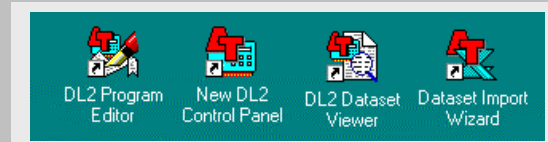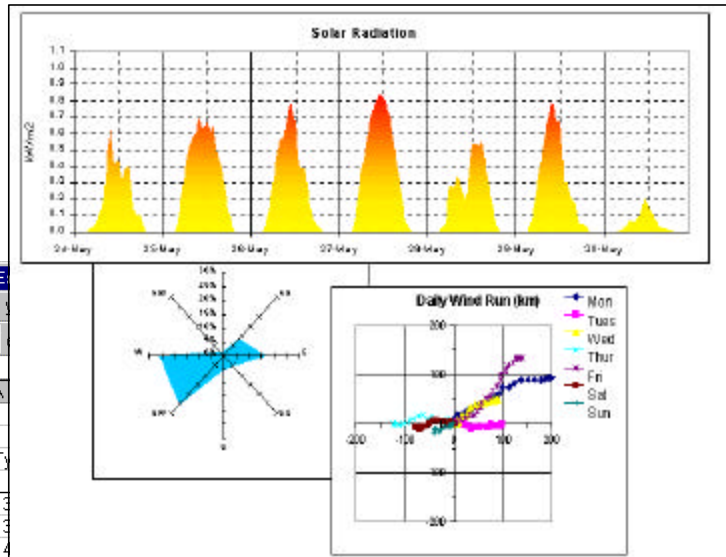# NEW : Ls2Win - Software Tools for the DL2e Data Logger

Ls2Win is the third generation PC support software for Delta-T's popular DL2e data logger. Running under the 32-bit Windows® family of operating systems, it can:

- ❑ program the logger
- ❑ interrogate and control the logger
- ❑ retrieve and display recorded data
- ❑ import data into Microsoft® Excel®

DL2 Program Editor　New DL2 Control Panel　DL2 Dataset Viewer　Dataset Import Wizard

- **Fully compatible with all DL2 and DL2e loggers**

  - and earlier LS2e (DOS) software configurations, sensor libraries and dataset files

- **Comprehensive Delta-T sensor libraries and on-line help**

- **Easy desk-top connections with any installed modem, including GSM modems**

- **Collects data from multiple remote sites into host PC**

- **Seamless data analysis and graphing with Microsoft Excel using** *Dataset Import Wizard*

	A							
1	Label							
2	Channel							
3	Sensor Ty							
4	Units							
5	11 Jan 13							
6	11 Jan 13							
7	11 Jan 14							
8	11 Jan 14:30:00	10.02	0.007593	0.0469	0.0451	9.3	29.25	27.53
9	11 Jan 15:00:00	9.42	0.007593	0.0404	0.0387	8.72	27.81	25.08
10	11 Jan 15:30:00	9.04	0.007593	0.0359	0.0341	7.61	27.06	22.9
11	11 Jan 16:00:00	8.43	0.0075	0.0177	0.0172	7.51	11.44	10.9
12	11 Jan 16:30:00	8.06	0.0075	0.0093	0.0092	7.82	4.015	3.33625
13	11 Jan 17:00:00	7.65	0.007407	0.0081	0.0081	6.98	3.0725	3.05
14	11 Jan 17:30:00	7.24	0.007407	0.008	0.008	6.47	3.07	3.0475
15	11 Jan 18:00:00	6.79	0.007407	0.008	0.008	6.63	3.06875	3.04625
16	11 Jan 18:30:00	6.94	0.007407	0.008	0.008	7.3	3.07125	3.0425
17	11 Jan 19:00:00	7.08	0.007407	0.008	0.008	6.64	3.07125	3.04625
18	11 Jan 19:30:00	6.74	0.007407	0.008	0.008	6.21	3.07125	3.0425
19	11 Jan 20:00:00	6.51	0.007407	0.008	0.008	6.03	3.06625	3.045
20	11 Jan 20:30:00	6.4	0.007407	0.008	0.008	6.13	3.065	3.04625

Ls2Win contains four integrated software modules :

