

GF601 Single-Axis Fluxgate Magnetometer

- Finest Resolution 0.1nT
- DC/AC Measurement Mode Switch



Description:

Single-axis Fluxgate Magnetometer GF601, 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.

GF601 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, Magnetic Flux Density, Trend Graph, etc.].

Magnetometer GF601 can be used to detect DC magnetic field in DC measurement mode and AC magnetic field in AC measurement mode respectively: GF601 allows DC measurements with a basic accuracy of 0.5%, resolution of 0.1nT and AC measurement with a basic accuracy of 1% and frequency response range of DC~ 1kHz. Magnetometer GF601 could be equipped with Transverse Probe or Axial Probe of different range: $\pm 100\mu\text{T}$, $\pm 500\mu\text{T}$ and $\pm 1000\mu\text{T}$.

Magnetometer GF601 has passed the CE certification and EMC (Electromagnetic Compatibility) test.

Features

- Ergonomically designed
- Colorful display style
- GUI Operation System
- 3.2 inches color touch LCD
- Full 5 display digits
- Max/Min/Hold Function
- Display trend graph & Alarm
- S or N Polar indication
- Range: $\pm 100\mu\text{T}$, $\pm 500\mu\text{T}$ and $\pm 1000\mu\text{T}$
- DC Basic Accuracy: 0.5%
- AC Basic Accuracy: 1%
- Finest resolution: 0.1nT
- DC/AC measurement mode switch
- Frequency response: DC- 1kHz
- Stability: $\pm 1\text{nT}/\text{Axis}$ (8 hours, 25 °C)
- Smart record and review

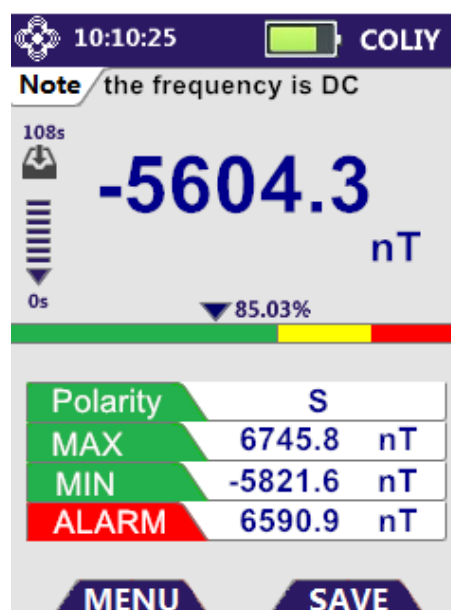


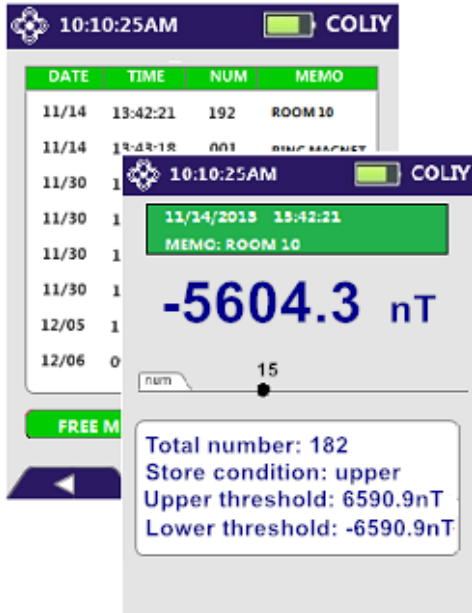
GUI Operation System

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, Magnetic Flux Density, trend graph, etc.





