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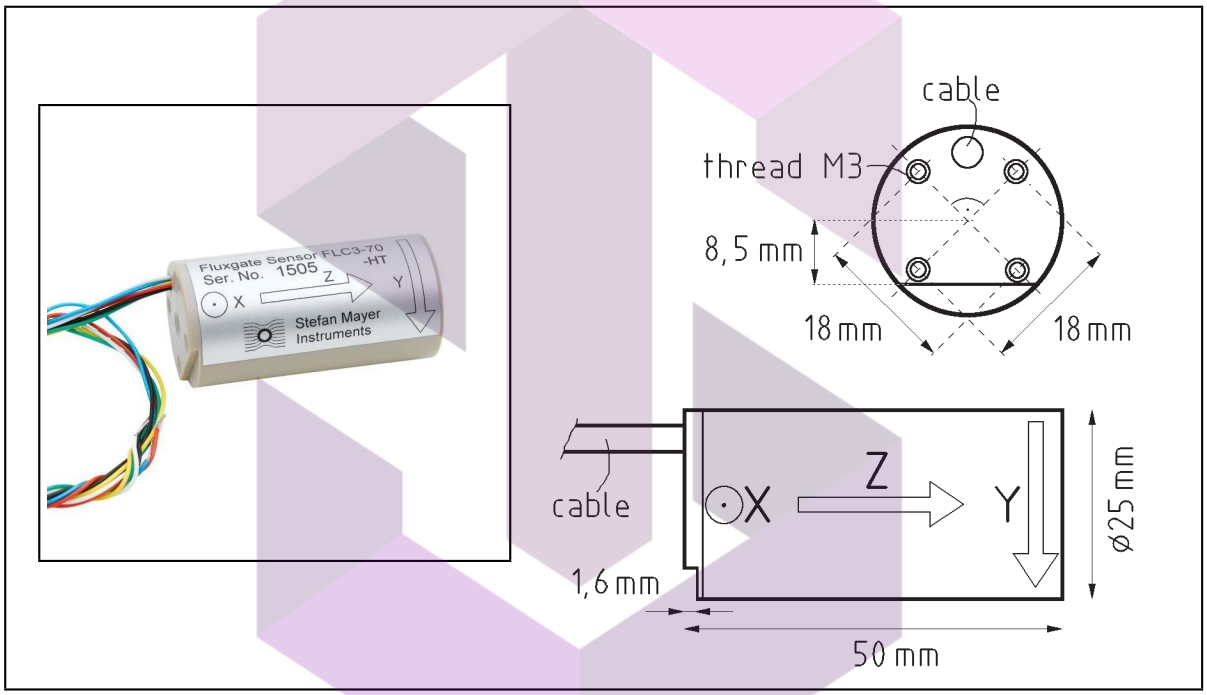
Magnetic Field Sensor FLC3-70-HT

Triaxial fluxgate sensor for high operating temperature

Measurement range up to ±200 μT, DC to 1 kHz



Features

- 3 analog output signals proportional to magnetic field components X, Y, and Z
- Low noise and high stability of output signals
- Operating temperature up to 175 °C
- Complete three axis miniature magnetometer
- Single power supply 4,8 V to 12 V
- Only 10 mA current consumption
- Simple integration into μP systems
- Rugged design

Applications

- Measurement of the earth's magnetic field, geomagnetic applications
- Directional drilling
- Oil and mineral exploration
- Navigation
- Aerospace applications
- Magnetic signatures, vehicle detection
- Magnetic field control and compensation
- Detection of fields from power lines, ELF measurement

Description

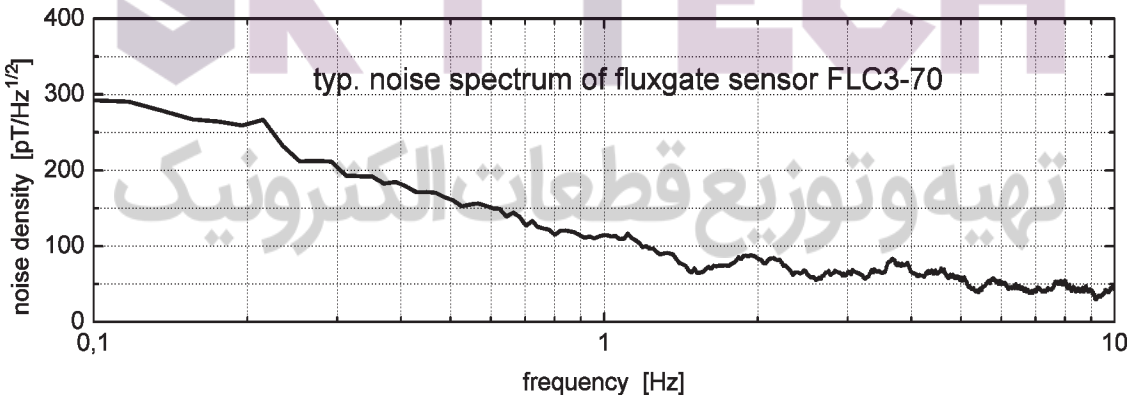
The magnetic field sensor FLC3-70-HT is a triaxial miniature fluxgate magnetometer for the measurement of weak magnetic fields up to 200 μT. This sensor can be used in any application where the sensitivity and stability of conventional magnetic field sensors (Hall or MR sensors) is too low, e. g. for the measurement of the earth's magnetic field (for navigation or magnetospheric research).

The FLC3-70-HT is a complete three axis fluxgate magnetometer. The analog output voltages are proportional to the three components X, Y and Z of the magnetic field. Due to its single supply voltage of 4.8 V to 12 V and low current consumption it is the ideal choice for battery powered or μP controlled applications.

The FLC3-70-HT is a high temperature version of the standard FLC3-70 sensor. It can be operated at temperatures up to 175 °C and is suitable for deep drilling and space applications.

Specifications

Measuring range	±200 μT @ 12 V supply voltage, other ranges on request
Accuracy of calibration data	±0.5% ± 0.05 μT
Orthogonality of meas. directions	±1 °
Operating temperature	−5 °C to +175 °C
Zero drift	<5 nT/K (15 °C to 175 °C)
Supply voltage $V_+ - V_-$	4.8 V to 12 V DC
Supply current	∼10 mA
Reference output $OUT-$	$(V_+ - V_-)/2$ ±1%
Output voltages X, Y, Z ref. to $OUT-$	±1 V/35 μT, max. $\pm(V_+ - V_-)/2$
Bandwidth	0 to 1 kHz (−3 dB)
Ripple @ excitation freq. = 16 kHz	typ. 3 mV_{rms}
DC output impedance	100 Ω
Noise	<0.5 nT_{RMS} or 3 nT_{PP} (0.1 Hz to 10 Hz), typ. 120 pT/$\sqrt{\text{Hz}}$ @ 1 Hz
Dimensions	diam. 25 mm × 50 mm
Weight	33 g
Enclosure	PEEK, bone
Connection cable	6 conductors



Subject to alterations.