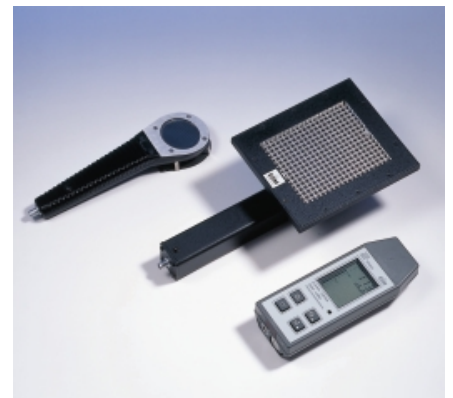
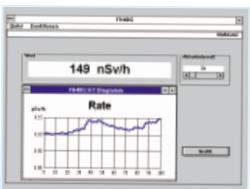


# FH 40 G/GL Advanced Survey Meter System



| Time     | Rate   | Count | Rate   | Count | Rate   | Count | Rate   | Count |
|----------|--------|-------|--------|-------|--------|-------|--------|-------|
| 17:00:00 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:01 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:02 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:03 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:04 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:05 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:06 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:07 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:08 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:09 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:10 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:11 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:12 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:13 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:14 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:15 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:16 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:17 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:18 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:19 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:20 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:21 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:22 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:23 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:24 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:25 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:26 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:27 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:28 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:29 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |
| 17:00:30 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 | 137.75 | 13775 |



All in one  
instrument

# FH 40 G, the Multipurpose Measuring S

The development of the high-tech Radiometer FH 40 G was governed by customers' requirements and the need for versatility.

Today the FH 40 G is the first hand held instrument with a built-in, wide range, proportional detector for dose rates from 10 nSv/h (1  $\mu$ R/h) up to 1 Sv/h (100R/h). It is also the first dual channel instrument for simultaneous measurement with an optional external detector at a distance of up to 50 m.

## New applications

- While the user is concentrating on an alpha/beta contamination survey with FHZ 742 the local gamma dose rate is simultaneously measured with the built-in detector. An alarm is actuated if required.
- The neutron and the gamma dose rate in mixed radiation fields can be simultaneously measured with a FHT 752 neutron detector and FH 40 G. Two different alarm levels may be adjusted.
- When using FH 40 TG teleprobe as external detector, remote locations may be investigated and personal safety of the operator is monitored as well. For special measuring tasks the wide range dose detector at the tip of the telescope can be replaced by a high sensitivity scintillation detector or by a light weight neutron sniffer.
- An external FHZ 632 detector monitors the gamma dose rate inside a room. FH 40 G, mounted close to the door, measures with its detector from the outside. Alarms may be individually set for both values.
- A big plastic scintillator mounted near the grab of a crane watches for radioactivity in scrap and additionally the driver's cab is secured by the built-in dose rate detector.



- In combination with a HCM Detector (neutron reflection method) the concentration of hydrogen in closed containers can be determined. UNO inspectors use this system for identification of chemical weapons. A similar method uses backscattered gammas for detection of contraband in cavities.



# System



## Ready for action

- Personal radiation protection.
- Workplace monitoring.
- Alpha/beta contamination.
- Monitoring for forwarding goods.
- Scrap monitoring on cranes.
- Detection of hidden radioactive sources.
- Harsh outdoor measurements.
- Mobile missions, GPS supported.
- Highly sensitive proof of artificial gammas at variable natural background.
- Simultaneous measurement of neutrons and gammas in mixed radiation fields.
- Stationary monitoring.
- Investigation of remote locations with approx. 4 m telescope.
- X-rays and gamma radiation in health care.
- Identification of chemical weapons.
- Detection of contraband in cavities.
- Gamma measurement down to 20 m under water.
- Combined measurements with barcode scanner.
- Protection of rescue services.
- Experimental measurement networks.

## State of the art

- NBR-discrimination of artificial and natural radiation.
- Quick and stable measured value display by ADF.
- Revolutionary operation concept.
- Uniform response due to  $2\pi$  directional characteristics.
- Measured value memory for Radiameter and external probe.
- One-hand probe for a simultaneous measurement of both gamma and neutron radiation in mixed radiation fields. Safety by separate alarm thresholds.

