G91, G92 Handheld Gaussmeter

Description:

The G91 and G92 Handheld Gaussmeters, introduced by COLIY, are high-performance and Single-Axis Handheld Gaussmeters, designed for scientific research institutions, universities, laboratories, industry, manufacturing and other users. G91 and G92 Gaussmeters boast 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 Intensity, and a Trend Graph etc.).

Gaussmeter G91 allows measurements up to 20KG(2T) with the reading-based accuracy of 2%, the resolution of 0.1G(10μT), and the frequency response of DC~ 10KHz. Besides, Gaussmeter G91 could be equipped with Axial Probe, Transverse Probe and Ultra-thin Probe (thickness of 0.5mm).

Gaussmeter G92 allows measurements up to 100KG(10T) with the reading-based accuracy of 1%, the resolution of 0.1G(10μT), and the frequency response of DC~ 30KHz. The temperature coefficient of ordinary probes(probes without built-in temperature sensor) is 300ppm/℃, but temperature sensor-contained probes(probes with built-in temperature sensor) have the function of temperature compensation, so temperature sensor-contained probes are strongly recommended for better precision and stability when the temperature changes. G92 could be equipped with much more different kinds of Hall Probes: Axial Probe, Transverse Probe, High-range Probe, High Temp. Probe (up to 160°C), Ultra-thin Probe (thickness of 0.5mm) and Temperature sensor-contained Probe.

Features

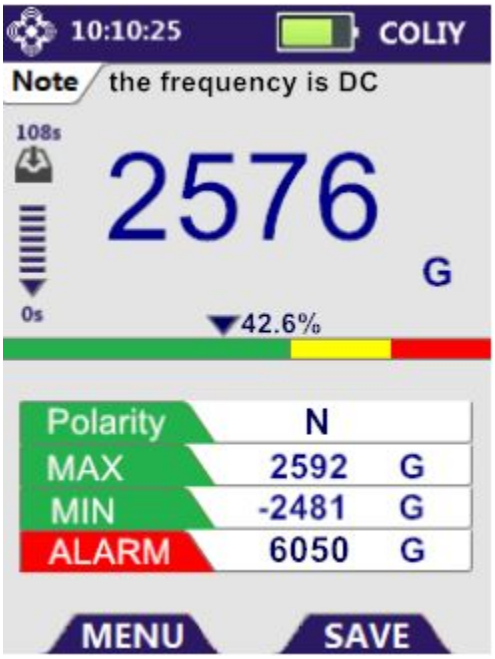
- Ergonomically designed
- Colorful display style
- GUI Operation System
- 3.2 inches color touch LCD
- Display trend graph & Alarm
- Max/Min/Hold Function
- S or N Polar indication
- Smart record and review
- Rechargeable batteries can work >24h
- G91: accuracy 2%, range of 20KG(2T)
- G91: frequency response DC- 10KHz
- G92: accuracy 1%, range of 100KG(10T)
- G92: frequency response DC- 30KHz
- G92 High Temp. Probe(up to 160°C)
- G92 Optional probes with temperature compensation function
- G91 and G92: Transverse Probe, Axial Probe, and Ultra-thin Probe

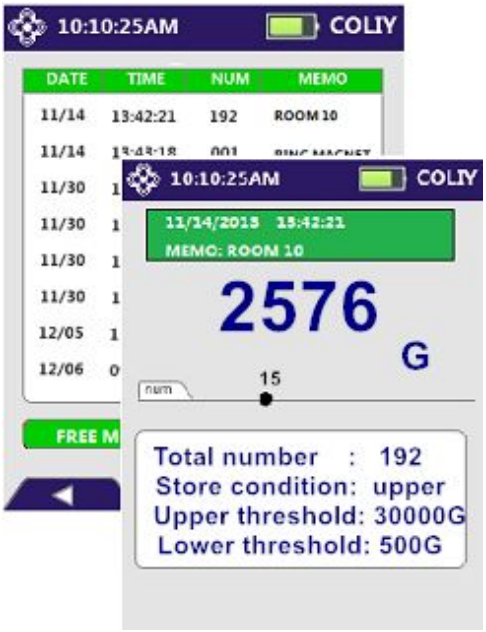
GUI Operation System

With the revolutionary operating system (GUI Operation System) developed by COLIY, operators can choose menu by touching, to operate gaussmeter and experience the extreme outstanding performance of COLIY GUI Operation System.

