

DataLINK is an on-line general purpose subject worn programmable Data Acquisition System allowing the user to collect both analogue and digital data from a wide range of sensors including Biometrics' Goniometers, Torsiometers, active EMG sensors, Accelerometers, MyoMeter, Pinchmeter, Hand Dynamometer and Contact Switches.



- On Line Data Collection
- Real Time Display & Analysis
- 40KHz total Sampling Frequency per DataLINK
- Readily Synchronized with other Systems
- 8, 16, 24 or 32 analogue channels
- Audible threshold alarms.

Examples of other general sensor inputs include load cells, strain gauges, potentiometers, temperature probes and flow metres. The data is transferred from the Subject Unit to the tabletop Base Unit via a RS485 data transfer cable. This cable (type no. R7000) is 7 metres in length but may be specified any length up to 15 metres. The Base Unit connects to the PC using a USB port where the data may readily be stored on disk or passed real time into other applications such as Microsoft Excel or Microsoft Visual Basic using the DLL (dynamic link library). Analogue outputs may be obtained using the optional output cable type no. R2000I.

### SPECIFICATIONS [ DataLINK Model No. DLK900 ]

analogue channels	8
digital channels	5

### MECHANICAL

<b>Subject Unit</b>	
Dimensions	130 x 65 x 25 mm
Mass	200g

### Base Unit

Dimensions	173 x 154 x 60 mm
Mass	360g



### DataLINK Analogue Inputs Window

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



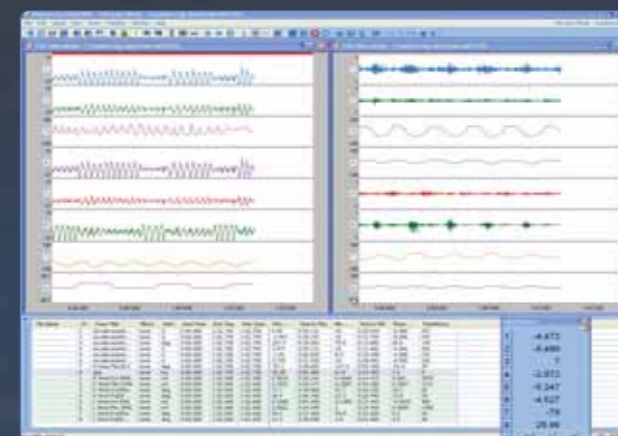
### DataLINK Digital Inputs Window

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 to use both the hardware and software.



### Management and Analysis Software

The NEW Biometrics Analysis software is one of the most powerful yet cost effective display & analysis software tools available. The usefulness and simplicity of this accurate real time display and real time analysis are excellent for both research and educational settings.

DataLINK comes with 8 analogue inputs, accommodating both single ended voltage inputs and differential voltage inputs, and 5 digital inputs.

The easy to use Management Software may simultaneously control up to 4 DataLINK units giving the researcher the flexibility of up to 32 analogue channels and 20 digital channels. Each of the channels is individually controlled with options for selectable gain, sampling frequency, sensor supply voltage and zero position.

The DataLINK Display & Analysis Software may display and analyze real time up to 32 analogue channels and 20 digital channels, and may open post data collection an unlimited number of files allowing display & analysis for a large number of channels, (refer to pages 7 & 8).

### CONTACT SWITCH ASSEMBLY FS4

An assembly of 4 Force Sensing Resistor Sensors (FSRs) each on 1.2 metres of cable which are readily connected to the DataLINK 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.

### 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.

### EVENT MARKER IS2

A 1.8 metre cable with a suitable connector at one end to connect to the DataLINK, and a hand held switch at the other. This accessory allows time marks to be superimposed on the recorded data highlighting specific points during data collection.



### OPTICAL SYNCHRONIZATION USING START SWITCH IS2-LED

As above but with a LED built into the hand held switch for use to activate start recording for precise synchronization with camera based motion analysis systems.



### LABORATORY SYSTEMS

The Laboratory Systems package the DataLINK with the most often requested Biometrics' sensors in either basic or enhanced configurations.

The LS800 Goniometer System comes with the DataLINK, Management & Analysis software, 6 goniometers (choice of sizes to

accommodate upper & lower extremity), the IS2 event marker and the FS4 contact switch assembly.

The LS850 EMG System is dedicated to EMG measurements and comes with the DataLINK, Management & Analysis software, 8 active EMG sensors, R206 earthing strap, T350 adhesive tape and IS2-LED event marker.

The LS900 Goniometer & EMG System combines movement analysis with surface EMG measurements in a complete easy to use, affordable system and comes with the DataLINK, Management & Analysis software, 6 goniometers (choice of sizes to accommodate upper & lower extremity), 1 Torsiometer, 4 active EMG sensors, R206 earthing strap, T350 adhesive tape, IS2-LED event marker and FS4 contact switch Assembly.

### ELECTRICAL

Mains powered rated continuous or powered via USB port.  
 Microprocessor controlled programmable gain amplifiers  
 Front end ADC 13 bit giving +/- 4000 counts  
 Communication with host PC USB  
 Communication from Subject unit to Base unit via RS485  
 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

Range of Sampling frequency per analogue channel	10, 20, 50, 100, 200, 500, 1000, 2000, 5000 Hz (maximum 40 KHz sequential)
Bandwidth	+0 / -1dB up to 2.5 KHz
Power supply per channel	0 to 4,950 mV dc
Current supply per channel	< 20 mA.
Accuracy	better than ± 0.75 % full scale.
Data interface	USB or analogue output via DACs contained in base unit.

Analogue Output Sensitivity	Count Equivalent	Analogue Output Equivalent	Goniometer Angle
+ 4000		+4.0 Vdc	+180 °
0		+2.0 Vdc	0 °
- 4000		+0.0 Vdc	- 180 °

### CABLES

TYPE NUMBER	LENGTH (mm)	DESCRIPTION
D1500	1500	Connection of general sensors to DataLINK.
J500	500	Connection of Goniometers & Torsiometers to DataLINK
J1000	1000	Connection of Goniometers & Torsiometers to DataLINK
J1500	1500	Connection of Goniometers & Torsiometers to DataLINK
R7000	7000	RS422 cable from Subject Unit to Base Unit
USB1800	1800	USB cable from Base unit to PC
R2000I	2000	Optional analogue and digital output cable
H1800	1800	Connection of Pinchmeter, Dynamometer & MyoMeter

### TYPICAL SYSTEM REQUIREMENTS

Processor	Pentium 2.8GHz
RAM	1GB
Operating platform	XP or XP Professional
Disk Drive	CD ROM
USB port 2.0	1 per DataLINK DLK900
Graphic card	128MB graphics RAM