

DeltaLINK 3 Release Notes

DeltaLINK 3.9
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About DeltaLINK 3

DeltaLINK 3 is the PC software for setting up and downloading data from GP2, GP1 and DL6 data loggers.

What's new in DeltaLINK 3.9

DeltaLINK 3.9 is a minor release including the addition of WET150 support and a few fixes:

- The WET150 SDI-12 sensors are now supported and is available in the sensor library.
- A “chart group” property in the GP2 program editor, allows grouping of measurement in charts.
- Various application notes have been updated.
- The temperature sensitivity of the permittivity of water in the conversion from EC_b to EC_p has been updated from 0.4 to 0.3595 as is based on Hubner & Kaatz (2016).
- Temperature compensation for EC_b has been removed.
- Fixed a bug where the C++ redistributable was not installed properly on some 64bit versions of Windows.
- Limit the total bits allowed to be record per recording.
- Fixes a bug where variables were removed if only used in conditional recordings.
- Fixed bug where power channel was not activated for counter channels in some instanced.
- Due to library update, DeltaLINK will only on Windows 7 and later.

Compatibility

DeltaLINK 3.9 is backward compatible with earlier GP2 firmware and DeltaLINK versions, i.e. it can communicate with, and open programs and datasets from earlier versions.

However, programs created in DeltaLINK 3.9 are incompatible with GP2 firmware 2.0:

- You can use DeltaLINK 3.9 to retrieve and view data created by firmware 2.0 without upgrading the firmware.
- You must upgrade GP2s to firmware 2.10 if you want to re-program them with DeltaLINK 3.9. See Firmware Upgrade below for instructions.
- DeltaLINK 3.9 is fully compatible with GP1 and DL6 firmware 1.48 – this is the current version and cannot be upgraded to provide SDI-12 functionality.
- DeltaLINK 3.9 installs side-by-side with earlier DeltaLINK versions. This allows you to continue using earlier firmware versions with an older DeltaLINK installation if you don't want to upgrade.

Compatibility between DeltaLINK and firmware versions is summarized in the table below.

DeltaLINK version:	3.9 - 3.2		3.1.1		2.3+	
GP2 firmware:	2.10	2.00	2.10	2.00		
GP1 and DL6 firmware:	1.48	1.47			1.48	1.47
Logger and Sensors windows, Read Now	✓	✓	✓	✓	✓	✓
Datasets	✓	✓	✗	✓	✗	✓
Programs, view and save	✓	✓	✗	✓	✗	✓
Programs, Change and Apply	✓	✗	✗	✓	✗	✓

Installation

System Requirements

To install and use DeltaLINK 3 you need:

- A PC running Windows 7, 8 or 10.
- 500MB of available hard disk space.
- One free RS232 serial port or USB-RS232 adapter, plus DL6 or GP1 RS232 cable (supplied with logger).
- Or one free USB port plus GP2-USB cable (supplied with the GP2).

To Install DeltaLINK

You need local administrator rights to install DeltaLINK 3.9. Please contact your system administrator for further information.

Open the **DeltaLINK for GP2, GP1 and DL6** page of the Delta-T Software and Manuals DVD and select the **Install DeltaLINK 3.9** link. You may also need to install the driver for the GP2-USB cable: select the **Install USB driver** link.

Alternatively, download DeltaLINK 3.9 from www.delta-t.co.uk and click **Run** when the download completes.

The installation program creates a **DeltaLINK 3.9** desktop shortcut, and a **DeltaLINK 3.9** program group in the Windows Programs menu which contains the following shortcuts:

- **DeltaLINK 3.9** for setting up, controlling, retrieving and displaying logged data.
- **Firmware Upgrade** upgrades logger firmware to the most recent version.
- **GSMConfig Utility** sets up the Delta-T GSM Modem System for use with DeltaLINK.
- **Document Library** opens a folder of application notes and technical documents which supplement the DeltaLINK online Help and the logger Quick Start Guide.
- **Calibration Certificate Generator** creates a printable GP2 calibration certificate.
- **Samples** contains sample programs and dataset which you can adapt for your own needs.

To Start DeltaLINK 3

1. Connect the logger to the PC using the cable supplied with the logger.
2. Double-click the **DeltaLINK** icon on the desktop.
3. DeltaLINK attempts to connect to a logger. If successful, DeltaLINK shows information about the logger in the Logger window.
4. If you have a fresh installation, DeltaLINK attempts to use COM1. If the connection fails because the logger is connected to the wrong serial port select **File, Properties**. Click **New...** to create a connection which uses the correct serial port. Press F1 or click Help for more information.

Firmware Upgrade

To upgrade to the current firmware version:

1. In DeltaLINK, stop logging, retrieve any stored data and delete all dataset records.
2. Close DeltaLINK.
3. From the Windows Start menu select **Firmware Upgrade** in the **DeltaLINK 3.9** program group, and follow the on-screen instructions.

