Güralp 3ESPDE

PORTABLE WEAK MOTION SEISMOMETER

A portable, rugged instrument for temporary, vault and post-hole installations.

The Güralp 3ESPDE is an integrated digital output seismometer. The 3ESP seismometer is combined with the well-proven DM24 digitiser and EAM Linux-based acquisition module.to offer on-board and external storage options; a convenient web-based user interface and; multi-protocol communications over serial and Ethernet connections.

Applications

> Surface and subsurface vault
> Posthole
> Networked Arrays
> Earthquake Early Warning systems

Images show the Güralp 3ESPDE digital broadband seismometer

Key features

- Manual mass-lock
- Stainless steel casing
- 60 second to 50 Hertz frequency response (other responses are available)
- Four-channel, 24-bit analogue to digital (ADC) channels
- > 135 dB dynamic range
- 1 to 1000 samples per second, user selectable
- 16 Gb internal industrial-grade memory
- GPS receiver
- Ethernet output
- GCF, SEEDLink, CD1.1, Win, QCSD formats, GDI-link
- Records in GCF and MiniSEED
- Optional 802.11b and 802.11g WiFi

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SPECIFICATIONS

SYSTEM	
Configuration / Topology	Triaxial orthogonal (ZNE)
PERFORMANCE	
Frequency Bandwidth	0.016 to 50 Hz (60 to 0.02 s) standard. Options of 1 s, 30 s and 120 s low pass corners. 100 Hz and 150 Hz high frequency corner options.
Output sensitivity	2000 V/ms^{1} (2 × 1000 V/ms^{1}) differential output - optional sensitivities 1500 V/ms^{1} to 20,000 V/ms-1
Peak / Full scale output	±10 V differential
Sensor Dynamic Range	> 135 dB at 100 samples per second
Total Harmonic Distortion	> 80 dB
Cross axis rejection	> 65 dB
Linearity	< 1 % full scale
Lowest spurious resonance	> 100 Hz
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	Sine, step and broadband calibration via web interface or command-line
MASS / MONITORING CONTROL	
Sensor Mass positions	Three independent sensor mass position outputs (single ended)
Locking	Manual mass lock/unlock
Mass centre	Remotely controlled automatic mass centring
POWER	
Power consumption (at 12 V DC)	2 .45 W average, depending on configuration
Power voltage range	10– 28 V DC
ENVIRONMENTAL	
Operating temperature	-20 to +75 °C

PHYSICAL	
Diameter	168 mm
Height with handle	338 mm
Height without handle	283 mm
Enclosure/Materials	Stainless steel case
Weight	11.8kg
Communication / Connectors	Mil-spec connector
DIGITISATION, ACQUISITION AND COMMUNICATION*	
Digital resolution/output format	24-bits
Data storage formats/Direct disk recording formats	Data recording in GCF or miniSEED formats
Data communication protocols/ seismic protocols	Scream (Antelope/Earthworm), SEEDlink, CD1.1, GDI-link
Data storage	16 Gb Flash internal memory storage as standard. (up to 256 Gb option). External USB storage options available
Communication interfaces	10BASE-T/100BASE-T Ethernet, serial, PPP, Wi-Fi
Sampling rates	1 to 1000 samples per second, user selectable
Configuration/control interface	Web browser, terminal based menus, Linux control line
***See DM24 digitiser and EAM datasheets for more information**	

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