

# AREA MONITOR SYSTEMS

Model # FML-5A SIX DECADE  
Model # FML-5B FOUR DECADE

## FEATURES:

- ALL PLUG-IN MODULAR
- ANTI-SATURATION FEATURE
- SINGLE OR MULTI-CHANNEL
- STAND-BY BATTERY POWER (OPTIONAL)
- RECORDER OUTPUT
- RACK MOUNTING OR CASE
- HIGH AND LOW LEVEL ALARMS  
SOLID STATE NON-CONTACTING
- RUGGED HEAVY DUTY GM PROBE FOR  
LOCAL OR REMOTE MONITORING  
(UP TO 500 FT CABLE OPTIONAL)
- ENERGY COMPENSATED GM DETECTOR

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

**GENERAL DESCRIPTION:** The Radiation Monitor uses a Log Alarm Ratemeter, Power Supply, Alarm Module and ruggedized GM Probe. Because of the plug-in modular construction, additional channels can be added. The built-in anti-saturation circuit prevents the system readings from falling off full scale during an over range condition. High level alarm can be set at any point on scale. Activation produces flashing red light on front panel and piercing intermittent 2000 Hz tone. Relay is also closed (or opened) for activation of remote alarms. A system failure alarm in the form of an amber panel light (and relay closure) is actuated if signal reading drops below built-in artificial background rate. Depressing test button on activator module activates movable check source in detector (option) when installed and gives check point on meter for system calibration. Rack mounting or case mounting supplied with up to six readout modules for every power supply module.



Figure 1: FML-5A / 5B (top),  
NEMA-4X detector (middle),  
Optional submersible detector (bottom)

**TA**

## TECHNICAL ASSOCIATES

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

\$Revision: 1.2 \$

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## SPECIFICATIONS:

<b>Response:</b>	Log
<b>Range:</b>	6 decade dynamic range(FML-5A) 1 mR/hr to 1,000 R/hr * (artificial background supplied by internal radiation source in probe) or .01 mR/hr to 10 R/hr * - optional. 4 decade dynamic range (FML-5B) 0.1 mR/hr to 1 R/hr * (artificial background supplied by internal radiation source in probe) * Other ranges available to 1,000 R/hr
<b>Front Panel Controls:</b>	Selector Switch CAL-Off-On Hi Level Alarm Set Knob Lo Level Alarm Set Knob Alarm Reset Pushbutton Operate-Calibrate Pushbutton Hi Voltage Adjust Power Off-On Test Button on Activator Module (option)
<b>Time Constant:</b>	Varies inversely with count rate
<b>Readout:</b>	Meter 100° 2.4" scale. Optional: 240° 4.2" scale
<b>Output:</b>	Positive $5 \pm 1$ V pulse output to Scaler, Printer, Computer, etc.
<b>Connector:</b>	0-1 mA supplied for remote meter or recorder



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<b>Alarm Features:</b>	Non-contacting - all solid state percentage of full scale type. Settable from 0 to 100% of full scale. Locking electronically actuated relay provides via DPDT + 5V at 300 mA plus contact closure (or opening) (3A rating 250V). Alarm module when triggered has flashing red light and sonalert beeper. Alarms activated until reset.
High Level Alarm:	Activated when count rate exceeds set point. Hi-level red light on count rate meter panel goes on in addition to Beeper and Flasher.
Low Level Alarm:	A small internal radiation source provides the probe with a count rate which exceeds the setting on the low-level alarm. Failure of any part of system, including probe, electronics or power supply, causes indicator to dip below low level alarm setting and activates alarm. AC failure is indicated also by pilot light on voltage module going off. Low level amber light on count rate meter panel goes on in addition to sonalert Beeper and Flasher.
<b>Anti-Saturation:</b>	Circuitry is incorporated to prevent readings from falling below full scale in over range conditions (tested to 1,000 R/hr).
<b>Emergency Power (option):</b>	Standby batteries operating under continuous charge automatically take over and provide approximately 8 hours operation in event of AC power failure.
<b>Line Operation:</b>	105-125 V (or 200-240 V), 50-60 Hz.
<b>High Voltage Output:</b>	0 to +2,000 V at 200 $\mu$ A continuously adjustable
<b>Detector:</b>	Energy compensated halogen quenched GM detectors, in ruggedized probe with internal radiation source. Supplied with 8 ft cable. (Up to 500 ft of cable can be supplied as an option). Optional movable internal radiation source - activated remotely.
<b>Energy Dependence:</b>	$\pm$ 20% from 100 KeV to 1.2 MeV
<b>Console Dimensions:</b>	10-1/4" W x 8-3/4" H x 13-1/2" D (single channel - wider if more than one channel) or rack mount
<b>Weight:</b>	Console plus detector 21lbs.



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