

# WIDE RANGE ION CHAMBER AREA MONITOR

Model # FIL-7DP

## FEATURES:

- ON-LINE REAL-TIME MONITORING
- ALL PLUG-IN MODULAR
- RACK MOUNTING OR CASE
- SINGLE OR MULTI-CHANNEL
- ION CHAMBER FOR EXCELLENT ENERGY RESPONSE
- LOCAL OR REMOTE MONITORING (UP TO 500 FT. CABLE OPTIONAL)
- HIGH LEVEL ALARM, SOLID STATE, NON-CONTACTING
- RS-232 OUTPUT FOR PRINTER OR PC AND REMOTE DISPLAY OUTPUTS
- MICROPROCESSOR BASED DATA MEASUREMENT AND DISPLAY

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

**GENERAL DESCRIPTION:** The **FIL-7** Series Radiation Monitors incorporate a digital alarm ratemeter, power supply, alarm, electrometer and reliable 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 even in very high fields. Front panel controls allow the alarm set point to be displayed. Alarm activation produces flashing red light on front panel and piercing intermittent 2000Hz tone. **Optional** relay is also closed (or opened) for activation of remote alarms. Stand-by battery power is **optional** Rack or case is supplied.



Figure 1: FIL-7DP (top), Detector IC-1 (bottom)

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\$Revision: 1.3 \$

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## SPECIFICATIONS:

<b>Range:</b>	<b>FIL-7DP:</b> 0.1 - 10,000 mR/h (5 decades) is standard. <b>Optional</b> range systems offer any 3 or 5 consecutive decades from 0.1 mR/h to 10 <sup>6</sup> R/h.
<b>Accuracy:</b>	+/- 10% of decade
<b>Detector:</b>	Air equivalent ion chamber. Standard systems use Model <b>IC-2</b> (for gamma) or Model <b>IC-1</b> (for beta-gamma). Both models have graphite lined phenolic walls and an active free air volume of 2 liters. <b>Optional</b> 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).
<b>Detector Response:</b>	
<b>Gamma Energy:</b>	<b>IC-1</b> is sensitive down to 2 KeV; energy independent ( $\pm 15\%$ ) 4 KeV to 6 MeV. <b>IC-2</b> is sensitive down to 10 KeV; energy independent ( $\pm 15\%$ ) 20 KeV to 7 MeV.
<b>Beta Energy:</b>	Sensitive down to 0.15 MeV; energy independent ( $\pm 25\%$ ) 0.4 MeV to 7 MeV ( <b>IC-1</b> only).
<b>Temperature:</b>	Operating range between -30°C and 65°C; drift less than -0.4% per °C at room temperature. 0-95% humidity non-condensing.
<b>Data Processing:</b>	High resolution charge to pulse electronics - Analog to Digital. Accurate internal timer.
<b>Readout:</b>	Large, easy to read Roentgen or Sievert display. User programmable.
<b>Front Panel Controls:</b>	Alarm Level Set, Display Alarm Set Point, Alarm Reset Pushbutton Power On-Off, Switch
<b>Alarms:</b>	Alarm level is adjustable over entire range. Alarm indicators include flashing red light and beeper.
<b>Power:</b>	105-125 V (or 200-240 V), 50-60 Hz. Optional 12 Volt operation. Optional standby batteries, normally under continuous charge, automatically provide power for one week in event of AC power failure.
<b>Mounting:</b>	Electronics are normally furnished in FM-5 case but can be furnished uncased with mounting bars for rack or Nema 4 (hostile environment) cabinet.
<b>Options:</b>	Multiple channel systems. Solenoid activated check source for system calibration. Remote alarm-flasher-howler Remote meter readout with alarm. Analog output for chart recorder - model <b>FIL-7DPA</b> Standby batteries. Cable to 500 feet.

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