

GF603 Three-Axis Fluxgate Magnetometer

- Resolution up to 0.1nT
- DC/AC Measurement Mode Switch
- Real-time Spectrum Analysis



Description:

Three-axis Fluxgate Magnetometer GF603, made by COLIY, has the excellent ergonomic design with the latest electronic technology, and it's one of best choices to measure low-intensity magnetic field. This handheld fluxgate magnetometer can be used in geomagnetism detection, wrapped detection, traffic monitoring, measuring residual magnetism, low-intensity magnetic field measurement, etc.

GF603 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, Declination/Inclination (D/I), Trend Graph and Real-time Spectrum Analysis (with model GF603S) etc.].

Magnetometer GF603 can be used to detect DC magnetic field in DC measurement mode and AC magnetic field in AC measurement mode respectively: GF603 allows DC measurements with a basic accuracy of 0.25%, resolution of 0.1nT and AC measurement with a basic accuracy of 1% and frequency response range of DC~ 1kHz. Magnetometer GF603 could be equipped with 3-Axis Probes of different range: $\pm 100\mu\text{T}$ and $\pm 1000\mu\text{T}$. Meanwhile, Magnetometer GF603S has the function of real-time spectrum analysis within the frequency range 15Hz- 1kHz.

In addition, Magnetometer GF603 has passed the CE certification and EMC (Electromagnetic Compatibility) test.

Features	
<ul style="list-style-type: none">● GUI Operation System● 3.2 inches color touch LCD● Full 5 display digits● Max/Min/Hold Function● Display trend graph & Alarm● Display XYZ axis and vector● Display R, D, I values● S or N Polar indication	<ul style="list-style-type: none">● Range: $\pm 100\mu\text{T}$ and $\pm 1000\mu\text{T}$● DC Basic Accuracy: 0.25%● AC Basic Accuracy: 1%● Finest resolution: 0.1nT● DC/AC measurement mode switch● Frequency response: DC- 1kHz● Smart record and review● [GF603S] Real-time spectrum analysis

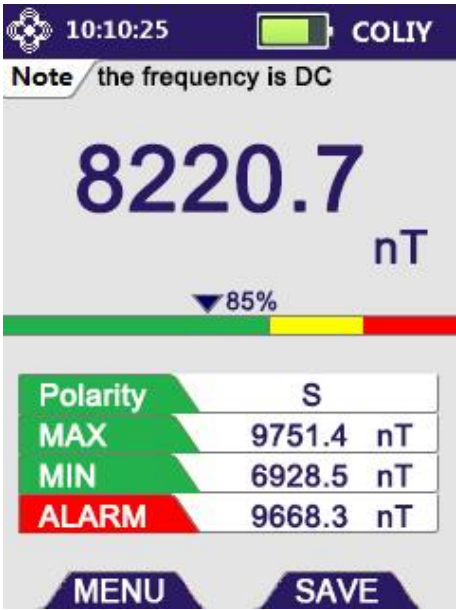


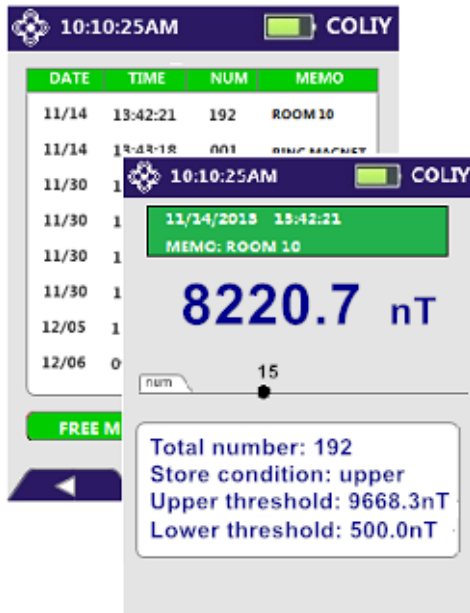
GUI Operation System

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 magnetometer.

Display Style

Color LCD shows magnificent data: time, value, polarity, Max, Min, note, Alarm, XYZ axis and vector of Magnetic Flux Density, Declination/Inclination (D/I), and trend graph.





