

DataLOG Analogue Inputs Window

The Analogue Inputs window is used to set up all the parameters relating to the analogue channels.



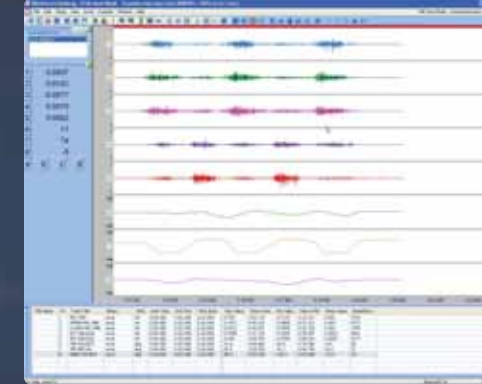
DataLOG Digital Inputs Window

This window controls the operation of the digital inputs and the auxiliary start/stop recording input.



Help Menu

The NEW Biometrics Analysis software comes with a **comprehensive Help menu** that may be used as a tutorial for both the hardware and software.



Management & Analysis Software

The NEW Biometrics Analysis software is one of the most powerful yet cost effective display & analysis software tools available. Real time display both graphically and in scientific units. Real time analysis in the new Expanded Results Table.

The DataLOG Display & Analysis Software may open an unlimited number of data files and the time axis may be tracked across all files allowing display & analysis for a large number of channels. (refer to pages 7 & 8).

- Portable Data Collection
- Fully Programmable, Multi Sensor Input
- State of the art Bluetooth® Technology
- Real Time Data Display & Analysis
- Data auto-back-up using MMC Flash Card
- Readily Synchronize with other Systems
- DLL (dynamic link library) option

The NEW DataLOG W4X8 incorporating both Bluetooth® Wireless and MMC Flashcard Technologies, provides unparalleled data capture and real time display and analysis. Developed to meet the demanding needs of researchers for portable data collection and ambulatory monitoring in medical, industrial ergonomic, sport science and educational settings.

DataLOG is a general purpose, programmable Data Acquisition Unit allowing the user to collect both analogue and digital data from a wide range of sensors. All Biometrics Ltd sensors readily connect to the DataLOG including:-

- Single and twin axis Goniometers
- Torsiometers
- Surface EMG amplifiers
- Accelerometers
- Contact switches & Event markers
- MyoMeter
- Hand Dynamometer
- Pinchmeter

The front end amplifier configuration and sensor power supply are programmable enabling the researcher to also connect a wide range of custom transducers including:-

- Load cells
- Strain gauge devices
- Single ended voltage inputs
- Differential voltage inputs
- Temperature probes
- Flow metres
- Microphones

During all stages of the design and development process, attention has been given to the Bluetooth® Wireless link, providing the end result of reliable real time data transfer and display. In addition, the data is automatically backed up to the MMC Flash Card providing complete peace of mind.



General analogue channels may be single ended or differential dependent on front end plug wiring configuration

Hardware Gain range options	Gain	Max Input	Resolution
	x 1000	± 1 mV	0.244 µV
	x 300	± 3 mV	0.732 µV
	x 100	± 10 mV	2.44 µV
	x 30	± 30 mV	7.32 µV
	x 10	± 100 mV	24.4 µV
	x 3	± 300 mV	73.2 µV
	x 1	± 1 V	0.244 mV
	x 0.3	± 3 V	0.732 mV

Recording mode (3 options)	Recording mode
	record to Bluetooth® & MMC
	record to MMC only
	record to Bluetooth® only

The DataLOG is configured from the host PC using the Bluetooth® wireless link, including simple adjustments per channel for gain, power supply, sampling rate and datum or zero settings. When Biometrics' sensors are connected these parameters are automatically selected using a drop down menu.

Data recording options include:-

- display and analyse real time within the PC via Bluetooth®
- store on the PC and auto-back-up to the MMC Flash Card
- store data to the MMC card for later download
- transfer real time using the Dynamic Link Library into 3rd party programs using tools such as Microsoft Visual Basic or Visual C++
- store as ASCII or as a standard Sound Wave file for passing into other applications such as Microsoft Excel or Cool Edit.
- display real time on the Graphics Display as a digital readout in engineering units, or as a bar chart, or as adjustable audible alarms.