WS-GP1 Weather Station Program

The firmware upgrade process restores the default GP1 program (i.e. the GP1 weather station program is lost). To re-program the logger as a weather station, connect to the GP1 in DeltaLINK and follow the below steps:

1. Select the Program page and click Change.
2. Select Edit > New Program... (NB: Not File > New Program...).
3. In the Program Type list, select WS-GP1 Weather Station Program.
4. Select the weather station options that you want to record.
5. Click Apply to update the logger in the normal way.

Dataset Import Wizard

Dataset Import Wizard imports DeltaLINK datasets into Microsoft Excel (32-bit) spreadsheets. To install Dataset Import Wizard open the **Dataset Import Wizard Excel add-in** page in the in the Delta-T Software and Manuals DVD and follow the on-screen instructions.

Known Issues

The following defects have been identified and will be addressed in forthcoming upgrades, which will be available from www.delta-t.co.uk.

1. When replacing an earlier version, DeltaLINK Setup leaves behind a shortcut to the Document Library folder of the previous version. This folder is empty – unless you have copied or moved files into it. If so, it can be safely deleted together with the shortcut. All other shortcuts, files and folders are correctly removed and replaced by the current version.

Revision History

DeltaLINK

DeltaLINK 3.9

- The WET150 SDI-12 sensors are now supported and is available in the sensor library.
- A “chart group” property in the GP2 program editor, allows grouping of measurement in charts.
- Various application notes have been updated.
- The temperature sensitivity of the permittivity of water in the conversion from EC_b to EC_p has been updated from 0.4 to 0.3595 as is based on Hubner & Kaatz (2016).
- Temperature compensation for EC_b has been removed.
- Fixed a bug where the C++ redistributable was not installed properly on some 64bit versions of Windows.
- Limit the total bits allowed to be record per recording.
- Fixes a bug where variables were removed if only used in conditional recordings.
- Fixed bug where power channel was not activated for counter channels in some instanced.
- Due to library update, DeltaLINK will only on Windows 7 and later.

DeltaLINK 3.8.2

- Resolved issue causing DeltaLINK to fail loading older programs that are not longer valid. Now the program will load and be editable, but will fail to save until the appropriate changes have been made.
- Fixed bug introduced in 3.8.1 that caused an incorrect sensor type list in the “Standard GP1” and “Standard DL6” program types.

DeltaLINK 3.8.1

- WS-GP1 Weather station program now prompts for serial number range of the solar sensor in order currently program the logger for the two different versions of the sensor. Since serial number 10517 (October 2018), the sensor has a calibration factor of 0.8 instead of 0.5.

DeltaLINK 3.8

- Addition of the FT1 tension and temperature sensor type to the GP2, GP1 and DL6 standard program types.

DeltaLINK 3.7

- *GP2 program type:*
 - New recording type: Full ACSE implementation of the **Penman-Monteith Evapotranspiration** equation.

- Add validation check (GP2) to ensure persistent variables are not written to frequently as the flash has a write cycle limit.
- Fix bug where using the totalizer in control conditions did not reset the total on entry of the state (activate of de-active)
- Fix a bug that did no install 32bit MS VC++ Redistributables if the 64bit MS VC++ Redistributables were already installed.
- Include DL4CmdLine 1.7 update which:
 - Adds the ability to convert DT6 files to tab separated text files
 - Updates the command line handler to fix a bug introduced with the latest build tools. In 1.5 command line parameters were not processed correctly.
- Fixed auto window sizing on the errors dialog.
- Fixed a few broken links in the help.

DeltaLINK 3.6.2

- New soil types (Coir, Mineral wool, Peat mix, Perlite) added for Theta Probes (ML2, ML3), Profile Probes, SM150, SM150T, SM200, and SM300.
- GP2 multi-function program, fixed WET sensor calibration from file. This previously failed with error.
- Command line tool DL4CmdLine, fixed COM port parameter, previously the COM port name was not recognised.

DeltaLINK 3.6

DeltaLINK 3.6 includes support for the new SM150T sensor. Support is included in the GP2 simulator as well as the sensor type being available in the GP2, GP1 and DL6 programs.

DeltaLINK 3.5

DeltaLINK 3.5 includes support for the new connection type "DeltaLINK-Cloud Gateway" for connecting to loggers via DeltaLINK-Cloud (www.delta-t.co.uk/DeltaLINK-Cloud.asp).

1. The 'GP2 Multi-function program' sensor library includes the PR2 SDI-12 sensor.
2. Logger errors can be copied to the clipboard.
3. Connection dialog can now be resized and sorted by column.
4. GP1 power max voltage adjusted from 12V to 10V.
5. SDI-12 terminal fixed to work over TCP/IP connections.

DeltaLINK 3.2

The principal feature of DeltaLINK 3.2 is SDI-12 support for GP2 loggers:

1. GP2 Program Editor offers a SDI-12 Input type
2. Includes Firmware Upgrade for GP2 loggers to firmware 2.10 which provides SDI-12 firmware functionality, and can be applied retrospectively to any GP2 logger.