Smart Record and Review

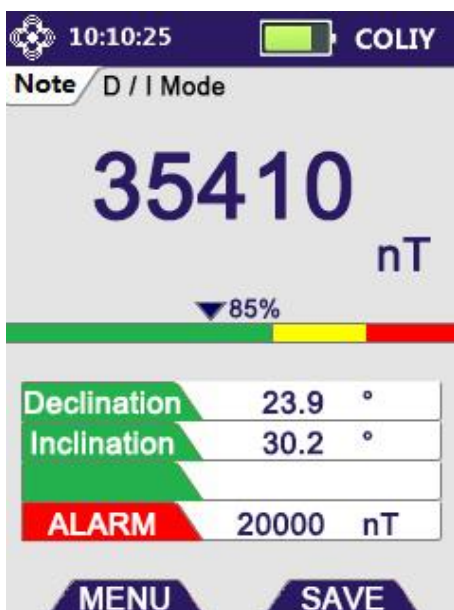
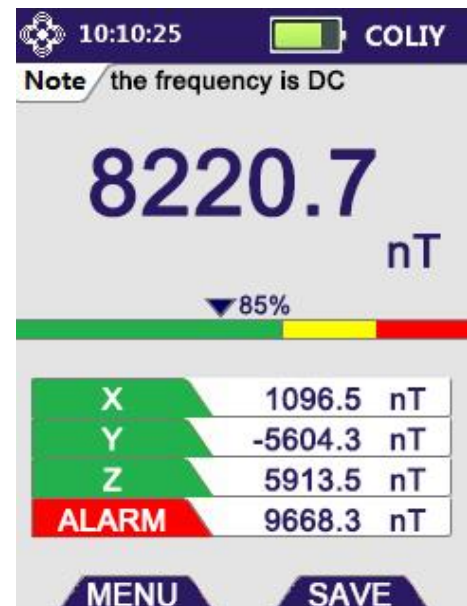
Detailed record list, operators can use MEMO to memorize any specification of every measurement.

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

XYZ Display Mode

GF603 has many display modes to be chosen: Standard Mode, XYZ Mode, D/I Mode, Graph Mode, Polarity Mode and Spectrum Mode.

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



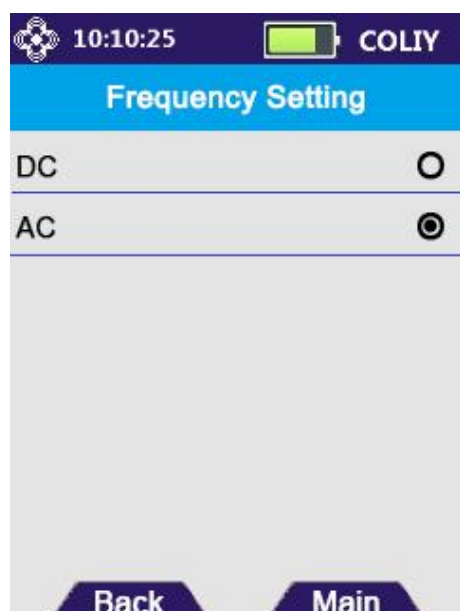
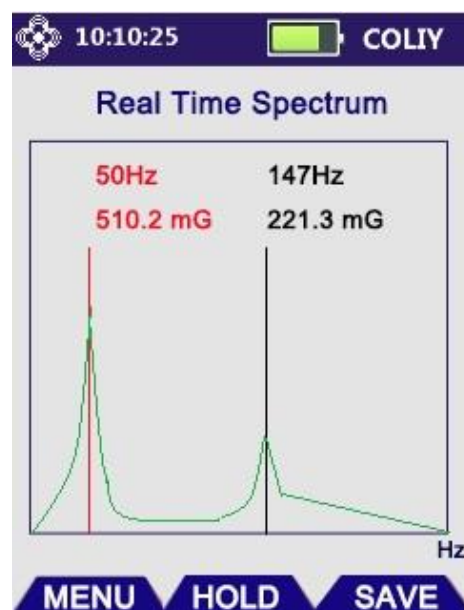
D/I Display Mode

Declination is the angle that between the X axis and the projection of the field vector onto the XY plane. Inclination is the angle that between the field vector and the XY plane.