Display Style

Color LCD shows magnificent data: time, value, polarity, Max, Min, note, Alarm, trend graph.





Smart Record And Review

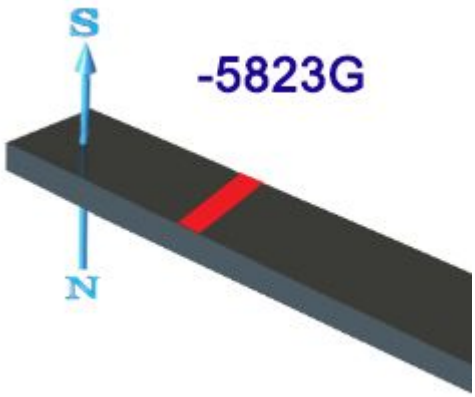
Detailed record list, operators can use MEMO to memorize any specification of every measurement.

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

There is a unique feature of COLIY GUI Operation System.

Magnetic Pole Direction

G91 and G92 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.

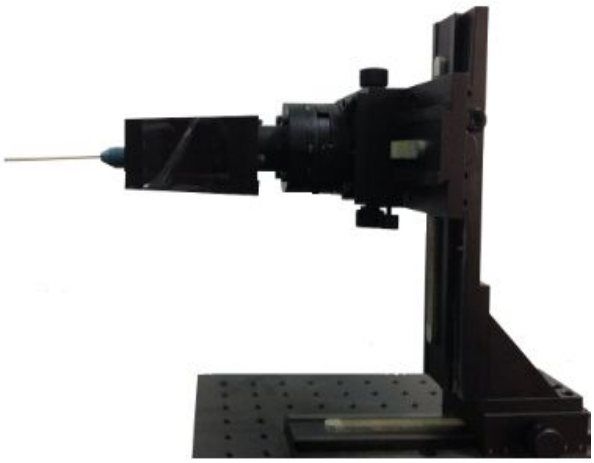


ZERO CHAMBER

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

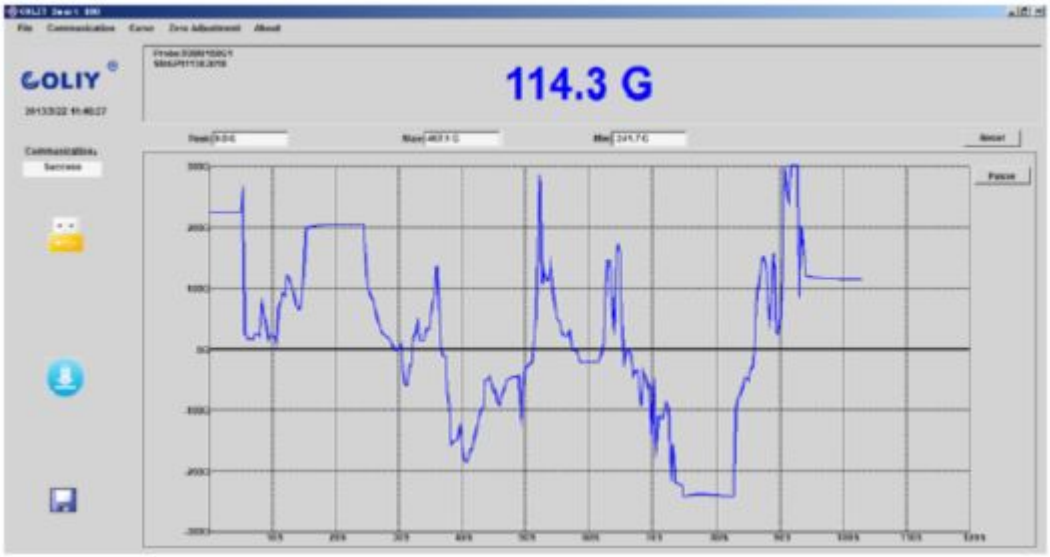
3D Movement Platform

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

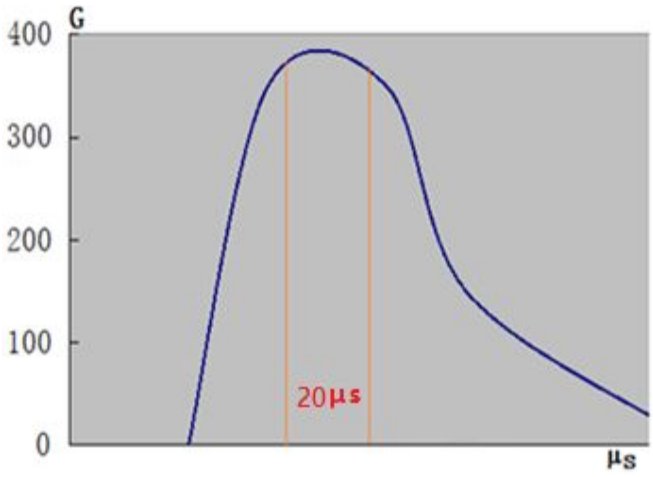
SMART computer software has rich features: Automatically record and display trend graph; Display the magnetic flux density, maximum and minimum in real time; Export saved data from the gaussmeter host; Record and save measurement data in real time.



