



FRANKONIA
EMC Test-Systems GmbH

EFS-10/100

ELECTRIC FIELD PROBES | DATASHEET


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



Frankonia EMC Test-Systems GmbH

Daimlerstr. 17
91031 Forchheim
Germany

 +49 9191 73666-0

 +49 9191 73666-20

 sales@frankonia-emv.com



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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. But it could also be used to measure the radiation pollution 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 does allow 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 61000-4-3 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 re-charging.



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TECHN. 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, claibration data, calibration factors, firmware version			
Communication	bidirectional fiber optic link			
Fiber optic connector	HFBR–0500			
Fiber optic length	10 m standard (20/40 m optional)			
Fiber optic to PC connection	fiber 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			



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TECHN. SPECIFICATIONS	EFS-10	EFS-100
Temperature reading	0.1°C resolution	
Battery voltage reading	10mV resolution	
Dimensions	53 mm overall, (body: 17 mm diameter, sensor: 17 mm)	
Weight	25 g, including 1 m fiber optical pigtail	
Probe mount	20 UNC female	
Included accessories	10m fiber optical cable, optical RS232 adapter + RS232/USB adapter, software, battery charger	
Optional accessories	20m fiber optic cable, order-no.: EFS-OF20 40m fiber optic cable, order-no.: EFS-OF40	



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