

FA7006/Kit* FA7218/Kit* FA7040/Kit* FA7060/Kit*

Electric Field Analyzer Kits

*For custom calibration, add CC to end of model number

Features

The FA7000 series Field Analyzers are specifically designed to measure modulated electric fields. Each kit provides a web-based, oscilloscope-type display of the instantaneous electric field strength or power density over time and calculates the minimum, maximum, and average field strength of the waveform as displayed. Each kit consists of an isotropic Field Sensor, glass fiber-optic cabling, a miniature tripod, carrying case, and a Processor Unit. The Processor Unit stores all of the necessary linearity corrections for its associated Field Sensor.

The Field Sensor is laser powered to allow for continuous operation without recharging or battery replacement. An ortho angle mount and adapter foot is provided for ease of mounting in common orientations.

Correction factors for many frequencies are provided with each kit. These factors can be loaded into the Processor Unit to automatically correct the field readings at user-specified frequencies. When correction factors are applied, the true accuracy of this device can be realized.

The glass fiber optic cabling between the Field Sensor and the Processor Unit can be up to 100 meters long.

The export classification for this equipment is EAR99. This equipment is controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



FA/218, FA/040, & FA/060 Field Sensor



FA7006, FA7218, FA7040, & FA7060 Processor Unit

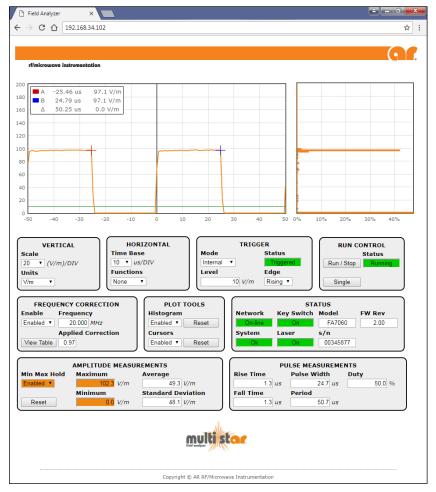
AR RF/Microwave Instrumentation

160 School House Rd Souderton, PA 18964 215-723-8181

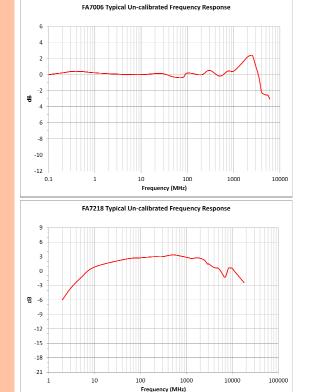
For an applications engineer call:800.933.8181

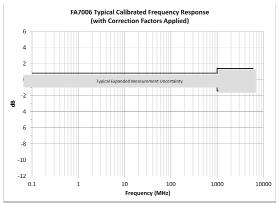
www.arworld.us

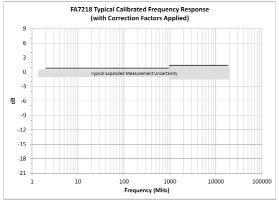
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Embedded webpage for viewing the modulation envelope of the measured electric field

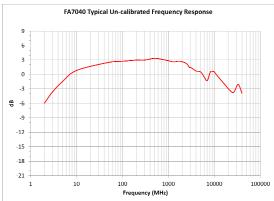


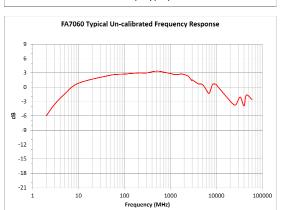


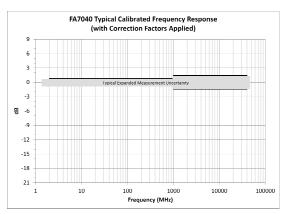


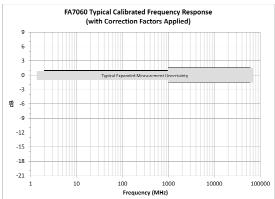
Page 3

FA7006/Kit FA7218/Kit FA7040/Kit FA7060/Kit Electric Field Analyzer Kits









Specifications

Processor Unit:

Dimensions (W x H x D):

21.91 x 4.45 x 27.69 cm (8.63 x 1.75 x 10.9 in)

Field Processor Weight: 1.36 kg (3 lbs)

Operating Temperature Range: 10°C to 40°C (50°F to 104°F) @ 5% to 95% RH non-condensing

Fiber Optic Connector: E2000 compact duplex connectors (yellow, keying #3).

