BG Revolutionary Dual-cycle Air Conditioning Systems

Revolutionary dual-cycle air conditioning systems combining a traditional refrigerant heat pump with an innovative liquid desiccant system for unmatched cooling, heating and dehumidification cost performance, particularly in humid areas

HAC-CA (Hybrid Air Conditioner - Circulated Air)

- For agricultural, industrial, and public facility applications where ambient humidity is high, or low humidity is mission-critical, the Hybrid Air Conditioner - Circulated Air (HACCA) excels at lowering temperatures, humidity, disease, and - especially - energy costs.
- With over five years of field experience, and based on standard off-the-shelf compressors and other moving parts, the innovative HAC-CA actually performs better in high-humidity ambient conditions.
- Further, the HAC-CA delivers highly-efficient heating in cold climates (as low as -10 °C), without problematic refrigerant pipe icing. The air conditioners also actually add water vapor to heated air – producing healthier and warmer air with much less energy input.

HAC-FA (Hybrid Air Conditioner - Fresh Air)

- For treating fresh air in humid climates, the Hybrid Air Conditioner - Fresh Air (HAC-FA) includes an innovative mechanism that ”recaptures energy” from already-cooled air as it is expelled.
- Through an innovative series of heat exchanges between air and liquid desiccant, the HAC-FA dramatically increases the efficiency of fresh-air cooling in hot, humid weather, and of fresh-air heating in cold climates - achieving a COP of 6 for cooling in tropical climates and a COP of 7 for heating.
- Based on standard off-the-shelf compressors and other moving parts, the HAC-FA can be installed as a standalone unit or as a fresh-air add-on to existing traditional air conditioning installations.

DAC-FA (Direct Air Conditioner - Fresh Air)

- For supplemental fresh-air conditioning in high ambient humidity climates, the Direct Air Conditioner - Fresh Air (DAC-FA) delivers cold, dry air with no compressor energy overhead.
- Based on the same technology as the HAC-FA but without the conventional refrigerant heat pump, the DAC-FA supplements conventional air conditioning systems with sufficient cooling power, providing highly cost-effective dehumidification of incoming fresh air, and dramatically decreasing the load on the conventional air conditioning system.
- With extremely low power consumption, the DAC-FA can achieve a COP of up to 15.

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