

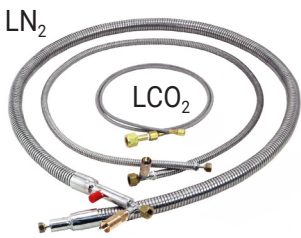
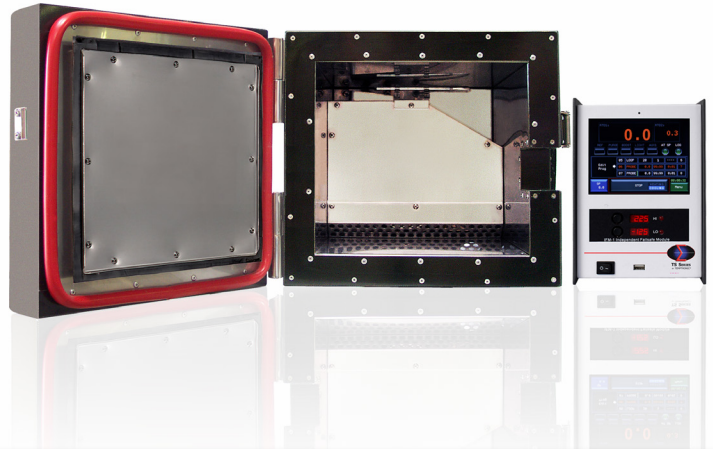


## M10 Cryogenic Temperature Chamber

The **Sigma Systems Cryogenically Cooled Chamber** provides an optimal test environment that can be configured as required.

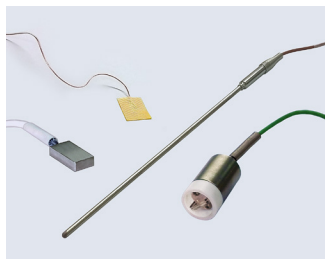
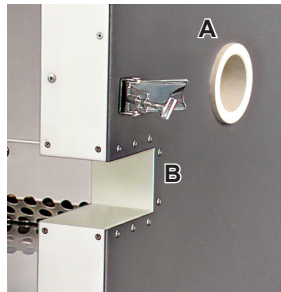
### FEATURES:

- Wide Temperature Range: -100°C to 200°C (options: -185°C to 500°C) with typical transition rates of 25°C per minute or greater
- Industry's smallest footprint for given interior workspace
- Basic System includes one Aperture or Notch and Controller - Configurable with many options (see below)
- Thermal shock in a single chamber and MIL-STD testing
- High air flow promotes fast cycling and low gradients
- Touch Screen Programmable Controller; supports Remote Capable Communications



Vacuum Jacketed, Armored Stainless, and Braided Superflex Coolant Delivery Hoses connect temperature chamber to coolant source  
All LN<sub>2</sub> hoses include a Safety Pressure Relief Valve

Apertures (A) and Notches (B) available in optimal location and size for maximum Test Access efficiency



Wide range of RTD Probes and Thermocouples available: Tubular, Block, Kapton Tape and Drop sensors, appropriate for temperature chamber or platform and compatible with TS Series Controllers

