LogTag®

TICT

45 Day Transit Temperature Indicator

with display

Contents

Document revision history

Ver	Date	Author	Details
0.1		CW	Initial TICT device
0.2	20/01/2012	MJ	Modifications
0.3	19/12/2012	CW	Updated picture
1.0	10/01/2013	SL	Corrected various issues, general edit for readability, edited profile data, edited specification table
1.1	16/04/2013	SL	Amended profile form fields

Description

The LogTag® TICT is a single-trip, low cost electronic temperature indicator for monitoring temperature and time statistics during the transportation and storage of chilled or frozen products.

The product is made from durable polycarbonate plastic and features an LCD display and a START/STOP button.

The LogTag TICT can monitor and record statistics against four factory pre-set temperature limits for up to 45 days, showing OK if environmental conditions remain within. If, however, temperatures exceed two high temperature alarm limits or go below two low temperature alarm limits, the LCD shows a REJECT alert, indicating the goods require further checking.

An interface cradle is available so trip statistics can be downloaded and saved for analysis in the freely available companion software LogTag Analyzer, including trip duration, minimum and maximum temperatures and exposure to levels outside the alarm limits.

Alerts

After the start delay time has elapsed, the TICT provides a visual alert on the display indicating OK (☑) or Reject (☒) throughout transport and storage.

Once the indicator has stopped at the completion of the trip, detailed information regarding temperature and time exposure during transportation and storage is made available via download in LogTag Analyzer.
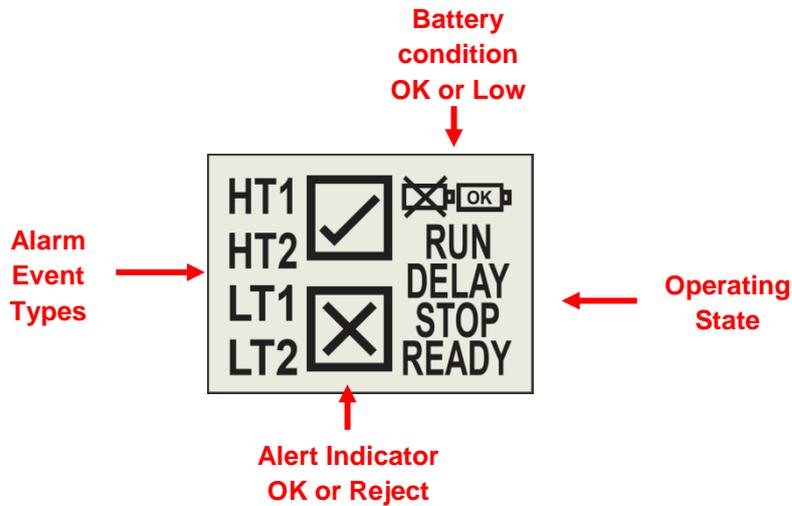
The four alarm limits are factory pre-set. Custom configurations can be ordered, allowing clients to select different alarm limit values, sampling intervals and alert event options such as instant or delayed reject alerts.

Stored Statistics

Comprehensive statistics are collected and stored on a daily basis and can be downloaded using LogTag Analyzer.

- Run time for the trip (days, hours, minutes). Each day represents a period of 24 hours from 0:00:00 to 23:59:59. Day 1 begins when the start delay has elapsed and the Indicator starts monitoring. A new day starts when the internal clock advances from 23:59:59 to 0:00:00.
- Maximum temperature reached for each day the indicator was running
- Minimum temperature reached for each day the indicator was running
- The first alarm trigger time and duration for each of the four alarms on each day the indicator was running. Trigger time is the number of hours and minutes into the current day the alarm was triggered

Display Overview

Display item	Description	
Alert Indicators	☑	OK indicator (☑). No alarms events have been generated, load has not been subjected to temperatures outside specified limits.
	☒	Reject alert indicator (☒). Alarm event has been generated, as temperatures have been outside specified temperature limits; load needs to be checked.
Alarm Event Types	**HT1** (High Temperature 1) **HT2** (High Temperature 2) **LT1** (Low Temperature 1) **LT2** (Low Temperature 2)	Each of the alarm event types are factory pre-set. If an alarm event is enabled and the temperatures monitored generate an alarm, the alert will change from OK ☑ to Reject ☒ and the alarm type will be displayed.
Battery Condition (Battery tested hourly when running and stopped)	OK◻	Displayed when the battery test reports OK.
	◻	Displayed when the battery test reports low
Operation	**READY**	When READY is shown, the TICT is ready to be started for a single trip.
	RUN	The Indicator is running and temperature readings are taken. The display shows the alert indicators (OK ☑ or Reject ☒) and the statistical information is updated every sampling interval and stored every 24 hours.
	STOP	The indicator has been stopped; stored statistics can now be downloaded.
Start Delay	**DELAY**	Shown during the Start Delay.

