

MODEL E ENGINEERING SPECIFICATIONS



AIR-TO-AIR HEAT EXCHANGERS

HEATEX

1. SPECIFICATIONS

- Triangle shaped corrugated aluminum matrix air-to-air rotary heat exchanger.
- Exchanger seals shall be of brush type.
- Brush seals shall be included to separate fresh air from exhaust air across the entire surface of the air entering side, the air leaving side, and around the outer perimeter of the rotor wheel.
- The brush seal should be able to flex back in order to compensate if there is a deflection in the wheel and seal at all time.
- The distance between the heat recovery wheel surface and cover-plate must be 18 mm to leave sufficient space for deflection of the wheel as well as minimize the leakage.
- The distance between the heat recovery wheel surface and center beam must be 20mm to avoid impact of beam shadow.
- The rim of the rotary heat exchanger shall consist of a flat aluminum sheet to ensure good contact between belt and the rim.
- The design of the rotary heat exchanger shall be done so that it can withstand a differential pressure up to 600Pa.
- Casing shall be fabricated of heavy duty, free rolled Aluzinc steel, with a sheet metal thickness ranging from 1,5 mm to 3 mm.
- For maximum compactness, the casing width & height shall not be larger than: Rotor diameter (Ø) + 50 mm.
- Rotor shall be supported by internally mounted sealed ball bearings that are maintenance free and permanently lubricated.
- Drive system shall have IP 55 protection class or higher and consist of either:
Gear-less stepping motor with MODBUS interface and 0-10 volt input signal, driving a self-adjusting round or multi-link belt.
Or
AC gear motor, driving a self-adjusting round or multi-link belt.
- Rotation speed should be 25rpm for adsorption wheel, 17rpm for hygroscopic wheel and 12 rpm for condensing wheel.
- Energy efficiency of the RHE must meet or exceed the demands stated in Ecodesign Lot 6.
- The RHE must be Eurovent certified and comply with EN13779 (standard for comfort ventilation).
- Control and motor units shall be approved by and comply with EMC Directive 2004/108/EC (according to EN 61800-3) and UL 508C or CSA C22.2 No. 14.

2. MEDIA OPTIONS

- Aluminum: Aluminum matrix for sensible energy recovery in non-corrosive environments.
- Epoxy: Self-sealing epoxy coated aluminum matrix for sensible energy recovery in corrosive environments.
- Hybrid Hygroscopic:
 - Aluminum and silica gel coated aluminum matrix for sensible and latent energy recovery.
 - Aluminum and molecular sieve coated aluminum matrix for sensible and latent energy recovery.
- Adsorption:
 - 3-4Å molecular sieve desiccant coated aluminum matrix for sensible and latent energy recovery.
 - Silica gel coated aluminum matrix for sensible and latent energy recovery.

3. OPTIONS

- Purge sectors shall be available and have a maximum angle of 3,5° (12rpm), 5° (17 rpm) and 10° (25 rpm) per air flow, with a maximum EATR-value of 0.16%.
- Without purge sector EATR must be within permissible limits of less than 5% as per class 3 classified of air, stipulated in ASHRAE 62.1
- Variable Frequency Drive for economizer and frost prevention.
- Multi-Link type drive belt, that does not need to be welded or require any other component when joining, must be available on all wheel diameter sizes.
- Condensing tray, to gather and transfer condensed water out of AHU.
- Inspection hatches, for easy access to the different rotor parts.
- Covered casing (four sides) shall be available as an option.