Shielded and Calibrated Magnetic Field Pickup Coil HZ-10

Measurement of magnetic field strengths to military standards

- Frequency range 5 Hz to 10 MHz
- Built to MIL-STD-461A, 462D and 461E
- Individually calibrated
- Shielded twin-wire connection
- Spacing plate 7 cm (MIL-STD-461/462, DEF STAN 59-41) and 5 cm (VG standards)

The shielded and individually calibrated Magnetic Field Pickup Coil HZ-10 allows magnetic field strengths in the frequency range from 20 Hz to 200 kHz to be measured in line with standards MIL-STD-461/462, DEF STAN 59-41, GAM EG 13 and VG 95377 Part 13. It comes with a calibration certificate for the frequency range from 5 Hz to 10 MHz.

The coil is covered by an aluminium shielding for high isolation and connected via a shielded twin-wire line to avoid measurement errors caused by galvanic surface currents induced in the shielding.

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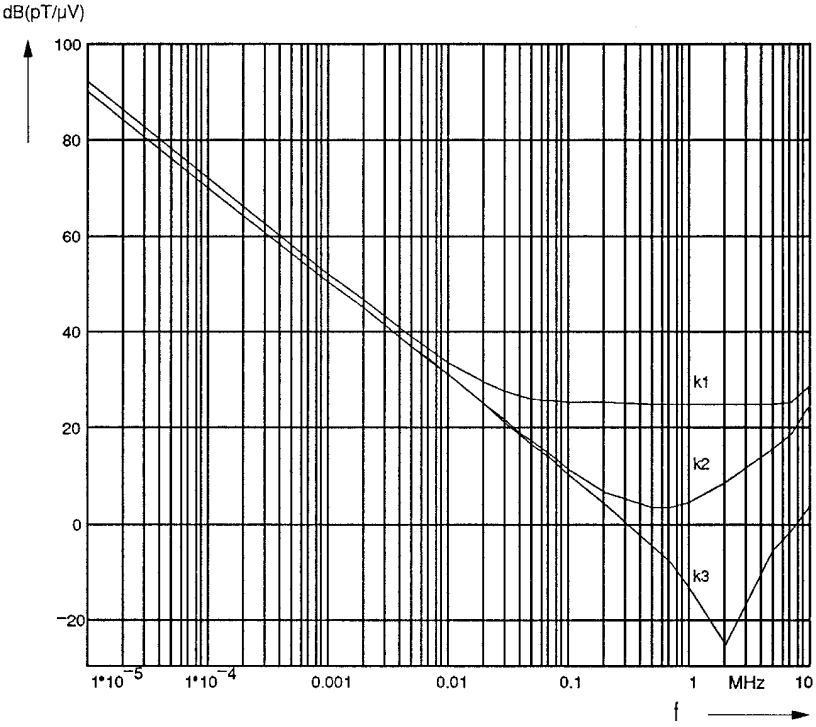
Shielding of electric and electronic equipment against low-frequency magnetic fields requires elaborate and costly measures. Therefore, the field strengths in the vicinity of such equipment must be limited as a prerequisite. Military EMC standards such as MIL-STD-461/462, DEF STAN 59-41, GAM EG 13 and the VG standards 95370 to 95377 give limits for the magnetic flux density in the frequency range 20 Hz to 50 kHz or 200 kHz and prescribe an electrostatically shielded coil with a defined number of turns for measuring the magnetic flux density.

According to MIL-STD-461/462, DEF STAN 59-41 and GAM EG 13 the magnetic flux density has to be measured at a distance of 7 cm from the EUT, and to VG standards at a distance of 5 cm. To ensure that these distances are maintained when searching for the maximum RFI, an asymmetrical spacing plate can be fitted to the HZ-10 (accessory supplied; see cover photo on the left).

The HZ-10 is supplied with a calibration certificate for the frequency range from 5 Hz to 10 MHz. In the calibration facility the HZ-10 is arranged parallel with a single-turn transmitting coil. The mean value of the magnetic flux density in the HZ-10 is precisely calculated. By operating the system as a transmitting and receiving coil, the calibration obtained is based on a high-precision attenuation measurement, and the transducer factor is calculated from the attenuation.

The HZ-10 is provided with a $^1/_4$" thread for mounting on a camera tripod.



Transducer factors in dB(pT/µV) measured and calculated by calibration: transducer factor k1 with 50 Ω, k2 with 600 Ω and k3 with 1 MΩ; k2 and k3 valid up to 100 kHz (above 100 kHz approximate values only)

Specifications

Frequency range	5 Hz to 10 MHz
Transducer factor	see diagram (calibration certificate supplied with coil)
Coil	
Diameter	133 mm
Number of turns	36
Type of wire	7-41, litz wire
Resistance	10 Ω
Inductance	415 µH
Max. input current	70 mA
Connector	Twinax female

General data

Dimensions (W x H x D)	142 mm x 178 mm x 29 mm
Weight	260 g

Certified Quality System ISO 9001 DQS REG. NO 1954

Certified Environmental System ISO 14001 REG. NO 1954

Ordering information

Shielded and Calibrated Magnetic Field Pickup Coil	HZ-10	0816.2511.02
Accessories supplied	manual, calibration certificate, spacing plate	

Recommended extras

RF connecting cable		
balanced, 1.5 m, Twinax connector	EZ-15	1052.2500.02
balanced/unbalanced, 0.2 m, Twinax/BNC connector	EZ-19	1052.2630.02

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Printed in Germany 0501 (Or ko)