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LASREC028
Temperature Probe Data Logger with LCD and USB Interface

FEATURES

- -40 to +125°C (-40 to +257°F) probe measurement range
- High contrast LCD with temperature display
- USB interface for set-up and data download
- User-programmable alarm thresholds
- Status indication via red and green LEDs
- Immediate, delayed and push-to-start logging
- Supplied with 1.0m type 2 sensor probe
- Probe length can be easily extended with an extension cable
- Supplied complete with replaceable lithium battery and Windows control software

This standalone data logger measures and stores up to 32,510 temperature readings from the supplied thermistor probe which is attached via the socket at the base of the unit. The user can easily set up the logging rate and start-time, and download the stored data by plugging the data logger into a PC's USB port and running the purpose designed software under Windows XP, Vista or 7. Data can then be graphed, printed and exported to other applications.

The EL-USB-TP-LCD features an LCD and push-button which allows the user to cycle through the most recent, highest and lowest stored temperature readings. The data logger is supplied complete with a long-life lithium battery, which can typically allow logging for up to 6 months.

Specifications	Minimum	Typical	Maximum	Unit
Supplied probe measurement range	-40 (-40)		+125 (+257)	°C (°F)
Operating temperature range *	-10 (+14)		+40 (+104)	°C (°F)
Resolution (internal and displayed)		0.5 (1)		°C (°F)
Accuracy (logger error)		±0.1 (±0.2)		°C (°F)
Logging rate	every 1 s		every 12 hr	-
1/2AA 3.6V Lithium Battery Life		6**		Month

* Operating temperature applies to the data logger unit only.
** Depending on sample rate, ambient temperature and use of LCD.

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WINDOWS CONTROL SOFTWARE

Lascar's EasyLog USB control software is supplied free of charge with each data logger. Easy to install and use, the control software runs under Windows XP, Vista or 7. The software is used to set-up the data logger as well as download, graph and export data to Excel.

The software allows the following parameters to be configured:

- Logger name
- °C, °F
- Logging rate (1s, 10s, 30s, 1m, 5m, 30m, 1hr, 6hr, 12hr)
- High and low alarms
- Immediate, delayed and push-to-start logging
- Display off, on for 30 seconds after button press, or permanently on
- Data rollover (Allows unlimited logging periods by overwriting the oldest data when the memory is full)
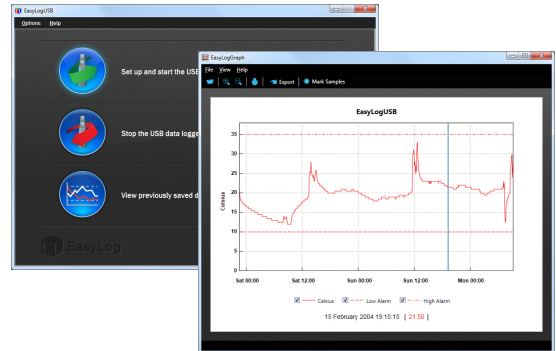
The latest version of the control software may be downloaded free of charge from **www.tiptemp.com**

THERMISTOR PROBE

The probe supplied with the LASREC028 uses a precision thermistor to sense the temperature. Alternative lengths and probe options are available.
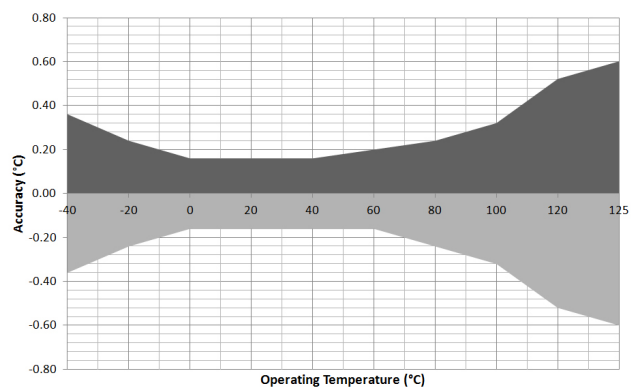
Alternatively, the probe length may be extended by the use of a suitable extension cable. We recommend twisted pair with high quality 3.5mm jack socket/plugs for best results.

