



## CME-6211

### Low noise force-balance broadband seismometer

#### Features:

- High performance broadband seismometer
- Wide dynamic range
- Easy installation
- No mass lock or mass centering needed
- Built-in calibration coil
- 0.0083 (120 sec) – 50 Hz bandwidth
- 2000 V/(m/s) sensitivity
- 20V peak-to-peak differential output
- Self-noise below NLNM in
- 10 sec – 5 Hz frequency range
- Low power consumption
- Installation tilts up to 15 degrees



The CME-6211 seismometers is primarily intended for use on a stationary seismic stations, but can also be used in the field measurements. The CME-6211 model has an improved isolation from unwanted atmospheric pressure and ambient temperature changes.

This seismometer contains 3 identical symmetrically installed transducers, which form an angle of  $45^\circ$  to the vertical axis and of  $120^\circ$  with respect to each other in horizontal plane (the so-called Galperin configuration). The transformation to the Cartesian coordinates (Z, X, Y) is performed by the electronic summation with according coefficients. The feedback coil of each transducer may act as a calibration coil and let form and control the standard sensor's responses.

Like other molecular-electronic instruments, the 6211 seismometer is very rugged and does not require any special means or procedures for transportation and installation. The only procedure to start the operation is to place the seismometer on a rigid horizontal surface, turn the power on and wait for several minutes. The seismometer can be used in various areas including permanent stations and field experiments.

### Sensor specifications\*

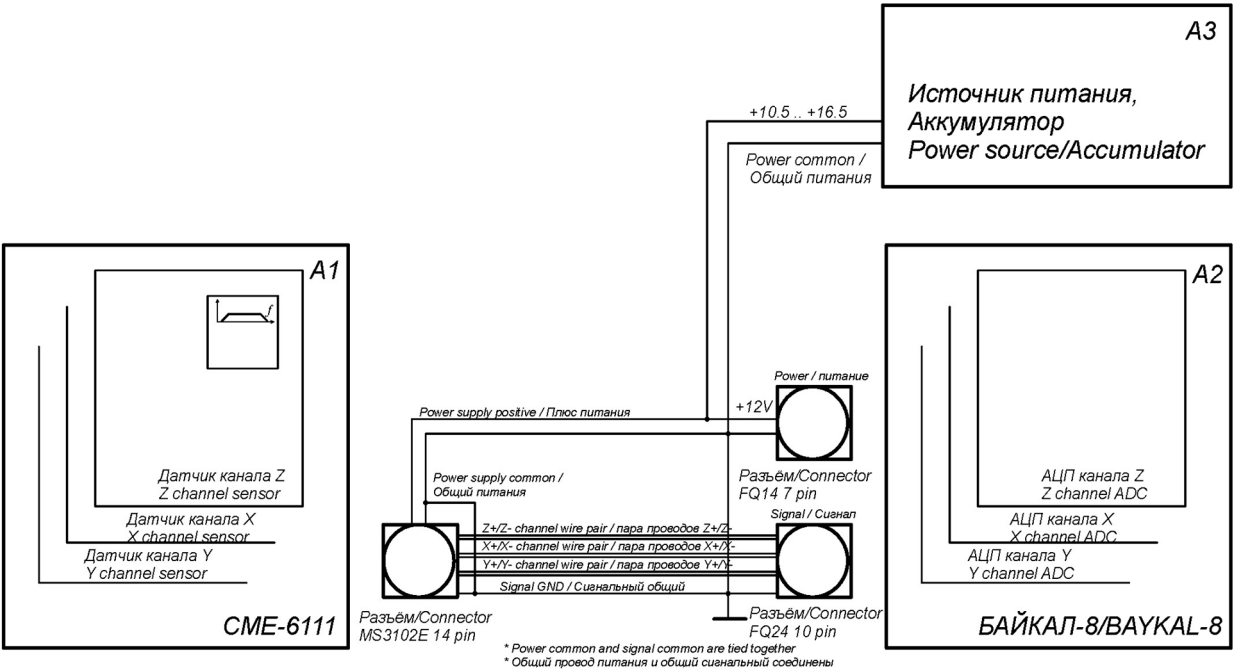
Sensor type	Molecular-electronic seismic sensor, Galprin configuration	
Axes	Triaxial, orthogonal - Up, North, East	
Sensitivity	2000	$\frac{V}{m/sec}$
Clip level	10	mm/sec
Bandwidth	0.008 (120 sec) – 50 Hz (standard) 0.0167 (60 sec) – 50 Hz (optional)	
Dynamic range at 1 Hz	140 dB	
Cross-axis coupling	-50 dB	
Nonlinearity at 1 Hz	0.2%	
Temperature range	-40°C - +55°C (-40°F - 131°F) (standard) -12°C - +55°C (10.4°F - 131°F) (optional)	
Cold-start time	20 - 60 min	
Maximum installation tilt	$\pm 15^\circ$	
Leveling, mass locking	Not required	
Integral noise in the band		
0,008 (120 sec) – 20 Hz	9.8 nm/sec (19.6 $\mu V$ )	
0,1 (10 sec) – 20 Hz	2.8 nm/sec (5,6 $\mu V$ )	

