



# TempTale<sup>®</sup> Monitors

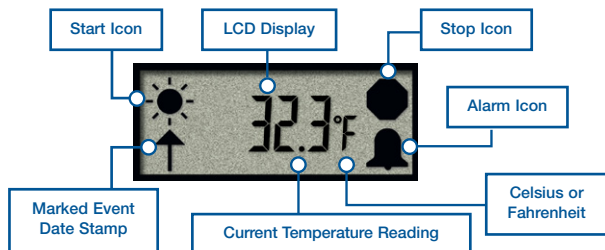
## Maintain Precise Visibility of Your Cold Chain

Our precision temperature and humidity monitors let you track and collect data about your temperature-sensitive shipments. These highly reliable, electronic monitors enable you to make immediate accept or reject decisions, and gain greater visibility into every critical step of your cold chain.

In addition to the strict quality control methods used in the design, test, production and service of our monitors, a NIST<sup>®</sup> traceable validation certificate is provided with every TempTale monitor we ship.

### TempTale<sup>®</sup>4 (TT4) Monitor

Our flagship temperature monitor offers customizable alarm settings to meet the widest array of in-transit and storage applications. The functional design of the alarm integrates pre-programmed time and temperature limits to trigger “time-out-of-range” events. The monitor quickly and easily downloads to a PC for detailed time/temperature history by using fast, reliable optical communications.



TempTale4 Specifications	
<b>Temperature Measurement Range</b>	-22°F to 158°F (-30°C to 70°C)
<b>Temperature Accuracy Range</b>	±2°F from -22°F to 0°F (±1.1°C from -30°C to -18°C) ±1°F from 0°F to 122°F (±0.55°C from -18°C to 50°C) ±2°F from 122°F to 158°F (±1.1°C from 50°C to 70°C)
<b>Temperature Resolution</b>	0.1°F/C over full temperature measurement range
<b>Memory Type</b>	Non-volatile 2K or 16K EEPROM Options
<b>Data Storage Capacity</b>	1,920 or 16,000 data points
<b>Battery Life/Type</b>	1-year run life/3.0v lithium battery
<b>Data Sampling Interval</b>	Programmable from 10 seconds up to a maximum of 2 hours
<b>Water Resistance Casing</b>	NEMA 6 Rating
<b>Start-Up Delay</b>	Minimum 0 seconds up to maximum 194 days
<b>LCD Programmable Options</b>	Display current temperature reading, display temp values in °F or °C, Enable flashing of start, stop and alarm icons.
<b>Start Up Options</b>	Manual push button or automatic launch option
<b>Alarm Function</b>	Programmable high and low limits; alarm is triggered when temperature exceeds set limits
<b>Typical Dimensions</b>	3.6" L x 2.0" W x 0.67" H (9.2cm L x 5.1cm W x 1.7cm H)
<b>Weight</b>	1.6 ounces, 45.4 grams (apprx)
<b>Testing</b>	Calibrated at 3 set points to NIST <sup>®</sup> traceable standards
<b>Quality Assurance Certifications</b>	CE; Validation Package
<b>Software/Computer Interface</b>	TempTale Manager Desktop Software; Interface Plus Reader



## TT4 Humidity Monitor

With its integrated digital humidity sensor, the TT4 Humidity monitor is ideal for any application where relative humidity must be monitored. The TempTale4 Humidity monitor is designed for measuring and recording relative humidity from 10% to 100% RH and temperatures from -30°C to 70°C (-22°F to 158°F).

