Efficient and adaptive.

AFDK Adaptive Frequency™ Drives

Trane Adaptive Frequency™ Drives (AFD) can help you save on energy bills by improving the efficiency of your existing chillers. The new AFD model AFDK is equipped with Active Front End (AFE) technology that allows you to cost effectively conform to IEEE Guideline 519, Recommended Practices and Requirements for Harmonic Control in Electric Power Systems. Harmonic attenuation may be needed to qualify for tax incentives or utility rebates.

Features and benefits.

Harmonic attenuation

The AFDK model can help you conform to IEEE Guideline 519 with its Active Front End (AFE) technology, designed to minimize harmonic distortion.

Cooling options

The AFDK model is offered in either a water-cooled or air-towater-cooled option. Like other Trane water-cooled drives, this makes it compact and quiet so it can operate in many sensitive environments like hospitals. It is also available in a refrigerantcooled configuration when used as a replacement for an existing Trane AFD.

Remote-mounted

Standard remote-mounted packages yield significant labor and space savings by allowing the AFD to be easily mounted anywhere in the mechanical room.

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

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.

BAS compatible

AFD control functions can be incorporated in the building automation.

Technical information

Enclosure: NEMA 1 ventilated with a hinged, locking door and door-mounted circuit breaker with shunt trip, short circuit withstand rating of 65,000 amps per UL 508. The entire package is UL/CUL listed.

Voltage: 460v/480v

Power factor: Exceeds 0.96 regardless of speed and load

Efficiency: Minimum of 97% at rated load amps

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.

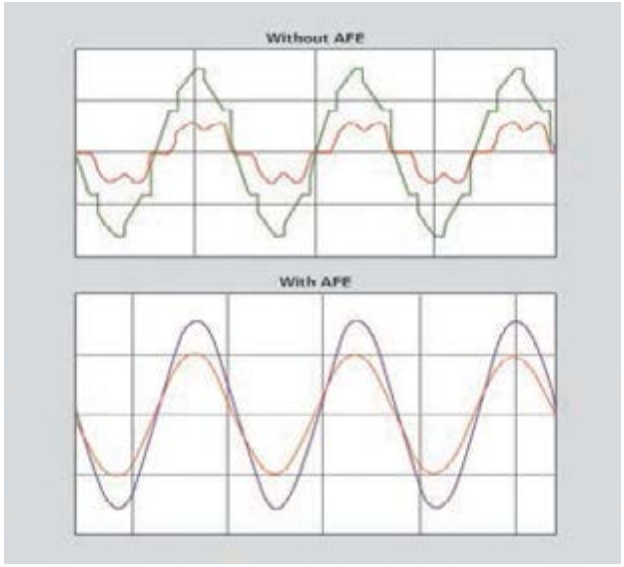
Frequent starts/stops: Swing chillers and chillers with very low loads are often subject to frequent starts and stops. This repetition is inefficient and hard on motor windings. The soft start capability of an AFD can reduce energy costs and improve motor reliability by keeping the chiller online.

High utility rates: More expensive power means more savings when solutions like a retrofit AFD are installed. Higher utility rates accelerate the payback and allow for aggressive solutions like a retrofit AFD.

Energy rebates: Many utilities offer rebates for installing AFDs. Rebates can pay for a significant portion of an upgrade, making the return on investment even greater.

To evaluate your application and see how much energy you could be saving, contact your local Trane sales office.

Water-cooled AFDK drive



Effects of AFE technology

SRV-SLB083-EN
06/15/2020