Save Money.
Be Adaptive.

Air-Cooled Adaptive Frequency™ Drives for CenTraVac® Chillers

The Trane retrofit Adaptive Frequency™ Drive (AFD) is available for Trane model CVHE and CVHF CenTraVac® chillers. By adapting the motor speed to the chiller operating conditions, the AFD helps maximize chiller efficiency and reduces power consumption. Working in conjunction with the Trane chiller control panel, the AFD allows the chiller to meet the system load conditions and maintain the lowest possible kW/ton. Installing an AFD can provide significant energy savings; the resulting payback can be especially high in areas where utility rates and electrical demand are high.

Features and Benefits

Air-Cooled
Trane retrofit AFDs, models AFDH & AFDL, are air-cooled, making them easy to install. With over 98% efficiency, the rejected heat has little impact on equipment room environments.

Unit-or-Remote Mounted
Unit- and remote-mount options provide flexibility to accommodate the unique footprint of the mechanical room saving significant labor costs.

Integrated controls software: The Trane-patented AFD control logic is integrated with the CenTraVac® chiller controls to optimize chiller efficiency, reliability, and drive performance. Standard motor protection includes power factor monitoring, over and under voltage, lack of phase and phase reversal protection. Advanced motor protections, including output short circuit and ground fault protection, input transient, and voltage protections, are standard.

Variable torque and soft start: Variable torque and soft start reduces the risk of motor and compressor damage. Compressor motor is started using low frequency and voltage, then brought up to the correct speed slowly by increasing the frequency and voltage (torque) at the same ratio.

Consideration

High run hours at part load: Trane AFDs can produce significant savings when applied to chillers that often run at part load by slowing motor speed instead of closing inlet guide vanes. Examples include office buildings with data centers, sports arenas, and buildings with oversized chillers.

Frequent starts/stops: Swing chillers and chillers with very low loads are often subject to frequent starts and stops. This repetition is inefficient and hard on motor windings. The soft start capability of an AFD can reduce energy costs and improve motor reliability by keeping the chiller online.

High utility rates: More expensive power means more savings when solutions like a retrofit AFD are installed. Many utilities offer rebates for installing AFDs. Rebates can pay for a significant portion of an upgrade making the return on investment even greater.

Technical Information

Enclosure: NEMA 1 ventilated with a hinged, locking door and circuit breaker. The entire package is UL/CUL listed.

Voltage:
380/400V, 460/480V, 575/600V

Amperage:

- 293 up to 990 amps for 380/400V applications
- 281 up to 1500 amps for 460/480V applications
- 178 up to 1120 amps for 575/600V applications

Air-cooled ambient limit:
104° F for 24 hours continuous
113° F absolute operating ambient

Power factor:
Exceeds 0.96 regardless of speed and load

Efficiency:
Minimum of 98% at rated load amps

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