The available options are listed online at **www.tiptemp.com**

PROBE MEASUREMENT ACCURACY
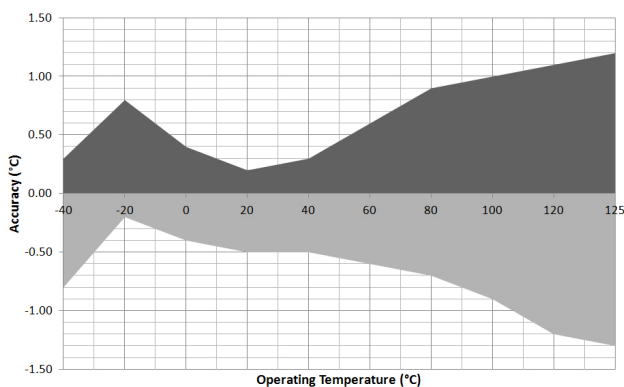
Supplied 'Type 2' Thermistor Probe

Thermistor Probe - sold seperately. See
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DISPLAY AND STATUS FUNCTIONS

The LASREC028 features a high contrast LCD and two LEDs. The LCD shows logged temperature values using seven segment numbers, along with symbols. The LCD can also show information regarding the logging status - see LCD INDICATION below.

Three different functions are available on the display – most recent logged temperature, maximum logged temperature and minimum logged temperature. The push button is used to cycle through the functions. In addition, logging and alarm status are shown using two high intensity LEDs.

Temperature scale symbols

Reading

Maximum/Minimum logged value symbol
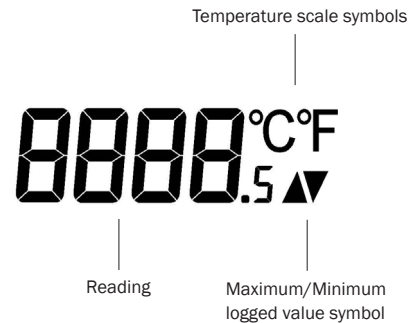
LCD INDICATION

Display	Logger Status	Explanation
dS	Delayed Start	This is shown when the logger is set to start at a specific data and time*
PS	Push to Start	This is shown when the logger is setup for "Push to start" logging
lo9	Logging	This is shown when the logger is running in "LCD off" mode, and the button is pressed. The display clears again after three seconds
---	Stopped	If the logger has not been set to log and the button is pressed, three dashes are displayed for three seconds
Prob / 1	Probe has been disconnected	The flashing message 'Prob', followed by a number, or letter, will be displayed if the logger is logging and the probe becomes disconnected. The number confirms the type of probe that should be connected

* If the logger is set to "LCD off" or "LCD on for 30 seconds" mode, then this will only be shown after the button is pressed. Otherwise the display will remain blank.

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LED FLASHING MODES

EL-USB-TP-LCD features two LEDs that indicate the logging, battery and alarm status:

- The first LED flashes red to indicate that the LASREC028 is in an alarm condition. It will flash when the logged temperature has exceeded a Low or High alarm level.
- The second LED flashes green to indicate that the LASREC028 is not in an alarm condition.

Hold is enabled by default, which forces the logger to continue flashing the red LED after an alarm, even when the temperature has returned to normal. This feature ensures that the user is notified that an alarm level has been exceeded, without the need to download the data from the logger.

Hold can be turned off via the control software. The red LED will then only flash whilst the logger is in an alarm condition. When the temperature returns to normal, the green LED will flash.

Additional LED modes are explained below:

	Green single flash (10 seconds) The data logger is currently logging. No alarm.
	Green single flash (20 seconds) The data logger is currently logging. No alarm. However, the battery is low and should be replaced before logging important data.
	Green single flash (30 seconds) The data logger is not currently logging, but is primed to start at a later date and time (delayed start).
	Green double flash (20 seconds) The data logger is full and has stopped logging. No alarm.
	Red single flash (10 seconds) The data logger is currently logging. Low alarm.
	Red single flash (20 seconds) The data logger is currently logging. Low alarm. However, the battery is low and should be replaced before logging important data.
	Red double flash (10 seconds) The data logger is currently logging. High alarm.
	Red double flash (20 seconds) The data logger is currently logging. High alarm. However, the battery is low and should be replaced before logging important data.
	Red/Green single flash (20 seconds) The data logger is full and has stopped logging. Alarm (high, low or both).
	No LEDs flash The data logger is stopped, the battery is empty or there is no battery fitted.
	Red triple flash (10 seconds) The data logger is currently logging, but the probe has been disconnected.

Green LED   Red LED

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DIMENSIONS

All dimensions in mm (inches)

21.2 (0.83)

134.5 (5.29)

23.9 (0.94)

BATTERY REPLACEMENT

We recommend that you replace the battery every 6 months, or prior to logging critical data.

The LASREC028 does not lose its stored readings when the battery is discharged or when the battery is replaced; however, the data logging process will be stopped and cannot be re-started until the battery has been replaced and the logged data has been downloaded to a PC.

Check with your supplier that the battery you are ordering is 'press fit' and is not fitted with solder tags. Before replacing the battery, remove the LASREC028 from the PC.

Note:
Leaving the LASREC028 plugged into the USB port for longer than necessary will cause some of the battery capacity to be lost.

WARNING

Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.