

# EL-GFX-DTC

## Dual Channel K, J and T type Thermocouple Data Logger with Graphic Screen

### ORDERING INFORMATION

Standard Data Logger (Data Logger, 2 x Batteries, USB cover, Mounting Clip, 2 x TC probes, Micro USB cable)	EL-GFX-DTC
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Replacement Battery (2 Required)	BAT 3V6 ½AA
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### FEATURES

- Rugged and robust construction
- Dual channel, compatible with K, J and T type Thermocouples
- Logging rates between 2 seconds and 1 hour
- Stores over 250,000 readings
- On screen menu and graphing to start, stop, review and restart the logger in the field
- Micro USB interface for PC based set-up and data download
- Immediate, delayed, push-button or temperature triggered start mode
- Graphic LCD shows real-time readings, graph and current status
- Resettable Min/Max readings may be viewed on the LCD
- User set audible alarm
- Highly visible confidence/alarm LEDs
- Supplied with user replaceable ½ AA batteries



The EL-GFX-DTC standalone USB data logger measures and stores up to 252,928 temperature readings from two J, K, or T-type thermocouple inputs at a resolution of 0.1°C. Alternatively, one or both of the channels can be set to record internal temperature.

Using the Windows control software (available as a free download from [www.easylogusb.com](http://www.easylogusb.com)) the user can quickly set up the logger name, sample rate, alarm settings and start mode (immediate start, push to start, delayed start or temperature triggered start). This software can later be used to download the stored data which can be graphed, printed and exported to other applications.

The data logger features a dot-matrix LCD and three face-buttons to navigate through an on-screen menu. This menu provides the user with access to real-time trend analysis, data summaries and the ability to start, stop and restart the data logger without the need to connect the data logger to the host-PC. Users can reset the maximum/minimum reading using the on-screen menu; this introduces an 'event marker' into the data which can later be viewed in the graphing software ('Mark Events' option) and the data file after download.

The data logger is supplied with two replaceable ½AA batteries.

Specifications		Minimum	Typical	Maximum	Unit
Probe measurement range	K-type	-200 (-328)		+1350 (+2462)	°C (°F)
	J-type	-200 (-328)		+1190 (+2174)	°C (°F)
	T-type	-200 (-328)		+390 (+734)	°C (°F)
Internal resolution			0.1 (0.1)*		°C (°F)
Accuracy (overall error)			±0.5 (±0.9)**		°C (°F)
Logging rate		Every 2 seconds		Every 1 hour	Time
Operating temperature range***		-10 (-14)		+40 (+104)	°C (°F)
2 x ½AA 3.6V Lithium Battery Life			4†		Months

\* Above 999.9°C/F display becomes 1°C. Internal resolution remains at 0.1°C/F.

\*\* At 25°C. See internal accuracy curve on page 4. Important - quoted accuracy is for the data logger only when measuring within the specified operating temperature. Thermocouple error is not included and should also be taken into consideration.

\*\*\* Operating temperature applies to the data logger module only. Please consult the probe manufacturer for operating temperature of thermocouple.

† At 25°C and 10 minute logging rate with no alarm LEDs or sounder and minimal LCD use.

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### EL-WIN-USB (CONTROL SOFTWARE)

Lascar's Easylog USB control software is available to download from [www.easylogusb.com](http://www.easylogusb.com). Easy to install and use, the control software runs under Windows XP, Vista and Windows 7. The software is used to set-up the data logger as well as download, graph and export data to Excel. Each stored logging session is saved as a separate file.

The software allows the following parameters to be configured:

- Logger name
- Measurement parameter (°C or °F)
- Logging Rate (customisable between 2 seconds and 1 hour)
- High and low temperature alarms
- Immediate, delayed, push-button or temperature triggered start mode
- Disable or enable LEDs and sounder with delayed activation
- Display and backlight behaviour after button press



The latest version of the control software may be downloaded free of charge from [www.easylogusb.com](http://www.easylogusb.com)

### DIMENSIONS


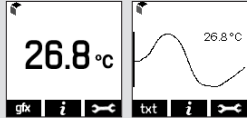










All dimensions in mm (inches)



