



SM40G

- M1
- Broadband EM Field Meter
- DC-40GHz



Features

The SM40G broadband EM Field Meter provides measurement capability over a wide frequency (DC to 40 GHz) of electric, magnetic and electromagnetic fields when used with the appropriate sensor heads. By selecting the appropriate sensor heads for the desired field types, frequency ranges, and power levels, a single meter with removable sensor heads can replace multiple fixed-head dedicated field measuring meters. Refer to the SH-series sensor head specification sheets for the available sensor heads.

The SM40G is housed within a durable metal shell with an integrated temperature sensor and GPS unit, provides X, Y, Z analog output and has a battery-life of more than 70 hours. It uses ARLinkwARe software for displaying measurements and data over the optical interface.

Multiple Monitoring and Data Logging

The SM40G allows the user to perform continuous monitoring activities, with more than 24 hours of recording time, and to periodically store the measured values by activating a START/STOP function.

The user can store up to 8 monitoring sequences/events before downloading the data to a PC. A maximum limit of 21,504 samples can be recorded.

ARLinkwARe Software

The ARLinkwARe software supplied with the SM40G allows the user to:

- operate the SM40G unit remotely using a PC connected via a fiber optic cable. This reduces the disturbance caused by human presence in the area where the sensor head is located.
- download stored data, graphics, and tabular reports of the acquired readings from the SM40G and export the data to Microsoft Excel for further analysis.
- highlight a portion of the graph and automatically focus on the corresponding readings or measurements within that area or period of the monitoring activity.

Safety Products

GPS Recording

Enabling GPS during outdoor monitoring allows recording location site of data that can be downloaded to a PC and viewed with mapping software.

Typical Applications

The SM40G sensor heads conform to the following standards:

- Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 (20th individual Directive within the meaning of article 16(1) of Directive 89/391/EEC) and repealing directive 2004/40/EC.

- CEI EN 50500
- CEI EN 62233
- CEI EN 62311

Applications include:

- Industrial ovens, welding systems, RF heating, tempering and drying equipment
- Diathermy equipment and medical devices, RF generating devices, NMR machines
- Electric generating plants and related systems
- Sensitive sites (imaging and NRM)
- Railways and ground transport systems
- Wireless telecom systems such as cellular towers, satellite communications, broadcasting, Wi-fi, Wi-max and LTE systems

Controls and monitoring of population exposure in public and private environments:

- CEI EN 211-6: Guide for measurement and evaluation of electric and magnetic fields from 0Hz-10kHz, with regard to human exposure
- CEI EN 211-7: Guide for measurement and evaluation of electric and magnetic fields from 10kHz-300GHz, with regard to human exposure
- High Voltage power lines
- Power and Electricity plants
- TV and radio transmission sites

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Specifications

Frequency Range: 0–40 GHz (Sensor head dependent; see SH Series specification sheets.)

Display:

Type: Transflective LCD, monochrome
 Size: 7 cm (2.76 in), 128x64 dots
 Backlight: Off/10S/Permanent
 Refresh rate: 200 ms

Measurement:

Units: mW/cm², W/m², V/m, A/m, Tesla
 Type (Isotropic, RSS): Actual (ACT), Max (MAX),
 Moving average (AVG), Median
 Type (X-Y-Z mode): Actual X, Y, Z
 Moving Average: Moving average made by analyzer from 6 to 192 min; Moving average in post-processing with timeframe from 6 min to 24 hours.
 Spatial Averaging: Discrete

Memory: 8 monitoring sequences totaling 21,504 samples, 432 single shot samples

Interfaces:

Optical: Serial, full duplex
 Sensor head Input: Plug-and-play auto-detection, LEMO™ connector
 Analog Output: 3 separated outputs X, Y, Z—SMA female connectors

GPS: Integrated (selectable)

Software: ARLinkwARe - compatibility: Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10 (32-bit and 64-bit)

Power Supply: Alkaline or rechargeable NiMH, 4 AA size batteries

Operation Time: >70 hours, backlight off

Charging Time: 4 hours

Battery Level (on display): 4 voltage levels (bar graph)

Temperature Range:

Operation: -10°C to +50°C
 Storage: -20°C to +70°C
 Charging: 0°C to +40°C

Humidity: 5% to 95% non-condensing

Size (H x W x D) without sensor head: 165 x 104 x 30 mm, 6.5 x 4 x 1.18 in

Weight (batteries included, without sensor head): 750g, 1.6 lbs

Export Classification: EAR99

Included Items

- Rigid Case
- Optical to USB converter, P/N #10037328
- Fiber optic cables, 10 meter, P/N #10037331
- AC/DC battery charger, P/N #10037330
- Calibration certificate for sensor head(s)

MODEL CONFIGURATIONS

SM40G	Meter only
SM40GM1	Meter and SHMD20K sensor head

Available Sensor Heads		
Model	Frequency Range	Measurement Range
Electric Field		
SHE100K6z5G	100 kHz-6.5 GHz	0.2-350 V/m
SHE400K40M	400 kHz-40 MHz	2-800 V/m
SHE100K18G	100 kHz-18 GHz	0.8-340 V/m
SHE3M40G	3 MHz-40 GHz	0.5-350 V/m
SHE5H400K	5 Hz-400 kHz	20 V/m-20 kV/m
Magnetic Field		
SHH300K30M	300 kHz-30 MHz	0.016-16 A/m
SHB5H400K	5 Hz-400 kHz	0.1 μT-1 mT
SHBD1K	0-1000 Hz	1 mT-15 T
SHBD1KA	0-1000 Hz	200 μT-600 mT
SHB5H20K	5 Hz-20 kHz	300 nT-16 mT
SHB5H400KA	5 Hz-400 kHz	300 nT-16 mT
Multiple Field Types		
SHMD20K*	0-20 kHz	See spec sheet

*Available only in conjunction with meter purchase.