

GCR-16 Motion Recorder

Features

- Recording memory for permanent recording and single event recording
- Wide selection of sensors for velocity and acceleration measurements, suitable for your application
- 16 Bit Resolution
- Complete continuous surveillance
- Notification of events via SMS message and alarm relays
- Detailed measuring reports on PC with the GeoDAS Data Analysis Package
- Compact and user-friendly
- Quick installation, Simple to use



Outline

GCR-16 Strong Motion Recorder utilizes the modern processor technology to carry out vibration measurements according to DIN 4150 part 1 and 2 and Swiss Norm SN 640312a.

A wide range of GeoSIG sensors as well as various user selectable parameters allow to configure the GCR-16 easily and specifically to the requirements of the desired measuring task.

The GCR-16 contains two separate recording memories, one to record continuous signals, and other to store individual events. With corresponding configuration of the recording parameters, the GCR-16 can be used either as a specific blasting surveillance recorder or as a permanent data recorder for ramming works, tunnel, bridge or traffic surveillance. The standard configurations and the defined user configurations can be transferred very easily from the PC to the GCR-16.

The system fulfils all requirements needed for a permanent surveillance. Transferring data to PC while recording is also possible and can be done also through a modem.

The recorded data are retrieved to PC with the GeoDAS Communication Package, analysed and evaluated with the GeoDAS Data Analysis Package.

The GeoDAS Data Analysis Package has been developed by GeoSIG also considering the needs of the measuring engineer. It contains all necessary functions and performances for detailed evaluation e.g. vector sum, frequency spectrum (FFT, Terzband and Power Spectrum), integration and double integration, effective value according to DIN 4150, filtering, response spectrum, CAV (Cumulative Absolute Velocity) as well as zooming and plotting data.

The GCR-16 is equipped with an internal GSM modem and it can call or send SMS messages to predefined numbers. The GSM modem additionally enables dial-in access.

An Internal Alarm Interface including 2 Seismic Alarms plus an Equipment Fault Alarm which give relay contacts that can be delivered Normally Open (NO) or Normally Closed (NC), facilitating the use of immediate operation of mission critical circuits and/or visual/audible notification.

Specifications GCR-16 Motion Recorder

Set-up and Configuration

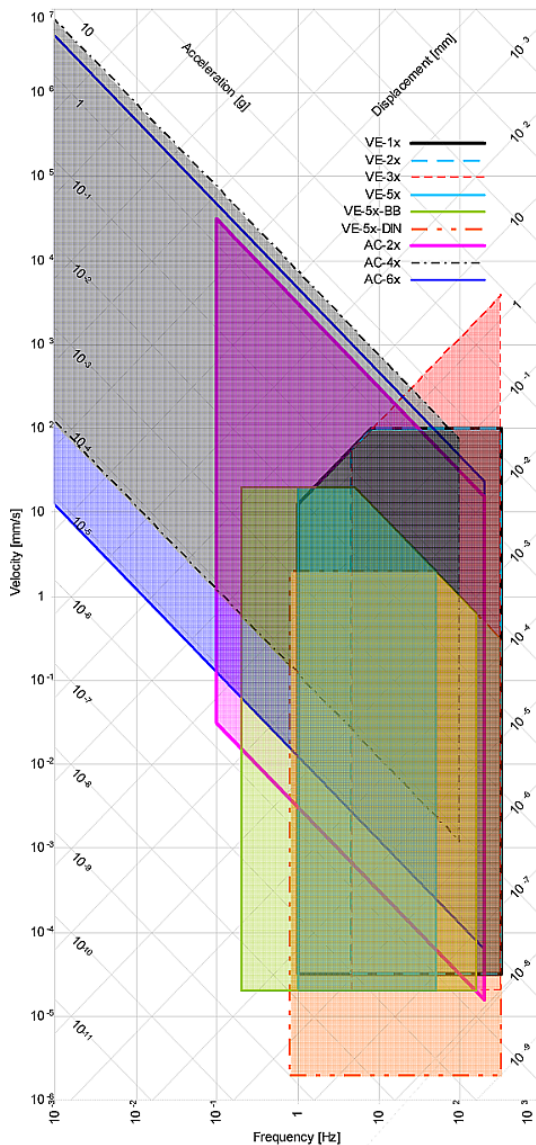
All the necessary parameter and configuration settings are selectable with the easy-to-use GeoDAS Microsoft Windows-based program. The configuration of the GCR-16 is stored in its internal EEPROM which secures the configuration independent of any backup battery requirements.

