

QUAKELOGIC

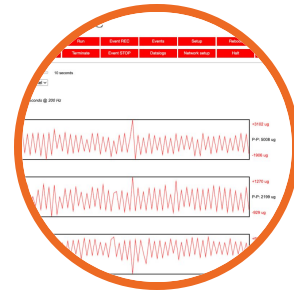
COMPACT ALL-IN-ONE
ACCELEROGRAPH

QUAKELY-PRO-HD



QUAKELOGIC-PRO-HD

Compact All-In-One Accelerograph



HIGH-RESOLUTION ACCELEROGRAPH FOR RAPID DEPLOYMENT

QUAKELOGIC-PRO-HD is a compact, all-in-one high-resolution accelerograph built for seismologists, structural engineers, and civil-protection networks. It embeds three ultra-low-noise force-balance accelerometers in a machined aluminum enclosure, operative within seconds of power-on. An Ultra-Fast SeedLink server streams up to ten packets per second, making it well suited to Earthquake Early Warning Systems, aftershock studies, and structural health monitoring in harsh field environments.

- Force-balance accelerometers with robust suspension require no mass-lock, so the unit is field-operative within seconds of switch-on with no manual setup.
- Ultra-Fast SeedLink streaming transmits up to ten packets per second, delivering the low-latency data essential to Earthquake Early Warning Systems.
- IP68 machined-aluminum enclosure resists corrosion and mechanical shock, allowing unlimited field deployment with minimal environmental protection.
- GPS-disciplined clock synchronises timing to within 1µs of UTC, ensuring accurate event correlation across distributed monitoring networks.

STANDARD FEATURES »

- Three-channel FBA sensors
- Sigma-Delta 24-bit ADC
- GPS-disciplined clock
- Ultra-Fast SeedLink server
- Internal NiMH backup battery
- IP68 aluminum housing
- LCD 16x2 control panel
- microSD and USB storage
- Ethernet 10/100
- Edge-computing alerting
- Multimode triggering
- UNI9916 measurements
- Automatic peak-picking
- Web-browser management
- VPN-ready networking
- Telegram and SMS alerts
- External GPS antenna
- Levelling feet & keyhole mount
- IRIS NRL response file
- CE conformity

Key Features

- Three embedded force-balance accelerometers with ultra-low noise and low cross-axis sensitivity capture faithful ground motion across the full dynamic range.
- Sigma-Delta 24-bit ADC delivers 144dB system dynamic range, with an optional 32-bit version reaching 162dB for demanding low-amplitude studies.
- GPS-disciplined real-time clock with PPS and NTP fallback maintains timing accuracy down to 1µs relative to UTC for reliable event correlation.
- Edge-computing capability supports on-board alerting algorithms such as P-wave analysis, enabling autonomous early-warning decisions at the sensor node.
- Flexible networking over TCP, SSH, FTP, HTTP, ModBus, MQTT, Telnet, plus Telegram and SMS alerting connects the unit directly to your observatory.
- VPN-ready operation lets the instrument work behind firewalls and NAT filters, simplifying secure integration into existing network infrastructure.
- Multimode triggering — STA/LTA, amplitude, IP voting, and scheduled — with configurable filters and pre/post windows captures only the events you need.
- Real-time measurements per the UNI9916 norm with automatic frequency peak-picking and shift alarms support structural vibration and health monitoring.
- Internal NiMh backup battery guarantees safe shutdown on power failure, protecting recorded data and file integrity in unattended installations.

PRODUCT FEATURES

Acquisition

3 channels, Sigma-Delta high-resolution ADC · 24-bit or 32-bit system upon order · 144dB dynamic range (up to 162dB, 32-bit)

Sensor

Force-balance accelerometers, robust suspension · No mass-lock required · Cross-axis sensitivity < 0.1%, noise floor < 60 ng/√Hz

Timing

GPS-disciplined clock ±10ppm · Accuracy down to 1µs of UTC (SPLL locked) · PPS and NTP fallback

Connectivity

Ethernet 10/100, RS232, RS485 (optional) · TCP, SSH, FTP, HTTP, ModBus, MQTT, Telnet · VPN-ready, Telegram and SMS alerting

Data & Storage

microSD and USB mass memory · GSEcm6, GSEint, SAC, SAF, miniSEED formats · Continuous and/or on-event recording

Streaming

Ultra-Fast SeedLink server · Up to 10 packets per second · Custom protocols with substreaming

Enclosure

Machined solid-block aluminum, corrosion-treated · IP68 protection grade · Keyhole anchoring and three levelling feet

Interface

LCD 16x2 with 3 buttons · Web-browser configuration and management · Status of health monitoring

For more information about the features, specifications, and available configurations of the QUAKELY-PRO-HD, please contact QuakeLogic.