TT4 Humidity Monitor Specifications	
Temperature Measurement Range	-22°F to 158°F (-30°C to 70°C)
Humidity Measurement Range	10% – 100% RH
Temperature Sensor Accuracy Range	±2°F from -22°F to 0°F (±1.1°C from -30°C to -18°C) ±1°F from 0°F to 122°F (±0.5°C from -18°C to 50°C) ±2°F from 122°F to 158°F (±1.1°C from 50°C to 70°C)
Humidity Sensor Accuracy Range*	±4.0% RH from 10 – 90%, ±5.0% RH from 90 – 100%
<i>*RH Accuracy stated within Temperature Exposure Range of: 5°C to +60°C, Non-Condensing</i>	
Temperature Resolution	0.1°F/C Over Full Temperature Measurement Range
Relative Humidity Resolution	0.4% RH from 10% to 100%
Memory Type	Non-volatile 16K EEPROM
Memory Capacity	Maximum 16,000 data points (8,000 temperature data points/8,000 Relative Humidity data points)
Data Sampling Interval	Variable from 10 seconds up to 120 minutes
Start-Up Options	Manual push button or automatic launch option
Start-Up Delay	Minimum 0 seconds up to maximum 194 days
LCD Display	Displays Max/Min Temperature and Humidity Data and Time-Out-of-Range Temperature Data
LCD Programmable Option	Displays Current Temperature and Humidity Data
Programmable High and Low Alarm Options (Ambient Sensor)	Single or cumulative time-out-of-range event above or below ideal temperature range
Programmable High and Low Alarm Options (Humidity Sensor)	Single or continuous time-out-of-range events above and below ideal RH range
Typical Dimensions	4.0" L x 2.0" W x 1.0" H (10.2cm L x 5.1cm W x 2.5cm H)
Weight	1.7 ounces (48.2 grams) approximate
Battery Life	1-year run life
Testing	Calibrated at 3 set points to NIST <sup>®</sup> traceable standards
Quality Assurance Certifications	CE; Validation Package
Software/Computer Interface	TempTale Manager Desktop Software; Interface Plus Reader



## TT4 Probeless Dry Ice Monitor

This monitor is designed to accurately record, monitor and archive temperature data of dry ice shipments. It is the industry's first self-contained probeless dry ice monitor with an LCD display capability. It can be placed directly into the dry ice environment in contact with the product and monitors temperatures as low as -80°C.

TT4 Probeless Dry Ice Monitor Specifications	
Temperature Measurement Range	-80°C to 30°C (-112°F to 86°F)
Temperature Accuracy Range	±1.7°C from -80°C to 30°C (±3°F from -112°F to 86°F)
Temperature Resolution	0.1°F/C Over Full Temperature Measurement Range
Memory Type	Non-volatile 2K or 16K EEPROM Options
Memory Capacity	Maximum 1,920 or 16,000 data points
Data Sampling Interval	Variable from 10 seconds up to 15 minutes
LCD Display	Displays Max/Min Temperatures and Time-Out-of-Range Data
Typical Dimensions	3.6" L x 2.0" W x 1.2" H (9.2cm L x 5.1cm W x 3.0cm H)
Weight	3.8 ounces (107.0 grams) approximate
Battery Life	1-year shelf life
Start-Up Options	Manual push button or automatic launch option
Start-Up Delay	Programmable from 0 seconds up to 10 days
Testing	Calibrated at 3 set points to NIST <sup>®</sup> traceable standards
Quality Assurance Certifications	CE; Validation Package
Maximum Recording Period	Continuous exposure to dry ice temperatures cannot exceed 30 days
Software/Computer Interface	TempTale Manager Desktop Software; Interface Plus Reader
Monitor Recording Options	Single Use Only

Operating the monitor outside of published specifications can cause damage to the monitor.



### TT4 Monitor with External Temperature Probe

#### TT4 Dual Sensor Monitor also available

The TT4 monitor with external probe supports applications where a remote probe (5' stainless steel probe or 5' flexible probe) is required. The TT4 Dual Sensor option allows for both the internal and external sensors to be programmed to trigger "time-out-of-range" events. The probe can be placed into a liquid or an insulated package to capture the core temperatures while also monitoring the external ambient temperatures. This capability provides you with maximum application flexibility and extremely high levels of control and visibility into your in-transit temperature monitoring.

