Common sense…uncommon innovation

GEOTECH INSTRUMENTS, LLC

FEATURES

- **24-bit delta sigma ADC**
- **1, 3, 4 or 6 channels**
- **Optional local event detection and data storage**
- **Field upgradable**
- **TCP/IP support**

The DR-24 is a low-power remote data acquisition system designed to record high quality data in harsh environments. The DR-24 is ideally suited for seismic monitoring or general purpose data acquisition at permanent remote locations where data is transmitted back to a central site in realtime. The DR-24 auto-detects installed hardware at power up, performs diagnostics and provides state-of-health information. A GPS receiver can be used to synchronize data samples to UTC. Utility software is provided for system setup, communications and data retrieval and realtime display, locally or remotely, as well as Earthworm input module. FLASH and FPGA technology allows easy field firmware upgrade.

REMOTE DIGITIZER

MODEL DR-24

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REMOTE DIGITIZER MODEL DR-24
SPECIFICATIONS

DATA ACQUISITION

Number of inputs	1, 3, 4 or 6 channels
Input type	Balanced differential with transient protection suitable for both passive and active sensors
Input range	40 volts p-p bipolar differential
Gain	User selectable 1 to 256
Common mode rejection	Greater than 80 dB
Digitizer	Over-sampled 24-bit Delta Sigma ADC with digital signal processing, 1 per channel
Anti-alias filter	Brickwall digital FIR filter, cutoff at 80% of and 130 dB down at output Nyquist
Dynamic range	130 dB at 100 sps
Intermodulation distortion	Less than -100 dB
Sample rates	10, 20, 40, 50, 60, 80, 100, 120, 125, 200, 250, 500, 1000 sps
Noise	4.75 microvolts RMS typical at 100 sps, X1 gain
Calibration	Calibration module provides pulse, sine wave, pseudo-random wide band noise, and step functions

TIMING

Type	Voltage controlled TCXO with optional external GPS synchronization
Accuracy	±5 microseconds of UTC with GPS lock
Stability (unlocked)	0.5 ppm
GPS duty cycle	User programmable GPS power on/off cycle times to conserve power

INTERFACES

Communications	One RS-232 serial port with full modem control interface (up to 115.2 Kbaud, asynchronous or synchronous) for data telemetry (modem, radio, etc.), with optional TCP/IP support One RS-232 for local user interface (up to 115.2 Kbaud)
GPS	Dedicated RS-232 serial port for GPS interface
Power	Main power input and external battery input
Analog	Up to 6 sensor input channels
Other I/O	Auxiliary state-of-health analog input, 1 PPS in/out

PHYSICAL

Construction	Rugged aluminum housing
Size	13 in. (330 mm) w x 8.5 in. (216 mm) l x 15.5 in. (364 mm) h
Weight	40 lbs (18.1 kg)
Operating temperature	-20°C to +65°C
Humidity	0 to 100%

OPTIONS

Local event detection	Optional DSP processor board allows for event detection using threshold and STA/LTA algorithms
Local data storage	Optional PCMCIA slot for ATA type hard drives (FLASH memory type or rotating media up to 1 GB)

POWER

Input	10 to 15 Vdc
Power consumption	3 watts average (1 channel) 4 watts average (3 channels)