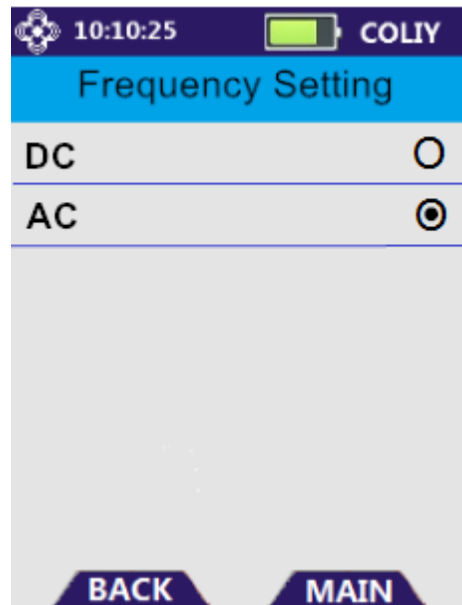
Smart Record and Review

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.

AC Measurement Mode

GF601 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.



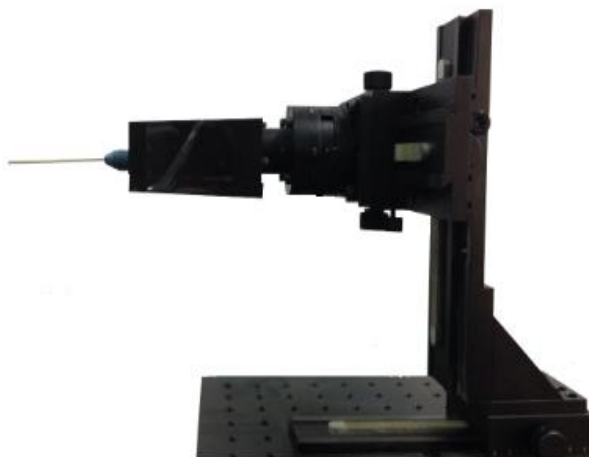
Magnetic Pole Direction

GF601 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.



