



# CGCH 115-250

Liquid chillers, air cooled,  
centrifugal fan

- Reliable, Efficient, and Quiet Operation.
- Reduced Maintenance.
- Fitted with Trane 3-D™ Scroll Compressors.
- Nominal cooling Capacities 50 to 150 kW (R22, 50 Hz)  
33 to 99 kW (R134a, 50 Hz)
- 8 Sizes



Quality Management System approval

D11 CA 001 E

Liquid chillers, air cooled, centrifugal fan  
CGCH 115-250. 50 to 150 kW R22, 33 to 99 kW R134a

# The Chiller Management System SMM (Scroll Manager Module).

The experience of Trane in the control of Liquid Chillers associated with the most recent technical innovations.

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## Leaving chilled water temperature control.

The temperature of the water is measured at the evaporator outlet. The SMM module compares this value with the setpoint and starts or stops the compressors following a PID algorithm.

## Condensing pressure control.

The SMM module controls the number of fans operating in a way which always optimizes the COP.

## Control.

The SMM module includes the following functions.

- Short cycle protection taking into account the frequency of compressor starts.
- Automatic restart after a power failure.
- Equalization of the number of starts and the operating hours of the compressors.
- Control of the chilled water pump.
- Control of the evaporator anti-frost heater.

## Optimization

In order to reduce electricity consumption the SMM module can automatically adjust the chilled water setpoint in relation to the outdoor temperature.

## Communication.

The SMM module caters for different types communication systems. These systems simplify considerably the maintenance and can supply information on the operating conditions of the chiller.

## Operator interface.

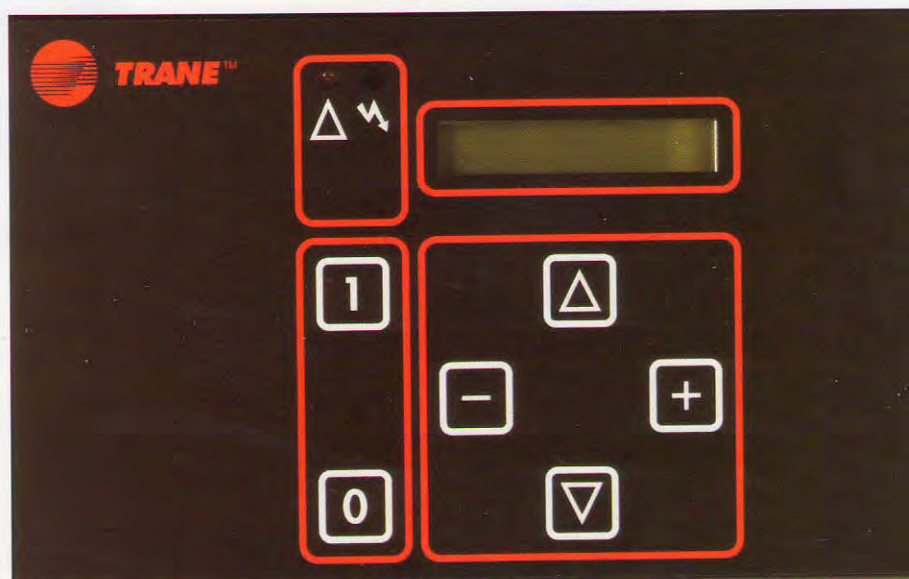
The SMM module includes a communication interface with a liquid crystal display. This interface provides an accurate assessment of the chiller operating conditions and facilitates a rapid diagnosis if a safety function is activated.

## Remote control

The dry contacts and the analog inputs, provided as standard, allow for the remote control and surveillance of the chiller.

If a safety function is activated an output via a dry contact is provided.

Inputs are available to partially or completely stop the operation of the chiller. An analog input (4/20 mA or 0/10 V) allows for the adjustment of the chilled water temperature setpoint.



## Technical characteristics (50 Hz)

Model	CGCH	115	120	125	225	230	235	240	250
Number of Circuits		1	1	1	2	2	2	2	2
Capacity Steps		2	2	2	3	3	3	4	4
Full Load Amps	380V (A)	38	48	58	67	77	87	96	116
	415V (A)	35	44	54	62	71	81	88	107
Inrush Current	380V (A)	107	143	154	163	173	183	196	218
	415V (A)	114	158	168	176	185	195	207	227
Operating Weight	(kg)	725	850	975	1250	1375	1425	1550	1750
Refrigerant Charge - R22	(kg)	9	12	12	18	18	18	20	24
Length	(mm)	2260	2260	2260	3190	3190	3190	3190	3190
Width	(mm)	850	850	850	850	850	850	850	850
Height	(mm)	2000	2000	2000	2000	2000	2000	2000	2000

