

EN 12830 Cold Chain Monitoring

Introduction

This document discusses the various clauses in the standard and how compliance is achieved using Signatrol® data loggers with TempIT® Software.

The Standard

EM12830:1999 is a Pan-European standard whose full title is: 'Temperature recorders for transport, storage and distribution of deep frozen/quick frozen food and ice cream-Tests, performance and suitability.-

Scope

The standard applies to stand alone data loggers and chart recorders with integral sensors or probes connected by wires.

Applicable Products: SL50 series, SL151T, SL7000 series.

Requirements of the Standard

Clause	Requirement	Met
4.1	The means of temperature must be independent of any temperature measurement which is used to control the refrigeration system	Independent stand alone self powered loggers
4.2	The measurement range of the sensors must be <-25 °C >15 °C with minimum span of 50°C	All our loggers for transportation and storage exceed this requirement
4.3	The time and date of the beginning shall be readable and any settings which configure the recording shall be protected against un-authorized or accidental modification	Time and date are recorded and form part of the record along with all configuration details. Access to data and configuration is controlled by password so that only authorised users have access.
4.4.1	At least the time and temperature shall be recorded. The place of measurement has to be indicated	Time and temperature are always recorded. TempIT allows at least 67 characters of manifest data to be entered which forms part of the record. This is entered at issue and is used to record the place and other meaningful information.
4.4.2	It shall be possible to identify and consult the charts and the recorded data. Records shall be available for at least one year	All records are identified and stored on the users system indefinitely. Appropriate back up procedures should be used to ensure the safety of the data.

4.5	Devices with an autonomous power supply shall be marked as such with an indication of the temperature range. An indication of battery life is desirable	All products have a recommended operating range shown and all devices show give a low battery warning at time of issue if the battery requires replacing.
4.6	The degree of protection shall be at least IP20, IP55 or IP65 for different environments	SL121T is IP20 SL7000 series is IP50 SL50 series is IP55 SL151T is IP66
	The recorder shall conform, to EN61010-1	Conforms
4.9.2.1	Under rated operating conditions the recorder shall have a maximum error of $\pm 1^{\circ}\text{C}$ and a resolution of better than $\pm 0.5^{\circ}\text{C}$	All loggers exceed this specification with the exception of the SL51
4.9.2.2.	The maximum recording interval for transport shall be 5m for recording durations shorter than 24 Hrs and 15m for 1-7 days and 60m for durations longer than 7 days. For storage, the recording interval shall be 60m	The recording interval is fully programmable at the issue stage to accommodate all the stated applications
4.9.2.3	The manufacturer shall specify the recording capacity as either duration at a given interval or as a number of readings	Log duration is displayed at issue when the sample interval is selected,
4.9.2.4	The maximum relative timing error shall be better than 0.2% for up to 31 days and 0.1% for durations > 31 days.	Worst case timing error is 0.008% $\pm 20\text{ppm}$ @ $+25^{\circ}\text{C}$ (1.728 seconds per day) $\pm 75\text{ppm}$ @ $+50^{\circ}\text{C}$ (6.480 seconds per day) $\pm 50\text{ppm}$ @ -30°C (4.320 seconds per day)
4.9.2.5	Response Time shall have a maximum response time of 10 mins (90%)	All response times meet this requirement
4.9.3.1 Table 3B	The standard operating range is -30 to $+65^{\circ}\text{C}$ operationally and -40 to $+85^{\circ}\text{C}$ for storage	All loggers meet the requirements although some distortion of the case may be apparent at temperatures in excess of 70°C
4.9.3.1	The equipment shall withstand vibration from 5Hz to 8.6 Hz 10mm amplitude and 8.6Hz to 150 Hz acceleration of 3g	All loggers are designed to comply with this requirement
4.1.0	The data shall be protected against alteration	All data are store in encrypted form which cannot be altered by ordinary means.