

The Model FH41B-10 is a dual purpose radiation detection instrument, in a compact and lightweight package, that operates continuously on a single battery.

FH41B-10

Radiation Detection System



- Area Monitor and survey meter in one
- No AC power
- Use it anywhere
- Data logging for analysis of incidents
- Maintenance free
- Unobtrusive monitoring
- 1 year of continuous battery operation
- Dose rate alarms

Hazardous gamma sources can appear at locations where they are completely unexpected. A recent study estimated that there are over 30,000 lost (orphan) radioactive sources in the USA alone. Unfortunately, the orphan source phenomena is a global problem with sources showing up unexpectedly in scrap yards, border crossings, and numerous public locations. For example, sources have also been found in bank vaults, public landfills, hidden inside trucks and lost in public buildings.

Typically, it is impractical to install sophisticated and expensive radiation monitoring systems everywhere, especially if the risk, assumed or otherwise, is very low. Given today's orphan radioactive source problems there clearly is a need to monitor for radioactive sources in non-traditional locations. In response to this increasing need, Thermo Electron Corporation has developed an instrument that

fills the gap between spending large amounts of money for high-end systems, while protecting the health of personnel in areas normally presumed to be safe.

The basic premise behind the FH41B-10 is the combination of sophisticated low power technology, a microprocessor and a very sensitive radiation detector. Packaged together in a tough case, this highly integrated instrument offers continuous radiation surveillance for a one year period on a single battery. The same basic concept behind household smoke detectors was applied to the design of this radiation detection device; chiefly a) its simply ignored unless it alarms, b) it's on all the time, and c) batteries are replaced only once each year. Another very important feature is that the instrument is measuring all of the time - once the battery is installed, the FH41B-10 cannot be turned off!

The FH41B-10 is designed to operate as both a stand-alone area monitor and a fast responding survey meter. In the even of an alarm, the operator can change from the area monitoring mode to the survey meter mode by simply pushing a single button. Once in the survey meter mode, the operator can quickly remove the instrument from its holder and begin surveying the area to locate the offending radioactive source.

FH41B-10 Specifications

Small Size

The FH41B-10 was specifically designed to be as small as possible. This makes it very unobtrusive when used in public buildings. It also allows the instrument to be installed in unusual locations: for example, in the cabs of delivery trucks transporting large numbers of packages each year, entrances/exits to buildings, conveyor belt systems like those used at airports or other package handling facilities, on workers at landfills etc. The applications of this small instruments are endless.

Low Power Consumption

Mounting an instruments and supplying the required wiring (and electrical connections) is often more expensive than the instrument itself. Depending on the type of 9 Volt battery used, the FH41B-10 can operate up to 10,000 hours including internal data recording. The alarm is indicated by sharp, power saving chirping pulses. An alarm can still be recognized even after the weekend - without exhaustion of the battery. A similar philosophy is applied to failure messages.

Rugged and Reliable

The Sealed metal housing incorporates a sensitive radiation detector, and is equipped with optimized low power technology. Several automatic self-checks are permanently active to test the performance of the detector and the electronics.

Security

All factory-set parameters can only be modified using optional Windows™-based PC-software and an accompanying reader device. This eliminates unauthorized changes to the operation of the instrument. Because the instrument is always on, no-one can turn it off to terminate the monitoring function.

Data Analysis

In order to allow retrospective analysis of any event, the last 1600 dose rate values are stored in the internal data memory. Each data point is averaged over a fixed time interval which can be easily adjusted by the PC-software. For example, choosing a 10 minute resolution time stores more than the last 6 days of data. All measurement parameters

Specifications

Energy Range: Gamma radiation from 48 keV to 1.3 MeV
Measuring

Range: 10 μ R/h - 1 R/h (0.1 μ Sv/h - 10 mSv/h)
Sensitivity: Approximately 1,000 cpm / mR/h (1.7 cps / μ Sv/h)

Alarm

Thresholds: Freely Adjustable via PC using the calibration software

Data Memory: 1600 data points (time averaged data, time interval selectable)

Temperature

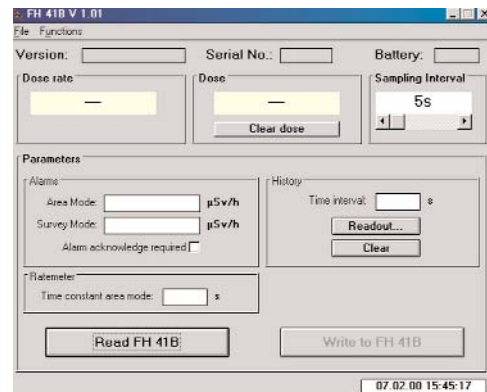
Range: -30 to 50 °C (-22 to 122 °F)

Size: 57 x 32 x 115 mm (2.24 x 1.26 x 4.5 in.)

Weight: Approximately 200 g (7 oz.) with 9 V battery

Battery Life: 5 months with standard 9 volt battery
>12 months with 9 V lithium battery

This instruments comes with a convenient holster.



Options

- Windows™ Calibration / Communications Software
- Infrared Reader Station and cable
- Wall Mount Adapter

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