



# TRITON ACCELEROGRAPH

## INTEGRATED DATA ACQUISITION PLUS SENSOR

### KEY FEATURES

For applications where combined and space saving-solution are required.

Very low seismic noise levels are achieved thanks to the sensor being shielded inside the enclosure and to the short wiring. Triton is available with MEMS or true mechanical Force Balance accelerometric sensor. Two different dynamic ranges are available for the MEMS sensors 90db and 110dB, while for the force balance sensor 160dB. Triton can be equipped with extra inputs for 3 or 6 24-bit channels. In this configuration, in addition to the internal sensor, the instrument can be connected externally to two other high dynamic sensors. The instrument is equipped with high-resolution delta-sigma 24 bit ADCs, each channel is synchronized and the sample rate is adjustable up to 1000 sps per channel.

INTEGRATED ACCELEROMETRIC SENSOR

ADC RESOLUTION 24 bit

DYNAMIC RANGE > 136dB@100 sps

SYNCHRONOUS SAMPLING

LAN, WIFI

INTEGRATED 4G MODEM (OPTIONAL)

BUILT-IN GNSS RECEIVER

INTEGRATED UPS

MINISEED DATA FORMAT

VERSION WITH INTEGRATE REMOVABLE  
BATTERY AVAILABLE



Seismological networks Structural monitoring and surveys Post-seismic damage analysis	APPLICATIONS
<b>MEMS</b> 0-500Hz 90db ±2g (7 µg/√Hz) or ±5g (17 µg/√Hz) 110dB ±3g (0.2 µg/√Hz) or ±5g (1.2 µg/√Hz) <b>FBA</b> 0-80Hz* (*opt 0-200Hz) 160dB ±0.5g, ±1g, ±2g, ±4g <b>MINIMUM RESOLUTION (@1G FULL SCALE)</b> 0.12µg <b>SENSOR SENSITIVITY (@1G FULL SCALE)</b> 10V/g	SENSORS
<b>SAMPLING</b> Simultaneous <b>ADC</b> Sigma-delta 24 bit synchronous sampling <b>DYNAMIC RANGE</b> > 136dB @ 100 sps <b>SAMPLE RATES</b> 25, 50, 100, 250, 500, 1000* sps *(3 ch active) <b>ADVANCED FEATURES</b> Dual Sampling <b>ANTI-ALIASING FILTER</b> FIR linear or minimum phase <b>ADDITIONAL DIGITAL FILTERS</b> Low-pass and High-pass filter	A/D CONVERSION
<b>TRIGGERS</b> STA/LTA and threshold independent for each channel AND/OR configuration on all channels Trigger broadcasting towards recorders in the network	TRIGGERS
<b>FORMAT</b> MiniSEED <b>INTERNAL MEMORY</b> 32GB standard, optionally up to 1TB <b>RING BUFFER DATA RECORDING</b> (16 or 32 days, depending on mem. size) plus strong motion events <b>ADV. FEAT.</b> Periodic generation of ambient noise and post-seismic analysis	STORAGE
<b>TIMING SOURCE</b> Absolute Time UTC through high sensitive integrated GNSS receiver or NTP <b>ACCURACY</b> in GNSS signal loss condition: ± 1 ppm (32 s/year) Accuracy with GNSS signal < 1 µs - Overall synchronisation error	SYNCHRONIZATION
<b>LEDs</b> Heartbeat, 4G, WiFi, GNSS, Ethernet, Power <b>BUTTONS</b> Power on/off and WiFi enable/disable on the same button	UI

<b>FILE TRANSFER</b> Via Ethernet 10/100, WiFi (optional) or integrated 4G modem (optional)	COMMUNICATION
<b>WIFI MODE</b> SOFT AP function <b>METADATA</b> RESP file available on IRIS <b>DATA DOWNLOAD</b> Through SCP protocol based program or via web interface <b>VPN</b> Compatible with OpenVPN and IPSec	DATA STREAMING
<b>FORMAT</b> Seedlink protocol management for real-time interface with most common seismic programs such as SeisComP and Earthworm <b>STREAM</b> Seismic and State-of-Health <b>ALARMS</b> Management towards remote monitoring server	CONFIGURATION
<b>INTERFACE</b> Web Server <b>CONTROL</b> Connection and management on remote servers <b>UPDATES</b> Remote software update (local network or via internet) <b>ADVANCED FEATURES</b> Multiple units can be connected to the network (Ethernet, WiFi or 4G) acting as a single multi-channel instrument	POWER SUPPLY
<b>POWER SUPPLY</b> 9 ÷ 28 Vdc - AC/DC adapter included <b>POWER CONSUMPTION</b> < 2 W (< 800 mW available on request) <b>UPS</b> Back-up LiPO battery, autonomy > 33 hours - version with integrate removable battery available <b>ALARMS</b> Remote alarms management in case of blackout <b>ACCESSORIES</b> External battery pack and solar panel options	OP. CONDITIONS
<b>STORAGE TEMPERATURE RANGE</b> - 40 ÷ +85°C <b>HUMIDITY</b> 0 to 100% <b>OPERATING TEMPERATURE RANGE</b> Without battery - 40 ÷ +85°C * <small>*LiPo batteries can be charged in the range 0 ÷ +45°C while discharge is allowed in the range of -20 ÷ +70°C. If the temperature is out of range, the LiPo battery will be inhibited by the electronics</small>	PHYSICAL
<b>CASE</b> Anodized aluminum case (AISI 316 stainless steel optional) <b>PROTECTION GRADE</b> IP67, IP68 optional <b>DIMENSIONS</b> 18 x 18 x 10 cm <b>WEIGHT</b> ≈3 Kg <b>INSTALLATION</b> Mounting plate or spikes available on request	

