

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 μ W/cm ² to 10 W/cm ² (CW) 5.4 μ W/cm ² to 18 mW/cm ² (True RMS) |
| Dynamic range | 62 dB | |
| CW damage level | 35 A/m | 46 W/cm ² |
| Peak damage level ^(c) | 350 A/m | 4.6 kW/cm ² |
| 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) | |
| Calibration uncertainty ^(e) @ 0.59 mW/cm ² (0.125 A/m) | \pm 0.6 dB | |
| Linearity Referred to 0.59 mW/cm ² (0.125 A/m) | \pm 3 dB (0.017 to 0.033 A/m) \pm 1 dB (0.033 to 0.068 A/m) \pm 0.5 dB (0.068 to 3 A/m) \pm 1 dB (3 to 16 A/m) | \pm 3 dB (10 to 40 μ W/cm ²) \pm 1 dB (40 to 175 μ W/cm ²) \pm 0.5 dB (175 μ W/cm ² to 340 mW/cm ²) \pm 1 dB (0.34 to 10 W/cm ²) |
| Isotropic response ^(f) | \pm 1 dB | |
| Temperature response | +0.2/ -0.8 dB (\pm 0.025 dB/K @ 10 to 50 °C) | |
| GENERAL SPECIFICATIONS | | |
| 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 0 °C to +50 °C Non-operating (transport) -40 °C to +70 °C | |
| Humidity | 5 to 95 % RH @ \leq 28 °C | \leq 26 g/m ³ absolute humidity |
| Size | 300 mm x 120 mm \varnothing | |
| 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 \pm 3 °C, relative air humidity 25% to 75%, sinusoidal signal

(b) Cutoff frequency at approx. -3 dB

(c) Pulse length 1 μ sec, duty cycle 1:100

(d) Frequency response can be compensated for by the use of correction factors stored in the probe memory

(e) Accuracy of the fields generated to calibrate the probes

(f) Uncertainty due to varying polarization (verified by type approval test for meter with probe). Ellipse ratio included and calibrated for each probe

ORDERING INFORMATION

| | Part number |
|------------------------------------------------------------|-------------|
| Probe HF3061, H-field for NBM, 300 kHz - 30 MHz, isotropic | 2402/05 |

Narda Safety Test Solutions GmbH
 Sandwiesenstrasse 7
 72793 Pfullingen, Germany
 Phone: +49 (0) 7121-97 32-777
 Fax: +49 (0) 7121-97 32-790
 E-Mail: support@narda-sts.de
 www.narda-sts.de

Narda Safety Test Solutions
 435 Moreland Road
 Hauppauge, NY 11788, USA
 Phone: +1 631 231-1700
 Fax: +1 631 231-1711
 E-Mail: NardaSTS@L-3COM.com
 www.narda-sts.com

Narda Safety Test Solutions Srl
 Via Leonardo da Vinci, 21/23
 20090 Segrate (Milano), Italy
 Phone: +39 02 2699871
 Fax: +39 02 26998700
 E-mail: support@narda-sts.it
 www.narda-sts.it

© Names and Logo are registered trademarks of Narda Safety Test Solutions GmbH and L3 Communications Holdings, Inc. - Trade names are trademarks of the owners.