

## G93 Handheld Wide-range 3-Axis Gaussmeter



### Description:

With many years of magnetic field testing experience, G93 Handheld 3-Axis Gaussmeter, introduced by COLIY, is designed for scientific research institutions, universities, laboratories, industry, manufacturing and other users. G93 Gaussmeter boasts with an industrial class 3.2 inches touch panel display that enables customers' instantaneous and simultaneous measurement results (Max/ Min/ Peak/ Hold/ Alarm/ Polarity, XYZ axis and vector of Magnetic Flux Density, and Trend Graph etc.).

There is a unique feature for 3-axis probe of G93: With the MEMS manufacturing technology, 3-axis probe provides very high spatial resolution (magnetic field sensitive volume 0.1 x 0.1 x 0.1mm<sup>3</sup>), orthogonality error is less than 0.1°, and the thickness of 3-axis probe is only 2mm. Gaussmeter G93 could fulfill many kinds of applications of institutes, universities and high technology enterprises.

Gaussmeter G93 could be equipped with different kinds of 3-Axis Probes: Standard Probe, Wide-range Probe and Temperature sensor-contained Probe. Its measurement range spans 10<sup>9</sup> from 10nT (0.1mG) to 10T (100kG) with a basic accuracy of 1% or 0.5%.

Gaussmeter G93 with standard probe allows measurements up to 40kG(4T), and the frequency response of DC~ 10kHz; Gaussmeter G93 with wide-range probe, suitable for superconducting magnet, allows measurements up to 100kG(10T), and the frequency response of DC~ 10kHz; Gaussmeter G93 with low-field probe allows measurements up to 6G(600μT), and the frequency response of DC~ 80Hz. Temperature sensor-contained probes(probes with built-in temperature

sensor) have the function of temperature compensation; temperature sensor-contained probes are strongly recommended for better precision and stability when the temperature changes.

Gaussmeter G93 has passed the CE certification and EMC (Electromagnetic Compatibility) test.

## Features

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| <ul style="list-style-type: none"><li>● Ergonomically designed</li><li>● GUI Operation System</li><li>● 3.2 inches color touch LCD</li><li>● Full 5 display digits</li><li>● Max/Min/Hold Function</li><li>● Smart record and review</li><li>● Display trend graph &amp; Alarm</li><li>● Display XYZ axis and vector</li><li>● S or N Polar indication</li></ul> | <ul style="list-style-type: none"><li>● Range from 10nT (0.1mG) to 10T (100kG)</li><li>● DC Basic Accuracy: 1% or 0.5%</li><li>● Frequency response: DC to 10kHz (-3dB)</li><li>● Orthogonality error &lt;math&gt;&lt; 0.1^\circ&lt;/math&gt;</li><li>● Magnetic field sensitive volume 0.1 x 0.1 x 0.1mm<sup>3</sup></li><li>● Typical temperature coefficient <math>\pm 500\text{ppm}/^\circ\text{C}</math></li><li>● Wide-range Probe (10T) available</li><li>● Thickness of 3-axis probe: only 2mm</li></ul> |
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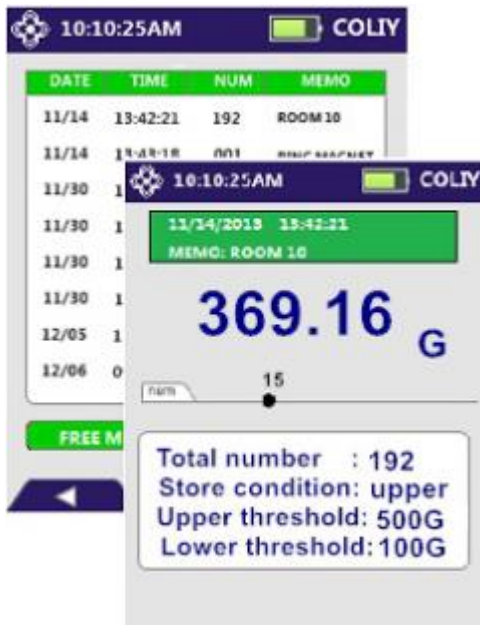
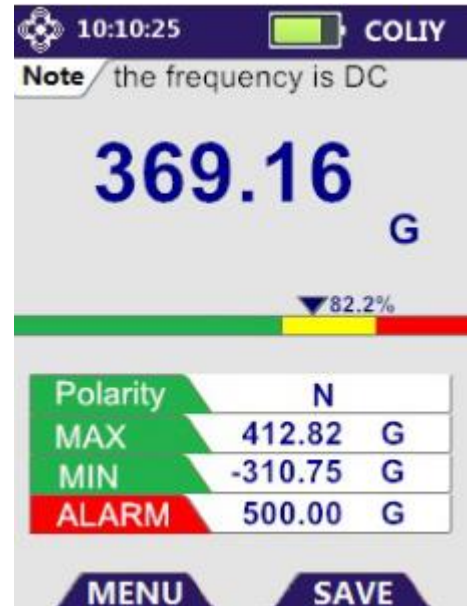
## GUI Operation System

With the handheld instrument operating system (GUI Operation System) developed by COLIY, it's very efficient and convenient for operators to choose menu by touching, to operate gaussmeter.

