

## Product Brochure

### Gaussmeter Model GM09-3

The GM09-3 gaussmeter features a touch-screen interface and rechargeable Li-ion battery for use with the Hirst three-axis Hall sensor probe. Built-in Application "App" modes ensure standard tests and measurements can be carried out with ease and minimal effort. Data-logging features allow the retrieval of data using a simple USB interface, no additional software is needed as the GM09 appears as a USB mass storage device.



GM09-3, a three-axis gaussmeter with touch screen display

### Key features

- A hand-held touch-screen general purpose gaussmeter (for determining magnetic field strength) with a range of built in application modes to make routine testing more user-friendly.
- GM09-3 appears as a USB mass storage device when connected to a computer or device and no software is needed to access the stored (time stamped data) in standard .CSV file formats.
- Display of magnetic field in cartesian coordinates (Bx, By, Bz and **B**) or polar coordinates (**B**,  $\theta$ ,  $\Phi$ )
- Application modes include :
  - Magnet testing - pass/ fail within user defined bands with polarity.
  - Magnetic Field testing – for standard and stringent safety levels or user defined pass / fail criteria.
  - Residual magnetism testing – for standard levels or user defined pass / fail criteria.
  - Food Magnet Extractor testing with standard settings (8, 10, 12 kG) plus user defined pass / fail criteria.
  - Occupational safety mode testing based on 1998 ICNIRP guidelines with DC testing using standard probes and AC testing for AC fields 3Hz up to 350Hz.
- Rechargeable Lithium-ion battery with USB-C compatible charging (wall-plug or computer charging)
- Easy to operate 3.5" multi-colour touch screen 320x480 px with backlight.
- Intuitive easy to use menus with on-screen help and a dedicated knowledge base support website.

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## Applications

Some example applications include:

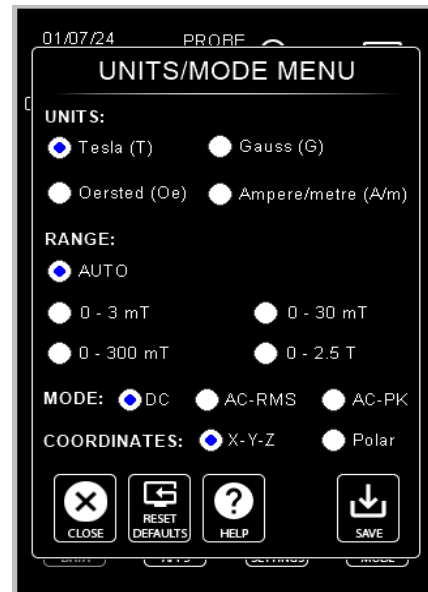
- Magnet polarity measurements, magnet strength testing.
- Testing Magnet calibrations.
- Production testing: computer disk drive actuators testing, loudspeaker air gaps, electric motor air gaps.
- Transformer Stray Field measurements.
- Magnetic field strength testing for food industry separators.
- Goods inward and Quality Assurance Inspection.

## Display

The GM09-3 features a clear 3.5" multi-colour touch screen with intuitive menus and on-screen help.



General measurement screen



Measurement units, range, and mode



Probe information and calibration status

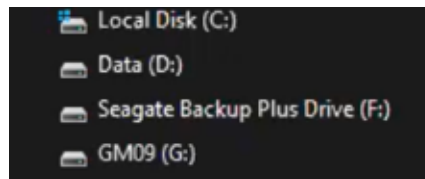


Application selection with settings and help

## Communications

The GM09 features a USB mass-storage interface to allow the downloading of measurements data to computers via the USB-C connector and cable provided with the GM09. Simply connect the GM09 to any computer, phone or device that can

read a standard USB memory flash drive. The GM09 appears as a mass storage device on your computer with all stored measurement files accessible.



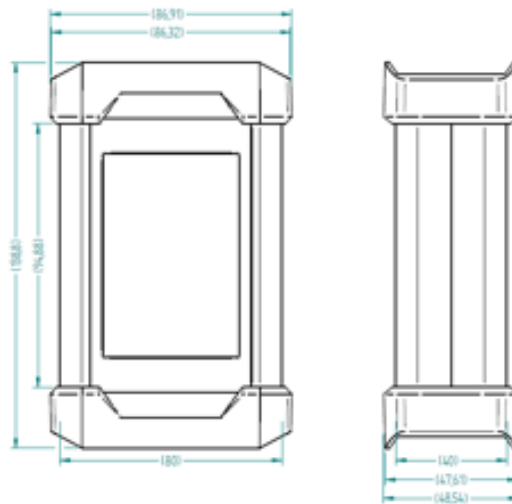
The GM09 also includes a real-time clock and time stamped measurements can be stored as required. The stored data can be download via the USB mass storage interface. Data is stored in a .CSV format file giving import capabilities into most software packages.