Operation

1. Starting the Indicator

READY	The TICT Indicator is shipped in a state of low energy consumption (hibernation) to maximise battery life. Pressing the START/STOP button ⓞ will wake the Indicator and display the battery condition as either **OK** or **Low** for 30 seconds. If the button is not pressed again during that time, the display will turn off and the Indicator will re-enter hibernation. An Indicator with a low battery cannot be started.
RUN **READY**	To start the Indicator, press and hold the START/STOP button for 6 seconds ⓞ 6 sec . **RUN** will flash. When **RUN** is permanently lit, release the button within 2 seconds. ⓧ <2 sec
DELAY	The indicator now starts the delay countdown, while the display shows the text **DELAY**. This delay allows the indicator to acclimatise to the temperature of the load, so it does not trigger an alarm too early. This is the reason the indicator should be placed into the load to be monitored as soon as possible after it has been started. If the selected factory pre-set profile does not have a start delay enabled, the Indicator will start taking temperatures immediately.

2. Indicator running
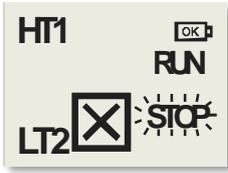
☑ **RUN**	As soon as the start delay time has elapsed, the indicator starts taking temperatures according to the sample interval defined in the factory pre-set profile. As long as the temperature readings stay within the limits defined by the four pre-set alarm events, the OK Alert (☑) is displayed.

HT1 OK RUN ☒ *HT1 alarm event was generated* HT1 OK RUN LT2 ☒ *HT1 and LT2 alarm events were generated*	If an alarm event is generated, the Reject Alert (☒) is displayed. Depending on the factory pre-set profile, up to four different alarm event types are enabled. HT1 or HT2 alarm events are generated when recorded temperatures exceed an upper limit for a specified number of readings. (LT1 and LT2 are the corresponding alarm events for recorded temperatures below lower limits). Alarm events can be generated for example by a single temperature above (below) the limit, or by a number of sequential or accumulated readings above (below) the temperature limit. The alarm event types are independent of each other and are defined in the factory pre-set profile.

3. Stopping the Indicator

The indicator will automatically stop after the number of days defined in the factory pre-set profile, typically after 45 days.

If you want to preserve the alert display at the conclusion of a trip shorter than 45 days, you must manually stop the indicator as soon as it is removed from the load. You must take care doing so, as the indicator cannot be restarted once stopped.

HT1 OK RUN LT2 ☒ STOP HT1 OK LT2 ☒ STOP	To stop the Indicator, press and hold the START/STOP button for 5 seconds ⬤ 5 sec . **STOP** will flash. When **STOP** no longer flashes, release the button within 2 seconds. ⬤ <2 sec **STOP** remains permanently lit and the indicator no longer processes new temperature values or statistics. If you release the STOP button before the **STOP** text becomes permanently lit, or you do not release the STOP button inside 2 seconds after the **STOP** text is permanently lit, the unit will not stop, and the state returns to **RUN.** The OK ☑ or Reject ☒ Alert and any generated alarm events at the time the indicator was stopped will continue to be available on the LCD for up to 6 months after the indicator has been stopped. The display will turn off once stopped, but you can turn it back on by briefly pressing the START/STOP button.

Please note that downloading the summary statistics with LogTag Analyzer will also stop the indicator, and no additional readings will be taken or processed.

TICT Factory Pre-sets

LogTag® TICT indicators cannot be client configured, but instead are purchased with one of a number of different factory configuration profiles pre-installed. If a default configuration does not suit, customers can compile their own profile by specifying the parameters in the table below when ordering. Please note that minimum order quantities apply for TICT units with profiles not stocked by LogTag®.

The default configuration profile is called "Profile 0001"; each custom configuration is assigned a different profile number which can be used for ordering.

