

<b>WinFrog Device Group:</b>	<b>Magnetometer</b>
<b>Device Name/Model:</b>	<b>GEOMETRICS</b>
<b>Device Manufacturer:</b>	<b>GEOMETRICS</b> 2190 Fortune Dr. San Jose, Ca. 95131 U.S.A. Phone: (408) 954-0522 Fax: (408) 954-0902 <a href="http://www.geometrics.com">www.geometrics.com</a>
<b>Device Data String(s) Output to WinFrog:</b>	Field level in gammas and signal strength.
<b>WinFrog Data String(s) Output to Device:</b>	Nil
<b>WinFrog Data Item(s) and their RAW record:</b>	MAGNETOMETER                      800

**DEVICE DESCRIPTION:**

The WinFrog GeoMetrics driver is a generic driver for GeoMetrics type Magnetometers other than the 866 and 88x models. This driver will accept data from GeoMetrics Magnetometers that do not output a depth value, including the Model 880 Cesium Magnetometer. The operator should confirm the compatibility of the magnetometer with this driver, if the GeoMetrics unit being used is not the Model 880.

***DEVICE CONFIGURATION INSTRUCTIONS***

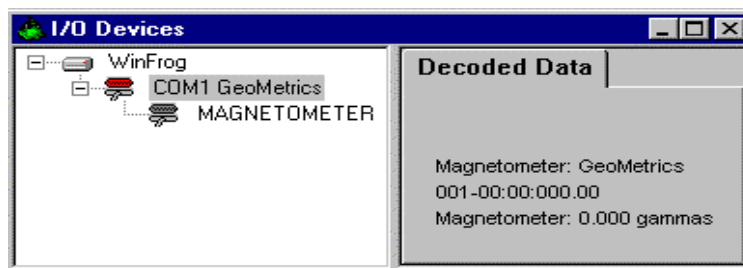
---

**WINFROG I/O DEVICES > EDIT I/O:**

Baud Rate: 19200  
Data Bits: 8  
Stop Bits: 1  
Parity: None

**WINFROG I/O DEVICES > CONFIGURE DEVICE:**

The GeoMetrics device driver is added to WinFrog from the Magnetometer device group. The MAGNETOMETER data item is added along with the GeoMetrics device. No configuration is required or available within the I/O Device window.



## **WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:**

Once the device is added to a vehicle, the 800 Raw Data Record is recorded to the \*.RAW file if raw recording is occurring.

No configuration edit options are available for the MAGNETOMETER data item, from the Configure Vehicle-Devices dialog box. This driver is used for storing the raw data record for post processing.

### **Raw Data String:**

800,name,time,magnetic field,signal strength,depth,quality,leakage,tuning,voltage,altitude

Values not sent by this instrument will be 0.

### **INSTRUMENT CONFIGURATION DETAILS:**

This driver records the raw data value and (GPS) time of observation for post processing. The Driver will record data from all GeoMetrics Magnetometers outputting the data string shown below. This includes the Model 880 and all GeoMetrics Magnetometers that output a data value only. The operator should ensure the data from the Magnetometer unit being used can be recorded in the type 800 raw data record, prior to using this driver.

### **Input / Output Data Format:**

Following are the two data formats accepted by the WinFrog GeoMetrics driver:

```
XXXXX.xxx<CR><LF>
```

Where: XXXXX.xxx is the magnetometer data value in gammas.

**OR**

```
$xAAAAA.aaa,BBBB<CR><LF>
```

Where: \$ marks the first character of the data stream,  
x is an ASCII '1' or a blank space dependant upon whether or not the magnetometer data is above or below 99999.999nT.  
AAAAA.aaa is the magnetometer data (nT).  
BBBB is 4 digits of A/D channel 0 (9999 full scale, 0 to +5 volts in).  
This channel is internal and contains the signal level of the magnetometer.

**Units:**

1 gamma = 1nT where T stands for Tesla.

1000 gammas = 1 $\mu$ T = 1 Killogamma

**Specifications:**

Following are Specifications for the Model 880 Magnetometer.

**Operating Principle:**

Self-oscillating split-beam Cesium Vapor (non-radioactive Cs133) with automatic hemisphere switching.

**Operating Range:** 17,000nT to 100,000 nT

**Heading Error:** +/- 0.5 nT

**Sensitivity:** 90% of all readings will fall within the following Peak-to-Peak envelopes:

0.05nT at 0.1 sec cycle rate

0.03nT at 0.2 sec cycle rate

0.01nT at 1.0 sec cycle rate

**Operating Zones:** For highest signal-to-noise ratio, the sensor long axis should be oriented at 45°, +/- 30° to the earth's field angle, but operation will continue through 45°, +/- 35°.

**Gradient Tolerance:** > 500nT / inch; >20,000nT / meter

**Data Output:** Three wire RS232, magnetics, up to 6 A/D channels for other sensors if present.

**Larmor Counter:**

Integrated into sensor electronics in 'fish'

Ref Osc: Nominal 22 MHz

Output data concatenated with other counters or data sources if present

A/D converters: 3 single and 3 differential, 12-bit resolution.

Control functions: Keyboard commands from surface

## **System Components**

### **Power Supply:**

Converts 115/220 50/60Hz AC to 28 to 32 VDC, 150 W

Provides cable junction for power & data

8 x 9 x 4.5 inches, 6 lb

### **Tow Cable:**

Shielded twisted pair of #12 conductors with 8 separate #20 conductors

Strain member: Kevlar, 10,000 lbs breaking strength

Maximum working load: 1250 lbs

Outside diameter: 0.65 inch

Bending diameter: 24 inch

Weight: Air: 215 lbs per 1000 ft. Water: 70 lbs per 1000 ft

lengths selectable to 2,500 ft (762 meters)

### **Environmental:**

Operating / Storage Temperature: -45°C to +60° C (-40° F to +140° F)

Depth: Pressure vessels in 'fish' rated to 4,000 ft (increased depth possible upon request)

### **Sensor 'Fish':**

Heavy duty filament wound fiberglass, free flooded with stabilizer ring-fin assembly

Length: 83 inches (cable stiffener and bulkhead termination adds 16 inches to length)

Body outside diameter: 4.5 inches

Ring-fin outside diameter: 14.25 inches

weight in air: 38 lbs; in water: 12 lbs

Depth transducer installed