

The range of tri-axial accelerometers have been developed for measurement of vibration in three perpendicular directions simultaneously. Type AP2022 has electronics built into the extended cable connector and can be delivered with 1B type Lemo connectors with 4 to 8 pin configurations. AP38 and AP2038 (P) have a central hole for mounting with a M5-bolt. AP2038P has a miniature 3-pin connector at the side and comes with a separate cable AK21. AP79 is designed for underwater use and has a hermetically sealed integral cable.

Tri-axial accelerometers

AP20

Sensitivity	2 pC/g 0.2 pC/ms ²
Type:	Charge
Amplitude range:	5,000 g rms
Frequency range:	0,5 to 18,000 Hz
Weight:	5 g



AP21

Sensitivity	2 pC/g 0.2 pC/ms ²
Type:	Charge
Amplitude range:	10,000 g rms
Frequency range:	0,5 to 20,000 Hz
Weight:	5 g



AP22

Sensitivity	1 pC/g 0.1 pC/ms ²
Type:	Charge
Amplitude range:	25,000 g rms
Frequency range:	0,5 to 22,000 Hz
Weight:	4 g



AP2022

Sensitivity	10 mV/g 1.02 mV/ms ²
Type:	IEPE
Amplitude range:	450 g rms
Frequency range:	1 to 20,000 Hz
Weight:	4 g



AP38

Sensitivity	10 pC/g 1.02 pC/ms ²
Type:	Charge
Amplitude range:	5,000 g rms
Frequency range:	0,5 to 10,000 Hz
Weight:	26 g



AP2038(P)

Sensitivity	10 mV/g 1.02 mV/ms ²
Type:	IEPE
Amplitude range:	500 g rms
Frequency range:	0.5 to 12,000 Hz
Weight:	34 g



AP79

Sensitivity	2 pC/g 0.2 pC/ms ²
Type:	Charge
Amplitude range:	2,500 g rms
Frequency range:	0.5 to 15,000 Hz
Weight:	6 g






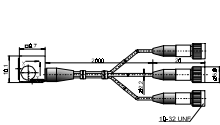
AP80

Sensitivity	2 pC/g 0.2 pC/ms ²
Type:	Charge
Amplitude range:	2,500 g rms
Frequency range:	0.5 to 20,000 Hz
Weight:	6 g

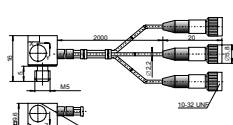


The range of tri-axial accelerometers have been developed for measurement of vibration in three perpendicular axis simultaneously. AP20, AP21 and AP22 are miniature versions for all applications where dimensions and weight have to be limited. AP20 is an electrically isolated version for adhesive mounting while AP21 and AP22 with their integral stud mounting can be used up to high shock levels. AP81 and AP2081 have been specifically designed for use inside the AP Tech Human vibration sensor AP5011 and AP5211.

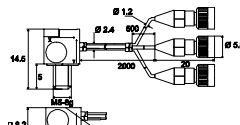
Triaxial accelerometers		AP20	AP21	AP22	AP38	AP2038
						
Parameter	Unit					
Charge sensitivity (+/- 10%)	pC/g	2	2	1	10	-
	pC/ms ²	0.2	0.2	0.1	1.02	-
Voltage sensitivity (+/- 10%)	mV/g	-	-	-	-	10
	mV/ms ²	-	-	-	-	1.02
Amplitude range	g rms	5000	10,000	25,000	5000	500
Resolution	g rms	-	-	-	-	0.0003
Mechanical shock limit	g peak	10,000	20,000	50,000	10,000	1000
Frequency range (+/- 1 dB)	Hz	0.5 to 18,000	0.5 to 20,000	0.5 to 22,000	0.5 to 10,000	0.5 to 10,000
Resonant frequency	kHz	>50	>55	>80	>35	>35
Transverse sensitivity	%	<5	<5	<5	<5	<5
Base strain sensitivity	g/μm	<0.005	<0.005	<0.005	<0.02	<0.02
Temperature range	°C	-60 to +150	-60 to +150	-60 to +150	-60 to +150	-60 to +125
Insulation resistance	MΩ	>10,000	>10,000	>10,000	>10,000	-
Capacitance	pF	600 to 900	600 to 900	500 to 700	600 to 800	-
Isolated base		Yes	No	No	No	No
Excitation voltage	Volt DC	-	-	-	-	+15 to +30
Constant current	mA	-	-	-	-	2 to 20
Output impedance	Ω	-	-	-	-	<500
Output bias voltage	Volt DC	-	-	-	-	+8 to +10
Settling time	second	-	-	-	-	3
Construction		Shear	Shear	Shear	Shear	Shear
Piezo material		ZTP19	ZTP19	ZTP19	ZTP19	ZTP19
Sensor connector		-	-	-	-	-
Integral cable length	meter	2	2	2	2	2
Connecting cable		-	-	-	-	-
Cable connector		3x 10-32 UNF	3x 10-32 UNF	3x 10-32 UNF	3x 10-32 UNF	3x BNC
Side/Top connection		Side	Side	Side	Side	Side
Mounting method		Adhesive	M5 stud	M5 stud	M5 bold	M5 bold
Housing material		Titanium	Titanium	Titanium	Titanium	Titanium
Weight without cable	gram	5	5	4	12	34
Notes						



