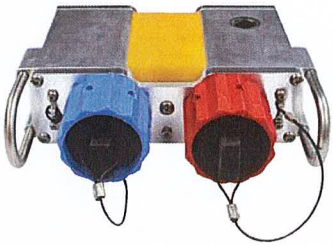
Hawk SN11 recording system

GROUND EQUIPMENT

FIELD STATION UNIT (FSU)

The Field Station Unit (FSU) is a versatile and rugged cableless field digitizer used in the Hawk recording system. Electronics are housed in an aluminum enclosure, validated using military test standards. The FSU can include up to 3 analog channels in addition to a 3 component digital VectorSeis sensor interface providing an array of channel and deployment configuration options with a single set of ground equipment.



GENERAL SPECIFICATIONS

Number of analog channels:

1, 2 or 3

Number of VectorSeis 3C digital interfaces:

1 (optional)

Data Storage Capacity:

16 GB non-volatile flash memory

Power Consumption (1 channel analog configuration):

0.36 W, estimated

External Battery Input:

11-17 V

LED Status Indicator:

Station Health, Sensor Health, GPS Signal, Battery Voltage

Wireless Communication Interfaces:

Bluetooth and WiFi

Sensor Input Connector Options:

6 pin Dynacon (multi-channel configuration)

5515 (single channel analog configuration or VectorSeis interface)

Special connector types optional

Power/Ethernet Connector:

8 pin Dynacon

ENVIRONMENTAL SPECIFICATIONS

Storage Temperature:

-50 °C to +85 °C

MIL-STD-810F Method 502.4, Procedure I

Operating Temperature:

-40 °C to +65 °C

MIL-STD-810F Method 501.4, Procedure II

Operating Altitude:

4000 meters

MIL-STD-810F Method 500.4, Procedure II

Salt Fog:

24 hours wet, 24 hours dry; two cycles @ 35 °C

MIL-STD-810F Method 509.4, Procedure I

Immersion:

24 hours, 3 meters depth

MIL-STD-810F Method 512.4, Procedure I

Shock and Drop:

48 inches onto 2 inch plywood on concrete; 26 times on each face, edge and cormer

MIL-STD-810F Method 516.5, Procedure IV

Loose Cargo Transportation:

3 cycles

MIL-STD-810F Method 514.5, Procedure II, Category 3

PHYSICAL

Size:

167.64 mm x 203.2 mm x 55.88 mm

(6.6" x 8.0" x 2.2")

Weight:

1.72 kg (3.8 lb)

HAWK

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GROUND EQUIPMENT

FIELD STATION UNIT (CONT.)

ANALOG SPECIFICATIONS

Performance specifications are typical values at 25 °C and 2 ms sample interval.

A/D Converter
32-bit
Preamplifier Fixed Gain Levels
G0, G1, G2, G3, G4, G5, G6 (Unity, 6 dB, 12 dB, 18 dB, 24 dB, 30 dB, 36 dB)
Sample Interval
1/4 ms, 1/2 ms, 1 ms, 2 ms, or 4 ms

Maximum Input Signal

1768 mV RMS;	2500 mV peak at G0
884 mV RMS;	1250 mV peak at G1
442 mV RMS;	625 mV peak at G2
221 mV RMS;	313 mV peak at G3
110 mV RMS;	156 mV peak at G4
55 mV RMS;	78 mV peak at G5
27.6 mV RMS;	39.1 mV peak at G6

Dynamic Range (DR)
Non-shorted input Instantaneous DR
130 dB at G0
130 dB at G1
129 dB at G2
128 dB at G3
124 dB at G4
119 dB at G5
114 dB at G6

Total dynamic range
150 dB

Equivalent Input Noise (EIN)
0.79 µV RMS at G0
0.39 µV RMS at G1
0.22 µV RMS at G2
0.12 µV RMS at G3
0.10 µV RMS at G4
0.09 µV RMS at G5
0.08 µV RMS at G6

Total Harmonic Distortion
0.0001%
Common Mode Rejection
110 dB or greater

Frequency Response
0 Hz to 1652 Hz

Input Impedance
Differential mode 20 kohm in parallel with 12 nF
Common Mode 2.0 Mohm in parallel with 1 nF

Digital anti-alias filters (remotely selectable):
- Zero, Linear or Minimum Phase response
- 1652 Hz at 1/4 ms sample interval
- 826 Hz at 1/2 ms sample interval
- 413 Hz at 1 ms sample interval
- 206.5 Hz at 2 ms sample interval
- 103 Hz at 4 ms sample interval
- Rejection above Nyquist frequency: 135 dB
- Passband ripple ± 0.003 dB

DC removal
Static (zero phase shift)

Analog Built-in Tests (BITs)

Internal Tests	External Tests
Calibration	String Resistance
Instrument Noise/Offset	String Leakage
Instrument Common-Mode Rejection (CMR)	Spread Noise
Channel Response	Power Line Pickup
Harmonic Distortion	Sensor CMRR
	Sensor Distortion
	Sensor Natural Frequency
	Sensor Damping

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GROUND EQUIPMENT

EXTERNAL POWER PACK

Purpose built high energy density Lithium Ion battery pack used to power an INOVA cableless field station unit. Options include a standard capacity 192 WHr pack and optional high capacity 288 WHr pack.

SPECIFICATIONS

Capacity:

192 WHr (standard); 288 WHr (high capacity)

Charge time (max.):

192 WHr pack - 4 hours; 288 WHr pack - 6 hours

Charge Temperature Range:

0 °C to +40 °C

Discharge Temperature Range:

-40 °C to +60 °C

Transportation Certification:

Tested to ensure compliance with UN/IATA requirements for Lithium Ion batteries

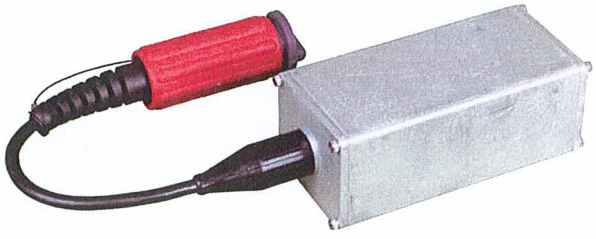
PHYSICAL

Size:

195.58 mm x 96.52 mm x 73.66 mm
(7.7" x 3.8" x 2.9")

Weight:

2.49 kg (5.5 lb)



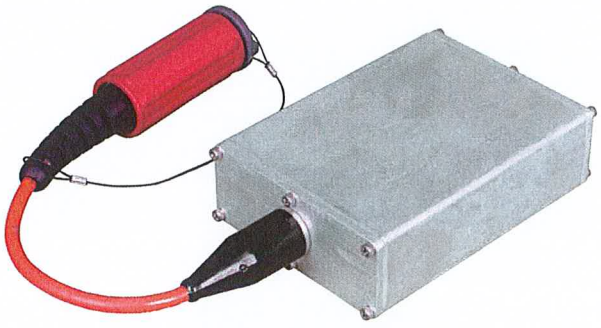
192 WHr Power Pack

Size:

195.58 mm x 137.16 mm x 73.66 mm
(7.7" x 5.4" x 2.9")

Weight:

3.45 kg (7.6 lb)



288 WHr Power Pack

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