

ZP1201

GEIGER-MÜLLER TUBE

Halogen quenched γ radiation counter tube fitted in a filter. The energy response is flat to within +25% over the range 50 keV to 1.25 MeV referred to ^{137}Cs (661 keV). The ZP1201 is an energy compensated version of the ZP1200.

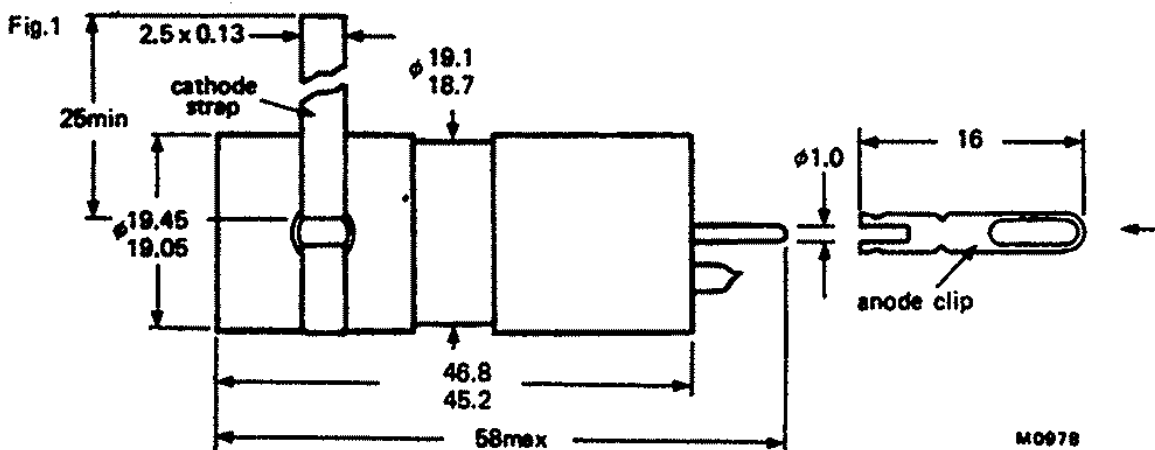
QUICK REFERENCE DATA

Dose rate range	10^{-3} to 40	mGy/h
	10^{-4} to 5	R/h
Plateau threshold voltage	400	V
Plateau length	200	V
Recommended supply voltage	500	V
Chrome-iron cathode	250	mg/cm ²

This data must be read in conjunction with General Information Geiger-Müller tubes.

MECHANICAL DATA

Dimensions in mm



note: cathode strap should be connected to the tube as shown

CATHODE (ZP1200)

Thickness	250	mg/cm ²
Sensitive length	40	mm
Material	chrome-iron	

ENVIRONMENTAL (Manufacturer's test conditions)

Shock (half sine wave 3 ms duration) — peak acceleration	392	m/s ²
--	-----	------------------

FILLING

neon, argon, halogen

CAPACITANCE

Anode to cathode	1.2	pF
------------------	-----	----

TUBE WEIGHT

38 g

ZP1201

OPERATING CHARACTERISTICS (Ambient temperature $\approx 25\text{ }^{\circ}\text{C}$)

Measured in circuit of Fig.2

Starting voltage	max.	325	V
Plateau threshold voltage	max.	400	V
Plateau length		200	V
Recommended supply voltage		500	V
Plateau slope	max.	0.04	%/V
Background (shielded with 50 mm Pb with an inner liner of 3 mm Al), at recommended supply voltage	max.	10	count/min
Dead time, at recommended supply voltage	max.	110	μs

LIMITING VALUES (Absolute max. rating system)

Anode resistor	min.	4.7	$\text{M}\Omega$
Anode voltage	max.	600	V
Ambient temperature continuous operating	max.	+70	$^{\circ}\text{C}$
	min.	-40	$^{\circ}\text{C}$
storage	max.	+75	$^{\circ}\text{C}$