Other improvements include:

3. Chart window corrections to prevent occasional 'hanging' when opening a dataset and to enable allocation of more than 63 different colours
4. GP2 Program Editor correction to enable single-ended resistance measurements on CH 12-.

DeltaLINK 3.1.2

DeltaLINK 3.1.2 is a maintenance release with a bug fix for Windows installation using non Western extended ASCII tables.

DeltaLINK 3.1.1

DeltaLINK 3.1.1 is a maintenance release with improvements to the TCP/IP connection type and other general changes.

1. A timeout setting is now available in all communication types. This overrides previous timeout behaviour.

2. Progress bars are now displayed when retrieving the logger's status and sending and retrieving the logger's program.
3. COM1 is no longer the default connection when starting Delta-T for the first time. This is due to most PCs not having built in serial ports anymore. Instead the communication property dialog will appear.

DeltaLINK 3.1

The principal new feature of DeltaLINK 3.1 is support for GPRS connections by way of a TCP/IP connection type.

Other new features include:

1. When a connection times out, DeltaLINK will attempt to save the downloaded data, to avoid having to re-download it next time. This is useful for remote connections, where the connection can be temperamental (e.g. internet)

DeltaLINK 3.0

The principal new feature of DeltaLINK 3.0 is support for the GP2 Advanced Data Logger and Controller. This includes:

1. GP2 Multifunction program editor, which provides a comprehensive feature set, including:
 - a. Extensive library of Delta-T sensors, complete with detailed programming and installation notes
 - b. Flexible recording options: multiple recording rates, statistics, wind processing functions (direction and vector averaging, wind roses), conditional recording
 - c. Controls, with independent activate and deactivate conditions and safety conditions
 - d. Alarms, threshold or condition triggered
 - e. Scripts, for full customization of logging and control behaviour.
2. GP2 Simulator, simulates most environmental and meteorological sensors and response applied irrigation

Other new features include:

3. Improved PC serial port selection, including automatic detection of USB COM ports.
4. Corrected text file output of DL4CmdLine command line utility: now outputs in identical format as DeltaLINK's **File, Save As** command, and always creates a new data file.

DeltaLINK 2.6

1. Support for SM150 soil moisture sensor.
2. DeltaLINK program, various corrections and improvements:
 - a. Corrected displaying of connection details at bottom of DeltaLINK window, previously connection details were only partly updating.
 - b. Corrected connection start-up settings, on some PC the start-up connection setting were not loaded correctly, and defaulted to use last successful connection.
 - c. DeltaLINK, various optimizations in chart view, data cache, data download.
3. DL4CmdLine utility, various corrections and improvements:
 - a. Added tab-separated data text files, use .txt extension for dataset file or use /X switch when using auto-generated filenames for multiple loggers in a single command line.
 - b. DL4CmdLine now only requires only DL4Api.dll to run, so can be run on PC without installing DeltaLINK.
 - c. Timestamps consistently written to logger errors and log file in default format for locale. Previously a mixture of locale-default and "YYYY-mm-dd hh:mm:ss". Auto-generated file name format retained as locale-default format is not guaranteed to provide seconds, so could lead to overwriting.
 - d. Error log output to screen was untidy, so has been removed.
 - e. 'Hidden' measurements excluded from error log.

- f. Removed trailing space from measurement names in error log

(Previous DeltaLINK revision history removed)

GP2 Firmware

Version 2.10

This is the current version of GP2 firmware. Its principal feature is support for the SDI-12 sensors.

Firmware 2.10 requires DeltaLINK 3.2 or later. It is not available for DL6 or GP1 loggers.

Other features include:

1. Correction of a fault which caused repeated occurrences of 'watchdog timeout' error in some GP2s.

Version 2.00

This was the first version of GP2 firmware.

GP1 and DL6 Firmware

Version 1.48

This is the current version of GP1 and DL6 firmware.

Version 1.48 is required for the new features provided in DeltaLINK 2.4, and is incompatible with programs created in earlier DeltaLINK versions.

Version 1.47 (GP1 only)

1. Optimization of quiescent current consumption.

Version 1.46 (GP1 only)

1. Supports WS-GP1, WET sensor and other new features provided in DeltaLINK 2.3.

Version 1.31

1. Allows loggers to be individually addressed when connected together on a network.
2. Prevents spurious switching of Alarm relays when Read Now is clicked in the Sensors window. This was caused by insufficient warmup time before the initial reading which controls the relay.

Version 1.27

1. Provides improved information about dataset memory usage, for use with DeltaLINK 2.1.
2. Correction to DL6 relay switching, required for the Advanced Control feature.
3. Is not vulnerable to crashing when used with DL6 Control Panel after being programmed with DeltaLINK.

Version 1.25 (GP1 only)

This is the first public release of GP1 firmware.

Version 1.03 (DL6 only)

1. Accuracy of resistance measurements is improved.

Version 1.02

This is the first public release of DL6 firmware.