



PROTK

KB 100 PEF/SEF™

Beta Ionization Chambers

Ionization chambers for high range beta activity monitoring



FEATURES

- Wide measuring range
- Beta energy range: 70 keV to 3 MeV
- Output signal: DC current starting at 0.1 pA
- Saturation proof
- Rugged construction
- Version KB 100 PEF with integrated check volume for remote testing

DESCRIPTION

The ionization chambers series KB 100 have been developed for high range beta activity monitoring, e.g. noble gas monitoring. The version KB 100 PEF has a check volume integrated in the detector housing which enables remote testing without access to the location of the detector.

Ionizing radiation produces charged particles in the gas filling of the ionization chamber. The transportation of these charged particles in the electrical field and their discharge on the electrodes causes charge pulses. The charge pulses are integrated to a DC current, which can be measured in the external circuit.

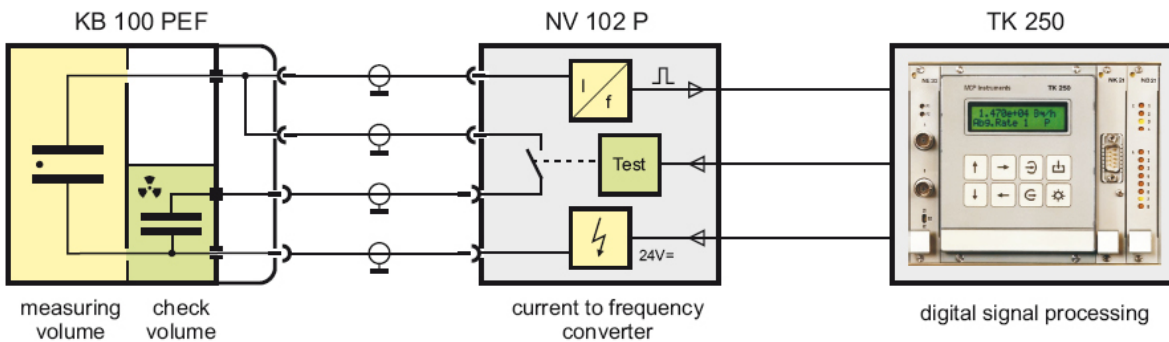
TECHNICAL CHARACTERISTICS

Properties	KB 100 PEF	KB 100 SEF
Beta-sensitivity Kr-85 Xe-133	5.6e-21 A/(Bq/m ³) 1.7e-21 A/(Bq/m ³)	5.6e-21 A/(Bq/m ³) 1.7e-21 A/(Bq/m ³)
Measuring range Kr-85 Xe-133	2e7 ... 5e13 Bq/m ³ 1e8 ... 1.5e14 Bq/m ³	1e8 ... 3e16 Bq/m ³
Beta energy range	70 keV ... 3 MeV	70 keV ... 3 MeV
Gamma sensitivity (in the main direction) Gamma energy range through the window)	1.2e-11A/(mGy/h) 30 keV ... 3 MeV	1.2e-11 A/(mGy/h) 30 keV ... 3 MeV
Gas filling Detector housing Detector window Check source	Argon, 5.5 bar Stainless steel 1.4571 Titanium, 15 µm Strontium-90, 37 MBq	Argon, 5.5 bar Stainless steel 1.4571 Titanium, 15 µm -
Operating voltage Check current from check volume	800V 1e-9 A approx.	800V -
Temperature range Ambient pressure Dimensions Ø (flange) x L Weight (without connector)	0 ... 135°C (32 ... 275°F) 0 ... 5 bar 115 (139) × 220 mm (6.1 (5.4) x 8.6 in) 6.5 kg approx. (14.3 lb)	0 ... 80°C (32 ... 176°F) 0 ... 5 bar 115 (139) × 114 mm (6.1 (5.4) x 4.5 in) 4.6 kg approx. (10.1 lb)

Beta-sensitivity and measuring range are in combination with measuring vessel RSD 211.

BETA IONIZATION CHAMBER WITH CHECK VOLUME

The KB 100 PEF ionization chamber has a second electrode system within the pressurized housing. The second system is irradiated by a built-in beta source, which generates a continuous detector current for test purposes. This test current can be added to the current of the measuring system by an external switch unit, which is part of the NV 102 P c/f-converter.



Interfacing of the KB 100 with TK 250 signal processing

Featuring:

