

# TEMPERATURE CONTROL SYSTEM FOR EV'S ENERGY SAVING



# Temperature Control System for EV's Energy Saving - ToronChill™ TCSe

ToronChill™ TCS is an energy-efficient Temperature Control System designed for EV test operations that need stable temperature control with lower operating cost. It uses direct heat exchange with cooling/chilled water, helping reduce noise and power consumption versus conventional refrigeration-based systems.

Built for production and durability testing, this Temperature Control System supports multiple flow configurations, optional communications, and intelligent fluid management. Load leakage detection and a modular internal design help maintain stable output and simplify long-term service in EV's Energy Saving test environments.

## APPLICATIONS

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### Temperature Control System for EV's Energy Saving - ToronChill™ TCSe Applications

- Motor performance and durability testing: Maintains stable temperatures for high-temperature performance and fatigue testing cycles.
- Controller and inverter validation: Supports repeatable thermal conditions to compare performance across builds and batches.
- Battery pack thermal conditioning: Provides controlled temperatures for functional checks and thermal screening.
- EV production and lab environments: Fits high-throughput test areas needing an EV's Energy Saving temperature solution.
- Water-based facility integration: Ideal where cooling water or chilled water is already available and stable.



## FEATURES

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### Temperature Control System for EV’s Energy Saving - ToronChill™ TCSe

#### Key Features

- Energy-saving direct heat exchange: Uses cooling/chilled water direct heat exchange to reduce energy consumption.
- Low-noise, environmentally friendly operation: Designed for quieter operation without a traditional refrigeration loop.
- Temperature control range for warm-side testing: Operates from +10°C to 95°C for many EV validation workflows.
- Stable temperature control: Temperature stability of ±1°C supports repeatable testing.
- Multiple flow configurations: Optional flows of 2-20 / 4-40 / 6-60 / 9-90 / 10-150 L/min to match different loads.
- Intelligent fluid return and blowing: Supports stable circulation and faster recovery during testing.
- Pipeline tightness support: Load leakage detection technology helps verify whole pipeline tightness.
- System connectivity: Optional RS485 / CAN / Ethernet integration for test control and data logging.
- Modular internal design: Independent modular structure supports upgrades and maintenance over time.

## TECHNICAL SPECIFICATIONS

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### Temperature Control System for EV’s Energy Saving - ToronChill™ TCSe

#### Technical Specifications

| Specification             | Details                                                             |
|---------------------------|---------------------------------------------------------------------|
| Product Name              | Temperature Control System for EV’s Energy Saving - ToronChill™ TCS |
| System Type               | Energy-saving Temperature Control System (direct heat exchange)     |
| Temperature Control Range | +10°C to 95°C                                                       |

| Specification                 | Details                                                      |
|-------------------------------|--------------------------------------------------------------|
| Temperature Control Stability | ±1°C                                                         |
| Optional Flow Range           | 2-20 L/min; 4-40 L/min; 6-60 L/min; 9-90 L/min; 10-150 L/min |
| Heat Exchange Method          | Cooling/chilled water direct heat exchange                   |
| Intelligent Fluid Return      | Yes (with automatic blowing)                                 |
| Leakage Monitoring            | Load leakage detection for pipeline tightness                |
| Communication Options         | RS485 / CAN / Ethernet (optional)                            |
| Design Notes                  | Low noise; modular internal design; upgrade-friendly         |

## ToronChiller™ TCSe name rules

**TCSe 20 W - C 2 T**

### Cooling capacity:

"01" : cooling capacity 3KW    "12" : cooling capacity 35KW  
 "02" : cooling capacity 5KW    "16" : cooling capacity 50KW  
 "04" : cooling capacity 10KW    "16" : cooling capacity 50KW  
 "06" : cooling capacity 15KW    "20" : cooling capacity 60KW  
 "08" : cooling capacity 20KW    "25" : cooling capacity 80KW  
 "10" : cooling capacity 25KW    "30" : cooling capacity 100KW  
 "12" : cooling capacity 35KW

### Heat discharge method:

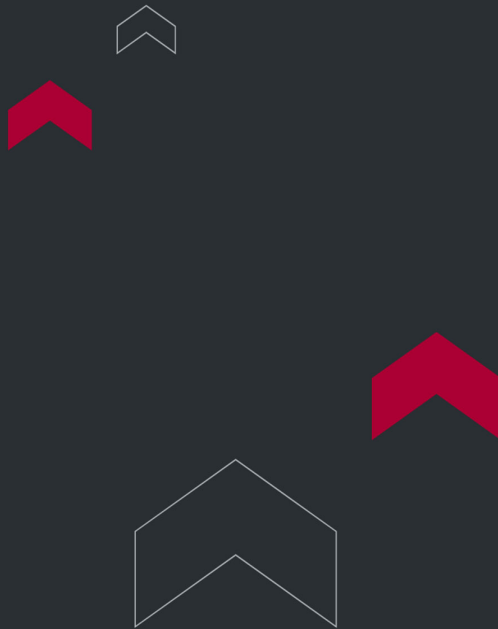
"U" : Air-cooled all-in-one machine  
 "W" : Water-cooled all-in-one machine

### Outlet loop:

"S" : Single output  
 "D" : Dual output  
 "T" : Three-way output

### Lower limit of control temp:

"0" : Lower temp. control limit 5°C  
 "2" : Lower temp. control limit -20°C



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