

# DES/DX ERV

Energy Efficient 100% Dedicated Outside Air System  
Advanced Humidity Control

The **DES/DX ERV** unit is a highly efficient dedicated outside air unit that combines the benefits of desiccant based dehumidification with energy recovery ventilation. Outside air is tempered in the ERV section and then dehumidified with a cooling coil followed by further dehumidification with a desiccant wheel. Waste condenser heat from the DX circuit is used to regenerate the desiccant wheel. The **DES/DX ERV** units provide low dewpoint (typically less than 45°F) air at essentially space neutral temperatures. In winter, energy savings continue to be realized as the ERV section recovers the exhaust air energy which preheats the outdoor air prior to a heating unit. Optional post heating packages are also available.



The **DES/DX ERV** unit  
sizes range from 2,000 to 10,000 cfm.

## BENEFITS

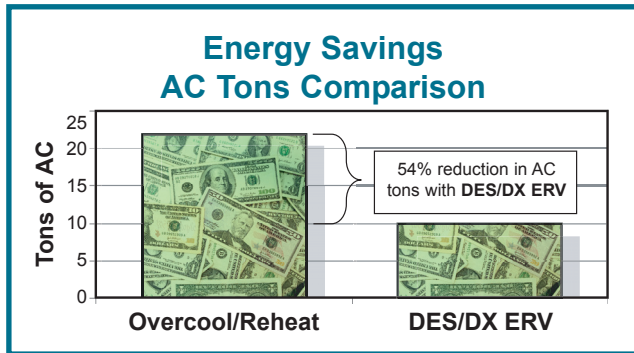
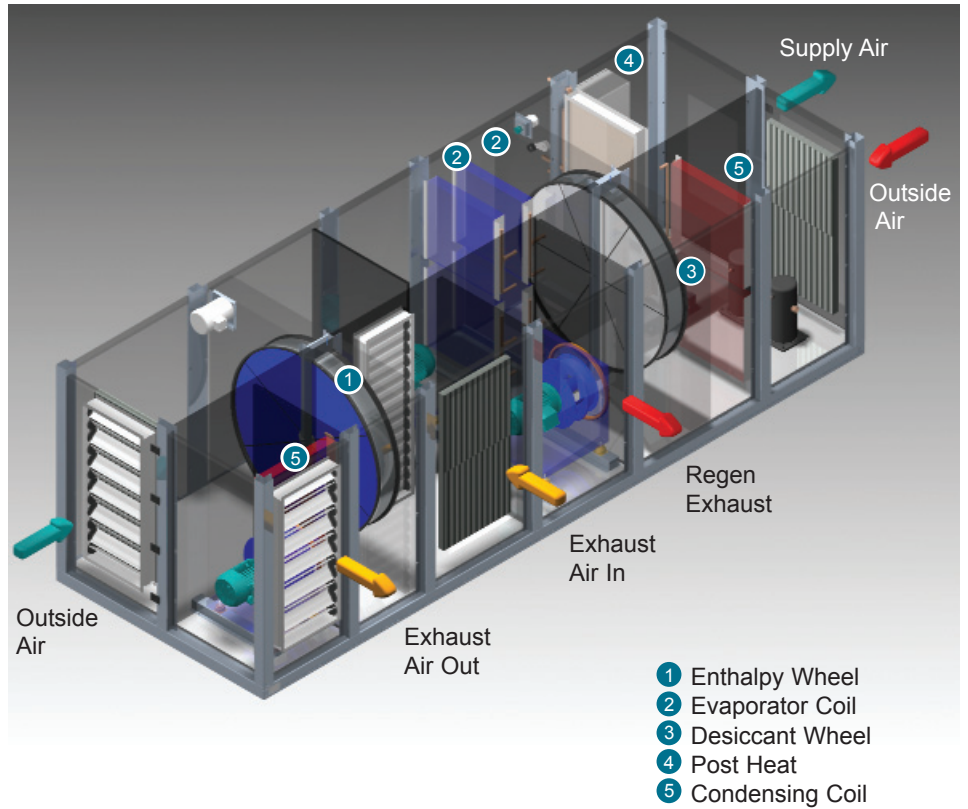
- Unmatched energy efficient dedicated outside air system
- Provides low dewpoint make up air
- Winter time energy recovery
- Humidity control in unoccupied mode

## FEATURING

- 410A refrigerant, scroll compressors
- NovelAire manufactured wheels
- AHRI certified energy recovery wheel
- Proprietary low temp regenerated desiccant wheel
- Designed with low face velocity wheels and coils
- Optional heating and post cooling packages available
- Double-wall cabinet construction
- Low maintenance direct drive fans with vfds
- BMS interface
- ETL listed

# HOW IT WORKS

The **DES/DX ERV** unit is comprised of primarily two main sections- an ERV section that uses a highly efficient energy recovery wheel to exchange enthalpy between outdoor air and building exhaust air and, a dehumidification section that cools the air to saturation prior to a desiccant wheel which further dehumidifies while providing free reheat. In dehumidification mode, outside air passes through an energy recovery wheel where its enthalpy is reduced, through an evaporator coil section where the enthalpy is further reduced. The cooled saturated air then passes through a desiccant wheel where the air is dried to a low dewpoint and warmed simultaneously supplying the building with a very dry, space neutral temperature air. Waste condenser heat is used to reactivate the desiccant wheel. Optional post heating or cooling is used to further control the supply air conditions if required.



Basis: 4000 cfm, 95/78wb outside air, 78/45DP supply air

The ERV section tempers the outdoor air sufficiently to reduce and simplify the DX requirements for the dehumidification section. The use of the desiccant wheel following the DX section ensures the lowest possible supply air dewpoints with significantly less energy consumption when compared to the typical process of overcooling followed by reheat.

The DX section can be operated independently in a recirculating dehumidification mode when ventilation air is not required.

# SPECIFICATIONS

Unit/CFM	2000	3000	4000	6000	8000	10000
Compressor Tons	5	7.5	10	15	22	27
Total Capacity (BTU/hr)	142592	210313	284887	434950	585560	740364
Water Removed (lb/hr)	98	148	197	301	397	495
Leaving Air DB/DP (F)	79 / 44	80 / 43	79 / 43	79 / 42	78 / 43	77 / 43
Dimensions L x W x H (in)	198 x 68 x 58	224 x 82 x 70	290 x 96 x 82	312 x 96 x 90	324 x 120 x 108	342 x 120 x 114
Weight (lbs)	3900	6500	9350	12000	15900	19500

Basis 95/78wb outside air, 75/50% return air

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