MACHINE CONFIGURATION

COMPONENT	CONFIGURATION
Sensor Package	3 embedded force-balance accelerometers
ADC	Sigma-Delta 24-bit (32-bit upon order)
Timing Source	GPS-disciplined clock, PPS/NTP fallback
GPS Antenna	External, 33 ft (10 m) coax, BNC connector
Data Links	Ethernet 10/100, RS232, RS485 (optional)
Streaming Server	Ultra-Fast SeedLink, up to 10 packets/s
Mass Memory	microSD and USB
Backup Power	Internal NiMh battery for safe shutdown
Control Panel	LCD 16x2 with 3 buttons
Housing	Machined solid-block aluminum, wall-mountable
Connectors	MIL-C-26842 series, 10/18/19/26 pins
Anchoring	Bottom keyhole with three levelling feet

CAPACITY

SPECIFICATION	VALUE
Number of Channels	3
Input Range	Selectable 0.8, 1, 2, 4g (customizable)
Dynamic Range	144dB system (up to 162dB, 32-bit)
Peak/RMS Noise	141dB at 2g and 100 SPS
Sampling Rates	1 Hz to 1500 Hz (up to 5000 Hz custom)
Streaming Throughput	Up to 10 packets per second
Pre/Post Event Window	1 to 10,000 seconds
Timing Accuracy	Down to 1µs of UTC
Power Consumption	< 3.2 W standard working mode

OPTIONAL FEATURES & ACCESSORIES

32-BIT ADC SYSTEM

Upgrades acquisition to a 32-bit system reaching up to 162dB dynamic range for demanding low-amplitude and high-resolution studies.

INTERNAL BACKUP UPS BATTERY

Factory-fitted internal battery, requested at order, sustains operation and ensures safe shutdown during power interruptions.

RS485 SERIAL INTERFACE

Adds an RS485 data link for robust multi-drop serial communication over longer cable runs in industrial installations.

EXTENDED SAMPLING RATES

Custom firmware raises sampling rates up to 5000 Hz for high-frequency vibration and specialized measurement applications.

TECHNICAL SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Power Supply	9-36 Vdc, optional internal backup UPS battery
Power Consumption	< 3.2 W (GPS on, streaming, memory writing)
Number of Channels	3, Sigma-Delta high-resolution ADC
ADC Resolution	24-bit (32-bit system upon order)
Input Range	Selectable 0.8, 1, 2, 4g (customizable)
Dynamic Range	144dB system, 141dB Peak/RMS at 2g, 100 SPS
Dynamic Range (32-bit)	Up to 162dB
Sampling Rates	1 to 1500 Hz (up to 5000 Hz custom)
Anti-Aliasing Filter	Analog and Digital (FIR), customizable
Offset Compensation	Software, selectable from web panel
Real Time Clock	GPS-disciplined ± 10 ppm, -4/+122°F (-20/+50°C)
RTC Accuracy	Down to 1 μ s of UTC (SPLL locked, PPS)
GPS Antenna	External, 33 ft (10 m) coax, BNC connector
GPS Type	Multiconstellation receiver, status/coordinates
Messaging	Telegram groups, message bot or SMS
Data Links	Ethernet 10/100, RS232, RS485 (optional)
Mass Memory	microSD and USB

SPECIFICATION	DESCRIPTION
Data Format	GSEcm6, GSEint, SAC, SAF, miniSEED
Recording	Continuous and/or on-event trigger
Triggering	STA/LTA, amplitude, IP voting, scheduled
Trigger Filters	High/low/band pass, fully independent
Pre/Post Event	1 to 10,000 seconds
Status of Health	Memory, power, Vref, test pulse, peer status
Test Sensor	Test pulse to force feedback loop
Protection Grade	IP68
Anchoring	Bottom keyhole with three levelling feet
Control Panel	LCD 16x2 + 3 buttons
Housing	Machined solid aluminum, wall-mount possible
Connectors	MIL-C-26842, 10/18/19/26 pins
Operating Temperature	-4/+158°F (-20/+70°C)
Dimensions	8.1 x 6.7 x 4.2 in (205 x 170 x 107 mm)
Weight	Approx. 8.8 lb (4 kg), sensor-dependent
Cross-Axis Sensitivity	< 0.1%
Linearity / Noise Floor	< 0.02% FS / < 60 ng/ $\sqrt{\text{Hz}}$

QUAKELY-PRO-HD

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About QuakeLogic:

QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, high-quality solutions to customers worldwide.

Our Commitment

We are committed to quality, innovation, and customer satisfaction – building lasting partnerships through reliable solutions and dependable support.

