Specifications Guide

CGWH/CCUH
Water-cooled / Condensing Scroll Liquid Chiller
Model CGWH 115-120-125-225-230-335-240-250
Model CCUH 115-120-125-225-230-335-240-250

50 kW to 155 kW

CG-PRG008-E4

Full specifications

Features

The contractor shall furnish and install packaged water-cooled scroll liquid chiller of size and capacity scheduled.

- Operates with HFC-based refrigerant like R407C.
- Furnished with scroll compressors, brazed plate evaporator, and microprocessor-based control.
- Complies with EC requirements for Machinery, Electromagnetic and Pressure Equipment Directives (98/37/CE directive), as amended, and with national implementing legislation.
- Designed and manufactured in accordance with the quality assurance ISO 9001/BS EN ISO9001 and environment management system ISO 14001.
- Certified and rated in accordance with Eurovent standard.
- Designed for indoor or outdoor application and painted.

Compressors

- Hermetic scroll compressors:
  - Direct-drive 2900 rpm,
  - Suction gas-cooled hermetic motor,
  - Built-in centrifugal oil lubricating device.

Evaporator

- One single brazed plate heat exchanger, made of stainless steel ASI316 and copper brazing.
- Fully insulated with vinyl based closed cell insulation.
- One entering and one leaving water connection.
- Electronic chilled water flow switch, factory installed.

Condenser *(CGWH only)*

- One single brazed plate heat exchanger, made of stainless steel ASI316 and copper brazing.

Refrigerant circuit

All units have … refrigerant circuit(s), with two or three manifolded compressors on each circuit.

Provided for each refrigerant circuit:

- High and Low pressure transducers.
- Replaceable liquid filter-dryer.
- One thermostatic expansion valve per refrigerant circuit
- Pressure port on each refrigerant line.
- High pressure side pressure switch.
- Full operating charge of HFC-407C and P.O.E. oil. (R134a or R22 available on demand)

Control panel

- Weatherproof control panel, containing starters, power and control wiring, mounted on the chiller, and include primary and secondary fused control power transformer with 2 secondary control circuits:
  - 230 volt single phase connection for evaporator freeze protection heaters and control circuit,
  - 24 volt single phase connection for electronic part of the control circuit.
- The power panel door locked by a main disconnect switch.

Unit Controls

The microprocessor-based control panel shall be factory-installed and factory-tested. Chilled water reset based on return water is standard. The unit controller shall automatically act to prevent unit shutdown due to abnormal operating conditions associated with low evaporator refrigerant temperature, high condensing temperature, and/or motor current overload. If an abnormal operating condition continues and the protective limit is reached, the machine should shut down.
The panel shall include machine protection shutdown requiring manual reset for the following conditions:
• Low evaporator refrigerant temperature and pressure.
• High condenser refrigerant pressure.
• Critical sensor or detection circuit faults.
• Motor current overload.
• High compressor discharge temperature.
• Lost communication between main processor and LLID.
• External and local emergency stop.

The panel shall also include machine protection shutdown with automatic reset for the following correctable conditions:
• Power loss.
• Loss of evaporator or condenser water flow.
When a fault is detected, the control shall display diagnostic checks and results.
The display shall identify the fault, indicate date, time, and operating mode at time of occurrence, and provide type of reset required and a help message. The diagnostic history shall display the last ten diagnostics with their time and date of occurrence.

Control display

Factory-mounted to the control panel door, the operator interface shall integrate an LCD touch-screen display for operator input and information output. This interface shall provide access to the following information: evaporator report, condenser report, compressor report. All diagnostics and messages shall be displayed in "clear language."
Data contained in available reports shall include:
• Refrigerant pressure and temperatures.
• Flow switch status.
• Compressor starts and run-time.
All necessary settings and setpoints shall be programmed into the microprocessor-based controller via the operator interface. The controller shall be capable of receiving signals contemporaneously from a variety of control sources, in any combination, and priority order of control sources shall be possible to be programmed. The control source with priority shall determine active setpoints via the signal it sends to the control panel.
Control sources may be:
• The local operator interface (standard).

Full specifications

• A 4-20 mA or 2-10 VDC signal from an external source (interface optional; control source not supplied).
• Trane Tracer Summit™ system (interface optional).
• LonTalk LCI-C (interface optional; control source not supplied)
Optional capabilities:
• Water (CDS Inlet/Outlet) and air (outside ambient/zone) temperatures.
• Electrical distribution faults: current loss or phase reversal.

Performances

The water-cooled chiller proposed shall have:

- A minimum **COP** of …… including fans in the cooling design duty conditions (Eurovent conditions).
- A maximum **SOUND POWER LEVEL of ……dBA according to ISO 3746**

Installation

- Install in accordance with manufacturer's instructions.
- Align chiller package on steel or concrete foundations.
- Install units on rubber pads factory supplied.
- Connect to electrical service.
- Connect to chilled water piping.

Manufacturer's field services

- Supply service of factory trained representative for a period of …….. days to supervise testing, start-up, and instruction on operation and maintenance to Owner.
- Supply initial charge of refrigerant and oil.

Submittals

- Submit drawings indicating components, assembly, dimensions, weights and loadings, required clearances, and location and size of field connections. Indicate accessories where required for complete system.
- Submit product data indicating rated capacities, weights, specificities and accessories, electrical requirements and wiring diagrams.
- Submit manufacturer's installation instructions.


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Literature Order Number	CG-PRG008-E4
Date	0207
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