Fiber Optic Cable length: 20m (supplied with kit)

Max Fiber Optic length: 100m (sold separately)

Remote Interfaces:

LAN (Ethernet)

USB 2.0 (Test and Measurement class)

IEEE-488 (GPIB)

Fiber Optic Serial (FSMA connectors; Reserved

for use with FM7004A Field Monitor)

Max Remote Transfer Rate: 20 queries per second

External Trigger Port:

Impedance:>10MΩThreshold Voltage:3VMaximum Input Voltage:5VMinimum Pulse Width:40ns

Readout Display: Embedded Web Application through PC (PC not included)

• Remote Interface: LAN (Ethernet)

 Compatible Web Browsers: Chrome, Internet Explorer, Firefox, Opera (Some features not available in all browsers.)

Timebase Range: 1μs/Div to 400μs/Div

Scale Range: 0.1(V/m)/Div to 5000(V/m)/Div

 Trigger Modes: Free Run, Internal (conventional threshold), External

• Edges (Threshold trigger): Rising and Falling

Vertical Divisions: 10

Horizontal Divisions: 10

Laser:

Wavelength: 830nm Output Power: ≤ 500mW

Shutdown Time: < 1 ms after fiber disconnect

Power Requirements:

Input Voltage: 90-260VAC, 50-60Hz

Input Current: 0.2–0.6A Input type: IEC inlet with filter

Sample Rate: 1.5MS/s

Max Record Length: 6kPoints

Modulation Frequency Range: 250Hz to 750kHz

Measurement Format: Composite only

Calibration Data: Accredited Calibration Report supplied with kit. Custom calibration available upon request. For models with CC suffix, userspecified calibration requirements must be provided, using Form 647, at time of quote.

Page 4

Specifications

FA7006/Kit **FA7218/Kit** FA7040/Kit FA7060/Kit Electric Field Analyzer Kits

Field Sensors

	FA7006	FA7218	FA7040	FA7060
Frequency Range	100kHz–6GHz	2MHz-18GHz	2MHz-40GHz	2MHz-60GHz
Amplitude Accuracy ¹	±1.0dB @ 10MHz ² 0.8dB, 100kHz–1GHz ^{3,4} 1.4dB, 1GHz–6GHz ^{3,4}	±1.0dB @ 10MHz ² 0.8dB, 2MHz–1GHz ^{3,4} 1.4dB, 1GHz–18GHz ^{3,4}	±1.0dB @ 10MHz ² 0.8dB, 2MHz–1GHz ^{3,4} 1.4dB, 1GHz–40GHz ^{3,4}	±1.0dB @ 10MHz ² 0.95dB, 2MHz–1GHz ^{3,4} 1.5dB, 1GHz–60GHz ^{3,4}
Isotropic Deviation ^{4,5}	±1.2dB @ 10MHz ≤ 200V/m	±1.0dB @ 10MHz ≤ 200V/m	±1.0dB @ 10MHz ≤ 200V/m	±1.0dB @ 10MHz ≤ 200V/m
Deviation	±2.0dB @ 10MHz > 200V/m	±2.0dB @ 10MHz > 200V/m	±2.0dB @ 10MHz > 200V/m	±2.0dB @ 10MHz > 200V/m
Operating Range ⁹	9 – 900V/m	14–1400V/m	14–1400V/m	14–1400V/m
Linearity	±0.5dB	±0.5dB	±0.5dB	±0.5dB
Typical Analog Rise Time ^{6,7}	300nS	300nS	300nS	300nS
Minimum Pulse Width	1μs	lμs	1 <i>μ</i> s	1 <i>μ</i> s
Damage Level (CW)	1000V/m	1200V/m	1200V/m	1200V/m
Temperature Stability	±1.0dB, 10°C - 40°C ⁸	±1.0dB, 10°C - 40°C8	±1.0dB, 10°C - 40°C8	±1.0dB, 10°C - 40°C8
Approximate Dimensions (W x H x D)	5.7 x 5.7 x 5.7cm	27.8 x 6.5 x 6.5cm	27.8 x 6.5 x 6.5cm	27.8 x 6.5 x 6.5cm
Weight	62.5g	150g	150g	150g

¹ Single axis aligned with field





Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice # 50, dated June 24, 2007

Compatible Accessories

Model	Description		
FM7004A	Field Monitor		
RK7000	Rack mount kit for up to two Processor Units (1.75" height x 19" width)		
FAC7010	10 meter fiber optic cable		
FAC7020	20 meter fiber optic cable		
FAC7050	50 meter fiber optic cable		
FAC7100	100 meter fiber optic cable		
FAM7000	Fiber optic mating adapter		

² Without correction factors applied

³ With correction factors applied

⁴ Typical expanded measurement uncertainty (95% confidence interval)

⁵ Measured at the ortho angle ⁶ 10% - 90%

⁷ Pre-digitization

^{85% - 95%} Relative humidity, non-condensing

⁹ Less than 50% duty