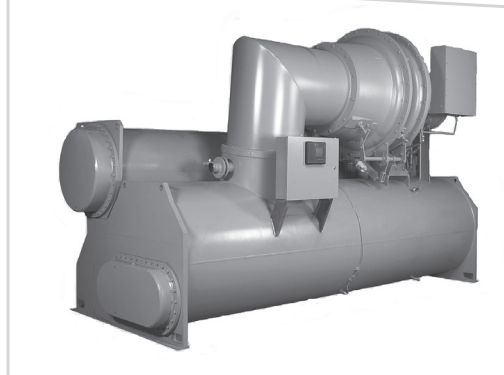
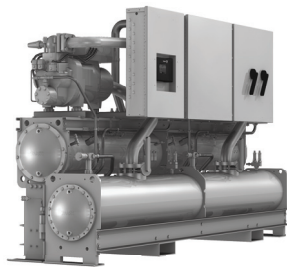
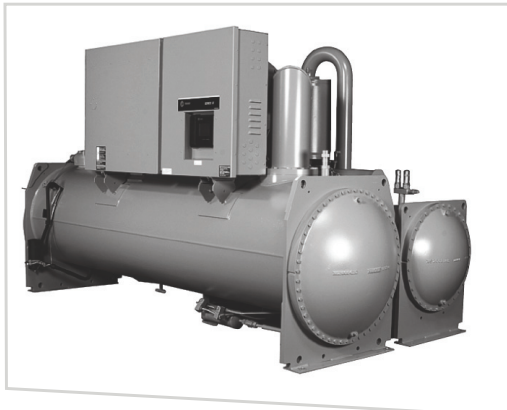




Product Data

LonTalk® Communication Interface for Chillers (LCI-C)

Data Sheet



SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.



Trademarks

All trademarks referenced in this document are the trademarks of their respective owners.

Trane[®] Open Solution

Building professionals demand products that allow them to design and install open solutions. In response, Trane offers equipment, controllers, and systems that fully support open protocols. More importantly, Trane offers the system integration knowledge to combine products and services that meet a variety of customer needs.

As an HVAC leader, Trane knows and understands HVAC equipment. This knowledge and expertise uniquely qualifies Trane to control equipment for the most efficient operation within the building automation system. While some applications demand open communication, many building owners find that an all-Trane system best meets their needs. Trane controls and HVAC components are designed to work together to provide easier commissioning and start-up. In ongoing operation, there is a single source available for parts and service. With built-in support for standard industry protocols, a total Trane system is still open for auxiliary systems and future building options. Whether a specific application calls for a single source supplier or a complex system integration, Trane can deliver a solution.

LonTalk[®] Communication Interface for Chillers (LCI-C)

The optional LCI-C, available as either factory installed or field retrofitted, is an integrated communication board that enables the chiller controller to communicate over a LonTalk network. While monitoring alarms and statuses, the LCI-C is capable of controlling chiller setpoints and operating modes. The Trane LCI-C adds to the standard chiller profile, an additional set of points to meet a broader range of system inter-operable applications. These added points, or open extensions, build on the standard LonMark[®] chiller profile. The LCI-C is certified to the *LonMark Chiller Controller Functional Profile 8040, Version 1.0* and follows *LonTalk FTT-10A* free topology communications.

Trane Water Chiller Overview

Trane water chillers are designed for comfort cooling, process cooling, and ice-making applications. All Trane chillers utilize direct digital control (DDC) to provide accurate, reliable control, and protection. The following chiller models have LonTalk certified profiles. Refer to [Table 1, p. 3](#) for chiller types and corresponding variable names. Within this table are specific footnotes that are related to either a chiller type or variable name.

Water-cooled CenTraVac[™] Liquid Chiller

- Models CVHE, CVHF and CDHF (170 to 3,950 tons)
- Models CVHG, CVGF and CDHG (170 to 2,500 tons, international only)
- Centrifugal compressor

Water-cooled Series R[®] Liquid Chiller

- Model RTWA and RTUA (70 to 125 tons)
- Model RTWD (70 to 150 tons)
- Model RTHD (175 to 450 tons)
- Helical-rotary (screw) compressor

Air-cooled Series R® Liquid Chiller

- RTAF (115 to 500 tons)
- RTAE (150 to 300 tons)
- Model RTAA (70 to 125 tons)
- Model RTAC (140 to 500 tons)
- Model RTXA+ (70 to 200 tons) for China only
- Helical-rotary (screw) compressor

