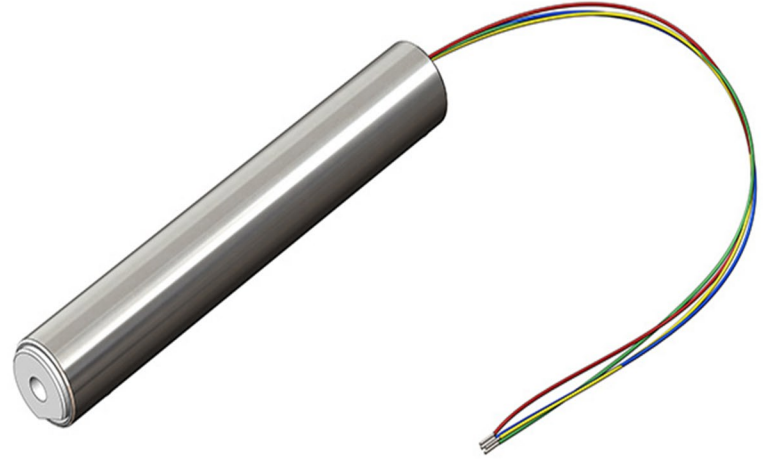


### Features

- Complete 3-axis system
- Implementation of analog and digital output in one construction
- Smallest size on the market with a diameter of  $\varnothing 18\text{mm}$  and length of 110mm
- High accuracy over the  $-40^{\circ}\text{C}$  to  $+145^{\circ}\text{C}$  temperature range
- Low noise Level
- High shock and vibration tolerance
- Low power consumption
- Single power input  $+5.6\text{V}$  to  $6\text{V}$

### Applications

- Fluxgate compass systems
- Magnetic anomaly detection
- Measurement of the Earth's magnetic field
- Navigation systems



Three-Component High-Temperature Analog/Digital Compact Fluxgate Magnetometer, designed for use in the field of magnetic measurement technology, specifically for magnetic navigation and navigation equipment, magnetic prospecting, magnetic mapping, and other related fields.

The magnetometer is implemented as a standalone module consisting of a housing that contains three orthogonally oriented fluxgate sensors and an electronic unit. The data output can be either analog or digital, allowing data to be received in a format convenient for the user.

A distinctive feature of this magnetometer is its miniaturization. With a diameter of just 18 mm and a length of 110 mm, it is the smallest magnetometer on the market in its accuracy class. Thanks to its compact size, it is ideally suited for use in confined spaces, making it a convenient tool in various fields where device dimensions are critical.

The unique design of the fluxgate sensors enables measurement linearity across the entire temperature range up to  $145^{\circ}\text{C}$ , with nonlinearity not exceeding 0.1%, without the need for calibration dependencies. This ensures measurement stability under temperature variations, which is essential for accurate readings in varying conditions. The analog version of the sensor features microprocessor-based compensation of zero offset temperature drift, delivering high accuracy and

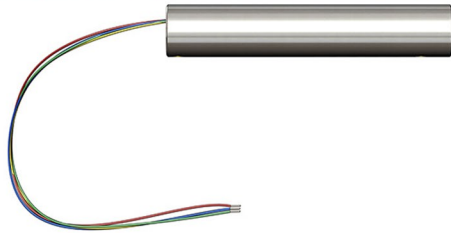
measurement stability in diverse operating environments. Low power consumption and a unipolar power supply enable integration or development of new autonomous magnetometric systems with extended operational time.

It converts the orthogonal components of the magnetic induction vector into either a digital code or analog signal (on request). The device is designed to measure weak magnetic fields in the  $\pm 70 \mu\text{T}$  range (other ranges available upon request).

This magnetometer features a simple circuit design, requires no additional components, and can be miniaturized for integration into various measurement instruments. It is a universal device suitable for applications in geophysics, defense, medicine, security, and material inspection. It can measure residual magnetic fields, monitor packaging, and even serve in security alarm systems.