## Display Style

Color LCD shows magnificent data: time, value, polarity, Max, Min, note, Alarm, XYZ axis and vector of Magnetic Flux Density, trend graph.

The right is G93's standard display mode.



## Smart Record and Review

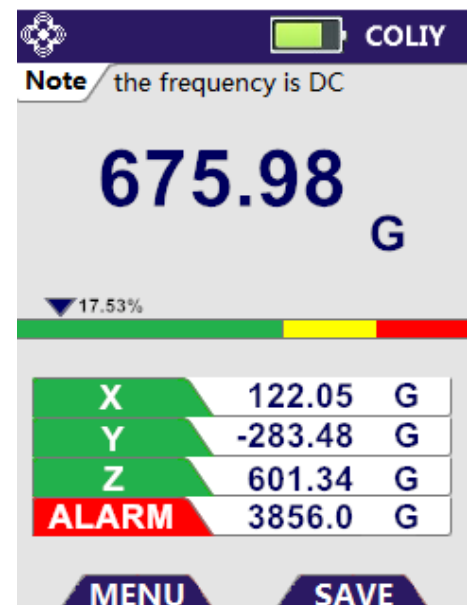
Detailed record list, operators can use MEMO to memorize any specification of every measurement.

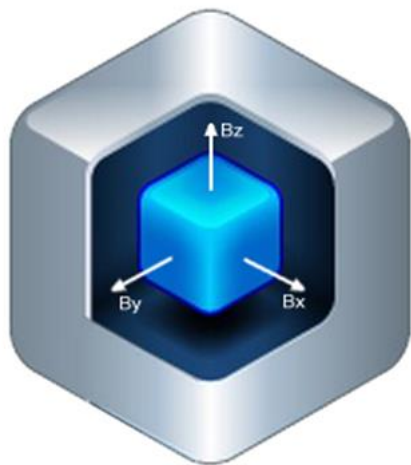
Click any record list, operators can review all the information recorded as screen shots and add note to every item.

## XYZ Display Mode

G93 has many display modes to be chosen: Standard Mode, XYZ Mode, Graph Mode, Polarity Mode and Simple Mode.

And XYZ Mode shows vector value, XYZ axis values and alarm value.



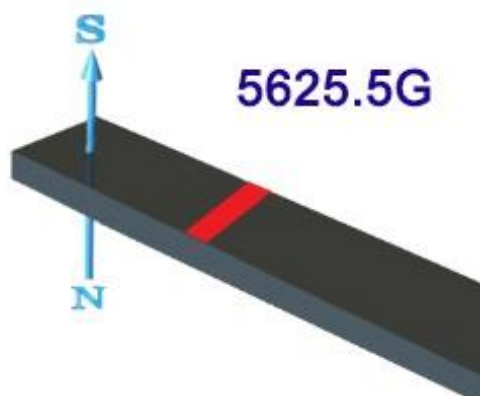
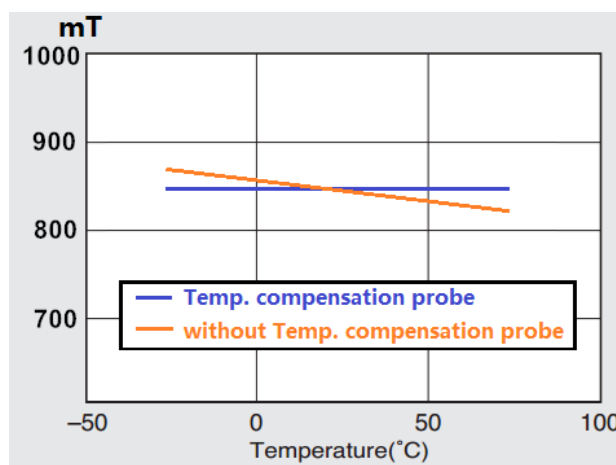


## Unique 3-Axis Sensor

The Three-Axis sensor adopts particular MEMS technology with high spatial resolution, three mutually orthogonal magnetic field sensitive volume is  $0.1 \times 0.1 \times 0.1\text{mm}^3$  and orthogonality error is less than  $0.1^\circ$ .

## Temperature Compensation

There is not temperature sensor contained in the ordinary probes of Gaussmeter G93, and the typical temperature coefficient is  $\pm 500\text{ppm}/^\circ\text{C}$ . However, temperature sensor-contained probes have the function of temperature compensation, so temperature sensor-contained probes are strongly recommended for the best precision and stability when the temperature changes.