Data Analysis

The GeoDAS program provides basic time history data evaluation in the field. The GCR-16 supplies data available in binary format or as ASCII files. The GeoDAS Data Analysis Package covers the requirements of detailed analysis for most civil engineering applications.

Sensor

Any sensor can be used with GCR-16 as long as the specifications match or are approved by GeoSIG. All GeoSIG sensors are housed in compact cases with a single bolt mount, easy to install and to level with three levelling screws. Some of the sensors can also be built into the GCR-16 unit (internal sensors). Also available as a standard option is a current loop interface (0 to 20 mA) for event transfer on long distances as well as a gain ranging to expand the signal range. Ranges of the available GeoSIG sensors:



Digital Filtering

A/D Converter: 16 Bit
Dec. sampling rate: 200, 400, 800, 1'000 SPS per channel
Memory: 2 MByte RAM

Permanent Recording

Recording time per file: 1 minute to 1 day
Tact period: 1 second to 1 hour
Recording functions:
- Peak value or effective peak for each tact period for each channel
- Peak value or effective peak for each tact period of the vector value
Recording mode:
- Always active
- Conditionally triggered recording
- Exceeding defined levels for each axis or the vector sum
- Hardware- or software trigger

Event Recording

Number of events for each permanent recording: 0, 1, unlimited
Pre-Event-/Pre-Peak-time: 0.1 to 5 sec
Post-Event-/Post-Peak-time: 0.1 to 60 sec
Recording possibilities:
- Signal (level- or effective value) for each channel
- Vector sum (level- or effective value)
Trigger possibilities:
- Exceeding defined levels for each axis or the vector sum
- Hardware or software trigger
Frequency analysis:
- FFT after event recording
- Definition of the frequency range

Evaluation of the signals within the time window: Truncated, Hanning, Hamming, Blackman

Power Supply

Principle: Switched power supply
Internal battery: Rechargeable, 12 VDC, 7.2 Ah Lead battery
Autonomy: 2 days
AC voltage: 64 to 264 VAC
DC voltage: 12 VDC
Power consumption (typic.): 0.9 W @ 12 VDC

Time Base

Int. standard clock: 20 ppm (10 min/year) @ - 10 °C to 50 °C

Indicators

Green: AC Power LED
Green: Run/Stop
Yellow: Event/Memory
Red: Warning/Error
LCD display:
- Indication of peak value, frequency, available memory, time, date etc.
- User selectable

Environment / Housing

Operational Temp.: - 20 °C to 70 °C
Storage Temp.: - 40 °C to 85 °C
Humidity: 0 % to 100 % (not condensing)
Type: Aluminium housing
Size: 280 x 180 x 100 mm
Weight: 6.9 kg (incl. battery)
Protection: IP 65

Self Test

Permanently active, self monitoring and user selectable, periodical system test including comprehensive sensor, memory, filter, real time clock, battery level and hardware tests.

Alarm / Warning Unit

The GCR-16 can be used as a warning unit when ramming or blasting. The threshold values allow a definition of the critical ranges and the ranges where the critical values are exceeded.

Number of alarm channels: 2
Alarm trigger: Single axis (level or effective value)
Vector sum (level or effective value)

GSM / SMS

The GCR-16 is equipped with an internal GSM modem and it can call or send SMS messages to predefined numbers. The GSM modem additionally enables dial-in access.