



TRITON-F ACCELEROGRAPH

INTEGRATED DATA ACQUISITION
PLUS SENSOR

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. Compared to standard TRITON it offers accessible/removable SD and SIM card slots. TRITON-F is available with MEMS or true mechanical ForceBalance accelerometric sensor. Two different dynamic ranges are available for the MEMS sensors 90dB and 110dB, while for the force balance sensor 160dB. TRITON-F 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.

KEY FEATURES

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

ACCESSIBLE/REMOVABLE SD AND SIM CARD SLOTS

Seismological networks
 Structural monitoring and surveys
 Post-seismic damage analysis

MEMS 0-500Hz

90db ±2g (7 µg/√Hz) or ±5g (17 µg/√Hz)
 110dB ±3g (0.2 µg/√Hz) or ±5g (1.2 µg/√Hz)

FBA 0-200 Hz / 160dB, ±1g, ±2g, ±4g

Triaxial force balance accelerometer orthogonally oriented

SAMPLING Simultaneous

ADC Sigma-delta 24 bit synchronous sampling

DYNAMIC RANGE > 136dB @ 100 sps

SAMPLE RATES 10, 20, 25, 50, 100, 200, 250, 500, 1000* sps * (3 ch active)

ADVANCED FEATURES Dual Sampling

ANTI-ALIASING FILTER FIR linear or minimum phase

ADDITIONAL DIGITAL FILTERS Low-pass and High-pass filter

CALIBRATION Pulse and Sensor Response Test

TRIGGERS STA/LTA and threshold independent for each channel AND/OR configuration on all channels / Trigger broadcasting towards recorders in the network / Triggers levels independently selected for each channel and threshold selectable from 0.01% to 100% / Manual

FORMAT MiniSEED

INTERNAL MEMORY 32GB standard, optionally up to 1TB

RING BUFFER DATA RECORDING (16 or 32 days, depending on mem. size) plus strong motion events

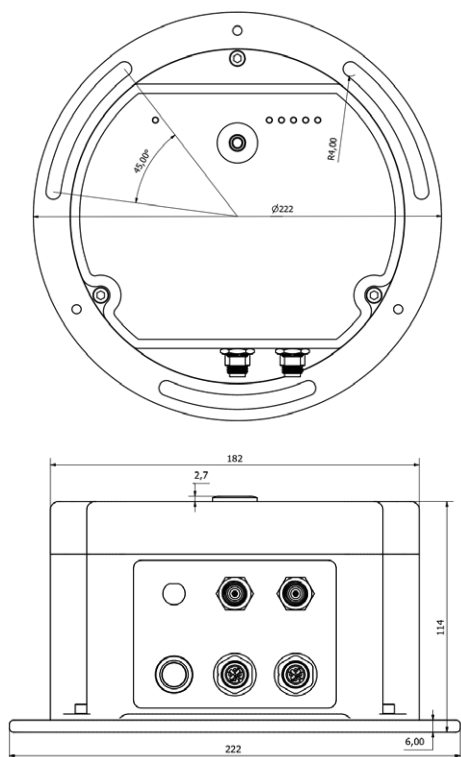
ADV. FEAT. Periodic generation of ambient noise and post-seismic analysis

TIMING SOURCE Absolute Time UTC through high sensitive integrated GNSS receiver or NTP

ACCURACY in GNSS signal loss condition: ± 1 ppm (32 s/year)
 Accuracy with GNSS signal < 1 µS

LEDs Heartbeat, 4G, WiFi, GNSS, Ethernet, Power

BUTTONS Power on/off and WiFi enable/disable on the same button



APPLICATIONS
 SENSORS
 A/D CONVERSION
 TRIGGERS
 STORAGE
 SYNCHRONIZATION
 UI

FILE TRANSFER Via Ethernet 10/100, WiFi (optional) or integrated 4G modem (optional)

WIFI MODE SOFT AP function

METADATA RESP file for download from accelerometer or available on IRIS
DATA DOWNLOAD Through SCP protocol based program or via web interface

VPN Compatible with OpenVPN and IPSec

COMMUNICATION Ethernet TCP/IP 10/100 Base-T, FTP/SFTP, WiFi included

FORMAT Seedlink protocol management for real-time interface with most common seismic programs such as SeisComP and Earthworm. Supports up to 10 simultaneous connections. Telemetry on modem or radio

STREAM Seismic and State-of-Health

ALARMS Management towards remote monitoring server

INTERFACE Web Server with option to upload and download accelerometer configuration file

CONTROL Connection and management on remote servers

UPDATES Remote software update (local network or via internet)

ADVANCED FEATURES Multiple units can be connected to the network (Ethernet, WiFi or 4G) acting as a single multi-channel instrument

POWER SUPPLY 9 ÷ 28 Vdc - AC/DC adapter included

POWER CONSUMPTION < 2 W (< 800 mW available on request)

UPS Back-up LiPO battery, autonomy > 33 hours

ALARMS Remote alarms management in case of blackout

ACCESSORIES External battery pack and solar panel options

STORAGE TEMPERATURE RANGE - 40 ÷ +85°C

HUMIDITY 0 to 100%

OPERATING TEMPERATURE RANGE Without battery - 40 ÷ +85°C *

*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

CASE Anodized aluminum case (AISI 316 stainless steel optional)

PROTECTION GRADE IP67, IP68 optional

DIMENSIONS 18 x 18 x 10 cm

WEIGHT ≈3 Kg

INSTALLATION Mounting plate or spikes available on request

EMI/RFI PROTECTION Inputs and outputs are protected against EMI/RFI and transients

COMMUNICATION
 DATA STREAMING
 CONFIGURATION
 POWER SUPPLY
 OP. CONDITIONS
 PHYSICAL



This datasheet can be reviewed or updated without notice