### CHAMBER SPECIFICATIONS

Temperature Range	-100°C to 200°C Extended low temperature options down to: -185°C Extended high temperature options up to: +500°C
Temperature Transition Rate	<b>Heating:</b> 22°C to 35°C/min. (Voltage/Current dependent) <b>Cooling:</b> 25°C to 100°C/min.
Workspace Dimensions	9.0"H x 10.0"W x 7.5"D (22.9cm x 25.4cm x 19.1cm)
Internal Volume	0.35 ft <sup>3</sup> (10 liters)
External Dimensions: Extended Temp. Dims:	12.5"H x 13.0"W x 21.2"D (31.8cm x 33.0cm x 52.1cm) 17.0"H x 18.0"W x 25.2"D (43.0cm x 46.0cm x 64.0cm) Excludes latches, hinges, and controller
Mounting Style	Benchtop/Optional: Floor Standing or Rack Mounting
Coolant Type	LN <sub>2</sub> (LCO <sub>2</sub> optional reduced low end temp)
Power Requirements (can be configured for CE)	100-120V / 50HZ-60HZ / 1PH / 15-20A 200-240V / 50HZ-60HZ / 1PH / 13-16A
Options	<ul style="list-style-type: none"> <li>• Delivery Hoses: Vacuum Jacketed; others (see left)</li> <li>• Independent Failsafe Module (IFM) (on Controller, see Page 2) with Redundant Solenoid Valves (RSV) Shuts off coolant to prevent runaway cold condition</li> <li>• Shelves / Interior Lights / Windows / Pull-off Doors</li> <li>• Additional Apertures / Notches</li> <li>• Dry Nitrogen Purge for Moisture Control</li> <li>• Dewar Accessories: <i>Distribution Manifolds, Pressure Regulators</i></li> <li>• Benchtop, Rack Mount, and Castered Stand Configurations</li> </ul>





## Chamber Temperature Controller

The TS Series Controller is the programable controller for Sigma Systems' cryogenically cooled thermal chambers and thermal platforms. The TS Controller provides touch-screen and remote interfacing to set up and transfer thermal profiles, view data and trends, and log diagnostics.

### FEATURES:

- Optimize test time: Precisely control and monitor UUT temperature, even during UUT power cycling
- Fast Setup Time: Intuitive touch-screen programming
- Display Test Status: Real-time data and graphing
- Built-in Diagnostics: Valve counts, ambient temp, equipment runtimes
- Protect UUT from thermal damage with optional Independent Fail Safe Modules

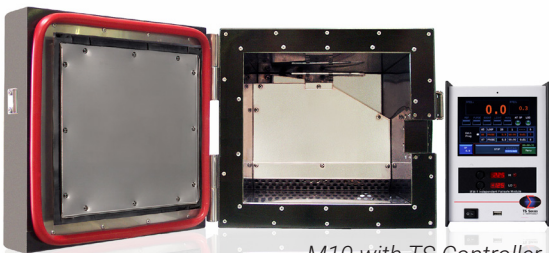


TS Shown with Failsafe Module option



Optional Dry Nitrogen Purge Systems eliminate moisture and/or oxygen from the test environment.

TS Shown with purge and failsafe module options



M10 with TS Controller



The inTEST Thermal family includes three temperature-related corporations: Tempronic, Sigma Systems, and Thermonics. Products include thermal chambers and plates, portable temperature environments, and process chillers.

### CONTROLLER SPECIFICATIONS

Temperature Measurement	Range: -210°C to 680°C, Accuracy: ±1.0°C Resolution: 0.1°C full scale
User Interface	5.7" color touch-screen with temperature graphing and charting
Control Safety	Independent Fail-Safe Module (IFM) (optional) high and low temperature limits
Compliance	CE / RoHS / Designed to meet UL 61010
Diagnostics	Controller, chiller, & blower runtime hours Valve activation counts Controller enclosure temperature System performance log
Operating Environment	Temperature: 10°C to 50°C Humidity: 10% to 50%
Temperature Inputs	RTD (500 Ohm/2Wire) (100 Ohm/3 Wire) Thermocouple (type K)
Control Algorithms	Primary loop PID, Dual loop, settable DUT control
Communication Interfaces	Ethernet 10/100 / Telnet / HTML Web Server / USB-2.0 Optional: RS232 and IEEE-488 GPIB
Power Requirements	Voltage: 100 to 250 VAC Frequency: 50/60 Hz Current: up to 30A (application based)
Physical Dimensions	(TS1-4) 8.5"H x 6"W x 11.6"D (21.6cm x 15.2cm x 29.5cm) (TS5-8) 8.5"H x 8.0"W x 11.6"D (21.6cm x 20.3cm x 29.5cm)
Program Compatibility	Supports Sigma C, CC3, CC3.5, C4, and C5 functionality & command set