



SEISMOLOGY
RESEARCH CENTRE



Gecko Sigma Accelerograph

TECHNICAL SPECIFICATIONS

Ground Motion Sensor

| | |
|--------------------------|--|
| Type | Triaxial Force Feedback Accelerometer |
| Clip Level & Sensitivity | $\pm 4g$ ($\pm 2g$, $\pm 1g$, $\pm 0.5g$ and other ranges via digitiser gain) |
| Frequency Response | DC to 400Hz |
| Dynamic Range | greater than 167 dB @ $\pm 4g$ |
| Self Noise | Better than $0.13 \mu g\sqrt{Hz}$ @ 1 Hz |

Digitiser & Recording

| | |
|---------------------------|--|
| Resolution | 24-bits |
| Data Channels | Four: 3D for ground motion, 1D for other sensor (not included) |
| Full-scale range | $\pm 20V$ with user selectable gain up to x512 |
| Sample rates (per second) | 50, 100, 200, 250, 400, 500, 800, 1000, 2000, 4000 |

Recorder Noise and Dynamic Range

| | |
|---------------------------------------|---|
| Noise level (shorted input) | Less than 1 LSB RMS noise in a 24-bit system @50sps |
| Dynamic range (RMS noise vs FS range) | 138dB @ 100sps (144dB @50sps, 127dB @4000sps) |

Timing

| | |
|-----------|---|
| Reference | Data is time stamped every second from GPS receiver |
| Accuracy | RMS 30 nanoseconds |

Controls

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|----------------------------|---|
| User Interface | In-built LCD with 4-line text display and 4-button input |
| File recording | Continuous (always on), Histogram (2, 5 or 60 sec. intervals) |
| Trigger & Alarm | 2x Level Trigger; 2x Alarm Outputs |
| Pre- and Post-trigger data | Unlimited - user configurable in data extraction software |

Data Storage

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|-------------------------------|--|
| Flash memory type | SD card, SLC NAND recommended |
| Included storage | 64GB, hot swappable. Supports up to 2TB SD card (FAT32 format) |
| Continuous recording capacity | Ring buffer capacity greater than 1 year @ 250sps |
| Data format | 24-bit MiniSEED (with station information files) |

Power

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|-------------|---|
| Input | 12V DC with low voltage disconnect (optionally 7-30V DC, factory-set) |
| Consumption | 1.7W |

Physical

| | |
|-----------------------------------|----------------------------------|
| Ingression Protection | IP68 |
| Operating Temperature | $-20^{\circ}C$ to $+70^{\circ}C$ |
| Dimensions (excluding connectors) | $\varnothing 136 \times 210$ mm |
| Weight | 2.5kg |

Included Accessories

GPS aerial with 7m cable, 2m Power cable, 2m 1D IEPE sensor cable, 2m Communications/Alarm cable, Mounting kit (anchor, threaded rod, lock nut)

Optional Accessories

- Installation tools (anchor punch, drill bit)
- Gecko-powered Ethernet adaptor (for live-streaming to Seismosphere cloud server or Streams desktop app)
- Power Stream (battery with 8+ hour recording backup; AC charger and AC-powered Ethernet adaptor)

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