Model 6010 Gauss/Tesla Meter

Selects DC or AC mode

Selects GAUSS, TESLA, AMP-METERS or TEMPERATURE in °C or °F

Selects one of three MANUAL ranges or AUTO range

Selects MIN, MAX or PEAK HOLD modes

Resets held reading

Connector for Hall probe or adapter

Makes fine adjustments to the offset

Selects RELATIVE mode

Starts the AUTO ZERO process

+B

TRANSVERSE

Flux in the "B" direction results in a positive (+) reading

AXIAL

WARNING - FRAGILE

← +B
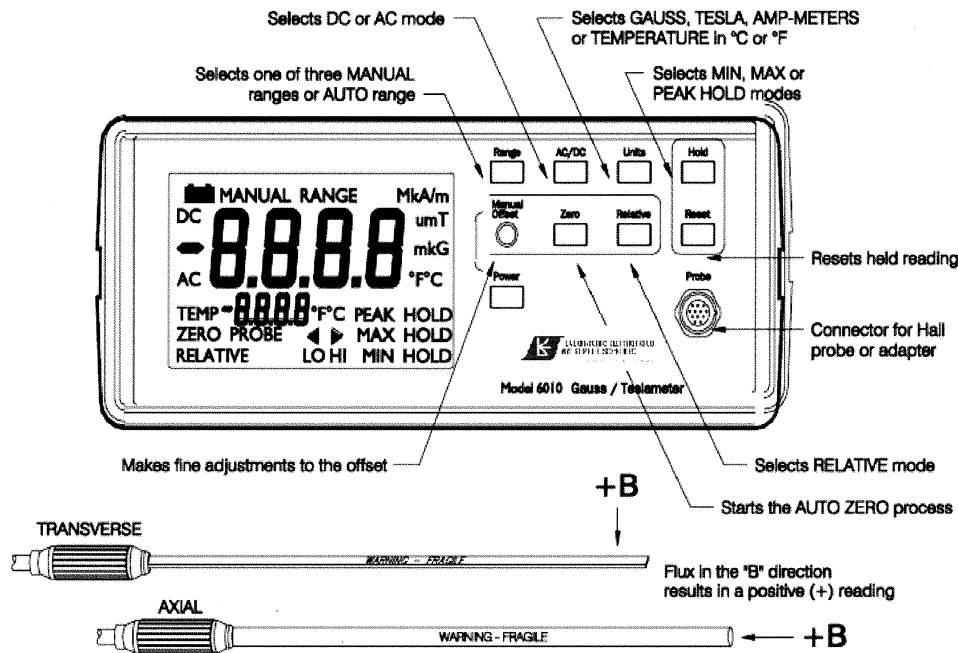
Zeroing the Probe

Initial electrical offsets in the probe and meter will be interpreted as flux density signals. To remove these errors place the tip of the probe in the Zero Flux Chamber and press the ZERO pushbutton. Once the zeroing operation completes use the MANUAL OFFSET control to make fine adjustments as needed. Stray magnetic fields from nearby equipment, magnets and the earth will also affect accuracy. To remove these errors place the probe in a fixed position and press the ZERO pushbutton. The ZERO function can be used in static (dc) fields not exceeding the lowest full-scale range.

Relative

To observe small variations in a larger magnetic field, position the probe in that field, select a fixed range and press the RELATIVE pushbutton. The value of that field will be subtracted from all future readings. Use the MANUAL OFFSET control to make fine adjustments as needed. Press the RELATIVE pushbutton again to return to normal operations.

Units

The UNITS pushbutton selects between flux density readings in gauss, tesla or amp-meters. When using temperature compensated probes, temperature readings are available in °C or °F, with or without flux density readings.

Hold

MAX HOLD retains the arithmetic maximum reading. MIN HOLD retains the arithmetic minimum. PEAK HOLD retains the highest magnitude regardless of polarity. In these modes the held value appears on the upper digits while the lower digits continue to display the latest readings. FAST PEAK HOLD quickly captures the peak value of pulsed or continuous events and retains that value on the upper digits only. In any mode press the RESET pushbutton to clear the held reading. Any HOLD mode requires a fixed range setting.

Analog Output

The analog output is calibrated to +3 Vdc (dc mode) or 3 Vrms (ac mode) full scale. Minimum load is 10 kohms.

Tips

Always ZERO the probe prior to making measurements. Maximum readings occur when the Flux lines are perpendicular to the sensor's plane. Flux density diminishes with increasing distance from the magnetic source. Flux density variations are common in permanent magnets. Do not subject the probe to physical abuse or extreme temperatures. Degauss the Zero Flux Chamber if it is exposed to high magnetic fields. A low battery condition will degrade accuracy.

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Observe all safety precautions.

Flux Density Range

GAUSS	TESLA	A/m	GAUSS	TESLA	A/m
# 3 G	300 µT	238.8 A/m	0.001 G	0.1 µT	0.1 A/m
# 30 G	3 mT	2.388 kA/m	0.01 G	0.001 mT	0.001 kA/m
300 G	30 mT	23.88 kA/m	0.1G	0.01 mT	0.01 kA/m
3 kG	300 m	238.8 kA/m	1 G	0.1 mT	0.1 kA/m
30 kG	3 T	2.388 MA/m	0.01 kG	0.001 T	1 kA/m
* 300 kG	30 T	23.88 MA/m	0.1 kG	0.01 T	0.01 MA/m

The first three columns are under the heading **Flux Density Range**; the last three under **Resolution**.