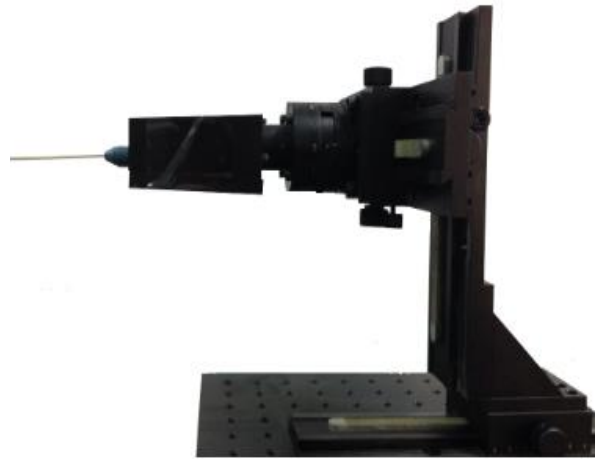


## Magnetic Pole Direction

G93 could show the clear polar indication by a colorful and dynamic cartoon picture. Picture in the left is adopted from Polar Mode displayed in the LCD screen during operation.

## 3D Movement Platform

3-Direction Precision Movement Platform, is made of non-magnetic material. Users fixed the probe on the bracket front-end, and then manually rotate the knob so that the probe moves stably along the X, Y, Z-axis to a certain position and lock fixed. Maximum stroke of XYZ axis are 180mm, 180mm and 280mm, and positioning accuracy is 0.1mm.



## ZERO CHAMBER

Provides up to 80 dB attenuation in fields up to 500 G, it could also be used to the zero calibration of standard probes.

Internal dimension of the Chamber:  
diameter 6.8mm x 44.5mm

## SMART PC Software

SMART computer software has rich features: Automatically record and display trend graph; Display XYZ axis and vector of magnetic flux density, maximum and minimum in real time; Export saved data from the gaussmeter host; Record and save measurement data in real time.



## Metal Protector of Probe

All COLIY gaussmeters' probes have metal protectors (protective sleeves), and metal protector could be tightened with probe grip, to protect probes from impact, compression and other damage. It is strongly recommended when finished the magnetic field measurements, users should tighten the protector.



## G93 Gaussmeter Specification:

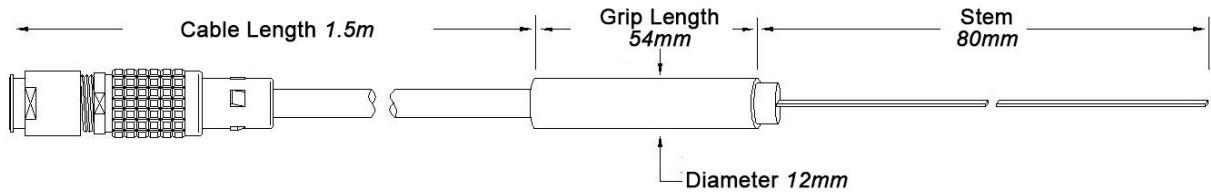
Model	G93		
Equipped with Probe	Standard Probe	Low-field Probe	Wide-range Probe
<b>Measurement Specification</b>			
Accuracy/Axis (DC)	±1% Rd ± 0.1% FS ±0.5% Rd ±0.05% FS	±1% Rd ± 0.05% FS	±1% Rd ± 0.1% FS ±0.5% Rd ±0.05% FS
Range	1kG, 10kG, 40kG (0.1T, 1T, 4T)	6G (600μT)	10kG, 30kG, 100kG (1T, 3T, 10T)
Best Resolution	0.01G(1μT)	0.1mG(10nT)	0.1G(10μT)
Display Digits	5		
Frequency Response	DC- 10kHz (-3dB)	DC- 80Hz	DC- 10kHz (-3dB)
Typical Temperature Coefficient	±500ppm/°C (Regular 3-axis probe) ±50ppm/°C (Probe with temperature sensor)		
<b>Front Panel</b>			
Screen	3.2 inches color resistive touch LCD, 320x240 Pixel		
Units	Gauss(G), Tesla(T), Amperes per meter (A/m)		
Display Update Rate	3 readings / second		
Display Mode	DC, AC, XYZ Display mode, MAX., MIN, Alarm, Polarity Indication, Trend Graph etc.		
<b>Probe</b>			
Probes	See " <b>Probe Specifications</b> " for details.		
Probe Cable Length	Standard 1.5m; Customizable longest length of 30 m		
<b>USB Interface</b>			
Function	1, Communication Interface: to connect PC with gaussmeter host for monitoring the measurement; 2, Charging interface: to connect PC or mobile power with gaussmeter host for charging		
Software/ Driver	SMART PC Software without any driver		
<b>Host Specifications</b>			
Operating Temperature	+15°C to +35°C (Rated Accuracy) -10°C to +60°C (Reduced accuracy)		
Storage Temperature	- 20°C to +75°C		
Ambient Magnetic Field	<10kG(1T)		
Battery	Rechargeable 4500mAH Li-ion		
Operating Battery Life	>24 hours(Standard Testing Environment)		

