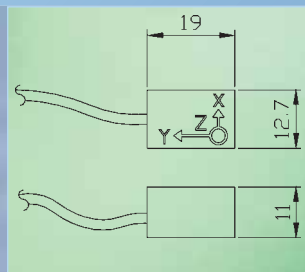# Accelerometers - 3 axes

2 model options:-

Model ACL300   range +/- 10G
Model S3-1000G-HA   range +/- 1000G

Both models of accelerometer provide a complete ready to go solution for measurements of acceleration in 3 axes.

Features - both models

- ■ 3 independent axes, X, Y, Z

- ■ variable full scale measuring range (adjusted within DataLINK or DataLOG 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

- ■ Non critical input power requirements

- ■ **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	10g	8g
Dimensions	19.0 x 12.7 x 10.9 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 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

Each channel of both models of accelerometer 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 1250 Hz	2500 Hz
	DC to 2500 Hz	5000 Hz
	DC to 5000 Hz	10000 Hz