AdaptiView™ Chiller Control Comparison

For RTAC Air-Cooled Chillers

Trane UCP1 panels were offered on water-cooled Series R™, model RTHA chillers built from mid 1988 through 1994. These panels relied upon fixed control alarm setpoints that did not allow adaptive protection from faults. In addition, the event of a power outage resulted in a fixed time shutdown that could be as long as 30 minutes. Such delays often resulted in an extended outage of chilled water production.

Tracer™ CH530

AdaptiView™

Features	UCP1 Control Panel	Tracer AdaptiView Control Panel	AdaptiView Benefits
Base Technology	Single module for unit and starter control. Has 2 digit alpha-numeric display for operator interface.	Networked digital sensors and display, controlled by Tracer™ UC800 digital controller and Tracer TD7 graphic display.	Provides unit control flexibility and monitoring not possible with early generation digital controls.
Primary Repair Components	Key modules and parts haven't been used on new Trane chiller control panels in 20+ years. These parts will no longer be supported as of 3/31/2015	Modular digital component design that minimizes cost of individual service parts and all components are used in Trane present production equipment.	Repair components are in stock and affordable.
Trane Communications Capability	Com 2 Trane digital communication - Not compatible with current Trane building automation systems.	Compatible with current Tracer Summit™ and Tracer SC building automation system.	Communicates with Tracer systems which allows advanced energy saving strategies such as Tracer chiller plant optimization.
Facility Communications Capability	No digital communication with facility communications systems.	Native LonTalk™, BACnet, Comm4 and Modbus® communications capability.	Communicates with leading commercial and industrial building management systems.
Temperature Control Strategy	Modified proportional control.	Feedforward Adaptive Control is an open-loop, PID - predictive control strategy designed to anticipate and compensate for load changes. It uses evaporator entering-water temperature as an indication of load change.	Responds faster and maintains stable leaving-water temperatures. It also eliminates the inherent proportional error seen with deadband controls.
Chiller Protective Control Strategy	Has fixed setpoint refrigerant temperature and refrigerant pressure safety controls.	Adaptive protection strategies - The Tracer UC800 controller monitors chiller refrigerant temperatures, refrigerant pressures and electrical phase imbalances and adjusts chiller operation when conditions approach alarm limits. An example of such a condition is when there is a partial failure of a cooling tower, limiting total capacity.	Maximizes the ability to keep the chiller running under conditions that would shut down UCP1 controlled chillers.

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Motor/Power Protective Control Strategy	Digital current overloads, phase imbalance, phase loss and momentary power loss protections.	Advanced motor/power protection - Digital control protection from current overload, phase imbalance, phase loss, momentary power loss, and over and under voltage variations.	Digital controls are more accurate and faster than analog overload controls. AdaptiView provides power imbalance protections that address important causes of chiller failures.
Performance Optimization	Unable to utilize Trane Intelligent Services to analyze and optimize chiller performance.	The UC800 control module provides a path to connectivity and use of Trane Intelligent Services. The optional inclusion of the Tracer™ SC module will allow for remote inspection, chiller performance optimization, and predictive maintenance.	The UC800 control module provides a path to connectivity and use of Trane Intelligent Services. The optional inclusion of the Tracer SC module will allow for remote inspection, chiller performance optimization, and predictive maintenance.
Unit Startup Strategy	Soft loading strategies. Large adjustments due to load or setpoint changes are made gradually.	The chiller controller uses soft loading except during manual operation. Large adjustments due to load or setpoint changes are made gradually.	Soft start adjusts the start rate to conditions and does not extend pull down unnecessarily. Soft start prevents overshoot and protects the compressor from cycling unnecessarily. Also it prevents demand peaks that can occur during morning startups without false starts.
Power Failure Recovery Strategy	Upon shutdown, fixed anti-recycle timer prevents restart by up to 30 minutes.	Fast Restart - The controller allows the chiller to restart during the postlube process. If the chiller shuts down on a nonlatching diagnostic, the diagnostic has 30–40 seconds to clear itself and initiate a fast restart. This includes momentary power losses.	Typically restarts 30-40 seconds after a power failure, compared to older chillers that require up to 30 minutes for a restart.
Performance Monitoring Capability	Monitors entering and leaving water, voltage and phase amps.	Capable of measuring heat exchanger approach, power consumption, power factor (uncorrected), compressor phase amps, and compressor phase voltage.	Allows users to monitor and diagnose chiller operation trends. An unnoticed 4 degree fouling of heat exchangers costs 6% or more in lost efficiency.
Logging and Reporting	Current status and alarm indicated on 2 digit LED display.	Recorded data logs include ASHRAE 3 report, Custom report, Graphical custom historical data log, purge report, and 20 alarm log (via TD7 display; Tracer TU allows access to 100 historic alarms).	Allows users to monitor and diagnose chiller operation trends.
Setpoint Saving and Backup	Mechanically set parameters.	All unit configurations and setpoints are recorded digitally via Tracer TU allowing complete backup and restoring of unit operating parameters.	Speeds replacement and assures accuracy in case the panel requires repair.

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