

SCINTREX

CG-5 AutoGrav

G R A V I T Y M E T E R

The CG-5 AutoGrav is the latest advance on the industry standard: the CG-3 AutoGrav.

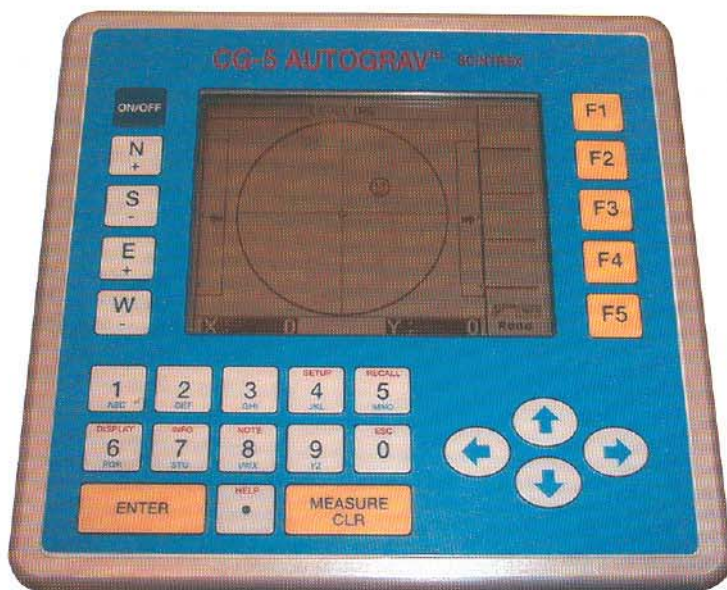
In addition to all the CG-3 features, the CG-5 offers:

- Premium Rugged Sensor
- Superlative Noise Reduction
- The lightest of all automated Gravity Meters
- Fast USB & RS-232 Data Dump
- Standard 1microGal resolution
- Smart Long-Life Batteries
- Flexible Data Formats
- Large 1/4 VGA Graphics Display
- 27 Key Alpha-Numeric Keypad
- User-accessible automated instrument alignment
- On-line terrain corrections
- Instrument self-diagnostic upon power-up

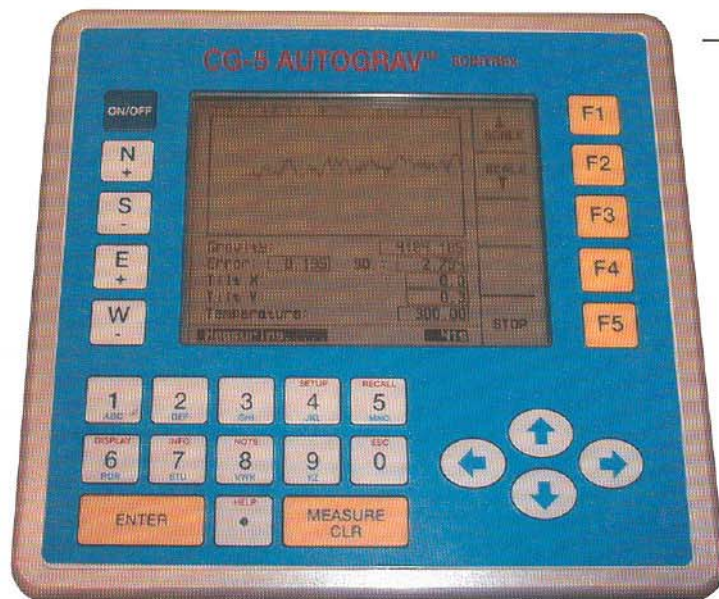
APPLICATIONS

- Mineral Exploration
- Geological Mapping
- Volcanology
- Oil & Gas Exploration
- Civil Engineering
- Regional Gravity Studies
- SeaGrav, Marine Gravimeter
- HeliGrav, Helicopter-Borne Gravity Meter





Leveling Screen



Measurement Screen

The CG-5 AutoGrav has a standard resolution of 1 microGal with a standard deviation that is < 5 microGals.

BENEFITS

The CG-5's many features make it the best and most reliable gravity meter on the market today.

Easy to Operate

With minimal training a user can quickly collect and record reliable gravity data, with only a few keystrokes. With the fully automated capabilities, reading errors are eliminated.

Best User Interface

Information and menus are clearly displayed on a large 1/4 VGA Graphics Display.

Accurate, Automatic Measurements

The high accuracy of the CG-5 AutoGrav is the result of:

- Automation
- Robust Design
- Low Residual drift
- Precise Calibration
- Freedom from Tares

Excellent Field Repeatability

Field repeatability tests are the best measure of a gravity meter's performance. Documented field testing of the CG-5 AutoGrav meters show a standard deviation between individual readings and station values of less than 0.005 mGal.