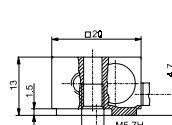
AP20



AP21



AP22



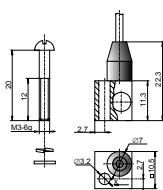
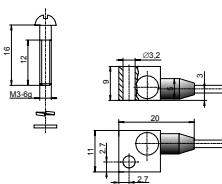
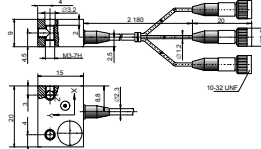
AP38

AP2038

The range of tri-axial accelerometers have been developed for measurement of vibration in three perpendicular axis simultaneously. AP20, AP21 and AP22 are miniature versions for all applications where dimensions and weight have to be limited. AP20 is an electrically isolated version for adhesive mounting while AP21 and AP22 with their integral stud mounting can be used up to high shock levels.

AP81 and AP2081 have been specifically designed for use inside the AP Tech Human vibration sensor AP5011 and AP5211.

Triaxial accelerometers		AP79	AP80	AP81	AP2081
Parameter	Unit				
Charge sensitivity (+/- 10%)	pC/g	2	2	10	-
	pC/ms ²	0.2	0.2	1.02	-
Voltage sensitivity (+/- 10%)	mV/g	-	-	-	10
	mV/ms ²	-	-	-	1.02
Amplitude range	g rms	2500	2500	2000	500
Resolution	g rms	-	-	-	0.0003
Mechanical shock limit	g peak	5000	5000	5000	1000
Frequency range (+/- 1 dB)	Hz	0.5 to 15,000	0.5 to 20,000	0.5 to 10,000	0.5 to 10,000
Resonant frequency	kHz	>50	>55	>35	>35
Max. underwater depth	meter	50	-	-	-
Transverse sensitivity	%	<5	<5	<5	<5
Base strain sensitivity	g/μm	<0.0005	0.005	<0.02	<0.02
Temperature range	°C	-60 to +150	-60 to +150	-60 to +150	-60 to +125
Insulation resistance	MΩ	>10,000	>10,000	>10,000	-
Capacitance	pF	1000	1000	1000 to 1200	-
Isolated base		No	No	No	No
Excitation voltage	Volt DC	-	-	-	+15 to +30
Constant current	mA	-	-	-	2 to 20
Output impedance	Ω	-	-	-	<500
Output bias voltage	Volt DC	-	-	-	+8 to +10
Settling time	second	-	-	-	3
Construction		Shear	Shear	Shear	Shear
Piezo material		ZTP19	ZTP19	ZTP19	ZTP19
Sensor connector		-	-	-	-
Integral cable length	meter	2	2	2	2
Connecting cable		-	-	-	-
Cable connector		3x 10-32 UNF	3x10-32 UNF	3x 10-32 UNF	3x BNC
Side/Top connection		Top	Side	Side	Side
Mounting method		M3 bold	M3 bold	2x M3 bold	3x M3 bold
Housing material		Titanium	Titanium	Titanium	Titanium
Weight without cable	gram	6	6	21	34
Notes		Underwater		For AP5011 seat transducer	For AP5211 seat transducer


AP79

AP80

AP81
AP2081