



WATER-COOLED TEMPERATURE CONTROL UNIT

SENQW Series

*Provides controlled temperature
coolant for secondary coolers*



WATER-COOLED TCU

Features

- Cooling water at a precisely-controlled temperature with $\pm 1^{\circ}\text{F}$ (0.5°C) accuracy.
- Self-contained with all necessary controls, pumping and refrigeration systems.
- Wide condenser cooling water temperature range: $55\text{--}105^{\circ}\text{F}$ ($13\text{--}41^{\circ}\text{C}$). Options available as low as 30°F or as high as 115°F (46°C).
- Optional heater for additional warming capacity for subcooled samples.
- Local display provides quick operational snapshot.

Description

A temperature control unit (TCU) provides controlled temperature water (coolant) to a group of secondary sample coolers in order to ensure closely controlled sample temperatures.

Sentry temperature control unit (TCU) systems are pre-designed, pre-piped packages available in sizes from 3 to 15 tons, air or water-cooled. All components are easily accessible for service. Each Sentry TCU system undergoes a factory “run-in” under a range of heat loads. Measurements are taken of critical parameters and recorded for future reference.

Model: SENQW	W03	W05	W08	W10	W15
Cooling Capacity ¹ BTU/hr (kw)	3 Ton 36,000 (10.6)	5 Ton 60,000 (17.6)	8 Ton 96,000 (28.1)	10 Ton 120,000 (35.1)	15 Ton 180,000 (52.7)
Chilled Water Flowrate gpm (lpm)	30 (114)	50 (189)	80 (303)	100 (379)	150 (568)
Std Heating Capacity BTU/hr (kw)	10,800 (3.2)	18,000 (5.3)	28,800 (8.4)	36,000 (10.6)	54,000 (15.8)
Condenser Water Flowrate gpm (lpm)	11 (42)	17 (64)	24 (91)	36 (136)	48 (182)
Condenser Water Press Drop psi (bar)	6 (0.4)	6 (0.4)	8 (0.6)	7 (0.5)	8 (0.6)
MCA @ 460 VAC 60 Hz	13.9	18.1	27.2	32.1	52.1
Aux. Heater BTU/hr (kw)	30,000 (9)	30,000 (9)	30,000 (9)	40,000 (12)	60,000 (18)

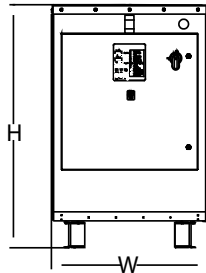
¹Cooling capacity based upon 105°F (41°C) condenser water and 76°F (24°C) coolant setpoint, 60 Hz power.

²MCA = Minimum Circuit Ampacity; used for main power wire sizing (not including Aux. Heater).

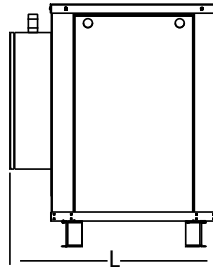
³Cooling and heating capacity is reduced about 17% for 50 Hz power.

WATER-COOLED TCU TECHNICAL DATA

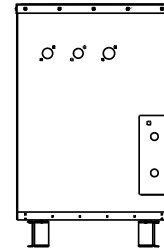
Model	Dimensions L x W x H (inches)	Dimensions L x W x H (mm)	Weight (lbs.)	Weight (kg)	Condenser Water Connections	Chilled Water Connections
W03	48 x 35 x 54	1219 x 889 x 1372	720	327	1½" NPT	2" NPT
W05	48 x 35 x 54	1219 x 889 x 1372	720	327	1½" NPT	2" NPT
W08	75 x 35 x 54	1905 x 889 x 1372	1195	542	1½" NPT	2½" NPT
W10	75 x 35 x 54	1905 x 889 x 1372	1195	542	1½" NPT	2½" NPT
W15	75 x 35 x 54	1905 x 889 x 1372	1315	597	1½" NPT	3" NPT



Front View



Right View



Rear View

SPECIFICATIONS

Refrigeration

- Hermetically-sealed scroll compressor
- Full factory refrigerant charge of HFC-410A
- Copper brazed 316L stainless steel evaporator
- Hot gas bypass valve for precise temperature control
- Crankcase heater
- Sealed desiccant core filter-dryer
- Moisture and liquid indicator
- Thermostatic expansion valve

Chilled Water

- Stainless steel TEFC close-coupled centrifugal pump
- Pressure indicator at pump discharge
- Accurate to $\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)
- Adjustable make-up water pressure reducing valve
- Pressure relief valve to protect pump and evaporator

Controller

- Keypad control to run system or pump alone
- Microprocessor based PID temperature control
- Digital contact provided for remote system start
- Digital indication of chilled water outlet temperature
- Clear display of operational warnings and alarms
- General fault alarm contact for remote indicator

Electrical

- NEMA 1 enclosure with disconnect
- 460 VAC / 60 Hz / 3 phase (standard)

Alternates available:

- » 230 VAC / 60 Hz / 3 phase
- » 575 VAC / 60 Hz / 3 phase
- » 208 VAC / 60 Hz / 3 phase
- » 380 VAC / 50 Hz / 3 phase

Options

- Higher condenser cooling water temperature range: 60°F (15°C) to 115°F (46°C)
- Lower condenser cooling water range: 30°F (-1°C) to 90°F (32°C)
- Outdoor service (NEMA 4)
- CE
- Internal electric heater for additional warming of sub-cooled samples

WARNING

It is solely the responsibility of the end-user, through its own analysis and testing, to select products and materials suitable for their specific application requirements, ensure they are properly installed, safely applied, properly maintained, and limit their use to their intended purpose. Improper selection, installation, or use may result in personal injury or property damage.



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