



**MIRION**  
TECHNOLOGIES

**PROTK & RAMSYS**

# KG 80 PED/PEF™

*Gamma Ionization Chambers*

Gamma dose rate monitoring under extreme conditions.



## FEATURES

- Ionization chamber with check volume for functional check at non accessible locations
- Wide dynamic range up to 100 kGy/h
- Energy range: 80 keV to 3 MeV
- Output signal: DC current starting at 1 pA
- Operates up to 180°C (356°F) and 7 bar
- Robust and reliable

## DESCRIPTION

The ionization chambers series KG 80 PED/PEF have been developed for gamma dose rate monitoring under extreme conditions. There is a check volume integrated in the detector housing which enables remote testing without access to the location of the detector.

Gamma 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.

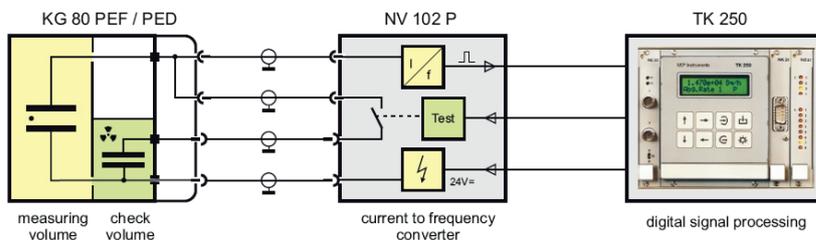
TECHNICAL CHARACTERISTICS

Properties	KG 80 PED	KG 80 PEF	Acceptable Tolerance
Measuring range	1e-5 Gy/h ... 1e+3 Gy/h 1e+3 Gy/h ... 1e+5 Gy/h		± 20%; 800V acceptable deviation of sensitivity ± 40%; 1200V acceptable deviation of sensitivity
Sensitivity Energy range	1.0e-8 A/(Gy/h) 80 keV ... 3 MeV		± 15% ± 20% acceptable deviation of sensitivity
Detector housing Gas filling Check source in the sensitive volume Check source in the check volume	Stainless steel 1.4571 Argon, 6 bar Sr-90, 3.7 MBq Sr-90, 37 MBq		
Operating voltage Basic current in the sensitive volume Basic current in the check volume	800 ... 1200V Approx. 2 ... 5e-13 A Approx. 1.2e-9 A		
Temperature range Short term temperature range, for max 1 h Environmental pressure Dimensions (Ø × L, without cable) Weight (without cable)	-25 ... 180°C (-13 ... 356°F) 190°C (374°F) 0.7 ... 7 bar 120 mm × 500 mm (4.7 in x 19.6 in) 6.3 kg (13.8 lb)	-25 ... 100°C (-13 ... 212°F) 120°C (248°F) 0.7 ... 7 bar 120 mm × 500 mm (4.7 in x 19.6 in) 6.5 kg (14.3 lb)	
Cable Connectors (KG 80 PEF only)	Coaxial cable (e.g. Raychem 5031B; the maximum length (capacity) of cable is determined by signal processing)	Coaxial cable (e.g. Raychem 5031B; the maximum length (capacity) of cable is determined by signal processing)  Fischer size 105	

GAMMA IONIZATION CHAMBER WITH CHECK VOLUME

The KG 80 ionization chambers have 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 KG 80 with TK 250 signal processing

Featuring:

