

MG-4D Hand-Held Gaussmeter



The MG-4D is a hand-held Hall effect gaussmeter designed for DC and AC (RMS) magnetic field measurements. Light and small in size, the MG-4D provides both the convenience of hand-held portability and the accuracy of a laboratory instrument.

Three bipolar ranges of ± 100 Gauss, ± 1 kilogauss and ± 10 kilogauss with 100% over-range and resolution of 0.05%, allows measurement of DC and AC fields from ± 0.1 Gauss to ± 19.99 kilogauss (using a 1X probe) with true RMS readings from 10 Hz to 20 kHz; readings are displayed on a $3\frac{1}{2}$ digit $\pm 0.1\%$ bipolar LCD meter.

Because the MG-4D is a Hall effect instrument, a Hall probe is used as a sensor to measure the magnetic field. Walker LDJ Scientific offers a wide selection of transverse and axial Hall probes. The measuring range of the MG-4D Gaussmeter can be extended to 150 kilogauss with select probes.

Standard accessories include carrying case, a 6' extension probe cable, and batteries. An optional battery eliminator provides AC operation. Alkaline batteries can also be replaced with "AA" rechargeable batteries.

For more information on The MG-4D Hall effect gaussmeter or a catalog of all of our products call

800-962-4638 or go to the web: www.walkerldjscientific.com

Applications

- Measure residual fields
- Analyze magnetic circuits and components
- Classify magnets
- Measure absolute and differential fields
- Plot field uniformity
- Measure stray and leakage fields

Features

- $3\frac{1}{2}$ digit 0.1% bipolar display
- DC and AC fields, ± 100 milligauss to ± 19.99 kilogauss with 1X probes
- Range extendable to 150 kilogauss with select probes
- True RMS readings to 20 kHz
- Analog Output
- 6' probe extension cable
- Wide selection of probes: 1X, 10X, and 100X
- Operates up to one year with standard "AA" alkaline batteries
- Optional battery eliminator
- Vinyl carrying pouch: Standard
- High impact plastic case
- One year warranty



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MG-4D Hand-Held Gaussmeter

General

Display 3½ digit $\pm 0.1\%$ bipolar LCD

Ranges ± 100 Gauss, ± 1 kilogauss and ± 10 kilogauss with 100% over range (± 100 milligauss to ± 19.99 kilogauss)

Resolution 0.05%
 ± 100 milligauss - 100 Gauss range
 ± 1 gauss - 1 kilogauss range
 ± 10 gauss - 10 kilogauss range

Analog Output ± 100 mV with 100% Overrange

Accuracy (Less Probe)

	Range Setting	Full Scale Accuracy
DC	100 Gauss	$\pm 0.1\%$
	1 kilogauss	$\pm 0.1\%$
	10 kilogauss	$\pm 0.1\%$
RMS	100 Gauss	$\pm 1\%$ 10 Hz-10 kHz, $\pm 10\%$, -20 kHz (5%-100% FS)
	1 kilogauss	$\pm 1\%$ 10 Hz-10 kHz, $\pm 2\%$, -20 kHz (1%-100% FRS.)
	10 kilogauss	$\pm 1\%$ 10 Hz-10 kHz, $\pm 2\%$, -20 kHz (1%-100% FRS.)

Power

6 volts from 4 "AA" 1.5 volt Alkaline Batteries
Optional Battery Eliminator (CE-4D)
105 V - 257 V 50-60 Hz. Charge rate 5 mA

Battery Life

Exceeds 16 hours continuous

Size

2.125" H x 3.6" W x 6.1" L
(5.4 cm H x 9.2 cm W x 15.6 cm L)

Weight

14 ounces (0.4 kg)
Shipping Weight 1.5 lbs. (0.7 kg)