## Cooling capacity and Power input - R22 / 50 Hz

Model	LWT (°C)	Outside air temperature (°C)									
		25		30		32		35		40	
		Cool. cap. kW	P. Inp. kW	Cool. cap. kW	P. Inp. kW	Cool. cap. kW	P. Inp. kW	Cool. cap. kW	P. Inp. kW	Cool. cap. kW	P. Inp. kW
CGCH115	5	53.6	15.3	50.9	16.9	49.8	17.8	48.1	18.7	45.2	20.6
CGCH115	7	56.3	15.6	53.5	17.2	52.4	17.9	50.6	19.0	47.6	20.9
CGCH115	9	59.0	15.9	56.1	17.5	54.9	18.2	53.1	19.3	49.9	21.3
CGCH120	5	65.7	18.9	62.5	20.8	61.2	21.6	59.2	22.9	55.7	25.1
CGCH120	7	69.0	19.2	65.7	21.1	64.3	22.0	62.2	23.3	58.6	25.6
CGCH120	9	72.3	19.6	68.8	21.5	67.4	22.3	65.2	23.6	61.4	26.0
CGCH125	5	78.9	22.5	75.4	24.7	73.9	25.6	71.6	27.1	67.7	29.8
CGCH125	7	82.9	22.8	79.2	25.1	77.6	26.1	75.2	27.6	71.1	30.3
CGCH125	9	86.8	23.2	82.9	25.5	81.3	26.5	78.8	28.0	74.5	30.7
CGCH225	5	94.3	26.4	89.8	29.2	87.9	30.3	84.9	32.2	79.9	35.4
CGCH225	7	99.2	26.9	94.5	29.7	92.5	30.9	89.4	32.7	84.1	36.0
CGCH225	9	104.1	27.4	99.1	30.2	97.1	31.4	93.9	33.3	88.3	36.6
CGCH230	5	106.3	30.2	101.3	33.2	99.2	34.5	96.0	36.6	90.4	40.2
CGCH230	7	111.9	30.8	106.6	33.8	104.4	35.2	101.0	37.2	95.2	40.9
CGCH230	9	117.4	31.4	111.9	34.5	109.6	35.8	106.0	37.9	100.0	41.5
CGCH235	5	119.1	34.2	113.6	37.5	111.3	38.9	107.8	41.2	101.7	45.2
CGCH235	7	125.3	34.8	119.5	38.2	117.1	39.6	113.4	41.9	107.0	45.9
CGCH235	9	131.4	35.5	125.3	38.9	122.8	40.3	118.9	42.6	112.2	46.7
CGCH240	5	130.6	37.8	124.4	41.7	121.8	43.3	117.8	45.9	110.9	50.4
CGCH240	7	137.2	38.5	130.7	42.4	128.0	44.0	123.8	46.6	116.6	51.2
CGCH240	9	143.8	39.1	137.0	43.1	134.1	44.7	129.8	47.4	122.3	52.0
CGCH250	5	155.6	46.1	148.3	50.5	145.3	52.5	140.6	55.5	132.6	60.9
CGCH250	7	163.3	46.9	155.6	51.5	152.5	53.4	147.6	56.4	139.2	61.9
CGCH250	9	170.9	47.8	162.8	52.4	159.5	54.3	154.5	57.4	145.7	62.9

# Mechanical Specifications.

The CGCH Liquid Chillers are of monobloc construction and are designed for indoor operation. The principle components are Trane 3-D™ Scroll compressors, brazed plate type evaporators, aluminium fin condensing coils, and centrifugal fans. All units are subject to test during manufacture and ready for immediate start up on site.

## Trane 3-D™ Scroll Compressors.

Patented compression chamber sealing system and swing link design to eliminate the effects of liquid slugging.

Lubrication with a centrifugal pump and sight glass.

Two pole motor, suction gas cooled with solid state protection against excess temperature and overload relay.

Two compressors in parallel for the sizes 115 to 125, three compressors for two refrigerant circuits for the sizes 225 to 235, and four compressors for two refrigerant circuits for the sizes 240 and 250.

## Condenser.

One vertical coil for the sizes 115 to 125, two vertical coils for the other sizes. Made from seamless copper tubes, expanded into continuous aluminium fins. Integral subcooler.

Vertical or horizontal discharge centrifugal fans.

## Evaporator.

Brazed plate type evaporator in stainless steel with copper brazed joints. Water connections pipe thread ISO R7. On units with two evaporators the connecting water manifold is supplied.

## Refrigerant Circuits.

The circuits are assembled, pressure tested, and dehydrated in the factory. Each circuit includes filter drier, solenoid valve, expansion valve and liquid line solenoid shut off valve.

## Control Panels.

Two separate compartments are provided for the SMM module and the electro-mechanical components.

The electro-mechanical compartment contains the compressor contactors, the fan contactors, the overload relays, and the customer connection terminals.

The electrical wiring diagrams are attached to the control panel door.

The SMM Module provides the following functions :

- Control of the leaving chilled water temperature.
- Control of the various operating modes and the safety parameters.

In addition the module has the following features :

- A liquid crystal display for local communication.
- An input for remote stop/start per circuit.
- An analog input for adjustment of the chilled water set point. (4/20 mA or 0/10 V)
- Programming function for automatic adjustment of the chilled water set point in relation to the outdoor temperature.

## Options.

- Disconnect switch
- HP and LP pressure gauges per circuit.
- Copper condensing coil fins.
- Sound attenuating compressor enclosure.
- Chilled water pump contactor.

## Factory Testing.

All CGCH Chillers are subject to in process and final quality tests before shipment.

## Quality Assurance.

The Quality Management System applied by Trane has been subject to independent third party assessment and approval to BS 5750 Part 1, I.S.O. 9001, and N.E.N. 2646.

The products described in this catalogue are designed and manufactured in accordance with the approved system requirements as defined in the Trane Quality Manual.

Trane reserves the right to alter any information without prior notice.

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