Rugged, Robust Sensor, No Clamping Required

The sensing element of the CG-5 is based on a fused quartz elastic system. The gravitational force on the proof-mass is balanced by a spring, as well as a relatively small electrostatic restoring force. The inherent strength and excellent elastic properties of fused quartz, together with the limit stops around the proof-mass, permit the instrument to be operated without clamping. Further protection is provided by a durable shock mount system.

Freedom from Tares

Due to the low mass and excellent elastic properties of fused quartz, tares are virtually unknown. Even after transport over rough roads and severe temperature shocks, the residual drift is extremely low. The CG-5 can withstand a shock greater than 20G and the tare will be no more than 5 microGals.

Fully Portable

The CG-5 incorporates the gravity sensor, the control keypad and the batteries into one lightweight weather resistant case. No cables to trip over, no notebooks, just an easy to use, self contained gravity meter.

Automatic Compensation and Correction

By using electronic tilt sensors, the CG-5 is constantly updating information from the internal tilt sensors. The CG-5 can automatically compensate measurements for the errors in gravity sensor tilt. This operator selectable feature ensures that when measurements are taken on unstable ground, errors due to instrument movement are automatically eliminated. Based on operator entered geographical location and time zone data, the CG-5 can automatically calculate and apply a real time tidal correction to each reading.

Unaffected by Ambient Temperature Changes

The CG-5 sensing element is sealed in a temperature-stabilized double-stage vacuum chamber to protect it from variations in the ambient temperature. The signal from a temperature sensor in close contact with the elastic system is used to make a software correction for small residual temperature changes. The temperature coefficient is typically less than 0.2 microGal/°C.

Unaffected by Pressure Changes

The CG-5 sensing element is sealed in a vacuum chamber to protect it from changes in atmospheric pressure. The atmospheric pressure coefficient is typically less than 0.15 microGal/kPa.

Unaffected by Magnetic Fields

Being based on a quartz sensor, the CG-5 is insensitive to even the strongest magnetic variations. The magnetic field coefficient is less typically than 0.15 microGal/Gauss.

Automatic Noise Rejection

Measurement errors due to locally induced shocks and vibrations are limited by smart signal processing.

Unsurpassed Seismic Noise Rejection

The CG-5 has a very effective seismic filter that can remove large micro-seismic noise.

Low Residual Drift

The extremely stable operating environment of the quartz elastic system allows the long-term drift to be accurately determined and a real-time software correction reduces it to less than 0.02 mGal/day.