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### MENU BUTTON FUNCTIONS AND LED SCREEN INDICATION

<p><b>ARMED!</b> Press button to start logging</p> 	<p><b>DELAYED START</b> Starts logging at 10:30:00 04/03/12</p>	<p><b>DELAYED START</b> Starts logging when temperature above 36.2°C</p>	<p><b>START LOGGER</b></p> <ul style="list-style-type: none"> <li>Loggers can be started immediately on a button press, delayed to a specific time or delayed to specific temperature reading</li> </ul>		<p><b>DISPLAY DATA</b></p> <ul style="list-style-type: none"> <li>Data can be displayed on screen in tabular or graphical format</li> <li>You can switch between these views by pressing the <b>gfx</b> / <b>txt</b> buttons at the bottom-left of your screen</li> </ul>
<p><b>ON-SCREEN ICONS</b></p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="161 696 344 842">  <ul style="list-style-type: none"> <li>When this EasyLog cube is spinning in the top-left corner your logger is logging</li> </ul> </div> <div data-bbox="352 696 536 842">  <ul style="list-style-type: none"> <li>High/Low Alarm indicators are displayed at the top of your screen</li> </ul> </div> <div data-bbox="544 696 791 842">  <ul style="list-style-type: none"> <li>This icon indicates that your battery is low and will need to be replaced soon</li> </ul> </div> </div>			<p><b>STOP/START LOGGING &amp; MUTE ALARM</b></p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="799 685 935 808">  </div> <div data-bbox="943 685 1078 808">  </div> <div data-bbox="1086 685 1222 808">  </div> </div> <ul style="list-style-type: none"> <li>By pressing the <b>stop</b> button, you can stop your logger, or view logger settings. If you have already stopped logging, this option will change to 'Start Logging'. The audible alarm can be muted from this menu if enabled</li> </ul>		
<p><b>Temperature</b> Max 34.8°C Min 22.8°C Since 10:30 24/09/2012</p> <p><b>Mem Used</b> Readings 32% 6336</p>		<p><b>SUMMARY DATA</b></p> <ul style="list-style-type: none"> <li>Summary screen displays max/min log and last log. Reset function clears summary if required</li> <li>These screens can be reached by pressing the <b>i</b> button</li> </ul>		<p><b>LOCKED MODE</b></p>  <ul style="list-style-type: none"> <li>When in locked mode - an option during PC set-up - the logger can only be stopped and re-started using a PC loaded with the unit's configuration software</li> </ul>	
<p><b>EasyLog USB</b> Sample Rate 10s Low Alm 10°C High Alm 40°C S/N 000000001</p>		<p><b>LOGGER SETTINGS</b></p> <ul style="list-style-type: none"> <li>To view a summary of the logger's settings press the <b>stop</b> button, then click 'Logger Settings'</li> </ul>		<p><b>POP-UP MESSAGES</b></p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="815 1021 935 1133">  </div> <div data-bbox="943 1021 1062 1133">  </div> <div data-bbox="1070 1021 1190 1133">  </div> </div> <ul style="list-style-type: none"> <li>A message will overlay the screen - if there is an issue - the next time a button is pressed, e.g. if the logger is running low on memory</li> </ul>	

Please note that screens may vary slightly depending on model. EL-GFX-1 screens shown.

### BATTERY INFORMATION

We recommend that you replace the batteries every 4 months, or prior to logging critical data.

#### Replacement

The EL-GFX-DTC does not lose its stored readings when the batteries are discharged or when the batteries are replaced; however, the data logging process will be stopped. If the batteries are changed within a 2 minute window the EL-GFX-DTC will retain its settings (internal clock and logging mode). This will allow logging to be restarted without additional connection to a PC via USB.

Only use 2 x 3.6V ½AA lithium batteries. Do not mix battery types and do not mix new and old batteries. Before replacing the batteries, unplug the EL-GFX-DTC from the PC.

#### WARNING

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

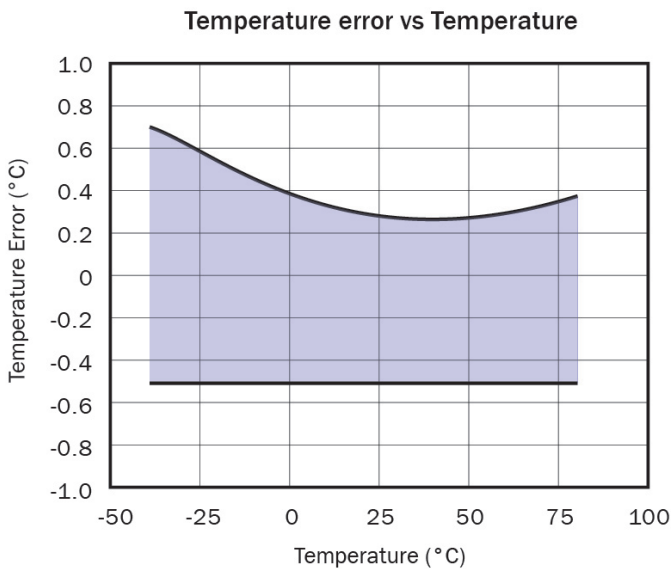
#### Passivation

If left unused for extended periods of time, the Lithium batteries used in the EasyLog range of data loggers naturally form a non-conductive internal layer, preventing them from self-discharge and effectively increasing their shelf life. When first installed in the data logger, this may cause a momentary drop in the battery voltage (the Transient Minimum Voltage) as the internal layer is broken down, resulting in the data logger resetting. Inserting the batteries in the data logger and leaving it connected to a PC for about 30 seconds will remove this layer. After this, remove and re-install the batteries to reset the data logger. Overall battery life will not be affected.

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### INTERNAL TEMPERATURE ACCURACY (Cold-junction Compensation)



### CAUTION

The K-Type thermocouple probes supplied with the EL-GFX-DTC are not electrically isolated from the thermocouple junction, to give a faster response.

However depending upon application it may be necessary to use electrically isolated thermocouple probes to avoid ground loops, and/or situations where the probes may come into contact with conductors that are at different electrical potentials.

Where doubt exists Lascar recommends that electrically isolated probes are always used.

Module House  
Whiteparish, Salisbury  
Wiltshire SP5 2SJ  
UK  
T +44 (1794) 884567  
F +44 (1794) 884616  
E sales@lascar.co.uk

4258 West 12th Street  
Erie  
PA 16505  
USA  
T +1 (814) 835 0621  
F +1 (814) 838 8141  
E us-sales@lascarelectronics.com

8th Floor, China Aerospace Centre  
143 Hoi Bun Road  
Kwun Tong, Kowloon  
HONG KONG  
T +852 2797 3219  
F +852 2343 6187  
E saleshk@lascar.com.hk



[www.lascarelectronics.com](http://www.lascarelectronics.com)

