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Data Sheet

Pro Series

RadiSense® 40

Electric Field Probe

Model - RSS2040S

Accurate | High Speed | Robust



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The high frequency E-field probe

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Raditeq, the inventor of the first laser powered E-field probe in the world provides a full range of accurate and fast laser powered probes from 9 kHz to 60 GHz. With their long experience and extensive knowledge on laser power technology and field probe measurement technology, the RadiSense® probes provide the most reliable, high quality range of laser powered E-field probes in the market, with unprecedented measurement uncertainty.

Wide range - The RadiSense® 40 has a very wide frequency range allowing accurate isotropic E-field strength measurements with a large dynamic range. These specifications make the RadiSense® 40 ideal for EMC Automotive, Military/Aerospace and CE marking applications.

Fast and accurate - The RSS2040S provides unprecedented amplitude accuracy and isotropy, with a maximum measurement speed of 100 measurements/second (simultaneous X-Y-Z axis + isotropic value). This makes the RSS2040S field probe ideal for immunity test applications when measuring continuous wave (CW) and or Pulse modulated (PM) fields as defined in the Mil-Std 461.

Modular - The RadiSense® 40 is intended to be used in combination with the RadiCentre® modular test system, which is available as a 1-slot (CTR1001S), 2-slot (CTR1004B), 7-slot (CTR1009B) or 8-slot (CTR2008A) RadiCentre®. The probe is connected to the plug-in card (model LPS2001B). The plug-in card provides the laser power source and bi-directional communication to the probe. The fiber optic extension cable between the RadiSense® 40 probe and the LPS2001B plug-in card is standard available at three different lengths (10, 20 or 30 m). A maximum of 100 m is available on request.

Factory Calibration Certificate - The RadiSense® field probes can be offered with a factory calibration certificate. This certificate includes correction factors for frequency response across the X, Y, and Z axes, linearity data at 100 MHz, anisotropy (rotational symmetry) measurements at seven frequency points. The factory calibration certificate is provided in PDF format. The correction factors are also provided in Excel® format.

Accredited Calibration Certificate - Alternatively, Raditeq offers calibration services conducted at an ISO17025 accredited calibration laboratory. This ensures compliance with international standards for calibration accuracy and traceability.

Internally stored calibration data - The frequency response calibration data of the X-Y-Z axis (k-factors) can be stored inside the probe as user correction data. As a result, there is no need to apply frequency dependent corrections for individual axis' in software. By storing the data inside the Radisense® each axis is corrected individually. This, instead of applying an average k-factor for each axis which often done in EMC software. Apart from this the probe can be easily moved from one setup to the next without the risk of applying the incorrect k-factors in software. This feature results in accurate measurements and ease-of-use.

Software support -The RadiSense® probes can be controlled by RadiMation® and most third party EMC software packages, such as, ETS-Lindgren TILE and Rohde & Schwarz EMC32 / Elektra.

RadiSense® 40 Specifications(*)

Model	RSS2040S
Field measurement range	1 to 1000 V/m
Damage Level (Max.)	2000 V/m
Frequency range	10 MHz to 40 GHz
Resolution	0.001 V/m < 0 to 10 V/m 0.01 V/m < 10 to 100 V/m 0.1 V/m > 100 to 1000 V/m
Measurement speed (x, y, z and E_{Tot} Simultaneously)	100 measurements/s
Accuracy (1,2)	
Frequency response	-4.0 dB + 2 dB (10 to 20 MHz) ± 1 dB (20 MHz to 40 GHz)
Anisotropy (3)	± 0.5 dB (10 MHz to 1 GHz) ± 1 dB (1 to 10 GHz) ± 2 dB (10 to 30 GHz) ± 3 dB (30 to 40 GHz)
Linearity	± 0.5 dB ± 0.5 V/m
Dimensions	
Shape of housing	stalk probe
Electrical measuring volume	1 cm^3
Total length including body	30 cm (11.81 in)
Number of antennas	3 dipoles
Environmental conditions	
Temperature range (operating)	0 to 40 ˚C (32 to 104 ˚F)
Relative humidity (operating)	10 to 90 %rh (non-condensing)
Calibration & Power consumption	
Factory adjustment data	Internally stored, ISO/IEC 17025 calibration
Accredited calibration (4)	Traceable, accredited calibration with certificate (optional)
Optical LASER power	Max. 0.5 Watt at aperture @ 808 nm
Fibre connection	
Laser fibre optic connector	FC/PC fibre
Data fibre optic connector	ST/PC fibre
Extension fibre length	Standard lengths 10, 20 or 30 m. (Maximum 100 m on request)
Safety	
Interlock	External interlock & closed loop safety system
Warranty (5)	Three years

*) Specifications measured after 30 minutes warm-up time and under the orthogonal angle, please refer to manual for more information and instructions.

1) The overall measurement accuracy of a field probe is primarily determined by the measurement uncertainty of the calibration laboratory. This calibration uncertainty varies significantly between different calibration labs. Therefore, the specified accuracy for the probe does not include the measurement uncertainty of the calibration laboratory but refers solely to the accuracy and stability of the probe itself. To determine the overall measurement uncertainty, the RSS (Root Sum Square) of the specified accuracy of the probe and the stated measurement uncertainty of the calibration report must be calculated.

2) The specified accuracy is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95%

3) Anisotropy is the maximum deviation from the geometric mean as defined by IEEE 1309-2013

4) This calibration can be stored inside the probe as user correction data

5) Standard warranty is 1 year. After you register your new Raditeq product two (2) years of warranty will be added for free. Registration can be done at: www.raditeq.com

Specifications are subject to change without notice



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