❑ **DL2 Control Panel**	❑ **Integrated Program and Sensor Library Editor**
❑ **Dataset Import Wizard**	❑ **Dataset Viewer**

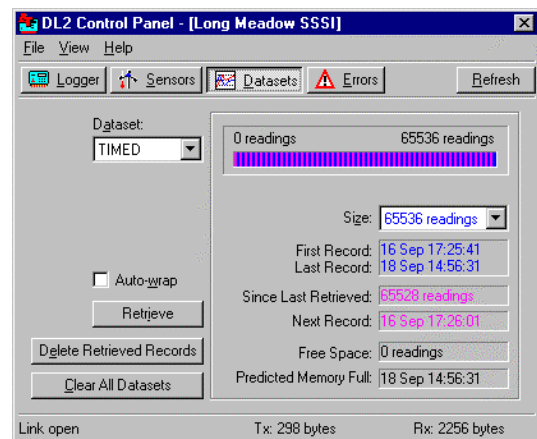⇨ See overleaf for more details

Ls2Win Software for the DL2e Logger

DL2 Control Panel   Ls2Win

DL2 Control Panel provides facilities for communicating with a DL2e logger:

- **Modem connections** are managed via your installed Windows modem drivers. DL2 Control Panel just requires a phone number to use any installed modem (GSM or land line)

- **Logger status** (program, battery, date and time), dataset status, sensor readings and error reports are a single mouse click away.

- **Dataset** status is represented graphically, with memory full projections for TIMED datasets.

- **Shortcut icons** on the desktop, each denoting a DL2e connection (ie individual serial port or telephone number), allow DL2e Loggers to be contacted with just a double-click on the desktop.

- **Realtime readings** can be displayed for individually selected sensor

Automatic Data Download from Multiple Sites

This valuable feature, accessed from the Control Panel can be used, for example to manage data collection from network weather stations. Using Windows Scheduler you can:

- ❑ Automatically collect data from one or more Loggers at a predetermined time
- ❑ Relax, and leave Ls2Win & Windows to download data files at your own scheduled intervals.

Program and Sensor Library Editors   Ls2Win

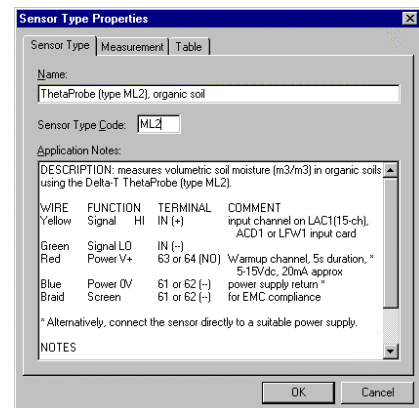### Ls2Win provides an integrated program and sensor library editor

The **DL2e program editor** lists the available channels in the DL2e logger. Double-clicking on a channel pops up its property sheet, which prompts the user to set a sensor type, label, recording regime and other options. The program editor can calculate the warm-up duration and repeat period for any selection of channels; and can prevent the programming of channels for unsuitable sensor types.

A separate tab lists the sensor types in the **sensor library**. Double-clicking on a sensor type pops up its property sheet, which prompts the user to specify its electrical measurement, conversion to engineering units, optional linearisation table and recommended warm-up duration.

Sensor types can be added to or removed from the sensor library. Export and Import commands allow sensor types to be easily transferred between libraries.

All information about each channel (and sensor type) is tabulated on a single screen using descriptive text – including sensor type properties and linearisation tables.

