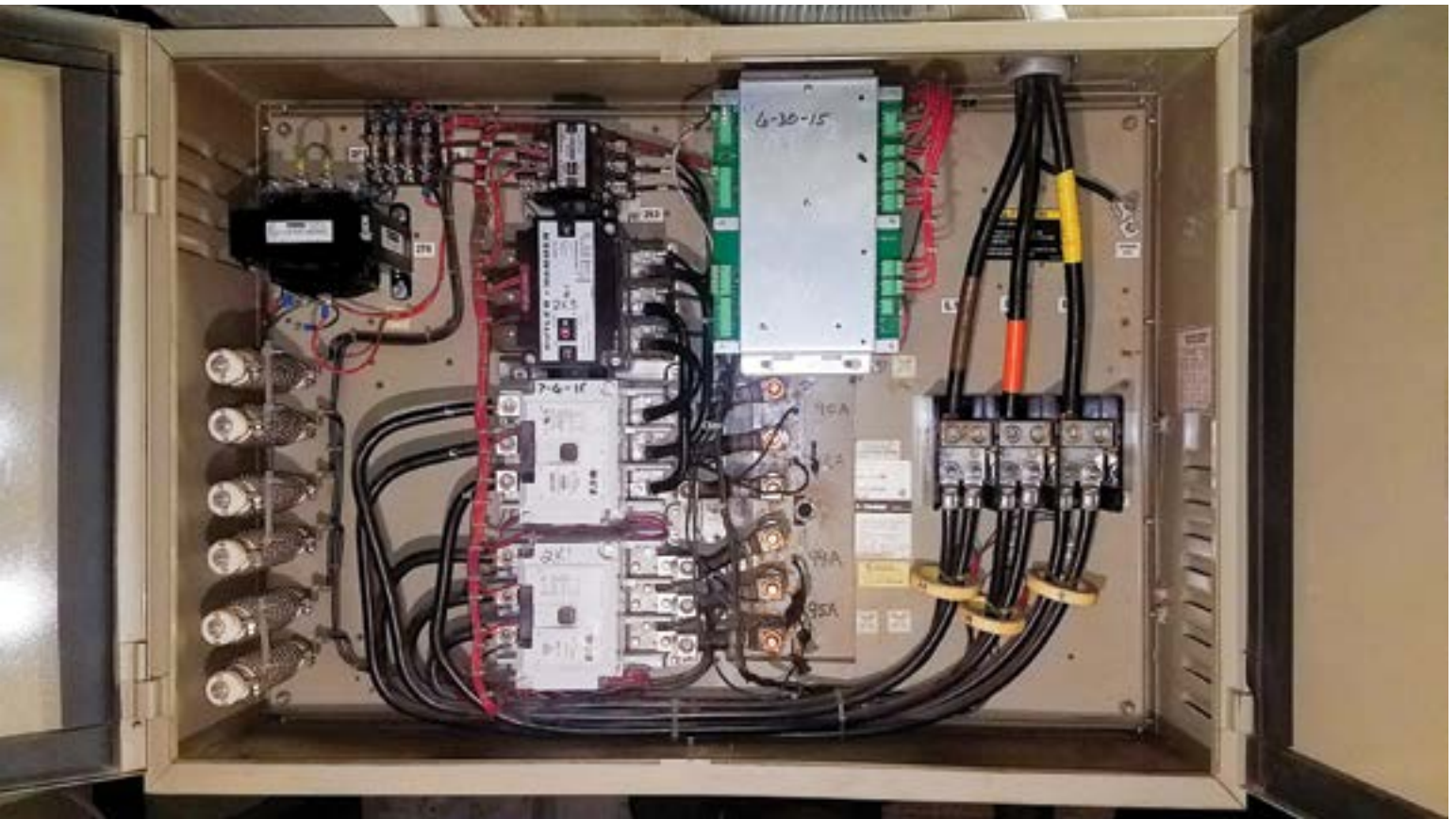




RTHA-D Power Controls Kit





What Series R power controls do...

Power controls, more commonly known in the industry as a starter, regulate the chiller motor electrical power when it is starting and running. By regulating the amount of power to the motor, the motor and compressor receive less stress; therefore, the life of the chiller is prolonged.

Why replace or upgrade your existing power controls

For most buildings, the chiller's electrical inrush is the building's single largest electrical demand. This and the fact that the starter is expected to operate often more than 10,000 times in a decade means it's not surprising for starters to require major service over a machine's life.

Repairing a failed starter can be a significant project, not to mention that its failure can also cause serious damage to the compressor and chiller. Trane offers a Series R power controls upgrade to provide proactive options compared to simply running to failure.

There are three main reasons why a comprehensive starter upgrade should be considered for your Trane series R chillers:

1

A planned upgrade will be less disruptive and expensive than replacing components as they fail.

A Trane starter upgrade can be done as a planned offseason event. This saves the cost and inconvenience of expedited and overtime repairs during cooling season.

2

Many starter legacy starter parts are no longer available, resulting in unnecessary costs and delays when unplanned failures occur.

Most Trane Series R chillers are over 15 years old and the oldest are over 30 years old. This is a problem because many of the legacy parts in these starters are incompatible with today's service parts. As such additional parts must be replaced when no longer supported parts fail.

