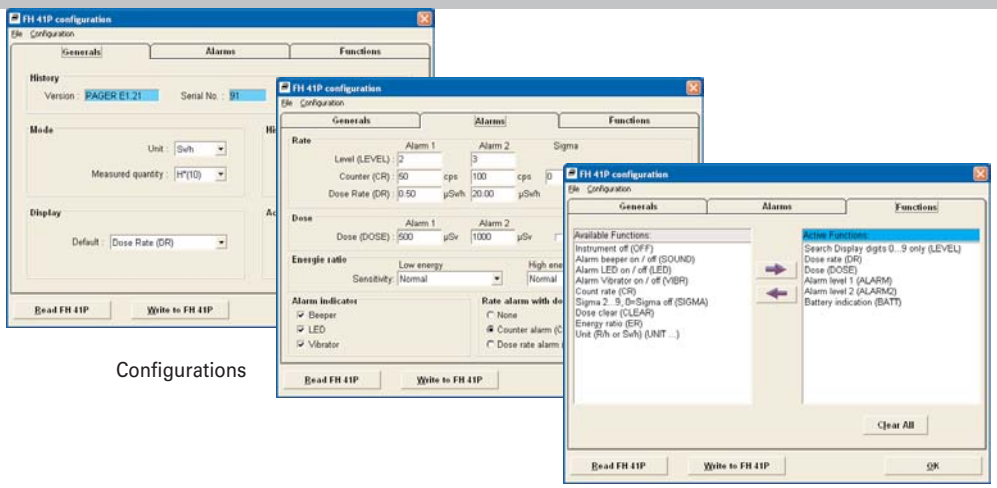
Thermo Electron´s new, most sensitive Personal Radiation Detector for gamma radiation detection and localization.

Product Specifications

FH 41 P First Response

Rugged and highly sensitive Radiation Detection, Dose- and Dose Rate Monitor



Configurations

- Detection of radioactive and nuclear materials
- True energy compensated dose and dose rate reading 5000 - 100 000 x more sensitive than typical electronic dosimeters
- Measuring range 10 nSv/h to 1 mSv/h (1 µR/h to 100 mR/h), overload indication up to 10 Sv/h (1000 R/h)
- Realistic dose rate alarm and dose alarm setting of 10 nSv/h possible, despite natural background fluctuations
- Fully automatic and easy to use with one button operation
- Can be worn permanently like a mobile phone
- PC configurable
- Unobtrusive monitoring
- Data logging for analysis of incidents

The orphan source phenomena is a global problem with sources showing up unexpectedly in scrap yards, border crossings, and numerous public locations. Another global phenomena is the increased security threat from nuclear terrorist activity. The FH 41 P First Response represents a high-performance measuring device for persons who are responsible for detecting and localizing radiation sources in customs, security, military and emergency response teams.

The characteristic feature of the FH 41 P First Response is the use of sophisticated low power technology components, and microprocessor based, fully automatic self checks. No maintenance is required.
The FH 41 P incorporates a highly sensitive NaI(Tl) scintillation detector with a miniature photo-multiplier allowing the detection of very low radiation levels.

NBR-based

An indication of radioactive material in the gamma energy range < 400 keV, allowing an immediate interpretation of a count rate increase.

Multi purpose

The FH 41 P is designed to operate as both a survey meter and a dosimeter. Four operator modes can be selected:

a detection mode (cps)
level indication mode (9 log steps)
a dose rate mode in the measuring units H_x and H*(10)
a dosimeter mode

In the event of an alarm, the operator can change from the survey meter mode to the dose meter mode by simply pushing a single button.

Small size

The FH 41 P was specifically designed to be as small as possible. This makes it very unobtrusive when used in public.