Description		Profile 0001 (default)	Range / Option	Requirement
Maximum Days (Maximum number of days to monitor)		45	1-45	
Sampling interval		5 minutes	1 to 15 minutes*	
Start Delay		60 minutes	0 to 255 minutes, 0=no delay	
Hibernate once STOPPED (Stops the Real Time Clock, increases length of period in which the unit can be downloaded)		off	on or off	
Allow stopping with STOP button		on	on or off	
HT1 (High Temperature Limit 1)	Monitor this alarm	enabled	enabled or disabled	
	Temperature limit value	10°C	-25°C to 60°C (-13°F to 140°F)	
	Alarm activation	instant	instant, accumulated or consecutive**	
	Activation delay time***	N/A	1 minute to 45 days	
HT2 (High Temperature Limit 2)	Monitor this alarm	enabled	enabled or disabled	
	Temperature limit value	8°C	-25°C to 60°C (-13°F to 140°F)	
	Alarm activation	accumulated	instant, accumulated or consecutive**	
	Activation delay time***	12 hours	1 minute to 45 days	
LT1 (Low Temperature Limit 1)	Monitor this alarm	enabled	enabled or disabled	
	Temperature limit value	2°C	-25°C to 60°C (-13°F to 140°F)	
	Alarm activation	accumulated	instant, accumulated or consecutive**	
	Activation delay time***	12 hours	1 minute to 45 days	
LT2 (Low Temperature Limit 2)	Monitor this alarm	enabled	enabled or disabled	
	Temperature limit value	0°C	-25°C to 60°C (-13°F to 140°F)	
	Alarm activation	instant	instant, accumulated or consecutive**	
	Activation delay time***	N/A	1 minute to 45 days	

*   Preferred intervals are 1, 2, 3, 4, 5, 6, 10, 12 and 15 minutes

**   Instant = one temperature reading is above/below limit; consecutive = temperature readings are above/below limit for the time defined in the activation delay time without interruption (single event); accumulative = temperature readings above/below limit for a total of time defined in the Activation delay time, but may not necessarily be sequential.

***   Delay times for alarm activations must be in multiples of the sampling interval.

Product Specifications

LogTag® Part Code	TICT-xxxx (xxxx = factory pre-set profile number)
Operating Temperature Range	-25.0°C to +60.0°C (-13.0°F to +140.0°F)
Ambient humidity range during transport and use	0% to 95%RH
Resolution	0.1°C or better in range of -20°C to +60°C (temperature shown after download)
Accuracy	±0.5°C (±1.5°F) or better for -10°C to +25°C (+14°F to +77°F). ±1.0°C (±2.0°F) or better for range of -25°C to -10°C (-13°F to +14°F). ±1.0°C (±2.0°F) or better for range of +25°C to +60°C (77°F to +140°F).
Capacity	Minimum & maximum temperature for each of the 45 days. 1st activation of each alarm for each day including trigger time and duration of each event. Please note the TICT does not store each individual temperature reading taken.
Memory type	Non volatile.
Sampling Interval	Factory pre-set between 1 and 59 minutes; 5 minute interval for profile 0001
Recordings	45 day statistics, min/max temperature/time and alarm trigger time/duration for each day.
Start delay	Factory pre-set between 1 and 255 minutes; 60 minute delay for profile 0001
Sensor	Precision electronic thermistor
Sensor Reaction time	T90 less than 7 minutes by method detailed in EN12830:1999
Vibration	Withstands vibration specification as detailed in EN12830:1999
Shock	Withstands shock specification as detailed in EN12830:1999 Withstand 5 drops 1m to smooth concrete floor without loss of function or calibration.
Environmental	IEC 60529: IP64
Resistance to Electrical Storms	Designed to resist the effects of intense electrical storms.
Power source	Internal 3V Lithium Li-Mg – non replaceable
Battery life	Minimum storage life of 18 months before 'start'. Monitoring period: 45 days. Minimum accessibility (display) period of 6 months after 'stop'
Size	71.5mm(W) x 33.0mm(H) x 8.6mm(T)
Weight	23g.
Case Material	Polycarbonate
Warranty	One year replaceable warranty against defects in materials and workmanship from the date of purchase. Excludes misuse or abuse of the product or as a result of unauthorized alteration or repairs.
Calibration	Certificate of Traceability and Calibration to ISO/IEC17025 available on request.
EMC compliance	EC EMC directives (EN 61000-6-1:2005 & EN 61000-6-3:2006) Including electrostatic discharge as prescribed in EN 61000-4-2. Complies with FCC Part 15 Subparts A and B.
Alarm events	Four factory pre-set alarm events, two over temperature and two under temperature. Each alarm event can be instant reject or accumulative reject. It can also be disabled.
Alert indication	OK ☑ = Temperature has remained within the alarm limits. Reject ☒ = Alarm event has been generated Display is static allowing photocopying.