

back-to-back
ACCELEROMETER SYSTEMS



Model Number	3120BK	3123AK
SYSTEM SPECIFICATIONS		
Sensitivity @ 100 Hz, ±0.5	10.00 mV/g	100.00 mV/g
Frequency Response, ±2%	10 to 10,000 Hz	10 to 5,000 Hz
Linearity, Full Scale	±1%	±1%
Range for ±5V Output, Full Scale	±500 g	±50 g
Range, Force Lbs.	±40 Lbs.	±10 Lbs.
Electrical Noise, Equiv. g's RMS	.02 g, RMS	.003 g, RMS
Noise Level, Broad Band	.2 mV, Pk-Pk	.02 mV, Pk-Pk
Output Impedance	2 Ohms	2 Ohms
ACCELEROMETERS		
Sensitivity, Nominal	10 mV/g	100 mV/g
Temperature Range	-60 to +250°F	-60 to +250°F
Thermal Coeff. of Sensitivity	.03%/°F	.03%/°F
Transverse Sensitivity	3% Maximum	3% Maximum
Weight	85 Grams	120 Grams
Electrical Connector	10-32 Coax	10-32 Coax
Material, Non-Magnetic	300 Series S.S.	300 Series S.S.
Input Current Required	2 mA	2 mA
Input Voltage Required	+20 VDC	+20 VDC
AMPLIFIER/ POWER UNIT MODEL 4119B		
Output Current	4 mA	4 mA
Output Voltage	+20 VDC	+20 VDC
Filter, Low Pass	Active VCVS	Active VCVS
Attenuation @ 10 kHz	3%	3%
Temperature Range	0 to 120°F	0 to 120°F
Weight	907 Grams	907 Grams
Sensor Connector	BNC Jack	BNC Jack
Output Connector	BNC Jack	BNC Jack
Power Source	110V, 50-60 Hz	110V, 50-60 Hz
SYSTEM COMPONENTS SUPPLIED FOR BOTH MODELS		

(1) 3120B or 3123A Accelerometer, (1) 4119B Amplifier/Power Unit, (1) 6011A05 Input Cable, (1) 6020A05 Output Cable, (2) 6200 10-32 Mounting Studs, (1) 6201 10-32 to 1/4-28 Mounting Stud, (1) Carrying Case.

NOTES: 1) Calibrated with a transfer standard weighing 19 grams. NIST traceability included.
2) Force Lbs = product of test accel. weight (Lbs) X g level.
3) 220V version available, Model E3120BK or model E3123AK

Accelerometer calibration by means of a double ended reference (comparison) accelerometer is a convenient way to determine the sensitivity and frequency response characteristics of unknown acceleration, velocity and displacement sensors. A vibration lab that is already equipped with an electrodynamic shaker and control system can easily employ the Dytran model 3120BK reference accelerometer to accomplish in-house NIST traceable calibrations.

Model 3120BK is a complete reference accelerometer kit containing a double ended 10 mV/g accelerometer (model 3120B), a matching current source power unit (model 4119B), cables, mounting studs and a carrying/storage case. The accelerometer mounts to the shaker head by means of a 10-32 tapped hole. The output connector on the 4119B is a standard BNC jack. The carrying case provides the proper protection when sending the system out for periodic calibration and certification. An alternate method of calibrating the system is the use of a single ended "transfer" standard accelerometer to calibrate the double ended 3120B. A complete instruction manual is provided with the system detailing these procedures. For more information on the back-to-back (or "piggyback") calibration method, see the article "Back-to-Back Accelerometer Calibration" in the Technical Articles section of the web site.

For calibration of velocity pickups and for low frequency calibrations below 10 Hz, a 100 mV/g double ended reference accelerometer is offered, model 3123A. Model 3123A has 10 times the signal level of model 3120B, a plus when signal to noise problems arise, typically during low frequency, low g level measurements. Model 3123A is also available in kit form as the 3123AK and is supplied with all of the same accessories as the 3120BK system. High end frequency response of the 3123AK system is 5 kHz.