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Search

Products & Services | About Us | Investors | Newsroom | HSE | Careers | Alumni | Resources | Contact

About Schlumberger
Corporate Profile
Events
Executive Management
Guiding Principles
Differentiating Technologies
Careers
Community Involvement
Health, Safety & Environment
University Relations
Research & Development
Research Centers
Technology and Product Centers
History
Our Brand

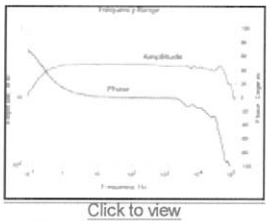
Print-friendly view
E-mail this page
Web site feedback

Recently viewed pages
Differentiating Technologies
Guiding Principles
EMI Technology Center—Magnetic Sensors

You are here: SLB.com > About Schlumberger > R&D > Technology and Product Centers > EMI > BF Sensor > BF-10

BF-10 Magnetic Field Induction Sensor

The BF-10 sensor utilizes a magnetic feedback design to provide a stable flat response over several decades of frequency. The sensors respond as a B field detector over the flat band regions. Both the amplitude and phase responses are highly stable with variations of less than 0.1 dB in amplitude and +/– 1° in phase between sensors. For the frequencies below the flat response region, the sensor response is proportional to signal frequency so that the sensor acts as a dB/dt detector. The coil is potted with epoxy and housed inside a Black Amalgon tube. A matched low-noise preamplifier is connected to the coil in a waterproof case and powered by an external +/– 12-V power supply.



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Frequency and noise performance.

Performance

- Frequency range: 0.0001 Hz to 700 Hz
- 3-dB frequency corners: 0.3 Hz, 500 kHz
- Sensitivity (flat region): 0.3 V/nT (standard)
- Power consumption: 9 mA at +/– 12 V

Physical Specifications

- Housing: Black Amalgon straight tube
- Length: 142 cm [56 in]
- Diameter: 6 cm [2.4 in]
- Weight: 7.9 kg [17.4 lbm]
- Connector: 8-pin Tajimi

Applications

- Magnetotellurics
- Audiomagnetotellurics
- Controlled-source electromagnetics
- Magnetometric resistivity
- Time-domain electromagnetics

Request more information about BF-10 Magnetic Field Induction Sensor and other Schlumberger innovations.

Features

- High sensitivity
- Very low noise
- Magnetic feedback design
- Rugged and waterproof
- Lightweight and compact
- Low power consumption
- Stable phase response

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Products & Services | About Us | Investors | Newsroom | HSE | Careers | Alumni | Resources | Contact

About Schlumberger
Corporate Profile
Events
Executive Management
Guiding Principles
Measurable Impact
Careers
Community Outreach
Health, Safety & Environment
University Relations
Research & Development
Research Centers
Technology and Product Centers
History
Our Brand

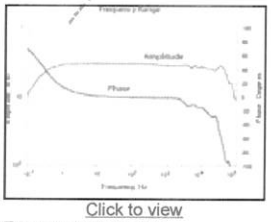
Print-friendly view
E-mail this page
Web site feedback

Recently viewed pages
BF-6 Magnetic Field Induction Sensor
Products & Services

BF-10 Magnetic Field Induction Sensor

The BF-10 sensor utilizes a magnetic feedback design to provide a stable flat response over several decades of frequency. The sensors respond as a B field detector over the flat band regions. Both the amplitude and phase responses are highly stable with variations of less than 0.1 dB in amplitude and +/– 1° in phase between sensors. For the frequencies below the flat response region, the sensor response is proportional to signal frequency so that the sensor acts as a dB/dt detector. The coil is potted with epoxy and housed inside a Black Amalgon tube. A matched low-noise preamplifier is connected to the coil in a waterproof case and powered by an external +/– 12-V power supply.

plus accessible



Click to view
Frequency and noise performance.

Performance

- Frequency range: 0.1 Hz to 700 Hz
- 3-dB frequency corners: 0.3 Hz, 500 Hz
- Sensitivity (flat region): 0.3 V/nT (standard)
- Power consumption: 9 mA at +/– 12 V

Physical Specifications

- Housing: Black Amalgon straight tube
- Length: 142 cm [56 in]
- Diameter: 6 cm [2.4 in]
- Weight: 7.9 kg [17.4 lbm]
- Connector: 8-pin Tajimi

Applications

- Magnetotellurics
- Audiomagnetotellurics
- Controlled-source electromagnetics
- Magnetometric resistivity
- Time-domain electromagnetics

Request more information about BF-10 Magnetic Field Induction Sensor and other Schlumberger innovations.

Features

- High sensitivity
- Very low noise
- Magnetic feedback design
- Rugged and waterproof
- Lightweight and compact
- Low power consumption
- Stable phase response

BF-10

The BF-10 sensor design utilizes a magnetic feedback design to provide a stable flat response over several decades of frequency. The sensors respond as a B field detector over the flat band regions. Both the amplitude and phase responses are highly stable with variations of less than 0.1 dB in amplitude and +/- 1 degree in phase between sensors. For the frequencies below the flat response region the sensor response is proportional to signal frequency so that the sensor acts as a dB/dt detector. The coil is sealed in epoxy inside a rugged impact resistant Nema G-10 fiberglass tube. A matched low noise preamplifier is connected to the coil inside the waterproof case and is powered from the connector using a nearby +/- 12V power supply. Ideal for CSAMT surveys.

FEATURES

- **High sensitivity**
- **Very low noise**
- **Magnetic feedback design**
- **Ruggedized and waterproof**
- **Light weight and compact design**
- **Low power consumption (210 mW)**
- **Stable phase response**

APPLICATIONS

- **Geophysical surveys: MT, AMT, CSAMT, MMR, MIP, CSEM, TSHMT, Stratagem™**
- **Marine surveys**
- **Earthquake studies**

OPTIONS

- **Marine connector for underwater applications**

TECHNICAL SPECIFICATIONS

PERFORMANCE

Frequency range:	0.1 Hz to 10 kHz
3 dB frequency corners:	0.2 Hz, 10 kHz
Sensitivity (flat region):	0.3 V/nT (standard)
Power consumption:	9 mA at +/- 12V

MECHANICAL

Case style:	Nema G-10 Straight Tube
Length:	142 cm (56 in.)
Diameter:	6 cm (2.4 in.)
Weight:	7.9 Kg (17.4 lbs)
Connector:	8 pin Waterproof Tajimi

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