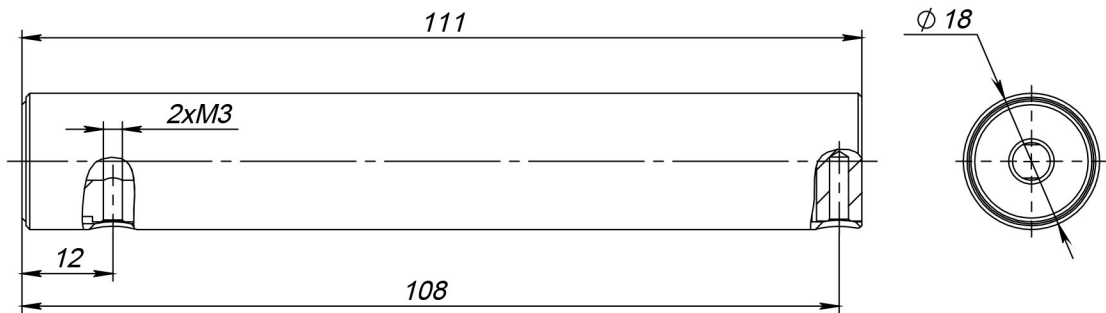
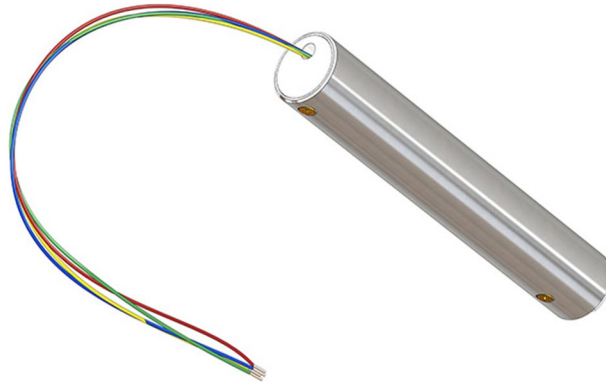
Thanks to its simplicity and versatility, it is an indispensable tool across many scientific and industrial fields.

In summary, this device is an example of a technological breakthrough that combines compactness, precision, and high sensitivity. It offers an innovative solution for a wide range of tasks and is an essential instrument for many areas of science and industry.



PHISICAL			
Outside Diameter (OD)	mm	18	
Length	mm	111	
Output connections long	mm	180	
ELECTRICAL			
Supply voltage	V	+5.6 ... 6.0 <sup>(1)</sup>	
Current consumption	mA	44	
Power consumption	W	0,24	
ENVIRONMENTAL			
Operational temperature range	°C	-40 ... 145	
PERFORMANCE			
Number of axes	pcs.	3	
Measuring range	μT	±70 <sup>(2)</sup>	
		analog	digital
Scaling error	%	1	0.1
Zero error	%	1	0.1
Orthogonality error	deg	1	0.05
Resolution	nT	< 0.1	< 2.2 <sup>(3)</sup>
Bandwidth	kHz	0..2	
Update Rate	Hz		20
Sensitivity	μV/nT	35	
Microprocessor-based compensation of zero offset temperature drift		+	
Temperature offset of measurement values for a digital	%	< 0.1	
Zero temperature offset for an analog	%	< 0.1	
Linearity error	%	< 0.1	
Output voltages of analog measurement outputs X, Y , Z	V	0 ... 5	
Output voltage of the analog output 'zero offset'	V	2.5	
Digital interface		UART <sup>(4)</sup>	
Voltage levels of the digital interface		RS232	
		1.7V ... 5.5 V <sup>(5)</sup>	
Digital interface protocol		Upon agreement	
Supply of software for <b>WINDOWS</b> for visualization of digital magnetometer measurement values is possible			

1. Range expansion is possible
2. Other ranges are possible
3. With a measurement range of ±70 μT (possibly 0.5 nT)
4. Speed by agreement
5. From an internal or external power source



How to Order:

**MELDOR-mag-18-analog**

Output: analog or digital