



Radiation Contamination Monitors for Steel / Metal Industry

Since human senses cannot detect nuclear contamination; a simple, robust and sensitive instrument is a genuine need of the present homeland security, cargo industry, & mainly all metal/ steel parts manufacturers, metal scrap processing companies/individuals. It has been estimated that 70% of the new steel comes out of scrap. This scrap could be the main source of nuclear contamination. Now it has become essential that all metal industry should check their raw material (scrap as well as new ore), in process goods and final product for radioactive contamination regularly. This can save their efforts, money and time. To cater these required we have introduced two units as :

Model D-MRSM – Micro R Survey Meter (Digital) NaI(Tl) detector based



Micro R Survey Meter (Digital) Model D-MRSM is a portable, Si-Lab micro-controller based, battery operated instrument for measurement of environmental low level gamma radiation dose rate. It employs an internally housed 1"x1" NaI(Tl) detector integrally coupled to a 1" dia PMT offering optimum performance to lower energies.

The unit can measure and display dose rate in the range of 0-500 $\mu\text{R}/\text{Hr}$ on a LCD screen on the front panel. Other parameters such as alarm level set by the user, the battery voltage and the HV applied to the detector are displayed on the LCD screen. The front-panel controls include a Potentiometer for setting dose rate alarm level, a power On/Off switch. The alarm is adjustable over the entire scale range.

Model D-MRSM offers display of dose rate either in $\mu\text{Sv}/\text{Hr}$ or $\mu\text{R}/\text{Hr}$ or in CPS. Alarm Level is settable in $\mu\text{Sv}/\text{Hr}$ or $\mu\text{R}/\text{Hr}$ unit.

The mechanical design consists of the ABS plastic housing with its sealed battery compartment and an accompanying handle with keyboard and mains ON/OFF switch. Thus, it offers an industrial robustness and quality that promotes long-lasting protection and instrument life.

Model D-MRSM having very sensitive detector, is useful for Health Physics applications in Radioisotope Laboratories, Nuclear Power Plants and nuclear medical centres. It is also useful for measurement of radioactive contamination in steel, other metals & alloys.

Specifications

Detector	: 1" dia x 1" thick NaI(Tl) detector with 1" dia PMT
Measurement Scales	: 0-500 $\mu\text{R}/\text{Hr}$, 0-5.00 $\mu\text{Sv}/\text{Hr}$, 0-999 CPS, Manual Scale selection option
Accuracy	: $\pm 10\%$ with Cs-137
Time Constant	: 4 Seconds
High Voltage	: 0 to + 1000 Volts, internally settable
Display	: 64 x 128 pixel Graphic LCD screen
Alarm	: Audio/Visual alarm when dose rate exceeds set alarm level ($\mu\text{R}/\text{Hr}$)
Alarm Indications	: Red LED and Audio Buzzer
Indications	: Low battery, No Pulse alarm, HV Fail
Enclosure	: ABS enclosure
Dimensions	: 260 L x 125 W x 172 H mm including handle dimensions
Weight	: Approximately 2.0 Kgs (including detector & battery)
Battery	: Five nos. of 1.2V Rechargeable Ni-MH batteries (12 Hrs of operational life) with external battery charger.