Dimension	238 mm W x 95 mm H x 42 mm D
Weight	350g
Certification	CE Certification, EMC Certification

Note: Rd = Reading, FS = Full Scale



## Probes Specification



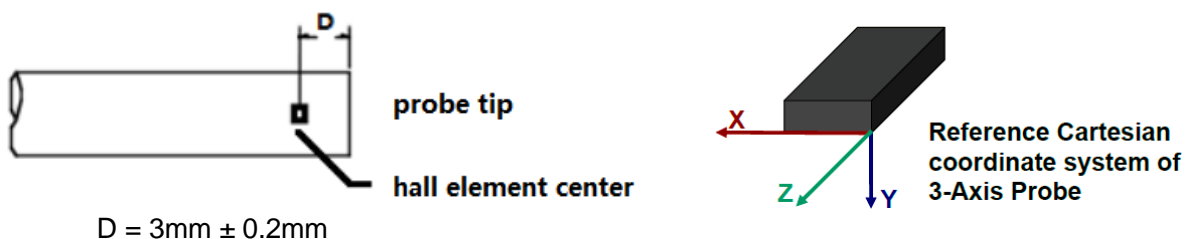
### Model G93 Gaussmeter Probes

Probe Model	Range	Frequency Response	Stem Dimension (mm)	Operating Temp. (°C)	DC Accuracy (25°C)	Stem Surface Material
<b>Standard</b> Y08M150G93 Y08M150G93T	40kG (4T)	DC -10kHz	80*6*3	-20 - +75	±1%	Metal (copper)
Y08M150G93plus Y08M150G93Tplus	40kG (4T)	DC -10kHz	80*6*3	-20 - +75	±0.5%	Metal (copper)
Y08P150G93 Y08P150G93T	30kG (3T)	DC -1kHz	80*5*2	-20 - +75	±1%	Plastic
<b>Low-field</b> Y06L150G93	6G (600μT)	DC -80Hz	55*5.5*2.5	-20 - +60	±1%	Plastic
<b>Wide-range</b> Y08W150G93 Y08W150G93T	100kG (10T)	DC -10kHz	80*6*3	-20 - +75	±1%	Metal (copper)
Y08W150G93plus Y08W150G93Tplus	100kG (10T)	DC -10kHz	80*6*3	-20 - +75	±0.5%	Metal (copper)

Note:

- 1, Option "T": Temperature sensor contained Probe, has the function of temperature compensation, and the typical temperature coefficient is  $\pm 50\text{ppm}/^\circ\text{C}$ ;
- 2, Each probe's fully calibrated measurement range:  $\leq \pm 20\text{kG}$  ( $\pm 2\text{T}$ );
- 3, Probe range, stem dimension, surface material, and probe cable length can be customized.

### The position of sensor center & each axis sensing direction



## Optional Accessories

Model	Descriptions
ZC10	Zero chamber, provides up to 80 dB attenuation in fields up to 500 G and can be used with standard probes. Internal dimension of the Chamber: diameter 6.8mm x 44.5mm
SAMRT PC Software	PC SOFTWARE for Gaussmeter
GHOLD100	3-Direction Precision Movement Platform, is made of non-magnetic material. Users fixed the probe on the bracket front-end, and then manually rotate the knob so that the probe moves stably along the X, Y, Z-axis to a certain position and lock fixed. Maximum stroke of XYZ axis are 180mm, 180mm and 280mm; positioning accuracy of 0.1mm; center load: 20kg; weight: 6.2kg

### The most popular Package

ORDER G9301: Gaussmeter G93 + Probe Y08M150G93

ORDER G9302: Gaussmeter G93 + Probe Y08M150G93 + Zero Chamber ZC10

## Description of Probe Type Selection

Y	08	M	150	G93	T
PROBE TYPE	STEM LENGTH	PROBE STYLE	CABLE LENGTH	GAUSSMETER MODEL	TEMPERATURE COMPENSATED
A - AXIAL	06 - 6 cm	C- CRYOGENIC	150 - 150cm	G91 - G91 probe	T - YES
T - TRANSVERSE	08 - 8 cm	F - FLEXIBLE	...	G92 - G92 probe	BLANK - NO
X - 2 AXIS	10 - 10 cm	H - HIGH TEMP.		G93 - G93 probe	
Y - 3 AXIS	25 - 25 cm	L - LOW FIELD			
	...	M - METAL			
		P - Plastic			
		U - ULTRATHIN			
		W - WIDE FIELD			

