

Mini 600 Series, Type 6-90

Scaler-Ratemeters



The instruments in the 6-90 series are general purpose scaler-ratemeters for use with GM tubes or scintillation probes.



Type 6-90 Scaler-Ratemeters

The 6-90 series has the following features:

- A six digit liquid crystal display of scaler count with 1cm high characters for ease of readability.
- A large, robust meter to show counts S^{-1} or detector voltage depending on model.
- Preset counting times from 10 seconds to 1000 seconds in seven steps plus manual timing using the start and stop buttons.
- Stable time base derived from crystal oscillator.
- Battery/mains operation using separate power unit or mains only use with built-in power supply
- Stabilised detector high voltage supply variable over 300-1500V range.
- Tough, splashproof polycarbonate case.

The 600 Series Scaler/Ratemeters Environmental Radiation Meter Type 6-90

The Type 6-90 is intended for dedicated applications where field adjustments to the detector operating parameters are not required. The only external controls are the stop/start buttons and function/time select switch. Internal adjustments are provided for detector HV, input sensitivity and paralysis time. Counts are shown on a 6 digit LCD display and count-rate on an analogue meter. The meter is logarithmically scaled with an open scale at the lower end while displaying higher count rates without range switching.

The 6-91 is similar to the 6-90 but has an external detector HV adjustment control. There is no ratemeter facility. On this model the analogue meter is scaled from 0-1.5kV and displays the detector voltage only. The scaler portion is identical to the 6-90.

The 6-92 combines the features of the 6-90 and 6-91. In addition to the 6-91 controls, it has a meter select push button. The analogue meter has dual scaling in counts s^{-1} and 0-1.5kV. It normally shows counts s^{-1} but by pressing the select button the meter displays detector voltage.

The Type 6-90 Specification

Normal input sensitivity:	Internally switch selectable 50mV or 100mV negative going into 3k Ohms. Input connector: PET series 100. Other types can be fitted. Consult factory.
Analogue meter display:	Moving coil meter, 65mm scale length. Type 6-90: 0 to 2,000 counts s^{-1} on log scale. Type 6-91: linear 0 to 1.5kV scale only. Type 6-92: Dual scale, log 0 to 2,000 counts s^{-1} plus linear 0 to 1.5kV scale.
Ratemeter response time:	1-10 counts s^{-1} :40s. 10-100 counts s^{-1} :10s. 100-1K counts s^{-1} :2s.
Analogue output:	0 to 0.5V FSD @ 1 ma max from front panel mounted sockets.
Accuracy (analogue display):	$\pm 20\%$ for the temperature range -5°C to $+30^{\circ}\text{C}$. $\pm 35^{\circ}\text{C}$ for the temperature range -10°C to $+45^{\circ}\text{C}$.
Digital scaler display:	6 digit LCD 1cm character height maximum display count 899999. Count overflow and count in progress indication.
Timer:	Crystal derived (163.84kHz) clock, accuracy $\pm 50\text{ppm}$. User selectable times (secs): 10, 30, 60, 100, 300, 600, 1000 and .
Paralysis time:	Internally preset by switches from 15 μsec to 200 μsec .
HV overload indication:	Meter indicates over FSD when HV overload is sensed, applies to models 6-90 and 6-92 only.
User controls:	Rotary on/off and combined time select. Push buttons for start/reset and stop. Additional controls on models: 6-91: As above plus potentiometer for HV adjustment. 6-92: As above plus meter counts s^{-1} /HV select push button.
Power supply:	Battery operation from four 'C' (IEC R14) size cells. Battery life typically 400hrs using G-M tube probe, 250hrs with Mini-Instruments scintillation probe. Low battery condition indicated by LCD display flashing.
Housing and dimensions:	Polycarbonate splashproof* case with detachable carrying straps 240mm wide 120mm high a 100mm deep, weight 1.4kg.
Temperature range:	10°C to $+45^{\circ}\text{C}$.

*only on battery operated versions.

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