

# FH40GL Digital Survey Meter

Radiation Measurement & Protection

**Thermo**  
ELECTRON CORPORATION

The FH 40G family of advanced digital survey meters is designed for multiple radiation protection measurements. This integrated design represents a versatile, user-friendly radiation measurement system that can be operated stand-alone or networked.

- Versatile Multipurpose Meter
- Backlit LCD digital readout & 3 decade logarithmic analog bargraph
- Setup and Calibration via Windows PC programs
- Data Logging up to 256 data records
- Simultaneously operates internal and external detectors
- Audible & visual dose and dose rate alarms



## General

The Model FH 40GL is a stand-alone unit with an internal proportional detector and can simultaneously function with an external detector.

The Model FH 40GX only operates with an external detector. The external probes utilized with either model of FH 40G are "smart" with the calibration parameters automatically adjusting with a change of probes.

Measured values are shown via a clear, backlit LCD display. Measurements are digital with a 3 decade logarithmic analog bargraph.

An intelligent rate meter algorithm (ADF mode) detects and indicates small changes in dose rate, suppressing random noise. Additional information includes alarm setting(s), audio speaker, battery voltage, external probe parameters, date and time and many user-selectable functions.

## General (Continued)

The FH 40G is rugged, lightweight, fits snugly in the palm of the hand and is easy to operate with large keys that enable users wearing gloves. Internal diagnostics ensure proper functioning of the detector(s) and the electronics. If the battery voltage falls below a pre-defined value, the corresponding icon on the display flashes giving the user 20 hours of remaining time before replacing the batteries.

Alarm values are established for dose rate and integrated dose. When an alarm value is exceeded, a permanent signal is emitted. In parallel to the measured value display, an audible speaker can be activated to signal detector pulses.

## SPECIFICATIONS

Dose rate equivalent Hx:	10 nSv/h to 100 mSv/h.
Exposure rate:	1 $\mu$ R/h to 10 R/h.
Air Kerma rate:	10 nGy/h to 100 mGy/h.
Energy Range:	36 keV - 1.3 MeV.
Polar Response:	-90 to +90 (+/-20% for energy greater than 65 keV).

### General

Overrange:	at 100 Sv/h no display decrease.
Alarm Thresholds:	dose rate 0 to 9.9 R/h (0 to 99 mSv/h) dose 0 to 1000 R (0 to 10 Sv).
Audible:	80 db at 30 cm.
Interface:	RS-232, infrared.
Interference:	Electromagnetic/RF shielded case EN50 081-1, EN50 082-2.
Batteries:	2 standard "AA", 250 hours with Alkaline, 500 hours with Lithium.
Operating Temperature:	-22°F to 131°F (-30°C to 55°C).
Storage Temperature:	-40° F to 158° F (-40°C to 70°C).
Size:	7.7" x 2.9" x 1.7" (195 x 73 x 42 mm).
Weight:	1.0 lbs. (453 g) FH 40GL, with batteries.

### INSTRUMENT CONFIGURATION OPTIONS

FH40GL:	Includes internal proportional detector.
FH40GX:	Without internal detector.

The memory of the FH 40G models are designed to record up to 256 data points containing measurement number, date, time and dose rate at the internal detector and external detector, status, and barcode information.

The stored values can be read directly from the LCD, accessed at any time and can also be processed and transferred for archiving to a PC via the FH 40G serial interface.

### OPTIONAL EXTERNAL PROBES

TeleProbe:	A lightweight telescoping probe for gamma. Extends to 13 feet (4m) 10 $\mu$ R/h -1000 R/h (100 nSv - 10 Sv/h).
UWDS:	FHZ312 Energy compensated GM underwater probe, with 65' watertight cable, 10 mR/h to 10,000 R/h.
FHZ512A:	1.5" x 1.5" NaI probe.
FHZ752S:	BF <sup>3</sup> Neutron probe, provides simultaneous gamma and neutron measurements when used with the FH 40GL.
FHZ752SH:	He <sup>3</sup> Neutron probe, provides simultaneous gamma and neutron measurements when used with the FH 40GL.
FHZ632L:	Proportional probe, 100 $\mu$ R/h -10R/h.
FHZ672E-10:	Highly sensitive Organic Scintillator and Proportional tube in one portable unit for NBR applications.
FHZ732GM:	GM Pancake, 1.75" Dia 1700 cpm/mR/h sensitivity.
NBR:	Natural Background Reduction FH-40G with FHZ-672E probe.

### INSTRUMENT OPTIONS

FH40GOPT1:	PC IR Interface cable.
FH40GOPT2:	Windows PC Software.
FH40GOPT <sub>3</sub> :	Windows PC Calibration Software.
FH40GOPT4:	Coiled Cable, 1.2 m, FH 40 G to external TeleProbe.

For more information see: ZT-002