GM-0001

#GM09-3 3-AXIS GAUSSMETER Data-log																					
#Creation date: 2024-07-08 / 16:25:43																					
#Gaussmeter SN: GM09-3-P0001																					
#Probe Type: Handheld 3-Axis / Probe SN: 3DHS-P0001 / Probe Null: 0.00000 mT (0.00000 G)																					
#Gaussmeter Calibration: 1/7/24 - 15.3 / Probe Calibration: 2/7/24																					
#GENERAL PURPOSE																					
#	#Timestamp (s)	Date	Time	Mode	T (C)	Range	Bx (mT)	Bx (mT)	By (mT)	Bz (mT)	B (G/Oe)	Bx (G/Oe)	By (G/Oe)	Bz (G/Oe)	Bx (A/m)	Bx (A/m)	By (A/m)	Bz (A/m)	Psi (deg)	Theta (deg)	Polarity (N/S)
1720459843	1720459843	2024-07-08	16:25:43	DC	21.8	Auto	0.134	0.100	0.027	0.001	1.039	1.002	0.275	0.011	0.083	0.080	0.022	0.001	15.34	89.38	N
1720459844	1720459844	2024-07-08	16:25:44	DC	21.7	Auto	0.124	0.121	0.028	0.001	1.240	1.207	0.282	0.010	0.098	0.096	0.022	0.001	13.15	89.55	N
1720459845	1720459845	2024-07-08	16:25:45	DC	21.8	Auto	0.118	0.115	0.029	0.001	1.181	1.146	0.288	0.011	0.094	0.091	0.023	0.001	14.11	89.49	N
1720459846	1720459846	2024-07-08	16:25:46	DC	21.7	Auto	0.115	0.111	0.029	0.001	1.145	1.108	0.289	0.007	0.091	0.088	0.023	0.001	14.60	89.64	N

The GM09 retains its last setting when powered off - so once set up the unit can be powered on and is ready to go.

## Dimensions



## Technical Specifications

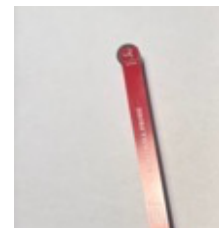
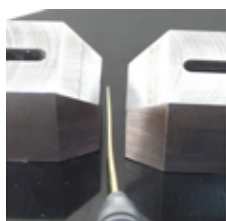
Maximum field sensed	±2.5T in x, y and z axes
Number of sensors	Single three-axis Hall sensor element
Sensing Element dimensions	0.1mm x 0.1mm x 0.1 mm
Probe cable length	1m
Typical Repeatability	Better than 0.5%
Accuracy	Better than ±1% calibrated to standards traceable to the NPL National Physical Laboratory (UK) up to 1 T, at field greater than 1.3T better than ±2%
Measurement ranges	AUTO, ±3 mT, ±30mT, ±300mT, Max (±2.5T)
Units	Tesla, Gauss, Oersted (Oe), A/m (1mT = 10 Gauss (Oe) = 0.7967 kA/m)

Max Display Resolution	1 microTesla, 0.01 Gauss (Oe)
Frequency range	Static field (DC) and AC measurements (3Hz to 350Hz)
Measurement modes	DC (with Min and Max), AC-Peak (with AC-Peak-Max), AC-RMS (with AC-RMS-Max)
Display Rate	1 reading per second
Display	3.5" multi-colour touch screen 320x480 px plus backlight
Temperature Coefficient	Compensated, displays probe temperature
Optimum Instrument Operating Temperature	5°C to 40°C
Optimum Instrument Storage Temperature	0 °C to 40°C
Recommended probe tip operating range	0°C to 60°C
Colours and materials	Anodised Aluminium with plastic end caps
Dimensions / Weight	139x88x49mm / 390g
Time	Real time clock with time and date - Battery back-up >3 years
Power	Li-ion battery 3500mAh capacity, USB-C chargeable (computer or mains charger) battery life >4-hour continuous measurement time with sleep mode and auto power-off.
Connectivity	USB-C compatible port for charging and data retrieval via mass storage device interface (like a USB flash memory stick with data saved in time-stamped .CSV format)

## Standard GM09-3 kit

The GM09-3 kit contains:-

- GM09-3 (3 Axis) touch screen gaussmeter.
- Three-axis probe 3DHS-1 with 1m cable.
- GM09-3 Calibration certificate.
- Zero flux chamber.
- A USB-C charging / computer connection cable (no charger is included).
- Carry case.



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## Three-axis probe



A calibration required is every year to maintain the highest levels of performance.

## Warranty and Calibration

Supplied calibrated with 1 year warranty. A calibration required is every year to maintain the highest levels of performance The GM09-3 is calibrated to standards traceable to the National Physical Laboratories (London UK).



Hirst Magnetic Instruments has been providing world class solutions for 60 years in magnetics and magnetic measurement. Hirst manufacture precision hand-held gaussmeters, large industrial magnetiser machines, as well as production line equipment for characterising high performance magnetic materials.

Hirst Magnetic Instruments Ltd reserves the right to make changes to any specifications or performance implied in this product brochure without notice.

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