And D/I Mode shows Resultant (vector value, R), Declination (D) and Inclination (I) values.

Real-time Spectrum Analysis

GF603S has the function of real-time spectrum analysis within the frequency range 15Hz- 1kHz.



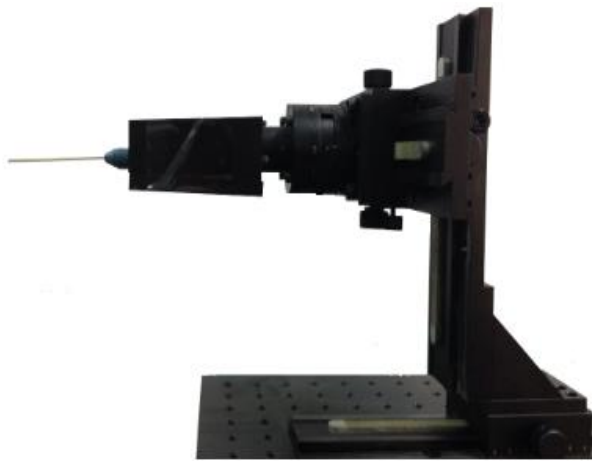
AC Measurement Mode

GF603 can be used to detect DC magnetic field in DC measurement mode and AC magnetic field in AC measurement mode respectively, and the frequency response range is DC~1kHz.

Magnetic Pole Direction

GF603 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.



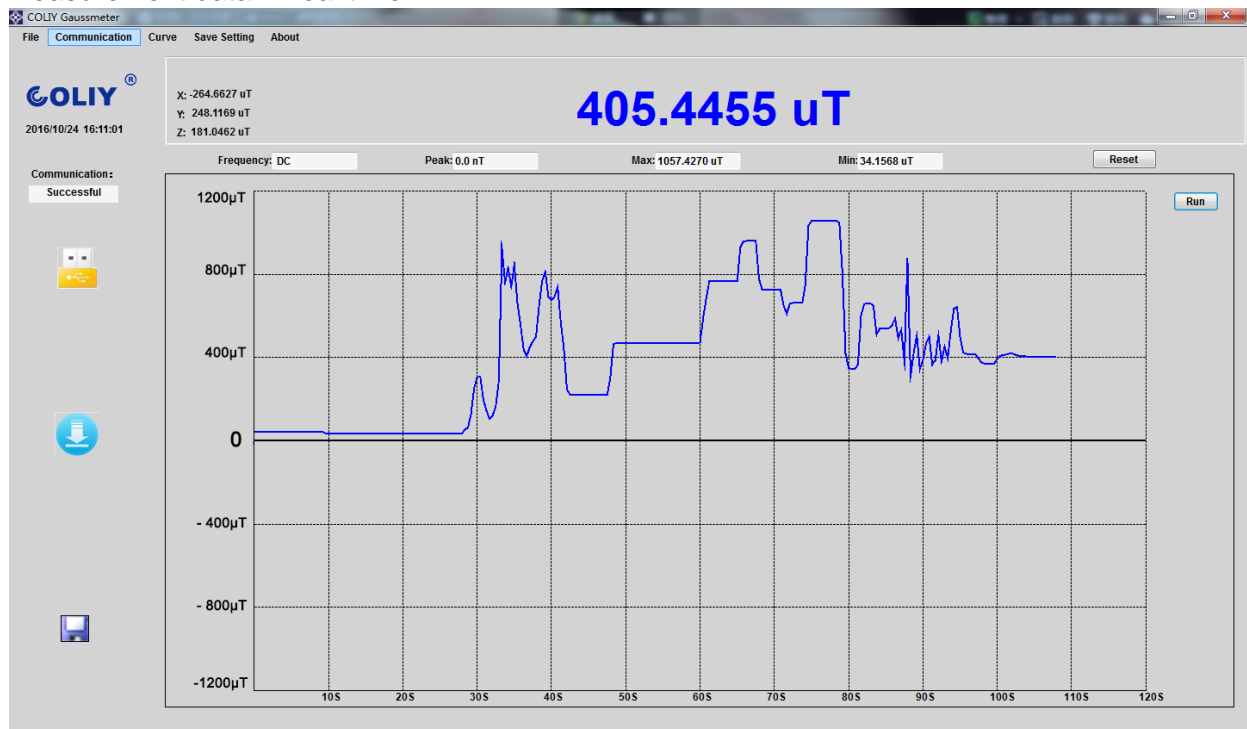


3D Movement Platform

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 each axis is 150mm, and positioning accuracy is 0.1mm.

