narda Safety Test Solutions

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H-FIELD PROBE

HF3061

Measuring magnetic fields from 300 kHz to 30 MHz

using instruments in the NBM-500 family

- **Public and occupational field exposure from broadcasting, telecoms, and industrial equipment**
- **Isotropic (non-directional) measurement**
- **62 dB dynamic range without changing measurement range**

The probe contains three orthogonally arranged coils with detector diodes. The three voltages, corresponding to the spatial components, are available individually at the probe output. The NBM basic unit calculates the resulting isotropic field strength.

APPLICATIONS

The probe detects magnetic fields from 300 kHz to 30 MHz, such as those caused by short and medium wave transmitters, many RF communications services, and industrial equipment. The dynamic range from 0.012 A/m to 16 A/m (62 dB) makes it ideal for measuring field exposure in both the public and the occupational environment.

PROPERTIES

The probe has mechanical and electrical properties that are ideal for field use. The sensors are effectively protected by impact resistant plastic. The electric destruction limit is above 35 A/m for continuous wave signals, which is several times more than any of the human safety limit values.

CALIBRATION

The probe is calibrated at several frequencies. The correction values are stored in an EPROM in the probe and are automatically taken into account by the NBM instrument. Calibrated accuracy is thus obtained regardless of the combination of probe and instrument.

SPECIFICATIONS [a]

Probe HF3061	Magnetic (H-)Field	
Frequency range [(b)]	300 kHz to 30 MHz	
Type of frequency response	Flat	
Measurement range	0.012 to 16 A/m (CW) 0.012 to 0.7 A/m (True RMS)	5.4 µW/cm² to 10 W/cm² (CW) 5.4 µW/cm² to 18 mW/cm² (True RMS)
Dynamic range	62 dB	
CW damage level	35 A/m	46 W/cm²
Peak damage level [(c)]	350 A/m	4.6 kW/cm²
Sensor type	Diode based system	
Directivity	Isotropic (Tri-axial)	
Readout mode / spatial assessment	3 separate axes	
UNCERTAINTY		
Flatness of frequency response [(d)] Calibration uncertainty not included	0/-1 dB (500 to 800 kHz) +0.1/ -0.5 dB (800 kHz to 30 MHz)	
Linearity Referred to 0.59 mW/cm² (0.125 A/m)	±3 dB (0.017 to 0.033 A/m) ±1 dB (0.033 to 0.068 A/m) ±0.5 dB (0.068 to 3 A/m) ±1 dB (3 to 16 A/m)	±3 dB (10 to 40 µW/cm²) ±1 dB (40 to 175 µW/cm²) ±0.5 dB (175 µW/cm² to 340 mW/cm²) ±1 dB (0.34 to 10 W/cm²)
Isotropic response [(e)]	±1 dB	
Temperature response	+0.2/ -0.8 dB (±0.025 dB/K @ 10 to 50 °C)	
GENERAL SPECIFICATIONS		
Factory calibration frequencies	0.1/ 0.15/ 0.2/ 0.3/ 0.4/ 0.5/ 0.6/ 0.7/ 0.8/ 0.9 MHz 1/ 1.2/ 1.5/ 2/ 3/ 4/ 5/ 10/ 15/ 20/ 25/ 27.12/ 30 MHz	
Recommended calibration interval	24 months	
Temperature range Operating Non-operating (transport)	 0 °C to +50 °C -40 °C to +70 °C	
Humidity	5 to 95 % RH @ ≤28 °C	≤26 g/m³ absolute humidity
Size	300 mm x 120 mm Ø	
Weight	190 g	
Compatibility	NBM-500 series meters	
Country of origin	Germany	

(a) Unless otherwise noted specifications apply at reference condition: device in far-field of source, ambient temperature 23±3 °C, relative air humidity 25% to 75%, sinusoidal signal
(b) Cutoff frequency at approx. -3 dB
(c) Pulse length 1µsec, duty cycle 1:100
(d) Frequency response can be compensated for by the use of correction factors stored in the probe memory
(e) Results are calculated from the maximum and minimum response obtained during the full revolution about the stem of the probe, oriented 54.7° to the electric field vector.

ORDERING INFORMATION

	Part number
Probe HF3061, H-field for NBM, 300 kHz - 30 MHz, isotropic	**2402/05B**
Probe HF3061, H-field, ACC - with accredited (DAkkS) calibration, basic unit required	**2402/05B/ACC**

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