Electrical specifications\*

Supply voltage	12 V Nominal 10.5-16 V permissible
Supply current	30mA (standard)

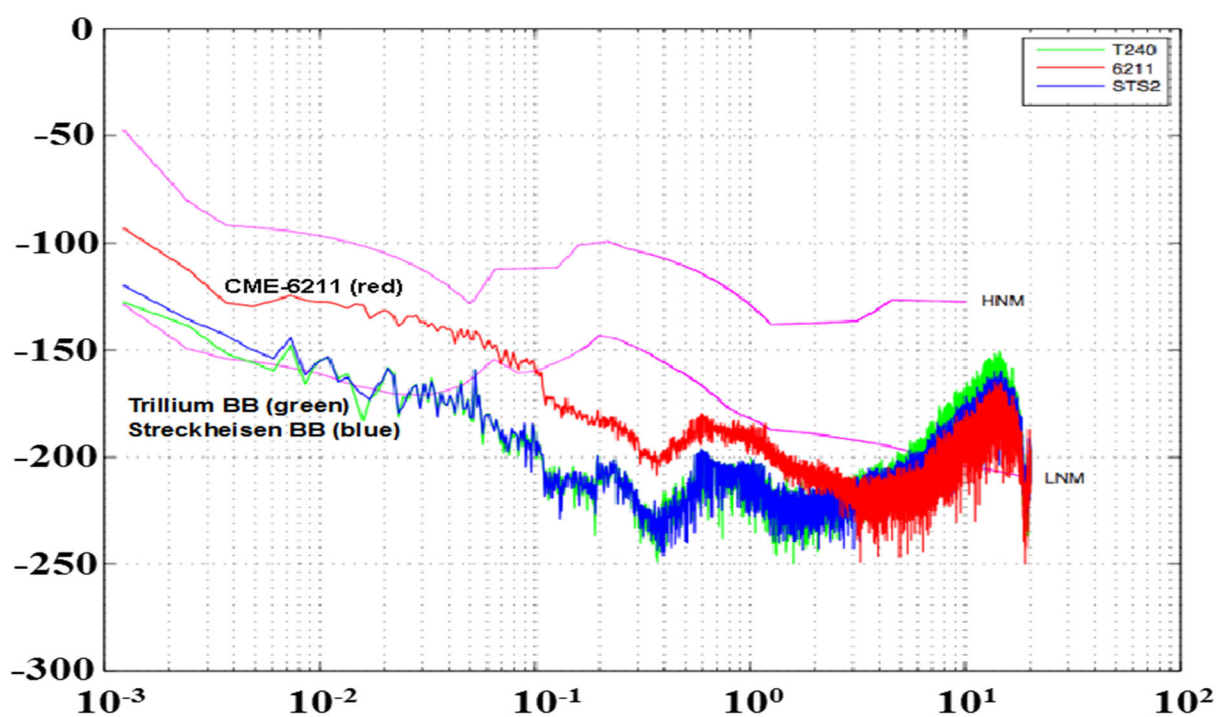
Mechanical specifications\*

Connector type	Amphenol MS-3102E type, 10 pin
Dimensions	Diameter 254 mm ( 10" ) Height with handle 260 mm ( 10.24" )
Weight	12.2 kg ( 26,9 lbs )
Case	Aluminum/stainless steel
Case accessories	Bubble level, handle, 3 feet sets, 2 pointers