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.

Unique Features of Gaussmeter G92



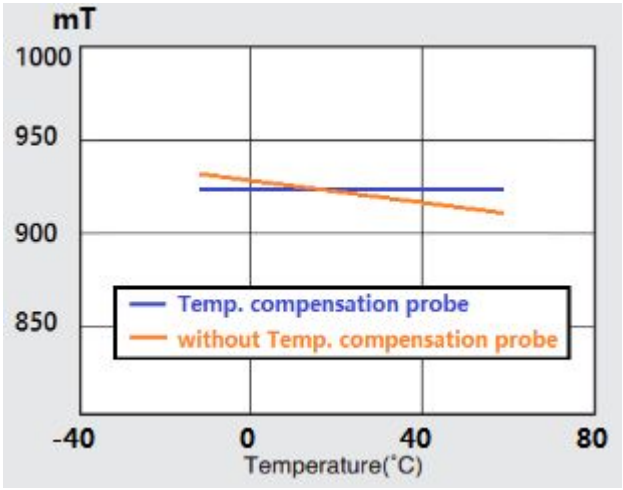
20μs Sampling Peak Mode

Gaussmeter G92P is able to capture the shore pulse magnetic field and the peak value of magnetic field intensity in rapidly changing magnetic field as narrow as up to 20 μs in width.

(The function is an option.)

Temperature Compensation

The temperature coefficient of ordinary probes(probes without built-in temperature sensor) is 300ppm/℃, but temperature sensor-contained probes (probes with built-in temperature sensor) have the function of temperature compensation, so temperature sensor-contained probes are strongly recommended for better precision and stability when the temperature changes.



High Temp. Probe

With the advanced sensor technology and excellent design, high temp. probe, made by COLIY, has a unique working temperature: -20°C to +160°C (-4°F to +320°F)

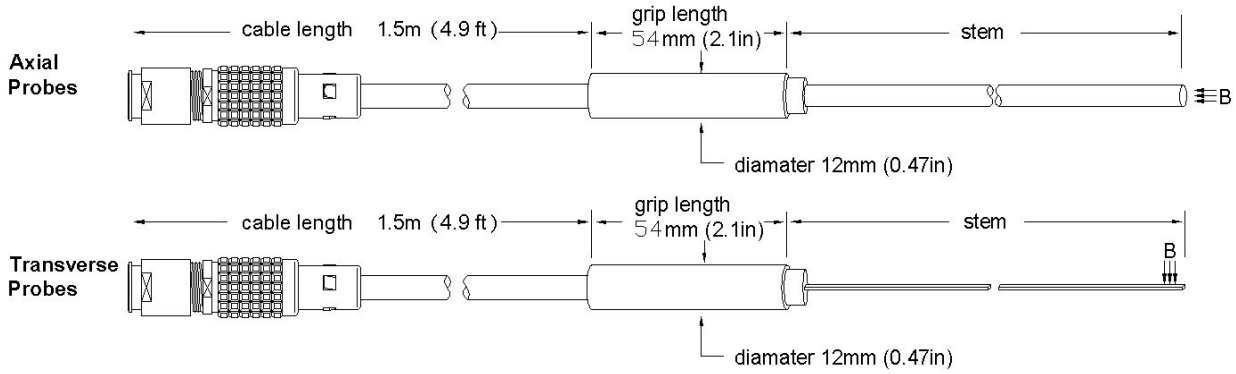
G91 and G92 Gaussmeter Specification:

Model		G91	G92
Measurement Specification			
Accuracy(DC)		2% of reading ± 0.2% of selected range	1% of reading ± 0.1% of selected range
Range		20KG(20T) (manual range: ±300G, ±3KG, ±20KG)	30KG(3T) (manual range: ±300G, ±3KG, ±30KG) OR 100KG(10T) (manual range: ±1KG, ±10KG, ±100KG)
Best Resolution		0.1G(0.01mT)	0.1G(0.01mT)
Display Digits		4	4
Display Resolution	Display Range 0~ 999.9G	0.1G(0.01mT)	0.1G(0.01mT)
	1000G~ 9999G	1G(0.1mT)	1G(0.1mT)
	10KG~ 30KG	10G(1mT)	10G(1mT)
Frequency Response [f_T]		DC- 10KHz	DC- 30KHz
Typical Temperature Coefficient		<±300ppm/°C	<±300ppm/°C (Regular probe) <±80ppm/°C (Probe with temperature sensor)
Zero Drift		±0.5G/8 hours	±0.3G/8 hours
Minimum Magnitudes for Rated AC Accuracy		3% of the selected range	
Long-term Instability		<±0.05% of reading (>1KG, within 8 hours, 25℃)	

MAX/ MIN Acquisition Time(DC)	10ms (G92P is able to capture the peak value of magnetic field intensity in rapidly changing magnetic field as narrow as up to 20 μs in width.)	
Front Panel		
Screen	3.2 inches colorful tough LCD, 320 x 240 Pixel	
Units	Gauss(G), Tesla(T)	Gauss(G), Tesla(T), Amperes per meter (A/m)
Display Update Rate	3 readings/second	
Display Mode	DC, AC, MAX., MIN, Alarm, Polarity Indication, Trend Graph etc.	
Panel Feature	Color resistive touch screen	
Probe		
Probes	Transverse Probe, Axial Probe, Ultra-thin Probe	Transverse Probe, Axial Probe, Ultra-thin Probe, High-range Probe, High Temp. Probe, Temperature sensor-contained Probe
USB Interface		
Function	To connect PC with gaussmeter host for monitoring the measurement	
Data Update Rate	MAX. 30 Sample/s	
Software/ Driver	SMART PC Software without any driver	
Host Specification		
Ambient 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	<100 G DC	
Battery	Rechargeable 4500mAH Li-ion	
Operating battery life	>24 hours (Standard Testing Environment)	
Dimension	238 mm **W** × 95 mm **H** × 42 mm **D**	
Weight	350g	
Certification	CE Certification, EMC Certification	

ONLY function of Gaussmeter G92: Analog Output	
Function	Real-time analog voltages output: these are high-level differential voltages proportional with the magnetic flux density
Range	±3 V
Proportion	3 V in proportion to the selected range
Frequency Response	DC to 30 KHz
Output Resistance	< 100 Ω (short circuit protected)
Connection	BNC adapting cable

Probes Specification



Model G91 Gaussmeter Probes

Probe Model	Range	Resolution	Frequency Response	Stem dimension (mm)	Working temp. (°C)	DC Accuracy (Based on reading at 25°C)	Stem material
Transverse T08P150G91	20KG (2T)	0.1G (10μT)	DC-10KHz	80*2.5*1	-20 - +75	2%	Plastic
Axial A08M150G91	20KG (2T)	0.1G (10μT)	DC-10KHz	80*Φ5	-20 - +75	2%	Copper
0.5mm Ultra-thin T06U150G91	20KG (2T)	0.1G (10μT)	DC-5KHz	60*2.5*0.5	-20 - +75	2%	Plastic