The sensor library provides an Application Notes field. For the standard sensor types provided in the Delta-T library, these Notes fields contain wiring information and other application notes. Alternatively, for user-defined sensor types, any information can be entered.
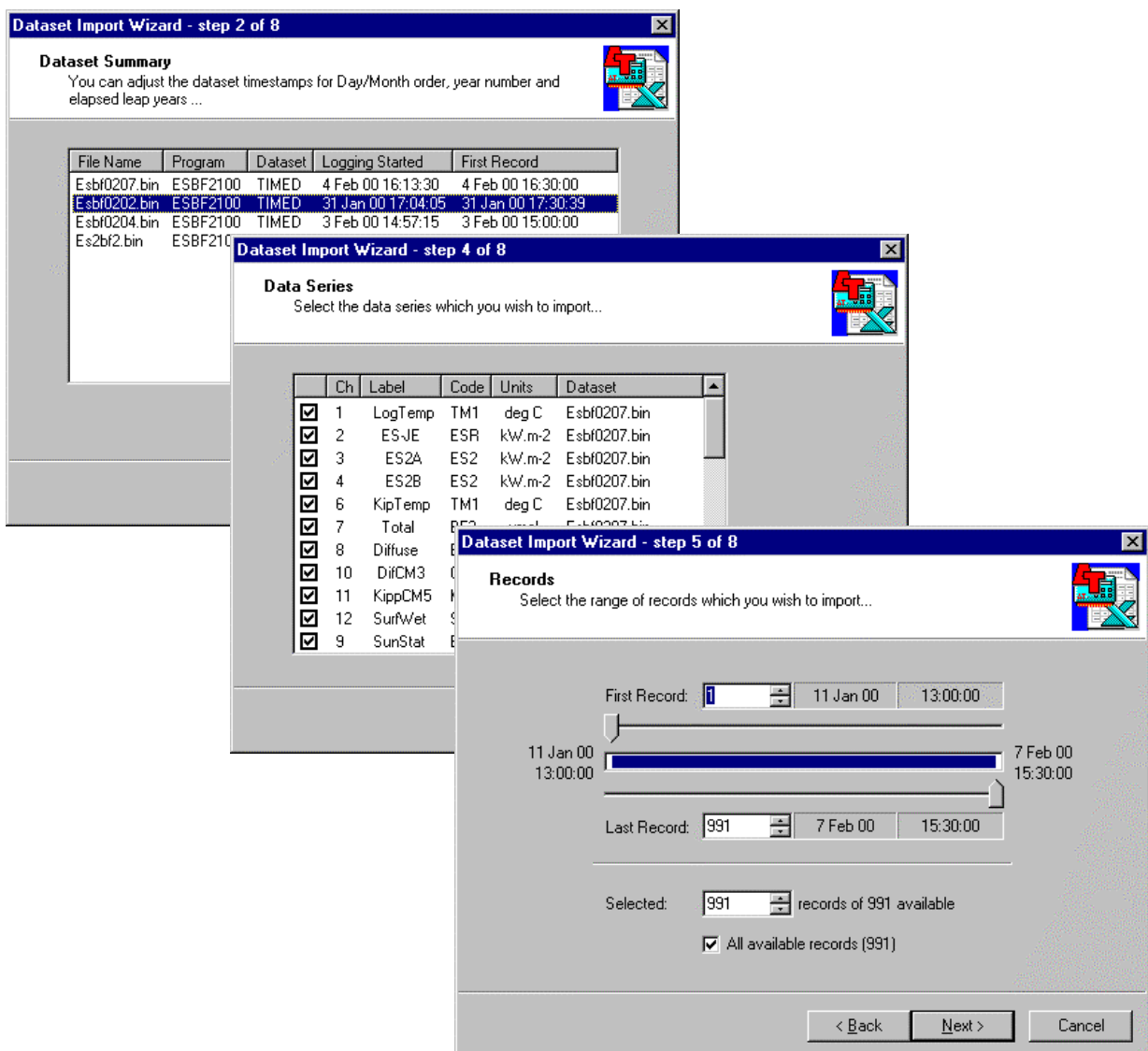
	Code	Sensor Type	Electrical Measurement	Engineering Units	Measurement Range
	AN1	Anemometer (type AN1)	Frequency, 5s min sample rate	m.s-1 = Hz / 0.8000	0.000000 to 75.00000 m.s-1
	A3A	Anemometer, high resolution (type AN3), analog	DC Voltage (Single-ended), auto-range, 5s warmup	m.s-1 = mV / 32.383	-0.0999907 to 64.74508 m.s-1
	A3D	Anemometer, high resolution (type AN3), digital	Frequency,	m.s-1 = Hz / 20.000	0.000000 to 77.00000 m.s-1
	BS4	Barometric Pressure Sensor (types BS4, BS4/N)	DC Voltage (Differential, low CM), auto-range, 1s warmup	hPa, using table 'Barometer, BS4'	600.3200 to 1060.480 hPa
	BSA	Barometric Pressure Sensor, high altitude (types BS3A, BS3A/N)	DC Voltage (Differential, low CM), auto-range, 1s warmup	hPa, using table 'Barometer, BS3A'	600.0000 to 1060.000 hPa
	BS3	Barometric Pressure Sensor, low altitude (types BS3, BS3/N)	DC Voltage (Differential, low CM), auto-range, 1s warmup	hPa, using table 'Barometer, BS3'	800.0000 to 1060.000 hPa
	CNT	Counter	Counter,	count = count / 1.0000	0.000000 to 65472.00 count

