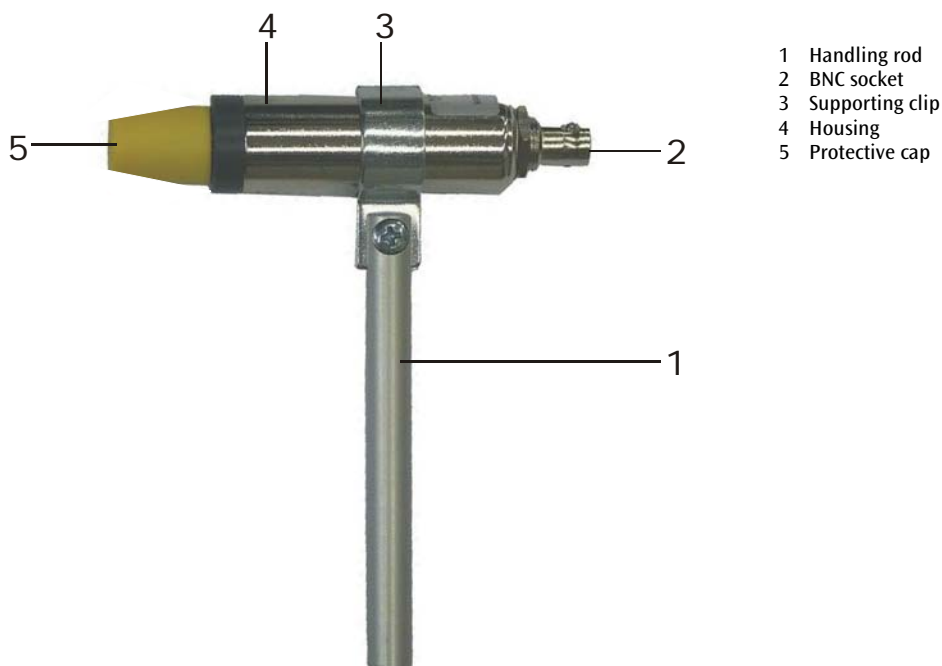


## Geiger-Müller Counter Tube U8533430

### Instruction sheet

07/07 SP/ALF



### 1. Safety instructions

If too high a voltage is applied, the life of the counter tube will be reduced and its characteristic curve will be altered (the gradient of the plateau will increase).

- Do not apply a voltage higher than 600 V.
- The mica window is only 0.03 mm thick and is subjected to the external atmospheric pressure.
- Caution! Do not touch the mica window.
  - Replace the protective cap after each use.
- The glass seal of the counter tube is not resistant to impacts and pressure.
- Do not subject the tube to knocks.
  - Handle the counter tube especially carefully when it is taken out of its supporting clip.

### 2. Description

The Geiger-Müller counter tube is a halogen self-quenching trigger counter tube for the detection of  $\alpha$ -,  $\beta$ -,  $\gamma$ - and X-radiation.

The counter tube consists of a chromium steel cylinder that is filled with an argon-neon mixture together with a halogen gas as a quenching agent. It is closed at one end by a very thin mica window and at the other end by a glass seal, both of which are gas-tight. A thin wire (the counter wire) is arranged axially in the cylinder, which it enters through the insulating glass seal. The counter tube is contained within a metal housing that is fitted with a shielded connecting lead and a BNC socket. A handling rod is attached to the housing by a detachable clamp. The mica window is protected by a removable plastic cap.

### 3. Technical data

Filling gas:	Neon-argon mixture, with halogen as quenching agent
Cathode dimensions:	39x14 mm <sup>2</sup>
Window:	Mica, 9 mm Ø
Surface density:	1.5 – 2.0 mg/cm <sup>2</sup>
Operating voltage:	400 – 600 V (recommended voltage: 500 V)
Rel. gradient of plateau:	0.04%/V
Dead-time:	90 µs
Limiting resistance:	10 MΩ, built into the housing
Overall dimensions:	Approx. 85 mm x 25 mm Ø
Handling rod dimensions:	100 mm x 10 mm Ø
Mass:	Approx. 160 g

### 4. Operation

#### Note:

The protective cap does not allow  $\alpha$ -radiation to pass through, and transmits  $\beta$ -radiation only partially. Remove the protective cap when appropriate before starting measurement. Replace the cap after each use, taking care not to touch the mica window.

For carrying out experiments the following additional equipment is recommended:

HF cable, 1 m	U11255
Digital counter (230 V, 50/60 Hz)	U8533341-230
or	
Digital counter (115 V, 50/60 Hz)	U8533341-115
Geiger-Müller box	U11391

- Connect the Geiger-Müller counter tube to a digital counter through an HF cable.
- Set up the counter tube so that the radiation falls squarely on the mica window.
- If appropriate, remove the plastic protective cap.
- Set the required measurement time on the counter.
- Switch the audible counting signal on or off as required.
- Start the measurement.
- After the measurement, replace the protective cap.

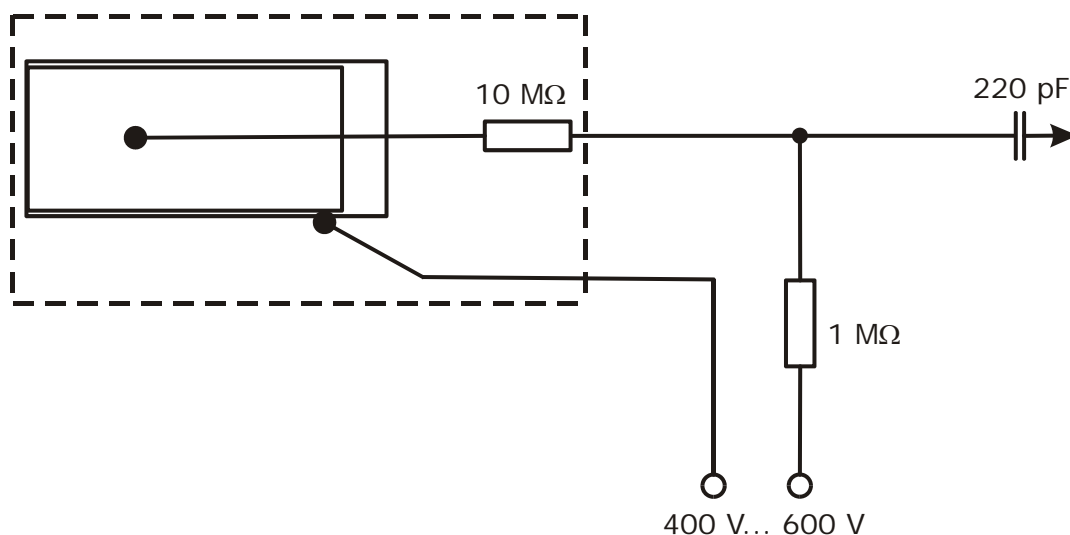


Fig. 1. Schematic arrangement of the counter tube.