TT4 Probe Monitor Specifications	
External Temperature Sensor Options	5' Stainless Steel Probe or 5' Flexible Probe (12.7cm)
External (Probe) Temperature Measurement Range	-22°F to 158°F (-30°C to 70°C)
External (Probe) and Internal Sensor Temperature Accuracy Range	±2°F from -22°F to 0°F (±1.1°C from -30°C to -18°C) ±1°F from 0°F to 122°F (±0.55°C from -18°C to 50°C) ±2°F from 122°F to 158°F (±1.1°C from 50°C to 70°C)
Temperature Resolution	0.1°F/C Over Full Temperature Measurement Range
Memory Type	Non-volatile 16K EEPROM
Memory Capacity	Maximum 16,000 temperature data points
Data Sampling Interval	Variable from 10 seconds up to 120 minutes
Start-Up Options	Manual push button or automatic launch option
Start-Up Delay	Minimum 0 seconds up to maximum 194 days
Programmable High and Low Alarm Options (Both Sensors)	Single or cumulative time-out-of-range events or programmable above or below ideal temperature range
LCD Display	Displays Max/Min Temperature Data & Time-Out-of-Range Data
LCD Programmable Option	Displays Current Temperature Data
Typical Dimensions	4.0" L x 2.0" W x 1.0" H (10.2cm L x 5.1cm W x 2.5cm H)
Weight	3.5 ounces (99.2 grams) approximate; including probe
Battery Life	1-year run life
Testing	Calibrated at 3 set points to NIST® traceable standards
Quality Assurance Certifications	CE; Validation Package
Software/Computer Interface	TempTale Manager Desktop Software; Interface Plus Reader



### TT4 Dry Ice Monitor

The TempTale4 Dry Ice monitor is used for monitoring in-transit and storage temperatures of pharmaceuticals, vaccines and frozen foods that need to be kept at consistently low temperatures to maintain their stability. This monitor features options for 5' flexible or 5' stainless steel probe. It can also be used to validate packaging and other components of your cold chain shipping and storage processes.

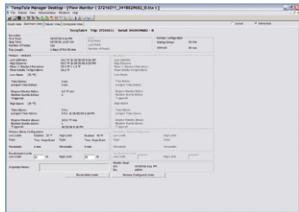
TT4 Dry Ice Monitor Specifications	
Probe Sensor Temperature Measurement Range	-80°C to 30°C (-112°F to 86°F)
Probe Sensor Accuracy Range	±1.7°C from -80°C to 0°C (±3°F from -112°F to 32°F)
Electronics Operating Range	-30°C to 70°C (-22°F to 158°F)
Temperature Resolution	0.1°F/C Over Full Temperature Measurement Range
Memory Type	Non-volatile 16K EEPROM
Memory Capacity	Maximum 16,000 temperature data points
Data Sampling Interval	Variable from 10 seconds up to 120 minutes
Start-Up Options	Manual push button or automatic launch option
Start-Up Delay	Minimum 0 seconds up to maximum 194 days
Programmable High and Low Alarm Options	Single temperature event, continuous or cumulative time-out-of-range events above and below ideal temperature range
LCD Display	Displays Max/Min Temperature Data & Time-Out-of-Range Data
LCD Display Factory Programmable Option	Displays Current (Probe) Temperature Data
Typical Dimensions	3.6" L x 2.0" W x 1.0" H (9.2cm L x 5.1cm W x 2.5cm H)
Weight	3.5 ounces (99.2 grams) approximate; including probe
Battery Life	1-year run life
Testing	Calibrated at 3 set points to NIST® traceable standards
Quality Assurance Certifications	CE; Validation Package
Options/Accessories	TempTale Manager Desktop Software; Interface Plus Reader

## TempTale Manager® Desktop Software

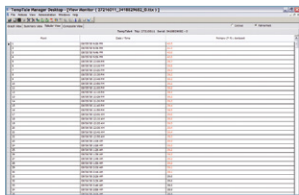
TempTale Manager Desktop (TTMD) is a multi-lingual, easy-to-use Windows®-based software application for configuring, downloading, displaying, analyzing and reporting time-and-temperature data collected from any of Sensitech's TempTale monitors. TTMD software is compatible with Microsoft® Windows Vista, XP and 2000 operating systems.