Dataset Import Wizard exploits the capabilities of the hugely popular and powerful Excel environment. It provides an additional 'Import Dataset(s)' Command Wizard in Excel's File menu, which guides the user through the process of importing one or more datasets into a new or existing worksheet.

- User selectable data series' and range of records.

- Intelligently matches up data series labels in a dataset file with headings in an Excel worksheet.

- Optionally plots a stacked array of charts from imported datasets – using Excel's excellent presentation graphing capability.

- Allows the user to import data directly into Excel via a DL2 Control Panel, thus eliminating any need for intermediate dataset files

- Replaces data within a worksheet with new values from imported datasets. This preserves the formulae and charts which apply to the data, so that newly imported data are recalculated and updated. This allows the user to construct workbooks and re-use them as templates for routine data analysis operations.

- Merges data: as an alternative to data replacement, data can be merged from different datasets (eg: records from different datasets can be interleaved in timestamp order)

Dataset Viewer The Viewer is an alternative to the Dataset Import Wizard for Ls2Win users who do not wish to use Excel. It displays datasets and converts proprietary .bin and .hfd format dataset files into comma separated ASCII .dat files, which are suitable for importing into most data analysis applications

How to Obtain Ls2Win

Ls2Win is included **free of charge** with all new DL2e Logger purchases.

Ls2Win Upgrades

Ls2Win is available as a software **upgrade** to existing DL2 or DL2e systems.
Please see below for ordering information.

Customers upgrading to Ls2Win should also consider the following upgrades:

- Upgrading to the latest PROM, version 5.03 (not necessary if your logger currently has PROM 2.12 or later)
- Having your Logger recalibrated

System Requirements

Ls2Win requires a Pentium™ or better PC, running 32-bit Microsoft Windows (ie Windows 95, 98, NT4 or 2000 etc), with a CD-ROM drive (for installation). Requires Excel 97 or later for Dataset Import Wizard. Requires Windows 98 or later, or Internet Explorer 4.0 or later, for Windows Scheduler features.

Ls2Win User Manuals

Ls2Win is provided on a single CD-ROM with one printed copy of the "Getting Started" User Manual for the DL2e Logger included.

The CD-ROM contains Ls2Win, along with full Adobe Acrobat (.pdf) versions of the DL2e Hardware User Manuals and Programmers Guide for the DL2e firmware. A version of Adobe Acrobat Reader is also supplied.

A printed version of the DL2e Hardware User Manual is available as a separate line item.

User Licences

Ls2Win is available for use under a single logger or multiple logger licence. Software can be installed on multiple PC's.

Ordering Information

Type ref:	Description:
DL2e	Delta-T Logger (Ls2Win s/ware). Fitted with 15/30 analogue channels and 64k readings memory. Includes DL2e Logger PC software type Ls2Win, "Getting Started" user guide and RS232 cable type LRS1.
Ls2WinU1	PC Software type Ls2Win Upgrade (single logger licence) Includes 1 x CD-Rom, and 1 x "Getting Started" user guide
Ls2WinU5	PC Software type Ls2Win Upgrade (five logger licence) Includes 1 x CD-Rom, and 1 x "Getting Started" user guide
Ls2WinU10	PC Software type Ls2Win Upgrade (ten logger licence) Includes 1 x CD-Rom, and 1 x "Getting Started" user guide
DL2-GS-UM1	DL2e Logger "Getting Started" user guide (for use with Ls2Win software)
DL2-HW-UM1	DL2e Logger complete hardware reference manual – printed copy (DL2-HW-UM1 is available as an Adobe Acrobat .pdf file on the Ls2Win CD-ROM)

A free-running demo of Ls2Win can be downloaded from www.delta-t.co.uk

LS2W-DS-7.DOC   LS2Win Data Sheet