130-MC

MULTI-CHANNEL ACCELEROGRAPH

Using REF TEK's Third Generation technology, the 130-MC is a robust multi-channel recorder designed for civil engineering and structural monitoring requirements. Built-in communication capabilities allow for real-time and on-demand data collection so that you can monitor your site and respond appropriately. The 130-MC can also be configured in a triggered mode, allowing it to only record data when actual sensor movement is occurring, reducing the data collected.

This multi-channel recorder is available in a twelve channel or eighteen channel recording system with advanced telemetry for real-time data collection on all channels. The 130-MC is designed specifically to work with the REF TEK® 147A strong motion accelerometer, but has the flexibility to connect other sensors.

The 130-MC's network capabilities allow multiple units be interconnected for more comprehensive coverage of movement in a building or on a structure such as a bridge or a dam.

During a power outage, the 130-MC recorder will continue data acquisition, running on four internal 12 V DC batteries for 72 hours. If power is unavailable for more than 72 hours and the system shuts down, then, when AC power returns the 130-MC recorder will automatically resume its previous data acquisition mode and begin re-charging the batteries.

Using REF TEK's Interface Software (RTI) with a local or remote PC, you can set all data recording parameters including; continuous or triggered data streams, independent channel selection, sampling rate, and trigger settings with independent trigger thresholds on a per channel basis, external alarm settings, and automatic notification settings for state-of-health messages and recorded events.

Compact flash memory cards are used to retrieve any recorded event files and state-of-health files, or upload firmware updates and preset parameter files. Updating the system firmware can be completed with a simple file upload and reset of the recorder.

For data analysis the REF TEK Compass Strong Motion Data Processing software calculates and displays functions such as CAV, Raw and Corrected Acceleration, Arias Intensity, Velocity, Displacement, Response Spectra, PSDs, and FFTs. The Compass software makes it easy to view and analyze all calculations simultaneously or individually, depending on your work flow.

Key Features

- 12 or 18 recording channels
- 24-Bit A/D Resolution
- IP based communications over Ethernet
- Three independent Relay closures for alarming purposes
- Embedded and removable mass data storage
- Remote alerts for event and alarm triggers

Applications:

- Structural Monitoring for buildings, bridges and dams
- Dense Accelerometer Arrays

DATASHEET

130-MC REF TEK MULTI-CHANNEL ACCELEROGRAPH

Model	130-MC12A, 130-MC18A
Channel Specifications	
No. of Channels	12 in 130-MC12A, 18 in 130-MC18A
Input Voltage	±10 VDC full scale
Noise Level	< 40 µV P-P (< 1 count of an 18 bit system) @ 200 sps
ADC Resolution	24-bit
Sample Rate	50, 100, 200, 500 sps (User Selectable)
Channel Skew	None, Simultaneous Independent Sampling
Anti-alias Filtering	>120 dB
Temperature Effects	<1% of Full Scale from -20 °C to 70 °C
Time Base	
Type	GPS Receiver/Clock plus a Disciplined Oscillator
Accuracy with GPS	±10 µsec, with 3-D Satellite Fix & Locked
Free-Running Accuracy	2.5 ppm from -20 °C to 60 °C
Triggered Recording	
Trigger Type	Continuous, Vote, External
Vote Trigger	User settable number of: • Votes per Channel • Votes required to determine Trigger/Detrigger User settable threshold for issuing votes Threshold range 0.0001 – 4 g
External Trigger	When interconnected, an external signal can be issued by one station to trigger all other stations in the case of an event.
Pre-event Time	User settable from 0 to 30 sec.
Post-event Time	User settable from 0 to 60 sec.
Trigger Filter	0.1 to 12 Hz Band Pass Filter, user selectable
Recorder Interconnection	
Interconnected Network Signals	Common GPS Time and common Trigger Notification
Time Synchronization	Within 10 µsec
Mechanical	
Size	24" high x 20" wide x 16" deep (61 cm x 50.8 cm x 40.6 cm)
Volume	4.4 cubic feet
Weight w/o Battery	93 lbs (42.2 Kg)
Cable Feed-thru	Liquid Tight Cable Grips 3/8" (0.95 cm) nominal diameter
Terminal	Sensor, and GPS connections
Communication Ports	
Ethernet (RJ-45)	Serial with optional Modem
Alert Relays	
3 alert relays	User configurable to be activated upon Unit trigger or independent threshold exceedance.
Power Requirements	
System Power Input Voltage	110/220 VAC, 47-63 Hz
Recorder Consumption	< 21 Watt-Hour/Day Per Channel

Ordering Information

Part No.	Description
97113-00	130-MC12A: Recorder 12-Channel
97114-00	130-MC18A: Recorder 18-Channel
97316-00	130-MC12A/AC220: Recorder 12-Channel for 220VAC power
97315-00	130-MC18A/AC220: Recorder 18-Channel for 220VAC power
97150-00	130-GPS: Receiver/Clock
97155-00	130-GPS-Extender: Extender GPS to 130-MC
97229-00	130-8261-75: Cable, GPS to MC recorder, 75'
97350-00	Cable, 6 Twisted pairs, Shielded, 1000' Spool
98489-00	Cable, Plenum, 6 Twisted pairs, Shielded, 1000' Spool
EWTAP-REC-HW	Extended Warranty for 130-MC units
97257-00	MBLC-X1220P: Battery, 20 amp/hour, Back-Up Power
97192-00	130-Reader-USB: Reader, CF I/II/III, External
97180-00	130-FLASH/8G: Disk, Compact Flash II
97181-00	130-FLASH/16G: Disk, Compact Flash II

RELATED SUB-SYSTEMS:

3rd Generation Seismic Recorders, 130S-01
147A Strong Motion Accelerometers

Specifications subject to change without notice.

Contact your local dealer today

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