

TEMPERATURE CONTROL SYSTEM



Temperature Control System - ToronChill™ TCS Series

ToronChill™ TCS Series is a Temperature Control System engineered for EV and e-mobility test benches where stable, repeatable thermal conditions matter. It supports environmental simulation, performance validation, and reliability testing across key drivetrain and power electronics subsystems.

This Temperature Control System platform covers wide operating needs, with temperature capability spanning -40 to 150°C, flow options from 0.5 to 90 L/min, and pressure up to 600 kPa. Multiple control modes and programmable profiles help match real-world duty cycles.

Applications

- EV electric motor testing: Supports high/low temperature performance checks, durability validation, and startup testing under controlled thermal conditions.
- Motor controller and inverter evaluation: Enables repeatable thermal loading for performance characterization and stress screening.
- Battery pack and module thermal tests: Used for extreme performance tests, thermal shock evaluations, and specialty cycles such as internal/external circulation and constant power operation.
- Transmission, hybrid engine, and oil-cooled systems: Designed for high/low temperature shock and durability testing of oil-cooled motors, gearboxes, and engines.
- OBC, DC/DC, CCU, pumps, and cooling lines: Supports system-level thermal simulation and line testing for leakage, flow resistance, and pressure resistance.

Key Features

- Wide temperature, flow, and pressure coverage: Temperature ranges reach -40 to 150°C, with selectable flow ranges and pressure capability up to 600 kPa for diverse test rigs.

- Multiple operating modes: Switch between constant temperature output, internal circulation, external circulation, and constant power mode to fit different test methodologies.
- Programmable temperature control: Supports linear temperature ramps and segmented program control for repeatable duty-cycle simulation.
- Leakage detection and safe fluid management: Includes load-line leakage detection plus automatic liquid return and “blowing” functions to improve test safety and housekeeping.
- Connectivity for integration: Optional communications include RS485, CAN, and Ethernet to connect with test stands and automation systems.
- Operator-focused interface: Optional large color touchscreen improves usability for setup, monitoring, and fast changeovers.

Why Choose ToronChill™ TCS Series?

Choosing the ToronChill™ TCS Series Temperature Control System means getting a platform built for repeatable EV testing where temperature, flow, and pressure directly affect results. With wide temperature capability, multiple control modes, programmable profiles, and integration options like CAN, RS485, and Ethernet, it helps labs and test centers standardize workflows, reduce variability, and support everything from component validation to full-system endurance testing.



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