NBR

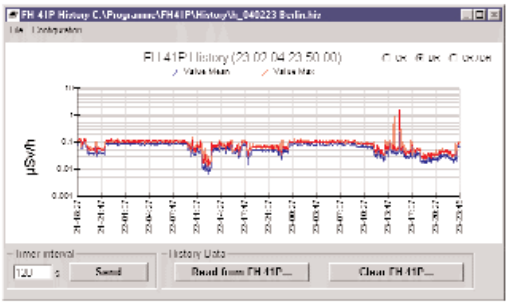
FH 41 P First Response

Low power consumption
Depending on the type of 9 volt battery used, the FH 41 P can operate up to 1600 h including internal data recording. The alarm is annunciated by chirping pulses.

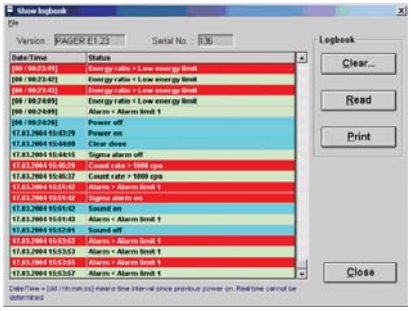
Rugged and Reliable
The sealed metal housing incorporates a highly sensitive radiation detector and is equipped with optimized low power technology. Several automatic self-checks are permanently active to test the performance of detector and the electronics. The unit can be worn in a belt holder.

Settings and data analysis
All factory-set parameters can be modified by hand, or by using optional Windows™-based PC software and an accompanying reader device. In order to allow retrospective analysis of any event, the latest 1600 dose rate values are stored in the internal data memory. Each data point is averaged over a fix time interval which can be easily adjusted by the PC software.

Logbook
Changes in configuration, occurring alarms and errors are saved in FH 41 P. These saved events can be read out via the "logbook" option. It is shown as a table and can be saved to PC hard disc or printed. The logbook has a maximum of 250 data sets. Several events at the same time are saved as one record. On the display every event is shown in one line for better overview.



History read out



Logbook

Specifications

FH 41 P	
Energy range	sensitive from 30 keV energy compensated from 60 keV to 1.3 MeV (Hx or H*(10) selectable)
Measuring range	0.01 µSv/h - 1 mSv/h (1 µR/h - 100 mR/h), Cs-137
Sensitivity	around 125 s^{-1}/µSv/h for photon radiation 660 keV, Cs-137 around 2000 s^{-1}/µSv/h (60 keV)
Alarm thresholds	Free adjustable via PC using the calibration software or by hand
Overrange capability	up to 10 Sv/h (1000 R/h)
Temperature range	-22 °F to 122 °F (-30 °C to 50 °C)
Size	2.24 x 1.26 x 4.5 inches (57 x 32 x 115 mm)
Weight	Approximately 250 g (7 oz) with 9 V battery
Battery life	800 h with standard 9 V battery, 1600 h with 9 V Lithium battery

The instrument comes with a convenient holster

NBR = Natural Background Rejection

The NBR measurement method has been developed by Thermo Electron Corporation, Erlangen (Germany) for extremely fast discrimination between natural and artificial gamma radiation. Worldwide more than 1000 devices based on this technology are in use.

NBR has a rapid response time. Artificial gamma radiation sources are identified in seconds by operators with basic training levels.

Unlike conventional spectroscopic-based gamma identification systems, the systems using NBR do not require the presence and resolution of gamma spectral lines. Because of this flexibility, NBR can also definitively distinguish artificial high energy beta sources and heavily shielded gamma ray sources from fluctuating natural background sources.

www.thermo.com

Thermo ELECTRON CORPORATION

USA:
504 Airport Road
Santa Fe, NM 87507
USA
(505) 471 3232
(505) 428 3535 fax

UK:
Bath Road
Beenham, Reading RG7 5PR
England
+44 (0) 118 971 2121
+44 (0) 118 971 2835 fax

European countries:
Frauenauracher Strasse 96
D 91056 Erlangen
Germany
+49 (0) 9131 909-0
+49 (0) 9131 909-205 fax

Other countries worldwide:
Viktoriastrasse 5
D 42929 Wermelskirchen
Germany
+49 (0) 21 96 72 28-0
+49 (0) 21 96 72 28 24 / 25 fax