Water-cooled and Air-cooled Scroll Liquid Chiller

- Model CGWF and CCAF (20 to 60 tons) water-cooled
- Model CGAF (20 to 60 tons) air-cooled
- Model CGWH, CGWN, CXAN, CGAH, CXAH, RAUL, CCUH, CCUN, CGAN and CGCL (15 to 130 tons, international only)
- Model CGAM and CXAM (20 to 130 tons) air-cooled
- Scroll compressor

Table 1. Chiller type and related variables

	Centrifugal		Air and Water-Cooled Screw					Air and Water-Cooled Scroll			
	CDHF CDHG CH530	CVHE/CVHF CVHG/CVGF CH530/531	RTHD UC800/ RTHD CH530	RTAC CH530	RTAF RTAE UC800/ RTUD RTWD CH530	RTXA+ CH530	RTAA/RTWA RTXA/RTUA UCM	CGWF CCAF CH530	CGAF Ipak	CGAM CXAM CH530	CGWH/CGWN CXAN/CGAH CXAH/RAUL CCUH/CCUN CGAN/CGCL CH530
Program ID revision	02	02	04	06	09	05	08	03	07	03	03
Input Variable Names											
Chiller Enable/Disable Command	X	X	X	X	X	X	X	X	X	X	X
Chiller Mode (a) (b)	X	X	X	X	X	X	X	X	X	X	X
Base Loading Auto/On Request	X	X	X								
Base Loading Setpoint Input	X	X	X								
Chilled Water Setpoint	X	X	X	X	X	X	X	X	X	X	X
Current Limit Setpoint	X	X	X	X	X	X	X	X	X	X	X
Heating Setpoint	X ^(c)	X ^(c)	X ^(c)		X ^(c)	X	X ^(d)			X ^(d)	X ^{(c) (d)}
Noise Reduction Auto/On Request					X ^(e)	X					
Output Variable Names											
Evaporator Water Pump Request	X	X	X	X	X	X	X	X	X	X	X
Condenser Water Pump Request	X	X	X		X		X	X			X
Evaporator Water Flow Status	X	X	X	X	X	X	X	X	X	X	X
Condenser Water Flow Status	X	X	X		X		X	X			X
Evaporator Flow Rate ^(f)	X	X									X
Condenser Flow Rate ^(f)	X	X									X
Evaporator Leaving Water Temp	X	X	X	X	X	X	X	X	X	X	X
Evaporator Entering Water Temp	X	X	X	X	X	X	X	X	X	X	X
Condenser Entering Water Temp	X	X	X		X		X	X			X
Condenser Leaving Water Temp	X	X	X		X		X	X			X
2 nd Condenser Entering Water Temp ^(g)		X									
2 nd Condenser Leaving Water Temp ^(g)		X									

Table 1. Chiller type and related variables (continued)

	Centrifugal		Air and Water-Cooled Screw					Air and Water-Cooled Scroll			
	CDHF CDHG CH530	CVHE/CVHF CVHG/CVGF CH530/531	RTHD UC800/ RTHD CH530	RTAC CH530	RTAF RTAE UC800/ RTUD RTWD CH530	RTXA+ CH530	RTAA/RTWA RTXA/RTUA UCM	CGWF CCAF CH530	CGAF Ipak	CGAM CXAM CH530	CGWH/CGWN CXAN/CGAH CXAH/RAUL CCUH/CCUN CGAN/CGCL CH530
Program ID revision	02	02	04	06	09	05	08	03	07	03	03
Output Variable Names (Cont)											
Evaporator Refrigerant Temp/circuit	X	X	X	X	X	X	X	X	X	X	X
Evaporator Refrigerant Press/circuit	X	X	X	X	X	X	X	X	X	X	X
Condenser Refrigerant Temp/circuit	X	X	X	X	X	X	X	X	X	X	X
Condenser Refrigerant Press/circuit	X ^(h)	X ^(h)	X	X	X	X	X	X	X	X	X
Refrigerant Discharge Temp/circuit	X ⁽ⁱ⁾	X ⁽ⁱ⁾	X		X						
Outdoor Air Temperature				X	X	X	X	X	X	X	X
Condenser Fan Running Output							X	X	X		
Condenser Control Output			X		X						
Condenser Airflow				X	X		X	X	X	X	X
Active Chilled/Hot Water Setpoint	X	X	X	X	X	X	X	X	X	X	X
Active Current or Demand Limit Setpoint	X	X	X	X	X	X	X	X	X	X	X
Active Baseloading Setpoint	X	X	X								
Head Relief Request	X	X	X		X						
Compressor Running Output	X	X	X	X	X	X	X	X	X	X	X
Maximum Capacity	X	X		X	X	X	X	X	X	X	X
Noise Reduction Mode					X	X				X ^(j)	
Defrost Mode						X ^(j)				X ^(j)	X ^(j)
Alarm Description ^(k)	X	X	X	X	X	X	X	X	X	X	X
Run Modes	X	X	X	X	X	X	X	X	X	X	X
Operating Modes ^{(a) (b)}	X	X	X	X	X	X	X	X	X	X	X
State (Alarm, Run, Local, Limited)	X	X	X	X	X	X	X	X	X	X	X
Base Loading	X	X	X								
Hot Gas Bypass ^(l)		X						X	X		
Actual Capacity (% RLA)	X	X	X	X	X	X	X	X	X		
Current per Line	X	X	X	X	X	X	X	X	X		
Voltage per Phase	X	X	X	X	X	X	X				
Power per compressor (kW)	X	X			X ^(m)						
Oil Temp per Compressor	X	X		X		X	X				
High Side Oil Pressure/compressor	X	X	X	X	X ⁽ⁿ⁾	X					
Low Side Oil Pressure/compressor	X	X									
Compressor Starts	X	X	X	X	X	X	X	X		X	X
Compressor Run Time	X	X	X	X	X	X	X	X		X	X
Purge Status ^(o)	X	X									
24 Hour Pumpout Average/circuit	X	X									