- A sensitive plastic scintillator with NBR electronics searches for artificial radiation, the FH 40 G adds the dose rate level and alarm indication, a GPS system provides the location and a Notebook PC stores all data.



# Quality According to ISO 9001

## The basic concept

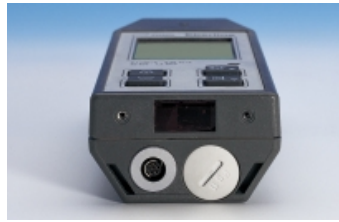
Only one proportional counter tube is required for the overall measurement range. This means that the inevitable hysteresis effects and anomalous detector overlaps for units with two or more detectors, are eliminated.

Furthermore, the internal diagnostics ensures the proper functioning of the proportional tube and its associated electronics.

The intelligent ratemeter algorithm (ADF mode) guarantees that even the smallest changes of dose rate are immediately detected, while, at the same time, the random electronic noise is effectively suppressed.

## Configuration by PC

The desired functions can be activated or inhibited using the WINDOWS based operating program. This means that the characteristics of the FH 40 G precisely correspond with the measurement task and thus operator errors are minimised. The Survey Meter keeps you informed by uncoded text messages to avoid any misinterpretation. This facilitates every measurement task.



## Flexible data storage for FH 40 G and external probe

- automatically periodic mean values in freely definable intervals
- by pressing a button current measured values

The stored measured values can be accessed any time and seen on the display of the Advanced Survey Meter. For further processing and archiving purposes, it is possible to transfer the complete history contents to a PC via the FH 40 G interface.

## Technical Data

|                                | FH 40 G <small>23.03<br/>95.26</small>                               | FH 40 G-L <small>23.01<br/>96.06</small> |
|--------------------------------|--|--|
| Dose equivalent Hx             | 10 nSv/h ... 1 Sv/h  | ... 100 mSv/h                            |
| Exposure                       | 1 µR/h ... 100 R/h   | ... 10 R/h                               |
| Air kerma                      | 10 nGy/h ... 1 Gy/h  | ... 100 mGy/h                            |
|                                | <b>FH 40 G-10</b>  | <b>FH 40 G-L 10</b>                      |
| Ambient dose equivalent H*(10) | 10 nSv/h ... 1 Sv/h  | ... 100 mSv/h                            |
|                                | <b>FH 40 G-X Ω</b>   |  |
|                                | Display unit with identical software (without internal counter tube) |  |

### Energy range:

from 30 keV ... 1.3 MeV

### Admissible overload:

up to 100 Sv/h no display decrease

### Accuracy:

typ. 5%, max. 20% for dose rates > 100 nSv/h (Cs-137)

### Polar response:

-75 ° ... +75 ° (± 20 %)

### Continuously adjustable alarm thresholds:

dose rate 0 ... 999 mSv/h

dose 0 ... 10 Sv

### Audible signal:

80 dB (A) at 30 cm distance

### Ambient temperature:

-30 ... +55 °C

### Storage temperature:

-40 ... +70 °C

### Electromagnetic sensitivity/interference resistance:

RF-shielded case

EN50 081-1, EN50 082-2

Batteries: 2 standard or Li AA-cells 1.5 V

### Battery operating time:

> 250 h or > 500 h with lithium cells (at natural background)

Size: 195 x 73 x 42 mm

Weight: ~ 410 g (without batteries)

Protection: IP 67

## Options

- External probes
- System case available in different configurations
- PC interface cable
- 230/115 V line adapter
- Barcode Scanner
- Earphone for FH 40 G-L Ω
- WINDOWS programs for configuration, calibration and storage of the data
- Transmitter and receiver for wireless data transmissions
- Accessories for calibration purposes
- Belt bag



FH 40 G with NBR probe and measurement case.

FH 40 G with supplementary equipment for wireless measured value transmissions.