ACCELEROMETERS

Accelerometer measurements are used in a variety of applications such as industrial vibration (both human and machine), medical (for example tremor studies), and sports medicine & sports performance.

Accelerometers - 3 axes
2 models:-
ACL300 range +/- 10G
S3-1000G-HA range +/- 1000G

Biometrics Ltd accelerometers provide a complete ready to go solution for measurements of acceleration in 3 axes

- 3 independent axes, X, Y, Z
- variable full scale measuring range (adjusted within **DataLOG** or **DataLINK** management software, 100%, 30% or 10% of full scale)
- 3 levels of adjustable frequency response
- 8th order anti-aliasing filter on each channel with user selectable corner frequencies
- Electronic calibration adjustments giving high stability under vibration and over time
- Signal conditioning electronics housed in a separate small enclosure allowing for miniaturization of the accelerometer probe

By simply plugging either accelerometer model into the Biometrics' **DataLOG**, **DataLINK** or **K800** instruments, accelerations may be displayed & analysed in units of G or m/s2 .

The small lightweight "active" head may be mounted practically anywhere using double sided adhesive tape, or held securely in place using a mechanical clamp for higher loading.

There is no need to calibrate either model as this is done during manufacture. They are ready to go giving accurate readings for both static and dynamic applications.

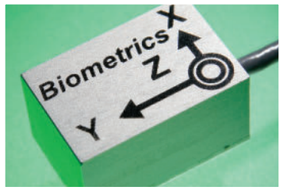
SPECIFICATIONS

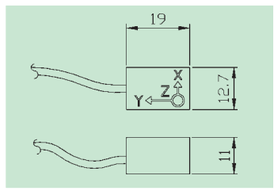
Model	ACL300	S3-1000G-HA
Range	+/- 10G	+/- 1000G
Mass	5g	8g
Dimensions	19 x 13 x 11 mm (L x D x H)	14 x 13 x 14 mm
Case material	anodised aluminium	Titanium alloy
Supply voltage	+4.50 to +5.50 Vdc	+4.50 to +5.50 Vdc
Sensitivity	± 100mV / G	± 1mV / G
Cross talk	< 5%	< 5%
Accuracy	better than ± 2 % full scale	better than ± 2 % full scale
Bandwidth	DC to 100, 500, 1000 Hz	DC to 312, 625, 1250, 2500, 5000 Hz
filter	8 pole, 8th order 1.2 Elliptic.	8 pole, 8th order 1.2 Elliptic.
Shock survival	500 G	5000 G

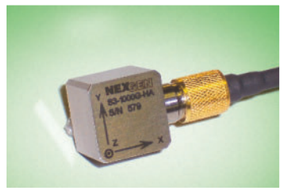
Bandwidth Limiting (cut-off) Filters
The accelerometers are fitted with an 8th order 1.2 elliptic filter with user selectable cut-off frequencies. This provides the optimum compromise between pass-band ripple and roll-off steepness; 60 dB of rejection is achieved at 1.2 times the selected corner frequency. The filter has 3 values, which are selected by positioning a simple switch within the accelerometer interface unit.

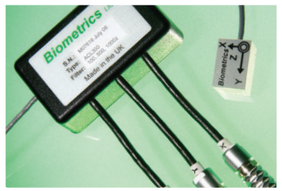
The following table shows the possible set corner frequencies and the recommended sampling frequency set within the DataLINK or DataLOG to avoid anti aliasing according to the Nyquist Sampling Theorem.

Model no.	Bandwidth	Recommended Sampling Frequency per channel of DataLINK or DataLOG
ACL300	DC to 100 Hz	200 Hz
	DC to 500 Hz	1000 Hz
	DC to 1000 Hz	2500 Hz
S3-1000G-HA	DC to 312 Hz	1000 Hz
	DC to 625 Hz	1250 Hz
	DC to 1250 Hz	2500 Hz
	DC to 2500 Hz	5000 Hz
	DC to 5000 Hz	10000 Hz



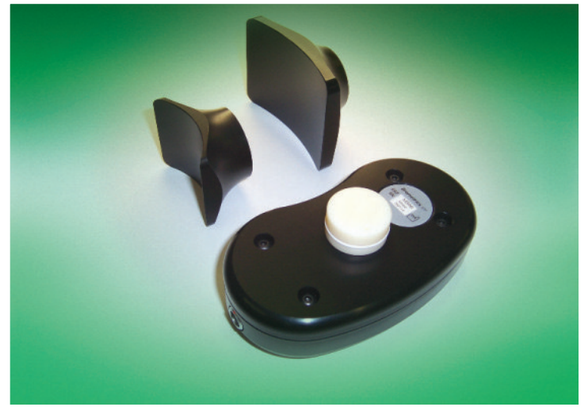






MYOMETER M550

The **M550 MyoMeter** quantifies the force used during Manual Muscle Testing for the evaluation of the function and strength of individual muscles and muscle groups based on effective performance of a movement in relation to the forces of gravity and manual resistance.



The accurate data obtained provides both researchers and clinicians with an objective measure for a variety of applications such as identifying deficits in muscle force, monitoring changes due to treatments in rehabilitation settings, and pharmacological studies (e.g. use of botulinum toxin for reduction of spasticity in stroke and cerebral palsy).

The **M550 MyoMeter** is held by the examiner with the curved anvil placed against the body part to be tested. The limb is stabilized and held in the desired starting position. The patient is instructed to hold the limb in position and resist the force applied by the examiner. The examiner applies force gradually until the limb is depressed. The force required to move the limb is referred to as the "breaking force".

The **M550 MyoMeter** is supplied with two anvils:

1 x general purpose (small)
1 x general purpose (large)

The device is focused to the needs of the researcher with high precision yet ease of use in mind. Designed for general research applications in the fields of medicine, industrial ergonomics and sports science, the **M550** when combined with the versatility of the Biometrics' **DataLINK** or **DataLOG** data acquisition systems makes an ideal research and teaching tool.

By connecting the **M550 MyoMeter** to the **DataLOG** or the **DataLINK** and using the management & analysis software, force may be displayed and analysed in units of N, Kg or lb and readily synchronized with data from other sensors. The **M550** may also be connected to the general purpose amplifier **K800** for direct connection to 3rd party instruments such as A/D cards.

SPECIFICATIONS

M550 MyoMeter

Dimensions	115 x 65 x 32 mm
Mass	250 g
Accuracy	better than 1% RL
Rated Load (RL)	0 to 50 Kg
Calibrated and designed to work in compression only.	
Anvils	1 small, 1 large
Cable	Direct connection to DataLOG, DataLINK and K800 using cable type no. H2000