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HALL PROBE SPECIFICATIONS

Model HP	Linearity	Temperature		Style	Stem Size (L x W x T) or (L x D)	Active Area (L x W)
		Coef %/°C	Range °C			
14S	±1% to 20 kG	-0.1	-55 to 100	V-1X	0.5" (12.70 mm) 0.025" (6.35 mm)	0.04" x .08" (1 x 2 mm)
145S 145F 145R	±1% to 20 kG	-0.1	-55 to 100	I-1X II-1X I-1X	All: L= 4.0" (10.16 cm) 0.155" (3.94 mm) x 0.043" (1.09 mm) 0.165" (4.19 mm) x 0.053" (1.35 mm) 0.175" (4.45 mm) x 0.063" (1.60 mm)	0.04" x .08" (1 x 2 mm)
345S-(* 345F-(* 345R-(*	±0.25% to 10 kG (10) ±0.5% to 20 kG (20) ±1% to 30 kG (30)	-0.04	-40 to 100	I-10X II-10X I-10X	All: L= 4.0" (10.16 cm) 0.155" (3.94 mm) x 0.043" (1.09 mm) 0.165" (4.19 mm) x 0.053" (1.35 mm) 0.175" (4.45 mm) x 0.063" (1.60 mm)	0.04" D (1 mm)
645S 645F 645R	±0.1% to 30 kG	±0.005	-40 to 100	I-100X II-100X I-100X	All: L= 4.0" (10.16 cm) 0.155" (3.94 mm) x 0.043" (1.09 mm) 0.165" (4.19 mm) x 0.053" (1.35 mm) 0.175" (4.45 mm) x 0.063" (1.60 mm)	0.04" D (1 mm)
1145S 1145F 1145R	±1% to 30 kG ±1.5% to 150 kG	±0.005	-40 to 100	I-100X II-100X I-100X	All: L= 4.0" (10.16 cm) 0.155" (3.94 mm) x 0.043" (1.09 mm) 0.165" (4.19 mm) x 0.053" (1.35 mm) 0.175" (4.45 mm) x 0.063" (1.60 mm)	0.04" D (1 mm)
24S	±1% to 30 kG	-0.1	-55 to 100	V-1X	0.5" (12.70 mm) x 0.250" (6.35 mm)	0.04" x 0.08" (1 x 2 mm)
245S 245F	±1% to 20 kG	-0.1	-55 to 100	III-1X IV-1X	5.0" (12.70 cm) x 0.263" (6.68 mm)	0.04" x 0.08" (1 x 2 mm)
845S-(* 845F-(*	±0.25% to 10 kG (10) ±0.5% to 20 kG (20) ±1% to 30 kG (30)	-0.04	-40 to 100	III-10X IV-10X	9.0" (22.86 cm) x 0.263" (6.68 mm)	0.04" D (1 mm)
1045S 1045F	±0.25% to 30 kG	±0.005	-40 to 100	III-100X IV-100X	9.0" (22.86 cm) x 0.263" (6.68 mm)	0.02" D (0.5 mm)
1245S 1245F	±1% to 30 kG ±1.5% to 150 kG	±0.005	-40 to 100	III-100X IV-100X	9.0" (22.86 cm) x 0.263" (6.68 mm)	0.02" D (0.5 mm)

* - Specify Linearity Range

Model Number Suffix: S-Standard, F-Flexible, R-Ruggedized

Note: Thickness of standard probe applies to 0.5" from tip only.

Please consult us if your application requires a probe not listed here



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Probe Style Chart

Hall Probes

A wide selection of transverse and axial Hall probes is available to meet most applications. Accuracy of measurement is assured through the use of pre-calibrated probes which are calibrated in high accuracy fields standardized by nuclear magnetic resonance techniques which permit traceability to the National Institute of Standards and Technology (NIST). Probes are available with accuracies from $\pm 0.1\%$ to $\pm 1.5\%$ of reading. These probes are directly interchangeable and do not require special calibration. All probes are quickly self-calibrated to their instrument via a convenient front panel control.

The transverse Hall probe measures magnetic fields perpendicular to the axis of the probe. Standard probe thicknesses range from a thin-line version of .043" (1.09 mm) to a ruggedized version of 0.063" (1.60 mm). Ultra-thin probes are available on special order.

Certain thin-line probes are provided with a rugged flexible plastic stem; others a rigid plastic stem, to allow for access versatility.

The axial Hall probe measures magnetic fields parallel to the axis of the probe such as solenoidal fields. Probe stem diameters for axial probes range from 0.263" (6.68mm) to 0.273" (6.93 mm).

All probes have a protective sheath which can either be removed or left in place during most measurements. Ruggedized probes are housed in a fiberglass sheath which provides maximum protection for the most demanding industrial applications.

Both the transverse and axial probes are equipped with a rugged handle and 6 feet of cable. Additional cable length can be ordered. Assistance is available to help in selecting the most appropriate combination of instrument and probe.

