

Güralp 3ESP



ALL-PURPOSE, WEAK MOTION BROADBAND SEISMOMETER



A compact and cost-effective three component broadband sensor.

The Güralp 3ESP is a lightweight instrument that can be used to monitor weak to moderate seismic events. The 3ESP is suitable for surface vault, subsurface vault and post-hole installations.

Applications

- > Surface vault
- > Subsurface vault
- > Post-hole
- > National seismic networks
- > Temporary deployments e.g. aftershock monitoring and regional research projects

Key features

Covers the complete seismic spectrum with single transfer function

Response from 120 s to 50 Hz (30 s - 50 Hz standard). Options of 1, 60 and 100 s LP corners. Option of 100 Hz high frequency corner

Self noise below the USGS NLNM from > 40 s to 16 Hz

High linearity: > 107 dB horizontal; 111 dB vertical

Over 140dB dynamic range

Cross axis rejection over 62dB

Sensor axes orthogonal to within +/- 0.05°

Manual mass locking and unlocking. electronic centring

Adjustable feet allow for up to 2.5 ° tilt

Low power consumption (0.6 W from 12 V input)

Truly portable with lifting handle and convenient access to connectors

Fully digital 3ESPD/E models are also available, combining the 3ESP with our low-noise DM24 digitizer in a single package

SPECIFICATIONS

SYSTEM		PHYSICAL	
Configuration / Topology	Triaxial orthogonal (ZNE)	Diameter	168 mm
PERFORMANCE		Height with handle	268 mm
Frequency Bandwidth	0.03 to 50 Hz (30 to 0.02 s) standard. Options of 1, 60 and 100 s or 120 s corner frequency or with hybrid response.	Height without handle	210 mm
Mass position output band	DC to 30 s	Enclosure/Materials	Stainless steel case
Output sensitivity	2000 V/ms ¹ (2*1000 V/ms ¹) differential output - optional sensitivities from 1500 V/V/ms ¹ to 2 × 20,000 V/ms ¹	Weight	9.5 kg
Peak / Full scale output	±10 V differential	Communication / Connectors	Mil-spec connector (optional 1500 psi waterproof connector or user connector)
Sensor Dynamic Range	> 140 dB		
Self-noise below NLNM	>40 s to >16 Hz		
Cross axis rejection	> 62dB		
Linearity	> 111 dB vertical; > 107 dB horizontal		
Lowest spurious resonance	> 140 Hz (vertical)		
Transfer function	User manual is available to download from the website. Each sensor is provided with full calibration details including measured sensitivity, measured frequency response and instrument poles and zeros		
Calibration controls	Independent signal & enable lines exposed on sensor connector		
MASS / MONITORING CONTROL			
Sensor Mass positions	Three independent sensor mass position outputs (single ended)		
Locking	Manual lock, unlock. Optional remote mass lock and unlock		
Mass centre	Remotely controlled automatic mass centring		
POWER			
Power consumption (at 12 V DC)	0.6 W		
Power voltage range	9– 36V DC Optional low power supply: 5 V DC (output ± 4.5 V)		
ENVIRONMENTAL			
Operating temperature	-20 to +65 °C (–55°C option)		