

# ION CHAMBER AREA MONITORS

Model # FIL-5C - 3 DECADE

Model # FIL-5D - 5 DECADE

## FEATURES:

- ALL PLUG-IN MONITOR
- RACK MOUNTING OR CASE
- SINGLE OR MULTI-CHANNEL
- FREE AIR ION CHAMBER FOR EXCELLENT ENERGY RESPONSE
- LOCAL OR REMOTE MONITORING (UP TO 500 FT. CABLE OPTIONAL)
- HIGH LEVEL ALARM, SOLID STATE, NON-CONTACTING
- RECORDER AND REMOTE DISPLAY OUTPUTS

**APPLICATION:** Area monitoring in and around nuclear reactors, hot cells, irradiators and other facilities handling radioactive materials or X-rays.

**GENERAL DESCRIPTION:** The FIL Series Radiation Monitors incorporate a log alarm ratemeter, power supply, alarm, electrometer and reliable free air ion chamber. Because of the plug-in modular construction, additional channels or functions can be added. Ion chamber and circuit design prevent the system readings from falling off full scale during an over range condition. High level alarm can be set to any point on the scale; a switch causes the alarm set point to be displayed. Alarm activation produces flashing red light on front panel and piercing intermittent 2000 Hz tone. Optional relay is also closed (or opened) for activation of remote alarms. Stand-by battery power is optional. Rack or case mounting is supplied.



Figure 1: FIL-5D - 5 DECADE (top),  
Detector IC-2 (bottom)

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## TECHNICAL ASSOCIATES

7051 ETON AVENUE \* CANOGA PARK, CA 91303 TELEPHONE (818) 883-7043 \* FAX(818) 883-6103

\$Revision: 1.2 \$

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Model # FIL-5C - 3 DECADE

Model # FIL-5D - 5 DECADE

## SPECIFICATIONS:

- Range:** FIL-5C: 0.1 mR/hr to 100 mR/hr standard.  
FIL-5D: 0.1 mR/hr to 10 R/hr standard.  
Optional high range systems offer any 3 or 5 consecutive decades to 10<sup>6</sup> R/hr.
- Detector:** Air equivalent ion chamber. Standard systems use Model IC-2 (for gamma) or Model IC-1 (for beta-gamma). Both models have graphite lined phenolic walls and an active free air volume of 300 cubic inches. Optional high range systems use smaller chambers. Detector is supplied with 8 ft. cable (up to 500 ft. of cable can be supplied as an option with no circuit adjustment necessary).
- Detector Response:** Gamma Energy: IC-1 is sensitive down to 2 KeV; and is energy independent ( $\pm 15\%$ ) 4 KeV to 6 MeV. IC-2 is sensitive down to 10 KeV; and is energy independent ( $\pm 15\%$ ) 20 KeV to 7 MeV.
- Beta Energy: Sensitive down to 0.15 MeV; energy independent ( $\pm 25\%$ ) 0.4 MeV to 7 MeV (IC-1 only).
- Temperature: Operating range between -30°C and 65°C; drift less than -0.4% per °C at room temperature.
- Readout:** Three decade log scale is used on a large, easy to read 4-1/2" meter. The FIL-5D autoranges with one decade of overlap, on two ranges. The three decade FIL-5C does not autorange. LED indicates high or low range.
- Front Panel Controls:** (Cover plate to prevent unauthorized changes)  
Alarm Level Set  
Display Alarm Set Point  
Alarm Reset Pushbutton  
Power On-Off Switch
- Alarms:** Alarm level is adjustable over entire range. Alarm indicators include flashing red light and beeper.
- Power:** 105-125 V (or 200-240 V), 50-60 Hz.  
Optional standby batteries, normally under continuous charge, automatically provide power for one week in event of AC power failure.
- Mounting:** Electronics are normally furnished in FM-5 case but can be furnished uncased with mounting bars for rack or Nema 4 (hostile environment) cabinet.
- Options:** Multiple channel systems.  
Solenoid activated check source for system calibration.  
Remote alarm-flasher-howler.  
Remote meter readout with alarm.  
Chart recorder.  
Standby batteries.  
Cable to 500 feet.



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