SMART PC Software

SMART computer software has up to 7 digital readouts, and it 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.



GF603 Magnetometer Specification:

Model		GF603 / GF603S				
(DC) Measurement Specification						
Tested item	X, Y, Z		Vector R		*D	*I
Range (FS)	±100μT	±1000μT	173μT	1732μT	±180°	±90°
Accuracy	±0.25% Reading ±0.1% FS	±0.25% Reading ±0.1% FS	±0.5% Reading ±0.1% FS	±0.5% Reading ±0.1% FS	1°	1°
Finest Display Resolution	0.1nT		0.1nT		0.1°	0.1°
Measurement Resolution	<1nT	<10nT	<1nT	<10nT	0.1°	0.1°
[Probes <i>without</i> Temp. Compensation] Typical Temperature Coefficient ppm/°C	±100	±200	±100	±200	N/A	
[Probes <i>with</i> Temp. Compensation] Typical Temperature Coefficient ppm/°C	±25	±50	±25	±50	N/A	
Display Digits	5 digits (More display digits will be shown in supporting PC software)				4 digits	
Real-time Spectrum	Only GF603S				N/A	
Hysteresis	<2nT for exposure to up to 2 x full scale				N/A	
(AC) Measurement Specification						
*Range	X, Y, Z	±70μT		±700μT		
	R	121.2μT		1212.4μT		
Accuracy	X, Y, Z	±1% Reading ± 0.1% FS [f _T ≤ 300Hz] ±2% Reading ± 0.1% FS [300Hz < f _T ≤ 500Hz] ±10% Reading ± 0.1% FS [500Hz < f _T ≤ 1kHz]				
	R	±2% Reading ± 0.1% FS [f _T ≤ 300Hz] ±4% Reading ± 0.1% FS [300Hz < f _T ≤ 500Hz] ±18% Reading ± 0.1% FS [500Hz < f _T ≤ 1kHz]				
Frequency Response [f _T]		DC – 1kHz				
Front Panel						
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 Axis, Vector R, Declination, Inclination, MAX, MIN, Trend Graph, Alarm, Polarity Indication, Real-time Spectrum [GF603S] etc.				

Probe	
Start-up Time	150 ms
Warm-up Time	15 min
Probes	See " Probe Specifications " for details.
Probe Cable Length	Standard 1.5m; Customizable longest length of 30 m
USB Interface	
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
Host Specifications	
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	<100G (10mT)
Battery	Rechargeable 4500mAH Li-ion
Operating Battery Life	5 hours; Can be charged by AC power or portable battery
Dimension	238 mm W × 95 mm H × 42 mm D
Weight	350g
Certification	CE Certification, EMC Certification