LIFE EXPECTANCY

Life expectancy at $\approx 25\text{ }^{\circ}\text{C}$ 5×10^{10} count

MEASURING CIRCUIT

$R_1 = 10\text{ M}\Omega$

$R_2 = 220\text{ k}\Omega$

$C_1 = 1\text{ pF}^*$

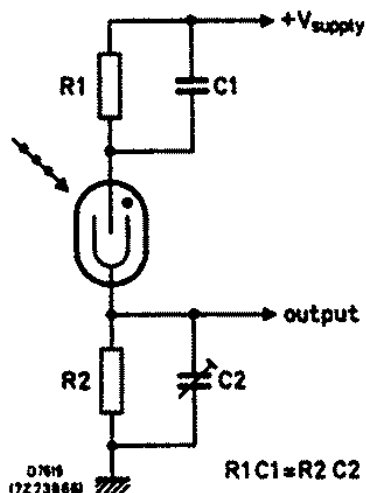
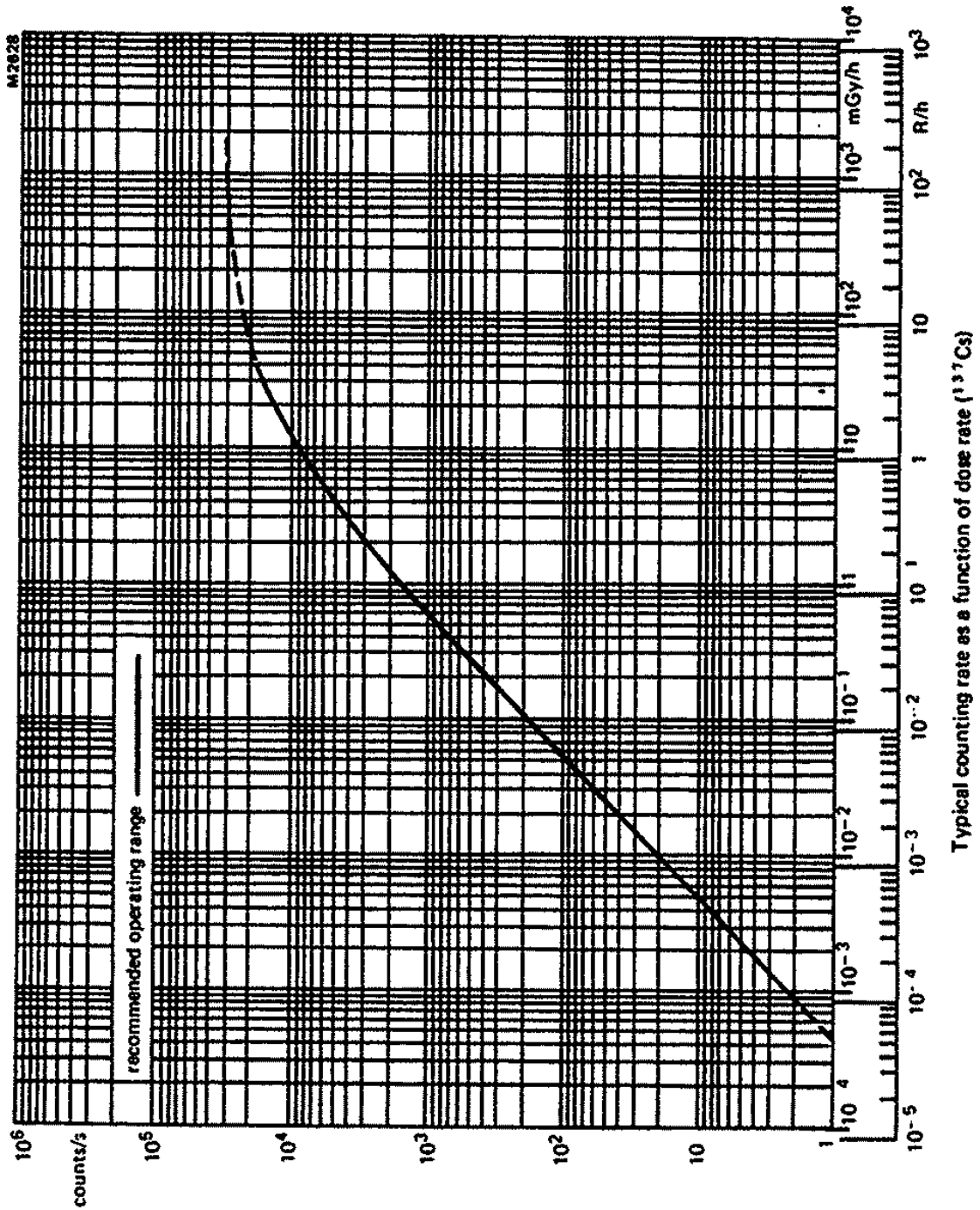


