



## Gamma ionization chamber

### Application

- Measurement of high intensity gamma radiations
- Low leakage current requirements

### Features

- Guard ring structure
- Integral cables
- Measurements up to 250 °C

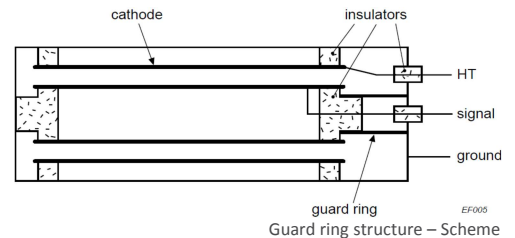
Nuclear characteristic <sup>1</sup>		
Sensitivity to <sup>60</sup> Co gamma-rays	1.5x10 <sup>-10</sup>	A/Gy.h <sup>-1</sup>
Gamma dose rate range <sup>2</sup>	3x10 <sup>-3</sup> - 10 <sup>3</sup>	Gy.h <sup>-1</sup>
Exposure limits	max 10 <sup>9</sup>	Gy

Electrical characteristics			
Insulating resistance at 600 VDC	Signal / Outer shell	min 10 <sup>12</sup>	Ohm
	HV / Outer shell	min 10 <sup>12</sup>	Ohm
	Signal / HV	min 10 <sup>13</sup>	Ohm
Operating voltage <sup>3</sup>	Nominal up to 250°C	600	VDC
	Maximum at 20°C	1000	VDC
	Limit with no radiation	1300	VDC
Cable capacitance		280	pF/m
Cable line resistance		1.8	Ohm/m

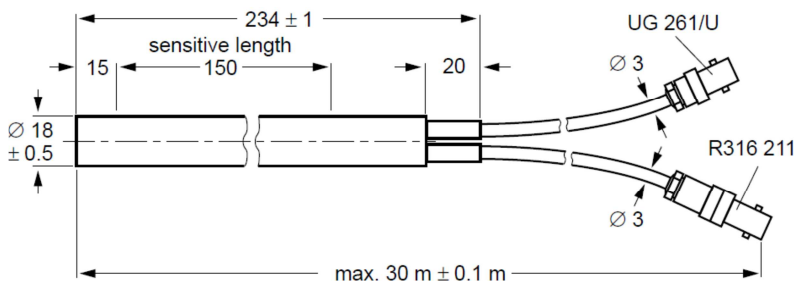
Mechanical and physical characteristics		
Detector	Outer shell, electrodes	Stainless steel
	Insulators	Al <sub>2</sub> O <sub>3</sub>
	Filling gas <sup>4</sup>	Nitrogen at 105 kPa
Cable	Type	Coaxial
	Insulator	MgO
	Curvature radius <sup>5</sup>	min 30 mm
Connector	Type <sup>6</sup>	BNC and BNC-HT (MHV)
	Insulator	PTFE

### Notes.

- <sup>1</sup> All characteristics are given for <sup>60</sup>Co gamma-ray energy (1.25 MeV).
- <sup>2</sup> The lower limit highly depends on the capability of the measurement equipment to separate the useful signal from the background (leakage current).
- <sup>3</sup> Polarity (-) on the HT cable. The operating voltage depends on the gamma dose rate to be measured.
- <sup>4</sup> Other filling gas on request.
- <sup>5</sup> The minimum curvature radius allowing one reversible deformation.
- <sup>6</sup> In order to avoid humidity penetration during storage, connectors are closed with caps to be removed just before use. As a general rule, prevent any humidity penetration at the connection level (refer to "Instructions for use and handling" in the package).
- <sup>7</sup> Including temperature increase due to gamma radiation. The leakage current in the cables increases rapidly with temperature. It is therefore necessary to take into account this characteristic, which limits the maximum temperature so that the ratio of wanted signal/parasitic signal remains acceptable.



### Outline



Max operating temperature of detector and cable <sup>7</sup>: 250 °C

Unless otherwise stated, all characteristics are given at 20°C and dimensions in mm.