

EFS-10 / EFS-100 Field Strength Meter

for field strength measurements during radiated immunity tests acc. to IEC/EN 61000-4-3 / -20



Special features

- Extreme small size
- PC connection via fibre optic link
- Excellent isotropy (0.3 dB typical)
- Frequency range: 10 kHz to 9.25 GHz
- Field strength measurements from 0.14 V/m to 500 V/m
- Up to 80 hours operating time before recharging

General description:

The Frankonia EFS field strength meters especially have been designed for field strength measurements / field homogeneity measurements during radiated immunity tests according to IEC/EN 61000-4-3 / -20. But it could also be used to measure the radiation exposure of the environment, for example at workplaces or flats.

The EFS is an isotropic miniature E-field sensor to ensure that the E-field will not be influenced by the size of the sensor itself. It even does not need any metering unit (which could also influence the field strength), because of its direct fibre optic output which allows direct

connection of the sensor to the USB-interface of the control PC or laptop. The measuring values may be displayed via the individual IEC/EN 61000-4-3 / -20 control software or via a Windows software included in the delivery.

The EFS-10 / EFS-100 cover the frequency range from 10 kHz up to 9.25 GHz and are able to detect electrical field strength in the range from 0.14 V/m to 500 V/m (depending on type). The sensors are battery operated by Li-Mn batteries, which allow a maximum operation time of 80 hours before recharging.



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Technical specifications	EFS-10	EFS-100
Frequency range	10 kHz – 9.25 GHz	100 kHz – 9.25 GHz
Flatness	0.1 – 150 MHz: 0.4 dB	1 – 150 MHz: 0.8 dB
With frequency correction OFF	0.05 – 6 GHz: 1.6 dB	0.5 – 6 GHz: 1.6 dB
	0.03 – 7.5 GHz: 3.2 dB	0.3 – 7.5 GHz: 3.2 dB
With frequency correction ON	0.05 – 7.5 GHz: 0.4 dB	0.3 – 7.5 GHz: 0.4 dB
Dynamic range (single range)	0.5 – 500 V/m (60 dB)	0.14 – 140 V/m (60 dB)
Linearity	0.4 dB @ 50 MHz / 1-500 V/m	0.4 dB @ 50 MHz / 0.3 – 100 V/m
Resolution	0.01 V/m	
Sensors	6 monopoles	
Isotropy	0.5 dB (0.3 dB typical) (@ 50 MHz)	
Overload	1000 V/m	300 V/m
Measured data X-Y-Z axis	sampling simultaneous on X-Y-Z axis	
Sampling rate	22 S/s to 0.03 S/s, depending on filter setting	
Digital filter	2.3 to 28 Hz, low-pass, pre-settable	
Internal battery	3 V – 5 mAh, rechargeable Li-Mn	
Operation time	80 hours @ 0.4 S/sec., 28 Hz filter	
	60 hours @ 5 S/sec., 28 Hz filter	
Recharging time	48 hours for full operation time	
Internal data memory	serial number, calibration date, calibration factors, firmware version	
Communication	bidirectional fibre optic link	
Fibre optic connector	HFBR-0500	
Fibre optic length	10 m standard (20/40 m optional)	
Fibre optic to PC connection	fibre optic to RS232 converter, RS232 to USB converter	
PC Software	included (display of field, temperature and battery voltage measurements, setting of filters, sampling rate, frequency)	
Operating temperature	-10 °C ÷ +50 °C	
Temperature reading	0.1 °C resolution	
Battery voltage reading	10 mV resolution	
Dimensions	53 mm overall, (body: 17 mm diameter, sensor: 17 mm)	
Weight	25 g, including 1 m fibre optic pigtail	
Probe mount	20 UNC female	
Included accessories	10 m fibre optic cable, optical/RS232 adapter + RS232/USB adapter, software, battery charger	
Optional accessories	20 m fibre optic cable, order-no.: EFS-OF20	
	40 m fibre optic cable, order-no.: EFS-OF40	