Fig.2

*See General Information (paragraph 5.5)

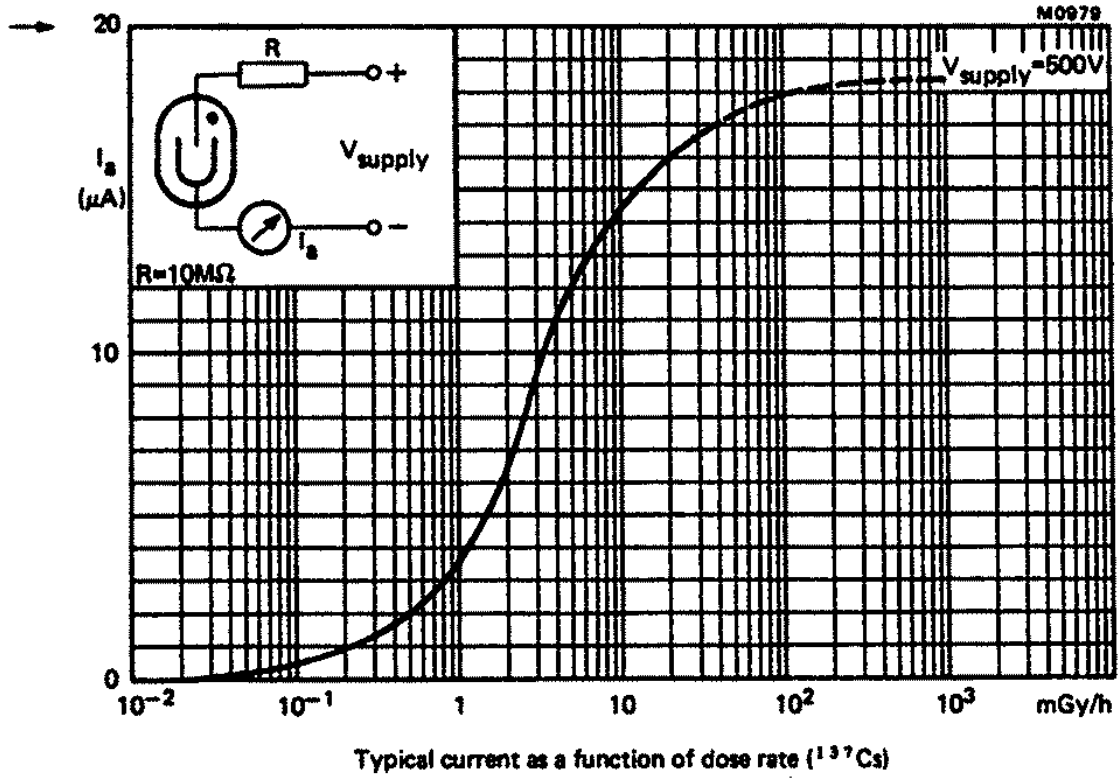
Geiger-Müller tube

ZP1201



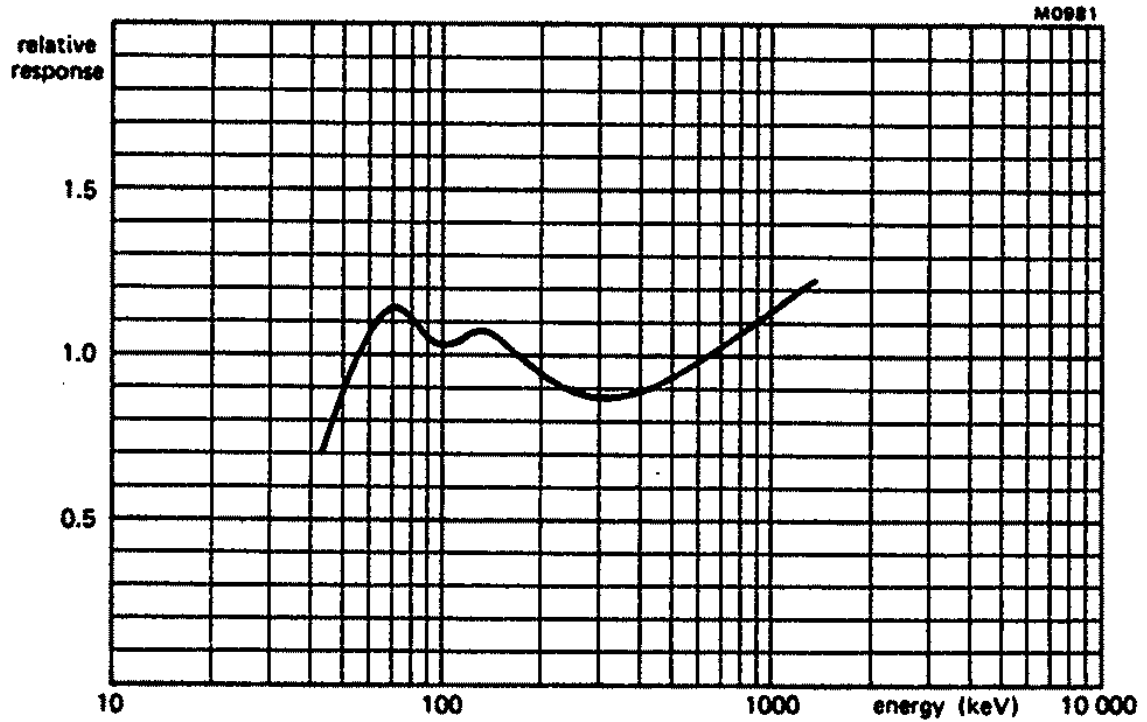
Typical counting rate as a function of dose rate (¹³⁷Cs)

