

H-Field Probe Type 14



REG. NO. 572 - 02
Wandel & Goltermann Germany



H-Field Probe Type 14

100 MHz to 1 GHz
For isotropic measurement of magnetic fields

NEW!

High-sensitivity H-field probe (range starts at 0.008 A/m = 10.05 nT)

- Outstanding measurement sensitivity
- Frequency range 100 MHz to 1 GHz
- Dynamic range > 56 dB
- Digital axis processing
- Compatible with all EMR-200/EMR-300 devices
- For telecom and broadcasting applications

Applications and characteristics

This probe is designed to measure magnetic fields in the range 100 MHz to 1 GHz, as occur in telecommunications and radio/TV broadcasting applications. It is well suited to precise measurement of very low field strengths due its outstanding measurement sensitivity.

With its wide frequency range for a magnetic field probe, it covers the main ranges in industry and telecommunications up to the mobile radio range at 900 MHz.

Calibration

A two-year recalibration interval is recommended. All calibration data are traceable to national / international standards. Probe type 14C is delivered with a calibration report for 22 frequency points across the entire frequency range.

Calibration encompasses:	Type 14	Type 14C
Typical frequency response (series averaging)	•	
Individually measured frequency response		•
Absolute level	•	•
Calibration certificate	•	•
Calibration report (with individual data)		•

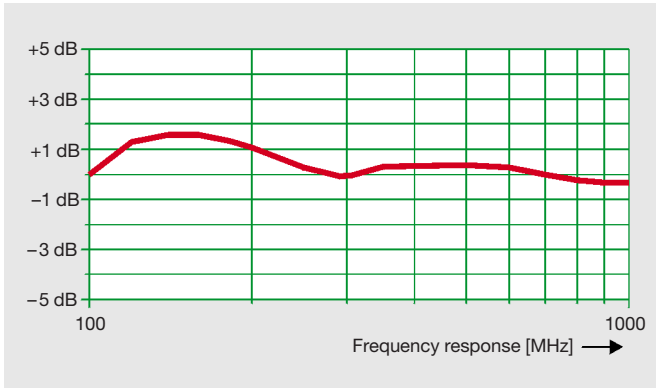
Ruggedness

In both mechanical and electrical terms, the probe was developed for field use. The entire device can be carried on the probe head without destroying the sensors. The electrical destruction limit is > 6 A/m for CW signals and thus lies well above all personal safety limits.

Basic principle

The probe works with three individual sensors. Coils with detector diodes are used as sensor elements for the magnetic field. The three channels are implemented separately and are fed to a digital signal processing unit in the EMR-200/300 mainframe. The diode characteristics are individually compensated for each channel.

Then, the equivalent field strength is computed from the three spatial components, as outlined in various standards. This assures proper display of the RMS value across a wide measurement range.



Typical frequency response for H-Field Probe Type 14

Specifications* for H-Field Probe Type 14

Sensor type magnetic field (H)	Isotropy deviation
Directivity triaxial (isotropic)	Field probe only (f < 800 MHz) typ. ± 0.6 dB
Frequency range 100 MHz to 1000 MHz	Probe and meas. unit. typ. ± 1 dB
Meas. range 0.008 A/m to 5 A/m	
(one continuous range)	Overload protection
Dynamic range typ. 56 dB	CW > 6.3 A/m
Temperature range 0 to +50 °C	Pulse (duty factor 1:100; T _i = 10 μm) > 63 A/m
Absolute error at 0.125 A/m and 100 MHz ± 1 dB	E-field suppression typ. > 20 dB
Linearity referred to 0.125 A/m	Temperature response (0 to +50 °C) +0.5/-0.8 dB
in meas. range	Dimensions
0.015 A/m to 0.035 A/m ± 1 dB	Diameter 65 mm
0.035 A/m to 1 A/m ± 0.5 dB	Length 300 mm
1 A/m to 5 A/m ± 1 dB	
Frequency response . . . +1.5/-0.5 dB (100 MHz to 1000 MHz)	
referred to 100 MHz and taking into account	
the typical calibration factor	
Frequency response ± 0.4 dB (100 to 300 MHz)	* Unless otherwise stated, all specifications apply under the following
. ± 0.65 dB (300 to 750 MHz)	conditions:
. ± 1.2 dB (750 to 1000 MHz)	Sinusoidal signals, device in far field of source; probe line parallel to
referred to 100 MHz, extended calibration	magnetic field component P _H ; ambient temperature +23 °C > 3 K;
	relative humidity 40% to 60%.

Ordering information

H-Field Probe Type 14	BN 2244/90.52	H-Field Probe Type 14C	BN 2244/90.53
		With extended calibration	

Subject to change without notice – EM/EN/D041/0100/AE – Printed in Germany