The Trane Series R Starter power controls upgrade provides all new starter power components, using the same parts offered with new Trane starters. This eliminates concerns about delays and concerns caused by out of production and no longer available components.

3

New and improved technology.

Legacy Trane starters were designed around chiller controls that are now up to five generation old.

The new upgraded starter controls are fully compatible with new Trane AdaptiView controls. Their installation allows the entire chiller control package to take advantage of new Trane controls and protections.



What Trane offers

Trane offers a variety of starter upgrade solutions to fit the requirements of each chiller situation. Each has unique features that can help you achieve your building's goals.

Wye-Delta Upgrade:

A Wye Delta starter uses electrical power contactors to start the compressor in a two stage acceleration. Known for their robust and serviceable design, Wye Delta starters are the most commonly found starters on Trane chillers.

A primary benefit of Wye Delta starters results from having the lowest inrush current of any constant speed starter. Their inrush current is 33% less inrush than cross line starters, 10% less than solid state starters. Lowering inrush current can reduce light flickers and other issues on startup for the rest of the building.

Our Wye Delta upgrades are stocked and can be shipped in all configurations in as little as one day in response to an emergency. Wye Delta Upgrades are available for all generations of Trane Series R chillers with typical applications.

The upgrade is offered both as a refresh kit for existing Wye Delta starters and as a conversion kit to convert other type starters to Wye Delta design. In either case, all new power components including contactors and transition resistors are installed to bring the starter to present OEM design and components.

Solid State Starter upgrades

A Solid State Starter uses silicone power transistors to control compressor power to provide a continuous compressor acceleration during the compressor startup operation.

The primary benefit of a Solid State starter upgrade is the "soft start" acceleration which is less stressful on the compressor and it's motor. The solid state starter upgrade provides new power control transistor assemblies that brings the starter to the same technology used on new Trane chillers.

The solid state starter upgrade can be used to replace existing no longer supported Trane Solid State Starters. It also can be used to replace any existing Trane Cross Line or Wye Delta starter.

An important note is that the Solid State starter upgrade requires the chiller to have a shunt trip type circuit breaker. This upgrade is not recommended for chillers not having shunt trip breakers.





Adaptive Frequency Drive Upgrade (AFD)

The adaptive frequency drive is offered as an upgrade for existing Trane RTHD family Series R chillers. This is the same variable speed option offered on new Trane Optimus RTHD chillers.

A Trane AFD continually adjusts chiller power frequency to the compressor motor in order to allow the compressor to operate at the lowest speed necessary to meet the building's cooling demand.

By lowering compressor speed, this improves compressor efficiency and saves energy. The primary benefit of an AFD upgrade is the 20% to 25% improvement in chiller IPLV part load efficiency.

Other benefits include:

- Reduced stress on chiller components.
- Elimination of excess inrush current which is an advantage where emergency generators are used to power the chiller.
- Reduced compressor noise during reduced speed operation.

The AFD upgrade is available only for Trane RTHD chillers. Its installation requires that the chiller be upgraded to current generation AdaptiView controls.

Installation Options

Chiller starter maintenance is critical to maximizing a Series R chiller's productive life. The starter upgrade can be done as a planned event or on an emergency basis.

Planned Event

A planned starter upgrade would be done during off season times when chiller operation is not required. These are typically done as part of a strategy to extend chiller useful life and reliability, typically when the starter is 12 to 15 years old.

These starter upgrades are often done in concert with other life extending activities such as controls upgrades. A chiller controls upgrade requires the starter to be rewired to the new controls. By doing the starter upgrade at the same time, this work is not duplicated.

The Starter Upgrade can also be done as part of an R'newal. Here the advantage is by combining the costs of both the R'newal and upgrade into the same project, separate projects do not have to be run and budgeted.

Emergency Basis

Wye Delta upgrade kits are stocked and can be shipped in as little as 1 day turn around for emergency situations.

The emergency basis upgrade is often the best option where the failed starter has no longer available parts which would require a major conversion in order to be repaired. A Wye Delta Starter upgrade is the fastest way to get chillers having these starters up and running again.

The emergency repair option can even be attractive when the starter has experienced a simple serviceable failure. This is because the incremental cost of installing a complete kit is not that much more than many major repairs.

Where budgets and time allow, the comprehensive starter upgrade is an attractive option compared to just replacing failed components while leaving the rest of the starter in its original condition.



Trane offers a variety of solutions for the life of your Series R® Chiller



R'newal® Services

Don't let just anyone overhaul your chiller at mid-life, trust the original manufacturer. A Trane R'newal is backed by a 2 or 5 year factory warranty.



AdaptiView™ Upgrades

Operate your chiller with controls that are shipping on new factory units today with an AdaptiView Controls upgrade.

Series R starter upgrade is part of a plan for the life of your unit.
Work with your local Trane office to ensure you're planning for the life of your unit.



AFD Upgrades & Replacement

Increase energy efficiency of your building by upgrading your system to an Adaptive Frequency Drive (AFD) or replace your existing drive.



Service Agreements

Trane is your one stop shop when it comes to equipment — ensure it is operating to its full potential with a Service Agreement.

Learn more at trane.com



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.com or tranetechnologies.com.

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