ZP1201

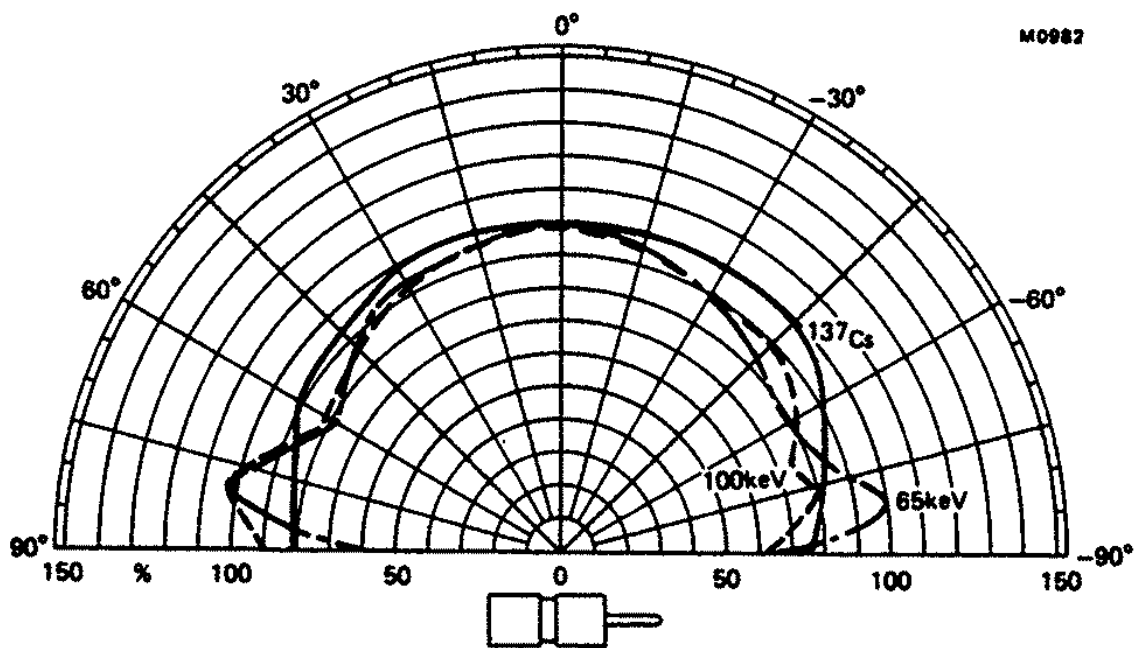


Geiger-Müller tube

ZP1201



Typical energy response relative to ^{137}Cs



Typical polar responses (normalised to 100% at 0°)