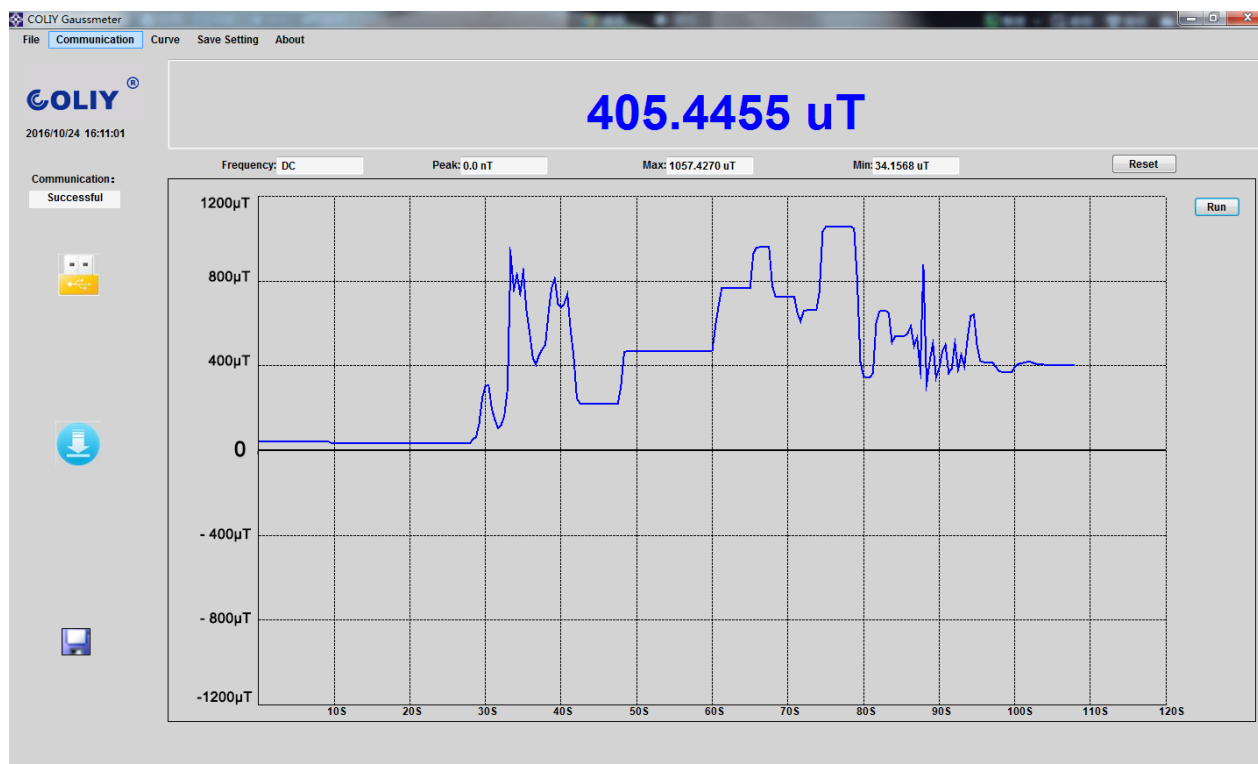
3D Movement Platform

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 components 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.



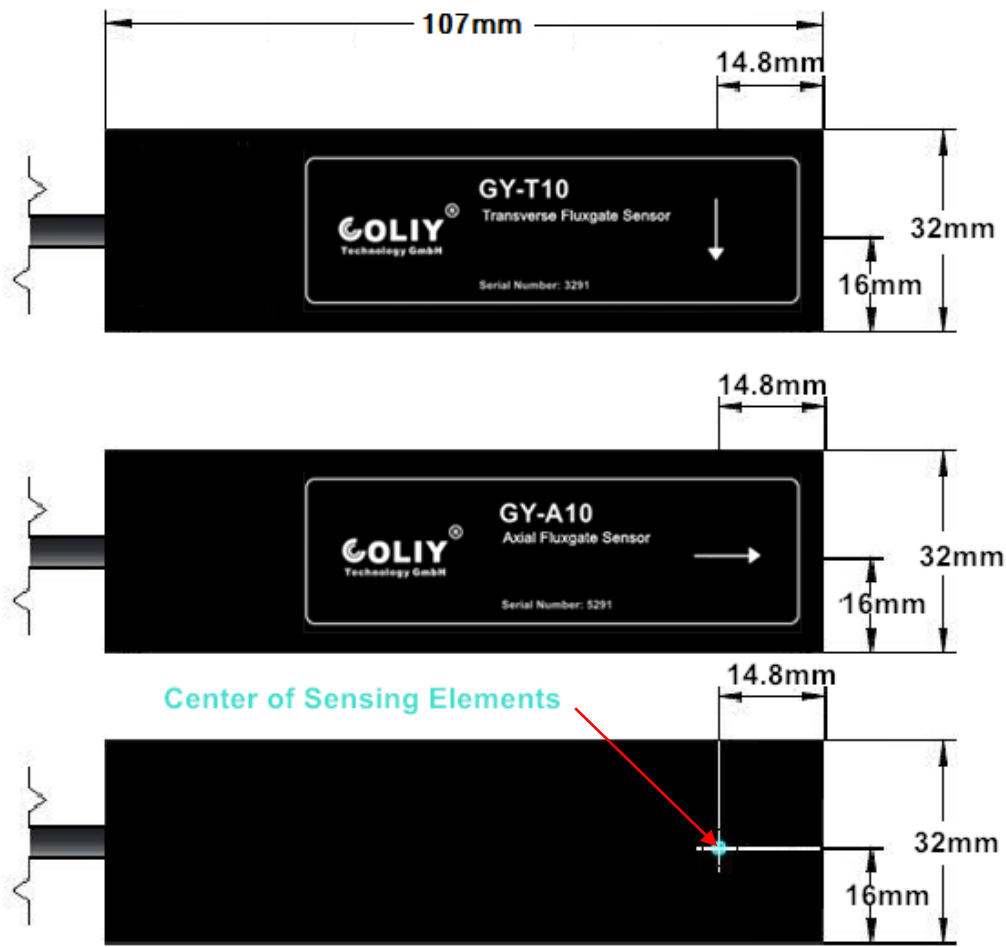
GF601 Magnetometer Specification:

Model		GF601		
Measurement Specification				
Accuracy	DC	±0.5% Reading ± 0.1% FS		
	AC	±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 ≤ 1000Hz]		
Range	DC	±1G (±100μT)	±5G (±500μT)	±10G (±1000μT)
	AC*	±0.7G (±70μT)	±3.5G (±350μT)	±7G (±700μT)
	DC	1.73G (173μT)	8.66G (866μT)	17.32G (1732μT)
	AC*	1.212G (121.2μT)	6.062G (606.2μT)	12.124G (1212.4μT)
Finest Display Resolution		1μG(0.1nT)		
Measurement Resolution		<10μG(1nT)	<50μG(5nT)	<0.1mG(10nT)
Display Digits		5 digits (More display digits will be shown in supporting PC software)		
Frequency Response [f _T]		DC - 1kHz		
Typical Temperature Coefficient		<±100ppm/°C	<±100ppm/°C	<±200ppm/°C
Hysteresis		<2nT for exposure to up to 2 x full scale		
Long-term Instability		±1nT/Axis (8 hours, 25 °C)		
MAX/ MIN Acquisition Time (DC)		1ms		
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, Vector, XYZ Components, MAX, MIN, Trend Graph, Alarm, Polarity Indication, Real-time Spectrum [Option] 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	To connect PC with magnetometer host for monitoring the measurement
Data Update Rate	MAX. 10 Sample/s
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	<10kG (1T)
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

“*”: **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 GF601 Magnetometer Probes

Probe Model	Range ¹	Frequency Response	Temperature Coefficient	Offset Error in Zero Field	DC Accuracy (25°C)	Stem material
Transverse GF-T01	±100μT	DC-1kHz	<±100ppm/°C	±25nT	±0.5% Reading ± 0.1% FS	Plastic
GF-T05	±500μT	DC-1kHz	<±100ppm/°C	±50nT	±0.5% Reading ± 0.1% FS	Plastic
GF-T10	±1,000μT	DC-1kHz	<±200ppm/°C	±100nT	±0.5% Reading ± 0.1% FS	Plastic
Axial GF-A01	±100μT	DC-1kHz	<±100ppm/°C	±25nT	±0.5% Reading ± 0.1% FS	Plastic
GF-A05	±500μT	DC-1kHz	<±100ppm/°C	±50nT	±0.5% Reading ± 0.1% FS	Plastic
GF-A10	±1,000μT	DC-1kHz	<±200ppm/°C	±100nT	±0.5% Reading ± 0.1% FS	Plastic

Note:

- 1, Single-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
DC Test Report	[Free of charge] DC accuracy test report; [Optional extra] DC accuracy, resolution, and zero drift test report
AC Test Report	[Optional extra] AC accuracy and frequency response test report
Probe Extension Cable	MAX length is 30m
SAMRT PC Software	PC SOFTWARE for Magnetometer

The most popular configuration

Package Product No. GF601T01: Magnetometer GF601 + Probe GF-T01
Package Product No. GF601T05: Magnetometer GF601 + Probe GF-T05
Package Product No. GF601T10: Magnetometer GF601 + Probe GF-T10
Package Product No. GF601A01: Magnetometer GF601S + Probe GF-A01
Package Product No. GF601A05: Magnetometer GF601S + Probe GF-A05
Package Product No. GF601A10: Magnetometer GF601S + Probe GF-A10

Description of Probe Type Selection

GF	T	01
PROBE PRINCIPLE	PROBE TYPE	MEASUREMENT RANGE
GF- Fluxgate Probe	Y- Single-axis Probe T- Transverse Probe A- Axial Probe ...	01- Range of 1G (100 μ T) 05- Range of 5G (500 μ T) 10- Range of 10G (1000 μ T)