Synchronisation options for 16, 24 or 32 channels

For applications requiring greater than 8 analogue or 4 digital channels, the DataLOGs are set-up in record to MMC card only mode, and then multiple units may be synchronized using one of the following cables:-

- SYNC2** To synchronize 2 DataLOGs for up to 16 analogue and 10 digital channels of data acquisition recording to MMC card only.
- SYNC3** To synchronize 3 DataLOGs for up to 24 analogue and 15 digital channels of data acquisition recording to MMC card only.
- SYNC4** To synchronize 4 DataLOGs for up to 32 analogue and 20 digital channels of data acquisition recording to MMC card only.

A graphics LCD provides a display of the unit status and a simple user interface. A keypad provides the following facilities:-

- Manual start and manual stop recording.
- Manual start with pre-set automatic stop.
- Zero a specific channel or all channels simultaneously.
- Erase the last recording or all recordings.
- Display of real time inputs as numerical values in engineering units or as a bar graph.

DataLOG Accessories:

SYNCHRONIZATION CABLE SYNC1

For remote start / stop by a TTL signal (i.e. the ability to switch a signal line from logic 1 (+5V) to logic 0 (+0)) sent from other hardware systems to synchronise data collection from multiple sources. The SYNC1 is a 2 metre cable with a connector at one end to connect to the digital input socket of the DataLOG and 2 flying wires at the other end. Alternatively, this cable may be specified with any connector of choice.

OPTICAL SYNCHRONISATION USING START SWITCH IS2-LED

A 1.8 metre cable with a suitable connector at one end to temporarily connect to the DataLOG, and a hand held switch with LED at the other. Pressing the switch will activate the start recording function and illuminate a LED which may be used for precise synchronization with camera based motion analysis systems.

EVENT MARKER IS3

A 1.8 meter cable with a suitable connector at one end to connect to the DataLOG, and a hand held switch at the other. This useful accessory allows time marks to be superimposed on the recorded data.

CONTACT SWITCH ASSEMBLY FS4

An assembly of 4 Force Sensing Resistor Sensors (FSRs) each on 1.2 meters of cable which are readily connected to the DataLOG via one connector for use as switches to indicate contact e.g. heel and toe strike or palmer contact. The sensors are thin and robust and are usually placed inside the subject's shoe or glove for convenience.

Portable Systems

The Portable Systems are comprehensive packages of sensors and instrumentation for static and dynamic measurements in clinical settings, research centres, or any remote location such as a workplace.



SPECIFICATIONS – DataLOG Model No. W4X8

MECHANICAL	
Dimensions	158 x 95 x 33 mm
Mass	380g
Battery type	4 x Alkaline AA, LR6, MN1500
Battery life	8 hours nominal
Analogue channels	8
Digital channels	5
Memory internal	MMC Flash Card Technology
Bluetooth® Adaptor	Microsoft Bluetooth® stack compatible
Front end ADC	13 bit giving +/- 4000 counts resolution
Range of Sampling frequency per channel	1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 1250, 2000, 2500, 5000, 10000, 20000 Hz (note: record in Bluetooth® mode limited to total 8 KHz, MMC only mode 55KHz)
Power supply per channel	adjustable 0 to 4.6 Vdc
Current supply per channel	≤ 20mA.
Accuracy	better than +/- 0.75% full scale
Maximum Common Mode	1.2 V

BANDWIDTH

INPUT RANGE	BANDWIDTH
1mV and 3mV ranges	DC to 1 KHz (+0 dB / -3 dB)
10mV to 3V ranges	DC to 10 KHz (+0 dB / -3 dB)

TYPICAL PC SYSTEM REQUIREMENTS

Processor	Pentium 2.8GHz
RAM	1GB
Operating platform	XP or XP Professional
Disk Drive	CD ROM
USB port 2.0	2
Graphic card	128MB graphics RAM
Bluetooth® adaptor	Microsoft Bluetooth® stack compatible

CABLES

TYPE NUMBER	LENGTH (mm)	DESCRIPTION
J500	500	Connection of Goniometers & Torsiometers to DataLOG
J1000	1000	Connection of Goniometers & Torsiometers to DataLOG
J1500	1500	Connection of Goniometers & Torsiometers to DataLOG
D1500	1500	Connection of general sensors to DataLOG
H1800	1800	Connection of MyoMeter, Dynamometer and Pinchmeter to DataLOG