



TSA-SMA

Internet-Ready Strong Motion Accelerograph

EQMet's TSA-SMA is a very cost-effective 3-channel, 24-bit Strong Motion Accelerograph based on Metrozet's field proven TSA-100S-D24. The three channels of acceleration deliver data at sample rates up to 500sps. With its internal TSA-100S high-performance force balance accelerometers, the TSA-SMA delivers lower-noise performance than competitive units or silicon MEMS-based accelerographs.

The TSA-SMA is easy to use and field-ready. It can be configured as an event recorder or a continuous data streamer, or to record during a specified time window. Where Internet service is provided (e.g., Broadband, GPRS, VSAT etc.), the system can be securely accessed from anywhere via a web browser. The TSA-SMA works with public domain data acquisition software such as SeedLink or Earthworm.

Customers around the world have confirmed the high-performance and ease-of-use of the TSA-100S-D24 digital sensor. If you are ready to collect high-fidelity accelerograph data, you are ready for the EQMet TSA-SMA system.

FEATURES

- | | |
|--|---|
| <ul style="list-style-type: none"> • High-performance digitizer • High-performance force-balance sensor • 24-bit resolution • Non-volatile memory (up to 32GB) • Multiple data formats • Multiple real-time streaming clients • Variety of communications options • Common software packages supported • Internal built-in GPS standard | <p>Benefits to you:</p> <ul style="list-style-type: none"> • Save time and money with a system that is easy to set up and use right out of the box • Record high quality data at a price that fits your budget • Low system noise floor coupled with 4g range allow one system to be used in any location • Compact design • Standard user interfaces, Ethernet, and USB connect to standard cabling and devices |
|--|---|

OPERATION OUTLINE



Internet or LAN

SPECIFICATIONS

Data Acquisition

Type:	24-bit delta-sigma ADC
Channels:	3
	Dynamic Range: 125 dB (0.1 to 40 Hz RMS Noise RMS Clip)
Anti-alias filter:	144 dB Linear Phase FIR Std.
Acquisition Mode:	Triggered, time windows- real-time output
Sample Rate:	50, 100, 200, 250, 500sps
Memory Buffer:	1GB standard SDHC card—up to 32GB available

Firmware

Type:	Loaded with Kinemetrics limited edition Rockhound®; real-time data collection and processing software
Compatibility:	Earthworm, Seedlink
	Monitoring: State-of-Health monitoring; input voltage, CPU and memory usage, GPS information, and communication link diagnostics
Data Format:	Kinemetrics EVT, miniSEED, SAC, COSMOS, MATLAB, SUDS, SEISAN, ASCII

Triggering

Type:	IIR band-pass filter (three types available)
Threshold:	Selectable from 0.01% to 100% full scale
Voting:	Internal, external, and network trigger votes with arithmetic combination
Pre-event:	Software selectable up to 100s
Post-event:	Software selectable up to 65,000s

Timing

System:	Internal GPS Engine with 5m Antenna
Time Base:	TCXO digitally locked to GPS
Accuracy:	< 5µs of UTC with GPS

Sensor

Type:	TSA-100S Triaxial, force-balance accelerometer with capacitive displacement sensor, restoring coil and calibration coil
Range:	+/-4g
Bandwidth:	DC to 225Hz
Cross-axis:	< 0.5% including misalignment
Offset:	< 0.05g
Hysteresis:	< 200 µg peak-to-peak with +/-1g excitation or < 0.005% of full-scale
Non-linearity:	< 0.015% total
THD:	< -74dB total harmonic distortion

Power

Type:	9-18VDC input, optional power supply from 100-250VAC 50/60Hz.
Battery:	Optional external 12V, 35Ah or more Optional battery charger.
Total:	2W (typical)

I/O

Standard Comm Link: 10/100 Ethernet, USB (Host), USB (Device), RS232 Console

Physical

Enclosure:	Aluminum baseplate, RFI-shielded cover with IP67 compliant connectors (when mated)
Weight:	2.3kg (5 lbs)
Dimensions:	20x20x8.4 cm (8 x 8 x 3 5/16 in)
Connectors:	Power/Console, RJ-45 Ethernet, Type A USB host, Type B USB device, TNC/BNC GPS Antenna

Environment

Operating temperature:	-20°to 60°C Operation
Humidity:	0-100% RH (Non-condensing)

*Specifications subject to change without notice