

TEMPERATURE CONTROL SYSTEM FOR COLD STORAGE EV TEST



Temperature Control System for Cold Storage EV Test - ToronChill™ TCSa

ToronChill™ TCSa is a Temperature Control System built for Cold Storage EV Test programs that require ultra-low temperature control and rapid thermal transitions. It uses a two-stage low-temperature compressor architecture to deliver stable setpoints across a wide operating range for demanding EV validation work.

Designed for multi-loop testing, this Temperature Control System lets each channel run independently while maintaining controlled flow and pressure. Integrated leakage detection, intelligent liquid return, and optional RS485/CAN/Ethernet communications help improve repeatability, safety, and integration with modern EV test benches.

APPLICATIONS

Temperature Control System for Cold Storage EV Test - ToronChill™ TCSa Applications

- Extreme motor performance testing: Supports cold-soak and high-temperature conditions to validate efficiency and durability.
- Battery pack cold-start and thermal performance testing: Maintains stable coolant temperature for repeatable cold storage EV test cycles.
- Rapid heating/cooling and thermal shock testing: Enables aggressive temperature transitions for stress screening and validation.
- Environmental adaptability evaluation: Helps simulate wide ambient conditions to verify system robustness across operating scenarios.



FEATURES

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Key Features

- Wide control range for cold storage EV test: Temperature control range from -40°C to 95°C for broad EV testing needs.
- High stability control: Temperature control stability of ±0.2°C to support repeatable EV test results.
- Multi-channel independent control: Each channel controls temperature independently with a maximum temperature difference of 135°C.
- Fast thermal response: Rapid heating and cooling with a temperature change rate ≥10 K.
- Stable output flow and pressure: Frequency-conversion flow and pressure control helps maintain consistent loop conditions.
- Smart fluid management: Intelligent liquid return technology with automatic blowing supports stable circulation.
- Leak detection for safer operation: Load leakage detection supports production-line load testing and pipeline tightness.
- Connectivity options: Optional RS485 / CAN / Ethernet for integration with EV test systems.
- Leakage monitoring design: Built-in anti-leakage fume design with leakage monitoring for improved site safety.

TECHNICAL SPECIFICATIONS

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Technical Specifications

Specification	Details
Product Type	Temperature Control System for Cold Storage EV Test

Specification	Details
Temperature Control Range	-40°C to 95°C
Temperature Control Stability	±0.2°C
Flow Control Options	0.5-10 / 2-20 / 4-40 / 6-60 L/min
Flow Control Stability	Better than ±0.2 L/min
Channel Control	Independent temperature control per channel
Max Temperature Difference (Between Channels)	135°C
Heating/Cooling Rate	≥10 K
Control Method	Frequency-conversion flow & pressure control
Fluid Management	Intelligent liquid return; automatic blowing
Leak Management	Load leakage detection; pipeline tightness support
Communication Options	RS485 / CAN / Ethernet
Safety/Monitoring	Anti-leakage fume design; leakage monitoring

ToronChiller™ TCSa name rules

TCSa 16 W – C 4 T

● **Outlet loop:**

“S” : Single output

“D” : Dual output

“T” : Three-way
output

● **Lower limit of control temp:**

“4” : Lower temp. control limit -40°C

● **Heat discharge method:**

“U” : Air-cooled all-in-one machine

“W” : Water-cooled all-in-one machine

“Y” : Water-cooled energy-saving all-in-one machine

● **Cooling capacity:**

“08” : Cooling capacity 12KW “12” : Cooling capacity 19KW

“16” : Cooling capacity 26KW “20” : Cooling capacity 30KW

“25” : Cooling capacity 35KW “30” : Cooling capacity 40KW



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