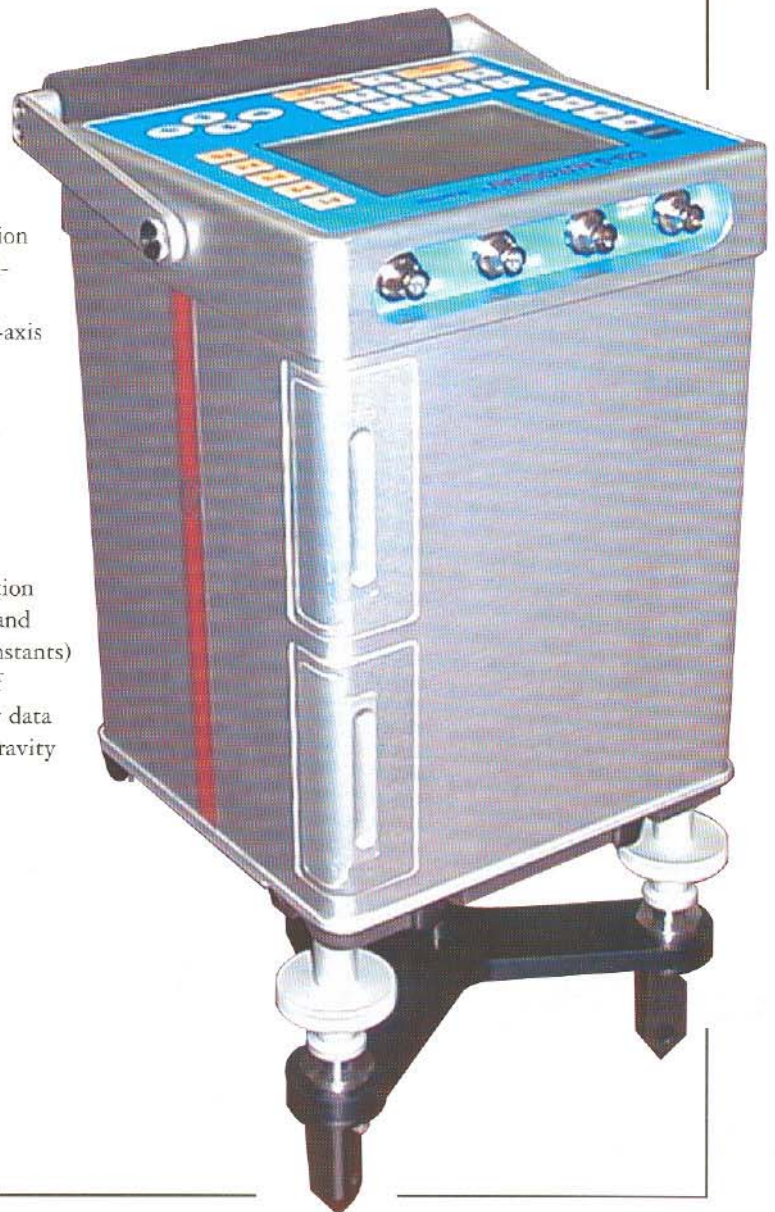
Displayed and Recorded Data

- Corrected Gravity
- Standard Deviation
- Tilt about the X-axis
- Tilt about the Y-axis
- Gravity Sensor Temperature
- Tidal Correction
- Duration of Measurement
- Time at Start of Measurement
- Header Information (including data and initialization constants)
- Graphic scope of digitized gravity data
- Storage of raw gravity samples
- Notes

Scintrex SCTUTIL Software

The SCTUTIL data transfer software is supplied with every CG-5 AutoGrav. The SCTUTIL allows the user to perform many functions, such as:

- Data transfer to a PC.
- Transferring the data in either Scintrex, text, CG-3 or xyz formats.
- Upgrading the operating system.



SPECIFICATIONS

Sensor Type

Fused Quartz using electrostatic nulling

Reading Resolution

1 microGal

Standard Deviation

< 5 microGal

Operating Range

8,000 mGal without resetting

Residual Long-Term Drift (static)

Less than 0.02 mGal/day

Range of Automatic Tilt Compensation

± 200 arc sec

Tares

Typically less than 5 microGals for shocks greater than 20 G.

Automated Corrections

Tide, Instrument Tilt, Temperature, Noisy Sample, Seismic Noise Filter.

Dimensions

30 cm (H) x 21 cm x 22 cm
12 in x 8 in x 9 in

Weight (including battery)

8 kg

Battery Capacity

2 x 6Ah (10.8 V) rechargeable Lithium Smart Batteries

Power Consumption

4.5 Watts at 25°C

Operating Temperature

-40°C to +45°C

Ambient Temperature Coefficient

0.2 microGal/°C (typical)

Pressure Coefficient

0.15 microGal/kPa (typical)

Magnetic Field Coefficient

1 microGal/Gauss (typical)

Memory

Flash Technology (data security)
1 MByte Standard
Expandable to 12 MBytes

Real Time Clock

Internal, provides day, month, year, hours, minutes, seconds. Continuous Lithium Battery backup.

Digital Data Output

RS-232 C and USB interface

Digital Data Formats

- Scintrex
- Text

- xyz

Analog Data Output

Strip Chart Recorder

Display Screen

¼ VGA 320 x 240

Keypad

27 key alpha/numeric

Standard System Complement

- CG-5 Console
- Tripod base
- 2 rechargeable batteries
- Battery Charger, 110/240 V
- External Power 110/240V
- Minor Spare Parts Kit
- RS-232 and USB Cables
- Carrying Bag
- Data dump and operating system upgrade software; windows based (SCTUTIL)
- Operating Manual
- Transit Case

OPTIONS

Remote Control

Remote operation of the CG-5 with a standard computer, over a standard, modem or RF modem connection (RS232 only). Windows based CG-5 Remote Software.

Battery Belt

Suggested for cold weather operation
External Power Cable for 12 VDC input

Tripod Extension

COMPLETE GRAVITY SOLUTIONS

SeaGrav

A modified CG-5 sensor and other accessories to suit your sea bottom requirements. See the SeaGrav brochure for more details.

HeliGrav

A modified CG-5 sensor and other accessories to suit your helicopter-borne requirements. See the HeliGrav brochure for more details.

Special Applications

Please contact Scintrex or your local representative.

Training Programs

Scintrex can provide training programs at our offices in Canada or at your location.

Application Software

Scintrex can provide software packages to support your data processing, interpretation and mapping needs.

* All specifications subject to change without notice.



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