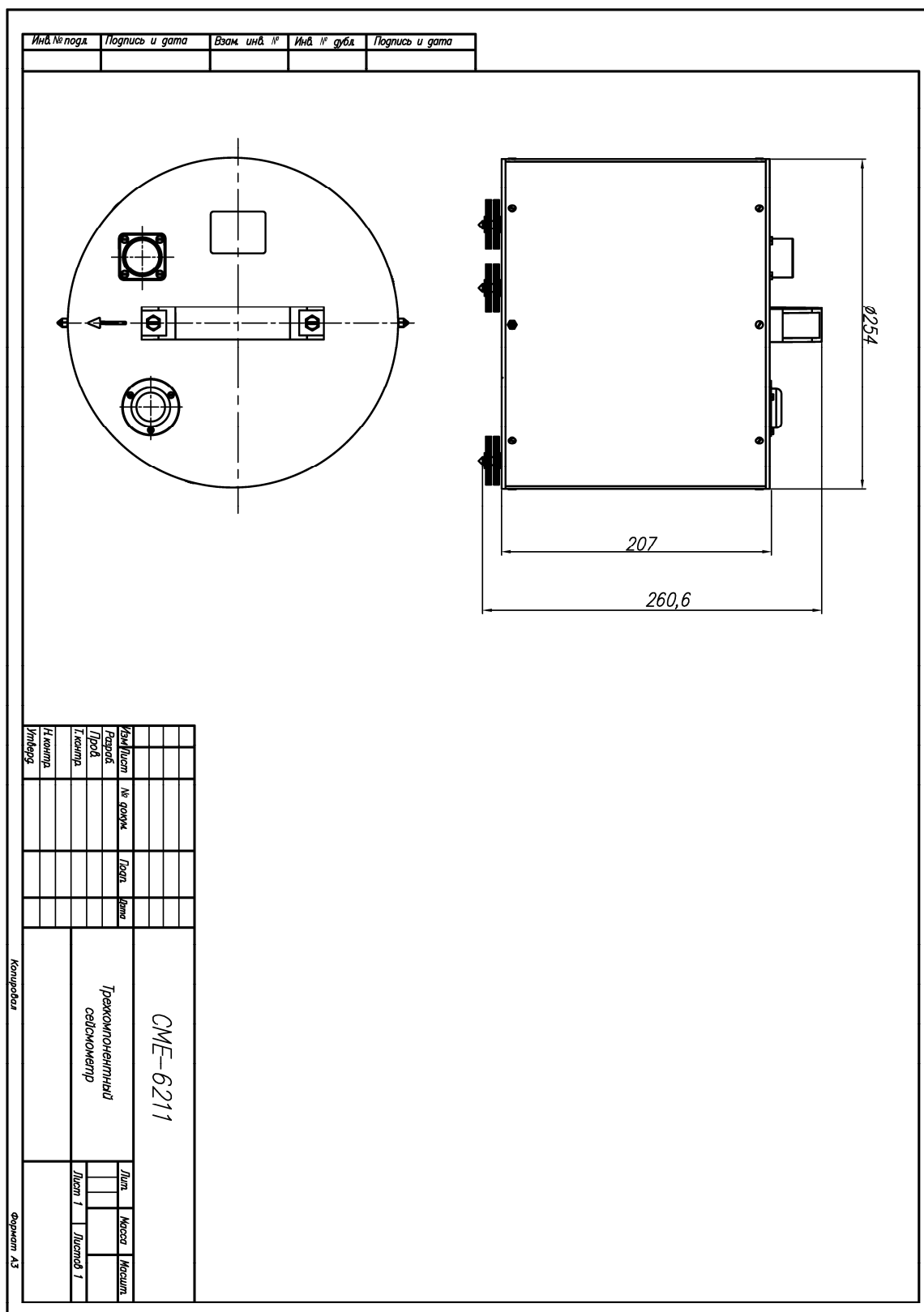
CME-6211 seismometer typical wiring diagram

\* - Some of presented features and parameters apply to specific versions of the seismometer. Specifications are subject to change without notice.



Source: *Incorporated Research Institutions for Seismology (IRIS), Program for Array Seismic Studies of the Continental Lithosphere (PASSCAL) instrument center and EarthScope USArray array operations facility, 2010*

CME-6211 seismometer noise performance



## CME-6211 seismometer outline drawing