



FEREX 4.034

Digital fluxgate magnetometer for detection of ferromagnetic metals with data logging and comprehensive application software



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Precise detection and documentation of geomagnetic anomalies. The FEREX 4.034 is a digital fluxgate magnetometer designed for the systematic detection of geomagnetic anomalies across large areas. It measures disturbances in the Earth's magnetic field caused by ferromagnetic materials such as iron, steel or nickel. Typical applications range from locating UXO such as bombs, shells and cluster munitions to detecting underground structures and infrastructure.

Depending on the application, the FEREX 4.034 can be operated in either direct meter mode or data recording mode. Four data recording channels allow the simultaneous use of up to four fluxgate magnetometer probes and expansion into a multi-probe system for efficient large area surveys.

Alternative sensors, GNSS systems and distance encoders can be connected via the serial interface. During data acquisition, the integrated navigation system provides information on the current position, survey track and data quality. This enables precise navigation and geo-referencing of the recorded data, while initial results can be viewed directly on the 3.5" color display.

With the [DATA2LINE software](#), projects can be created and recorded measurement data can be post-processed and analyzed. Integrated filters and dedicated operating modes also support surveys near high-voltage power lines and along fences, railway tracks or pipelines.

YOUR ADVANTAGES AT A GLANCE

4-channel data recording: Simultaneous use of up to four fluxgate magnetometer probes for efficient large area surveys

Precise navigation & geo-referencing: Integration of GNSS systems and distance encoders for accurate survey tracks and position-referenced measurement data

High detection sensitivity: Calibration-free tension-band technology with an improved signal-to-noise ratio

Convenient data monitoring: Bright 3.5" color display for direct viewing of measurement data, position and data quality

Flexible field operation: Dedicated filters and operating modes for surveys near high-voltage power lines and along fences, railway tracks or pipelines

Comprehensive data analysis: DATA2LINE software for project setup, post-processing and analysis, including a stake-out function

TECHNICAL INFORMATION

WEIGHT:	— 4.1 kg complete detector incl. batteries — 12.1 kg complete detector set in case
DIMENSIONS:	— FEREX – 1270 × 145 × 850 mm (L × W × H) — Case – 989 × 415 × 157 mm (L × W × H)
DISPLAY:	3.5" LCD with adjustable back-light, sunlight readable
MEMORY:	32 GB SD card
INTERFACES:	— 4 × analog Fluxgate Gradiometer — 1 × serial
TEMPERATURE RANGE:	— Operation: -37 °C to +71 °C; -99 °F to +160 °F (ambient temperature) — Stock: -57 °C to +71 °C; -135 °F to +160 °F
POWER SUPPLY:	4 × 1.5 V alkaline batteries (LR20) or 4 × 1.2 V NiMH (HR20)
BATTERY SIZE:	IEC LR20/HR20 – ANSI „D“
BATTERY LIFETIME:	1 probe, continuous operation > 8 hrs
MEASURING RANGES IN FEREX MODE:	8 linear ranges: ±3 nT to 10,000 nT and 1 logarithmic range
SAMPLING RATE	900 Hz each channel
RESOLUTION:	24 bit ADC
PROTECTION GRADE:	IP65
NATO STOCK NUMBER:	Probe MG-10-550, 2042037, 6665-12-410-0248
PROBE TYPE:	Fluxgate Gradiometer (MG-10-550)
BASE DISTANCE:	550 mm
APPLICATION AREA:	±62.500 nT
MEASURING RANGE:	— ±10.000 nT gradient — ±62.500 nT absolute
REFERENCE POINT:	— 97,5 mm from end of probe rod — 4 mm outside symmetry axis
DECLINATION:	±3 nT
NOISE:	<40 pT √ Hz @ 1 Hz
CUT-OFF FREQUENCY:	230 Hz
TEMPERATURE DRIFT:	<1 nT/K
UNCERTAINTY OF MEASUREMENT:	<2 % ref. ±10.000 nT
LINEARITY:	<1 nT referred to maximum measuring range
PROTECTION GRADE:	IP68, 100 m with optional sealing plug
EXTERNAL DIMENSIONS:	— Diameter 39.4 mm (with protective cap), — probe length 750 mm — base distance 550 mm

CERTIFICATIONS

MIL-Standard certifications

- MIL-STD 810G Method 514.6, Procedure I, Random Vibration
- MIL-STD 810G Method 516.6, Procedure I, Mechanical Shock
- MIL-STD 810G Method 516.6, Procedure IV, Transit Drop Test
- MIL-STD 810G Method 501.5, Procedure I, High Temperature
- MIL-STD 810G Method 502.5, Procedure I, Low Temperature
- MIL-STD 810G Method 503.5, Procedure I-C, Temperature Shock
- MIL-STD 810G Method 506.5, Procedure I, Blowing Rain
- AEODP-7 Edition B, Annex A-1

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