Temperature Range @ / Resolution

°C	°F	°C	°F
-40.0 to +100.0	-40.0 to +212.0	0.1	0.1

The first two columns are under **Temperature Range @**; the last two under **Resolution**.

Key:

\# - When used with high sensitivity probes.
* - When used with high stability probes.
@ - When used with temperature compensated probes.

RX (to meter)
TX (from meter)
COMMON

5 4 3 2 1
9 8 7 6

RTS (from meter)
CTS (to meter)

2400 Baud, 8-Bit, 1-Stop, No Parity

The transmitted signal at this end

Becomes the received signal at this end

Rear Panel

Analog Output   RS-232

Tx
Rx

Tx Rx

Computer
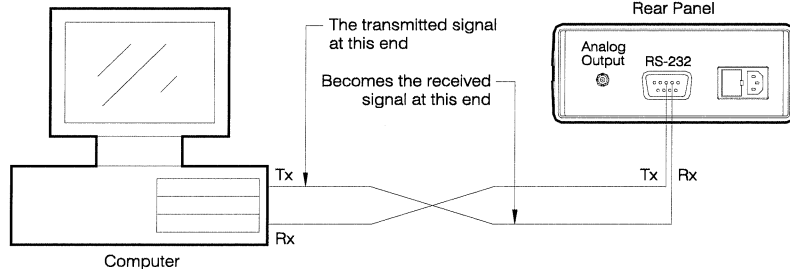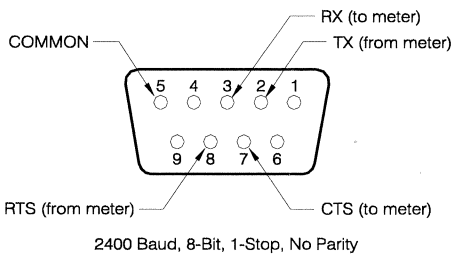
Remote **Commands**

Units Commands	Description
:UNIT:FLUX:AC:GAUSs	Program ac gauss units
:UNIT:FLUX:AC:TESLa	Program ac tesla units
:UNIT:FLUX:AC:AM	Program ac ampere per meter units
:UNIT:FLUX:DC:GAUSs	Program dc gauss mode
:UNIT:FLUX:DC TESLa	Program dc tesla units
:UNIT:FLUX:DC:AM	Program dc ampere per meter units
:UNIT:FLUX?	Query flux units settings
:UNIT:TEMP:C	Program degrees C units
:UNIT:TEMP:F	Program degrees F units
:UNIT:TEMP?	Query temperature units setting

Measurement Commands	Description
:MEASure:FLUX?	Otain flux density reading
:MEASure:TEMP?	Obtain temperature reading

Display Format Commands	Description
:UNIT:FLUX:AC:GAUSs	Program ac gauss units
:UNIT:FLUX:AC:TESLa	Program ac tesla units

Zero / Relative Commands	Description
:SYSTem:AZERo	Initiates an automatic zero operation
:SYSTem:ARELative:STATe <n>	Program relative mode
:SYETem:ARELative:STATe?	Query relative mode setting

Status Register Commands	Description
:STATus:MEASurement:EVENt?	Query Measurement Event reg.
:STATus:OPERation:EVENt?	Query Operation Event reg.
:STATus:QUEStionable:EVENt?	Query Questionable Event reg.
:STATus:MEASurement:ENABle <NRf>	Program Measurement Event Enable reg.
:STATus:OPERation:ENABle <NRf>	Program Operation Event Enable reg.
:STATus:QUEStionable:ENABle <NRf>	Program Questionable Event Enable reg.
:STATus:MEASurement:ENABle?	Query Measurement Event Enable reg.
:STATus:OPERation:ENABle?	Query Operation Event Enable reg.
:STATus:QUEStionable:ENABle?	Query Questionable Event Enable reg.
:STATus:MEASurement:CONDition?	Query Measurement Condition reg.
:STATus:OPERation:CONDition?	Query Operation Condition reg.
:STATus:QUEStionable:CONDition?	Query Questionable Condition reg.
:STATus:PRESet	Clear all event registers

Common Commands	Description
*CLS	Clear all event registers and error buffer.
*ESE <NRf>	Program standard event enable register.
*ESE?	Read standard event enable register.
*ESR?	Read standard event register and clear it.
*IDN?	Return meter type and software version number.
*OPC	Set the Operation Complete bit in the standard event register after all commands have been executed.
*OPC?	Returns an ASCII "1" after all commands have been executed.
*OPT?	Returns information about the attached Hall probe.
*SRE <NRf>	Program STATUS enable register.
*SRE?	Read STATUS enable register.
*STB?	Read STATUS byte register.

Hold Commands	Description
:SENSe:HOLD:STATe <n>	Program hold mode
:SENSe:HOLD:STATe?	Query hold mode setting
:SENSe:HOLD:RESet	Reset held value

Range Commands	Description
:SENSe:FLUX:RANGe:AUTO	Program auto range
:SENSe:FLUX:RANGe: <n>	Program fixed range
:SENSe:FLUX:RANGe?	Query range setting

Error Commands	Description
:SYSTem:ERRor?	Retrieve error message
:SYSTem:CLEar	Clear error message

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