- (a) Free cooling.
- (b) Chiller should be selected for ice making.
- (c) Leaving condenser water temperature control.
- (d) Hot water control with heat pumps in heating mode.
- (e) Requires very low noise reduction on RTAE.
- (f) Variable flow compensation.
- (g) Heat recovery or auxiliary condenser.
- (h) Based on temperatures without enhanced protection package.
- (i) Enhanced protection package.
- (j) Only available on heat pumps.
- (k) Alarm description denotes alarm severity and description of event. *Severity: no alarm, warning, normal shutdown, immediate shutdown.*
- (l) Hot gas bypass.
- (m) RTAE with AFD or power meter option.
- (n) Actually Intermediate Oil pressure for these products.
- (o) Regenerating, refrigeration circuit on, pumping out.



Resources

- *Sintesis™ Air-Cooled Chillers Model RTAF 115 to 520 Nominal Tons Product Catalog (RLC-PRC049*-EN)*
- *Stealth™ Model RTAE Air-Cooled Chillers With AdaptiSpeed™ Technology Quiet operation enabled by InvisiSound™ Technology 150 to 300 Nominal Tons Product Catalog (RLC-PRC042*-EN)*
- *Series R® Rotary Liquid Chiller Model RTWA 70 to 125 Tons Water-Cooled and Condenserless Built For the Industrial and Commercial Markets Product Catalog (RLC-PRC027*-EN)*
- *Series R® Helical Rotary Liquid Chillers Model RTWD Water-Cooled Model RTUD Condenserless 80 to 250 Nominal Tons (60 Hz) Made in USA Product Catalog (RLC-PRC029*-EN)*
- *Optimus™ Water-Cooled Chillers Model RTHD 150 to 430 (60 Hz) Nominal Tons 125 to 430 (50 Hz) Nominal Tons Product Catalog (RLC-PRC020*-EN)*
- *Air-Cooled Series R™ Rotary Liquid Chiller Model RTAA 70 to 125 Tons Built for Industrial and Commercial Markets Product Catalog (RLC-PRC016*-EN)*
- *Air-Cooled Series R® Chillers Model RTAC 140 to 500 Nominal Tons (60 Hz) Product Catalog (RLC-PRC006*-EN)*
- *Scroll Liquid Chillers Model CGWF and CCAF 20 to 60 Tons (60 Hertz) and 17 to 50 Tons (50 Hertz) Water-Cooled and Condenserless Built For the Industrial and Commercial Markets Product Catalog (CG-PRC012*-EN)*
- *Air-Cooled Liquid Chillers Models CGA and CGAF 10 to 60 Tons Product Catalog (CG-PRC007*-EN)*
- *Air-Cooled Scroll Chillers Model CGAM — Made in USA With Symbio™ Controls 20 to 130 Nominal Tons (60 Hz) Product Catalog (CG-PRC017*-EN)*



Notes

Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.