Model G92 Gaussmeter Probes

Probe Model	Range	Resolution	Frequency Response	Stem dimension (mm)	Working temp. (°C)	DC Accuracy (Based on reading at 25°C)	Stem material
Transverse T08P150G92 T08P150G92T	30KG (3T)	0.1G (10μT)	DC-30KHz	80*2.5*1	-20 - +75	1%	Plastic
Transverse T08M150G92 T08M150G92T	30KG (3T)	0.1G (10μT)	DC-30KHz	80*2.2*1	-20 - +75	1%	Copper
High-range Transverse T08W150G92 T08W150G92T	100KG (10T)	0.1G (10μT)	DC-30KHz	80*4.5*1	-20 - +75	1%	Plastic
High Temp. Transverse T40H150G92 T40H150G92T	30KG (3T)	0.1G (10μT)	DC-30KHz	400*4.5*1	-20 - +160 (-4℉ - +320℉)	1%	Plastic
Axial A08M150G92 A08M150G92T	30KG (3T)	0.1G (10μT)	DC-30KHz	80*Φ5	-20 - +75	1%	Copper
High-range Axial A08W150G92 A08W150G92T	100KG (10T)	0.1G (10μT)	DC-30KHz	80*Φ5	-20 - +75	1%	Copper
0.5mm Ultra-thin T06U150G92 T06U150G92T	30KG (3T)	0.1G (10μT)	DC-10KHz	60*2.5*0.5	-20 - +75	1%	Plastic

Note:

1, Option "T" : Temperature sensor contained Probe, has the function of temperature compensation, and the temperature coefficient is <±80ppm/°C;

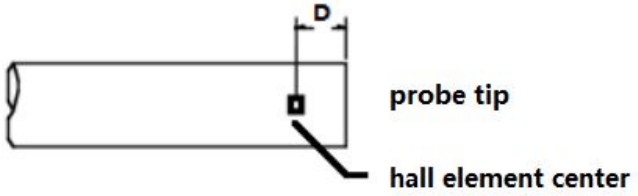
2, Each probe's fully calibrated measurement range: ±20KG(±2T);

3, Each probe only matches with the appropriate gaussmeter host, for example, G92's probe is not suitable to Gaussmeter G91, and G92's probe only matches with G92 host.

The position of sensor center(Transverse Probe)

Copper Probe:D=1mm±0.2mm

Plastic Probe:D=2mm±0.2mm



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
CAB30	BNC adapting cable for analog output (Only for G92 Gaussmeter)
SAMRT PC Software	PC SOFTWARE for Gaussmeter
STD30	Bracket for main unit
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

The most popular Package
ORDER G9201: Gaussmeter G92 + Probe T08P150G92
ORDER G9202: Gaussmeter G92 + Probe T08P150G92 + Zero Chamber ZC10
ORDER G9101: Gaussmeter G91 + Probe T08P150G91
ORDER G9102: Gaussmeter G91 + Probe T08P150G91 + Zero Chamber ZC10

Description Of Probe Type Selection

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

Precision Description Of COLIY Gaussmeter

- When using gaussmeter to measure magnetic field in the environment that ambient temperature changes obviously, it's recommended to use temperature sensor contained probe with the gaussmeter. Temperature sensor contained probe has the function of temperature compensation for better precision and stability when the temperature changes.

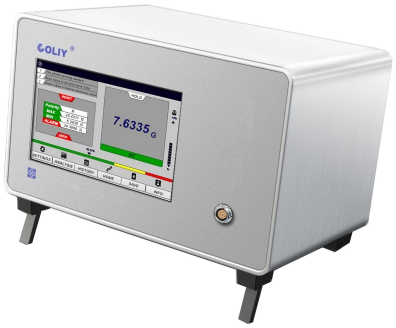
- Difference of rated accuracy between COLIY Gaussmeter and other brand's Gaussmeters: the accuracy of COLIY is based on the reading, but other brand's Gaussmeters' accuracy is based on the selected range. So COLIY Gaussmeter's measurement data is more accurate than other brand's Gaussmeters' when all the Gaussmeters' accuracy is in a same value, and all the Gaussmeters work under the same working conditions. For example: When using COLIY gaussmeter and other brand gaussmeter, whose rated accuracy is 1%, to detect a magnetic field at 500G, COLIY gaussmeter readings range is 500G ± 500 * 1%, but other brand's gaussmeter readings range is 500G ± 3000 * 1%, (3000G is the most appropriate range in such condition).

Compare With Competitors

COLIY has an advantage	COLIY MODEL G92	FWBELL MODEL 5180
Accuracy(DC)	1%	1%
MAX Range	100KG (10T)	30KG (3T)
Display screen	3.2" Color touch LCD	Black and white LCD
Display Digits	4 (example:5678G)	$3^{1/2}$ (example:5.67KG)
Temperature coefficient	300ppm/℃	870 - 950ppm/℃ **
Probe protector	Metal	Brittle Plastic
Operation System	GUI	Button Control
Polar indication	YES	NO
High Temp. Probe(≤160℃)	YES	NO
High range probe(10T)	YES	NO
Smart record and review	YES	NO
Trend Graph display	YES	NO

*According to the practical test results.

COLIY- Excellent Solution for Magnetic Field Measurement



Model	Sensor	Type	Axis	Accuracy Based on reading	MAX Range	Best Resolution
Gaussmeters for High Magnetic Field(0-10T)						
G91	Hall	Handheld	1	2.0%	2T	10μT
G92	Hall	Handheld	1	1.0%	10T	10μT
G93 (with probe Y08P150G93)	Hall	Handheld	3	1.0%	3T	1μT
G201	Hall	Desktop	1	0.25%	10T	1μT
G203	Hall	Desktop	3	0.25%	3T	1μT
G401*	Hall	Desktop	1	0.05%	10T	0.1μT
G403*	Hall	Desktop	3	0.05%	3T	0.1μT
G501*	Hall	Desktop	1	0.01%	3T	0.1μT
GSP301	Hall	Digital Transmitter	1	1%, 0.5%, 0.25%,0.05%*	10T	0.1μT
GSP303	Hall	Digital Transmitter	3	1%, 0.5%, 0.25%*,0.05%*	3T	0.1μT
Gaussmeters for Low Magnetic Field(0- 4.5mT)						
GMR50	GMR	Handheld	1	1.0%	4.5mT	10nT
G93 (with probe Y08L150G93)	GMR	Handheld	3	1.0%	1mT	10nT
GF601	Fluxgate	Handheld	1	0.5%	1mT	1nT
GF603	Fluxgate	Handheld	3	0.5%	1mT	1nT
GF803*	Fluxgate	Desktop	3	0.1%	1mT	0.1nT
GFP703	Fluxgate	Digital Transmitter	3	0.5%	1mT	1nT
GFP903*	Fluxgate	Digital Transmitter	3	0.1%	1mT	0.1nT
Magnetic Field Measurement System						
GAS3000	Probe Array of Magnetic Field Detection System: can be used to simultaneously monitor 2- 128 points of magnetic field					
Gaussmeter Calibration System	DC Magnetic Field (Accuracy up to 50ppm)			AC Magnetic Field (Accuracy up to 0.1%)		
	• Low Range: 0.1nT- 0.1mT • Middle Range: 0.1- 100mT • High Range: 1mT- 2T			• Low Range: 0.1μT- 0.1mT • Middle Range: 0.01- 15mT • High Range: 0.1- 200mT		
AC Magnetic Field Sensor						
AMS-2K	Range of 3mT; Frequency response 25Hz- 2kHz					
AMS-1M	Range of 3mT; Frequency response 2kHz- 1MHz					

Note: 1T= 10KG; 1mT= 10G; 1μT= 10mG; 1nT= 10μG; "*": coming soon without notice.