The power of TTMD software lies in its extremely intuitive user interface that allows users to effortlessly retrieve, display and analyze in-transit shipment data thereby allowing users to make higher quality shipment disposition decisions and ensure that Standard Operating Procedures (SOPs) are delivering acceptable results. With its extensive multi-language support and enhanced data transfer options, TTMD greatly enhances users ability to share data globally.

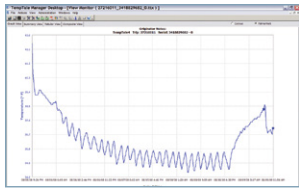
## TempTale Manager Desktop Features Summary



▶ **Summary View** displays statistical temperature and humidity data, such as minimums, maximums, standard deviation, mean kinetic temperature and "time-out-of-range" calculations.



▶ **Tabular View** displays detailed information for each data point including dates, times and temperature and humidity readings.

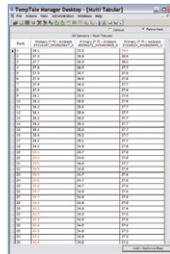


▶ **Graph View** plots temperature and secondary sensor data over time.



▶ **Multi-Graph View** overlays graphs from up to 50 monitors onto the same graph to quickly highlight relationships between monitor data files.

▶ **Multi-Tabular View** displays detailed data point information along with calculated statistics including min, max, delta, mean and standard deviation for up to 100 monitors in a single view.



TempTale Manager Desktop includes powerful tools that allow users superior flexibility when sharing and exporting monitor data:

**Export to PDF** exports your data to portable document format (\*.pdf). Once exported, you can open the file using Adobe® Reader.

**Export to Excel** exports your data to the popular spreadsheet format (\*.xls). Once exported, you can open the file directly from Microsoft Excel.

**Email File** allows you to quickly email attachments of open views of monitor data in \*.pdf and \*.txt file formats directly from the TTMD application with a single mouse click.

## ColdStream® Cold Chain Manager

For customers looking to move beyond local desktop data management, Sensitech offers a robust web-accessible solution: ColdStream Hosted Data Management Services. ColdStream provides centralized storage for all your detailed time-and-temperature records in a secure, compliant repository. Maintaining, archiving, retrieving and analyzing

detailed logistics information for your temperature-sensitive products has never been so user-friendly. And, ColdStream is internationalized to support many local dialects and a range of non-English operating systems.

Call Sensitech directly or ask your Sales Representative for more information about ColdStream and Sensitech's Hosted Data Management Services.

Sensitech Inc. is focused on delivering supply chain visibility solutions that track, monitor and protect products for global leaders in the food, life sciences, consumer goods, and industrial markets. Our solutions are focused in three key areas: quality and compliance, supply chain security, and logistics performance management. Quality and compliance solutions address temperature-sensitive, complex supply chains focused on delivering the highest quality possible, while our supply chain security solutions help to mitigate risks associated with theft, diversion and chain of custody. Sensitech's logistics performance solutions deliver origin-to-destination, real-time transparency to any in-transit journey. Sensitech Inc. is an ISO 9001:2008 company, headquartered in Beverly, Mass., with more than 35 sales, service and distribution locations around the world. Sensitech is a part of UTC Climate, Controls & Security, a unit of United Technologies Corp., a leading provider to the aerospace and building systems industries worldwide. Visit [www.sensitech.com](http://www.sensitech.com) for additional information. © 2018 Sensitech Inc. All Rights Reserved. Unless otherwise indicated, all trademarks and service marks are the property of Sensitech Inc. NIST is a registered trademark of The National Institute of Standards and Technology Agency of the United States Government. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries.