✓	✓	✓	✓	✓	✓	✓
--	300			✓	✓	✓	✓	✓	✓	✓
--	375					✓	✓	✓	✓	✓
400	--			✓	✓	✓	✓	✓	✓	✓
500	450					✓	✓	✓	✓	✓
600	--					✓	✓	✓	✓	✓
--	600								✓	✓
700	--								✓	✓
800	--								✓	✓

Controls

Control System

Makeup air applications push the limits on traditional control systems. The Model YDMA control system was specifically designed to meet these demanding applications. It has the ideal blend of custom unit performance without overwhelming the user with unnecessary setpoints, menus and confusing complex sequences. When needed, the unit gives the right information at the right time, but most of the time it works behind the scene just like you want it to.

Features

- Standard unit mounted display
- Optional remote display(s)
- Native BacNet & Lon communication
- Test mode and start-up operation
- Controller level status lights
- Quick setpoint menus
- Permanent unit memory back-up
- Unit safeties
- Anti-cycle program
- Reheat anti-freeze program (patent pending)
- CFM monitoring and control
- Patent pending - Hot Gas Reheat Control

Alarm & Recovery

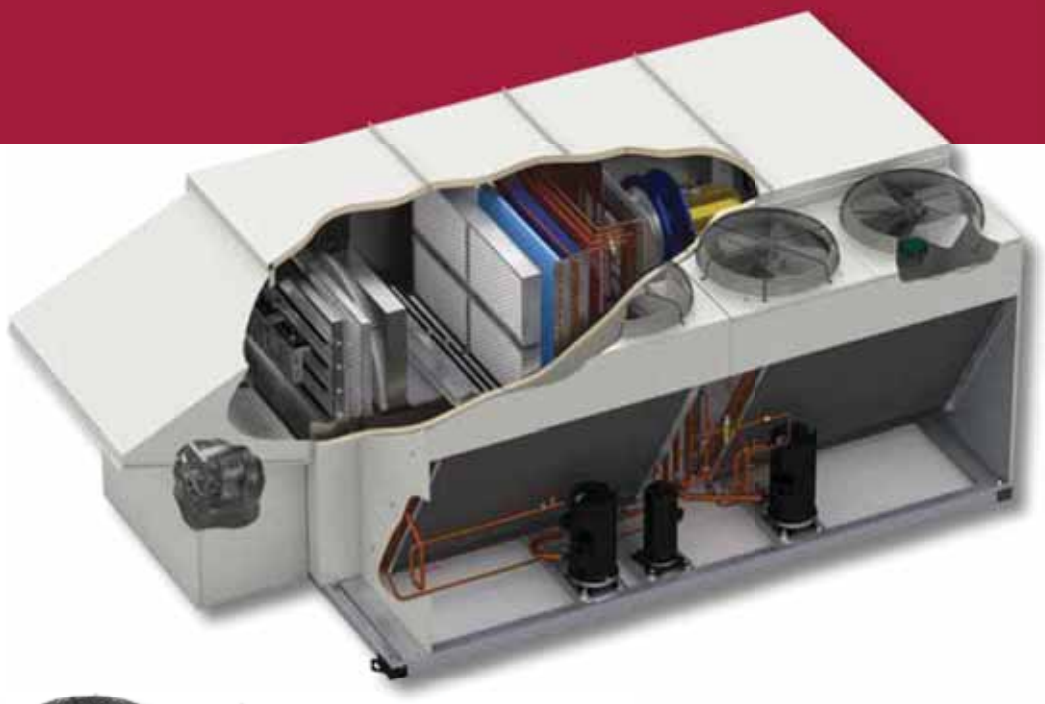
- High discharge air temperature
- Low discharge air temperature
- No flow
- Failed sensor(s)
- Phase loss/ brownout
- Smoke
- Mechanical heat
  - » 5 alarms codes
  - » 10 error codes
- Mechanical cooling
  - » 7 alarm codes
- Intelligent system recovery

Sequences of Operation

- Neutral air control
- Space temperature reset control
- Tempered air control
- Process control
- Supply air constant volume
- Supply air variable volume
  - » Duct static & building static
  - » Demand ventilation
  - » Exhaust fan matching
  - » Summer/winter fan speed
  - » Space fan speed control
  - » Manual & external control
- Power exhaust control
- Mixed air damper controls
  - » Duct static & building static
  - » Demand ventilation
  - » Exhaust fan matching
  - » Manual & external control
- Energy recovery

System Integration

Modern buildings are relying more on building wide automation systems to maintain proper control of the facility. The native BacNet control system has been specifically designed to be integrated in your BAS. This insures hassle free integration. In addition Lon protocols are also available. More importantly, the control system is intuitive and user friendly so that you don't have to be a computer to understand it.



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For complete catalog information including submittals, energy calculations, dimension drawings, and more go to ReznorHVAC.com or call 800-695-1901.

Note: In keeping with our policy of continuous product improvement, we reserve the right to alter, at any time, the design, construction, dimensions, weights, etc., of equipment information shown here.

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