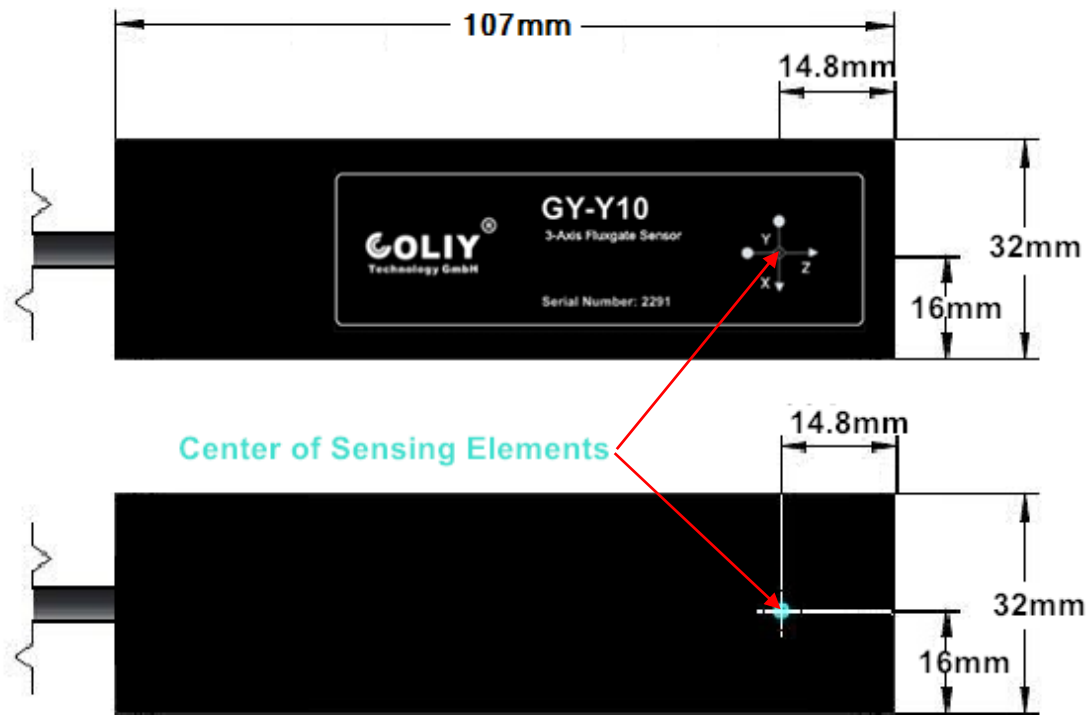
Note:

1, D- Declination, is the angle that between the X axis and the projection of the field vector onto the XY plane.

2, I- Inclination, is the angle that between the field vector and the XY plane.

3, AC Range mentioned above refers to AC magnetic field measurement range after DC magnetic field is shielded, so if DC magnetic field is not shielded, and users want to measure magnetic field in AC measurement mode, AC Range is equivalent to the value that 0.7 times of DC Range minus DC magnetic field intensity. [$\text{SQRT}(2)/2 \approx 0.7$]

Probes Specification



Model GF603 Magnetometer Probes					
Probe Model	*Range	Frequency Response	Typical Temperature Coefficient	DC Accuracy (25°C)	Stem Material
GF-Y01	±100μT	DC-1kHz	±100ppm/°C	±0.25%	POM
GF-Y01T	±100μT	DC-1kHz	±25ppm/°C	±0.25%	POM
GF-Y10	±1,000μT	DC-1kHz	±200ppm/°C	±0.25%	POM
GF-Y10T	±1,000μT	DC-1kHz	±50ppm/°C	±0.25%	POM

Note:

- 1, Three-axis fluxgate probe can be customized within ±10G; Unit Conversion: 1G=100,000nT;
- 2, Fluxgate probe's dimension: 107 x 32 x 32mm, and its operating temperature: -20°C to +60°C;
- 3, Fluxgate probe's environmental protection / sealing is IP66 by default;
- 4, Please contact Coliy for probes with higher environmental protection, like supporting the fluxgate probe in the long-term work of 50 meters underwater.

Optional Accessories

Model	Descriptions
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 each axis is 150mm, positioning accuracy of 0.1mm; center load: 10kg; weight: 3.5kg
SAMRT PC Software	PC SOFTWARE for Magnetometer
Probe Extension Cable	MAX length is 30m

The most popular configuration

Package Product No. GF60301: Magnetometer GF603 + Probe GF-Y01

Package Product No. GF60310: Magnetometer GF603 + Probe GF-Y10

Package Product No. GF603S01: Magnetometer GF603S + Probe GF-Y01

Package Product No. GF603S10: Magnetometer GF603S + Probe GF-Y10

Description of Magnetometer Host Type Selection

Magnetometer	Description
GF603	Magnetometer <i>WITHOUT</i> the function of real-time spectrum analysis
GF603S	Magnetometer <i>WITH</i> the function of real-time spectrum analysis

Description of Probe Type Selection

GF	Y	01	T
PROBE PRINCIPLE	PROBE TYPE	MEASUREMENT RANGE	TEMPERATURE COMPENSATION
GF- Fluxgate Probe	Y- Three-axis Probe T- Transverse Probe A- Axial Probe	01- Range of 1G/Axis 10- Range of 10G/Axis	BLANK- Without T- With

