

DOSFET PLUS

Real-time integrated radiation dose monitoring



Highlights

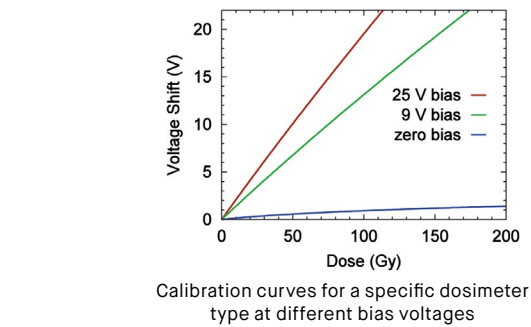
Feature	Benefit
On-line dosimetry system	Real-time monitoring of radiation dose deposition Dose measurement in remote and inaccessible locations
Exchangeable RADFET sensors	Dosimeters with different sensitivities available Measurement of sub-mGy to kGy doses
New case design featuring mechanical robustness, improved electrical grounding, and isolation	Distinguishable from its predecessor, the new case design showcases advancements in mechanical durability, enhanced electrical grounding, and superior isolation.
4-wire sensing	Immunity to changes in cable and connector resistance System can be installed outside the radiation zones (tested with cable lengths of up to 100 m)
Programmable bias voltage (0–30 V)	Dosimeter sensitivity adjustable to individual application
Ethernet–TCP/IP interface	Easy integration into existing control systems

RADFET: Radiation-Sensing Field-Effect Transistor

RADFETs are susceptible to ionizing radiation due to the insulating oxide layer separating the gate electrode from the semiconductor.

Under irradiation, electrons are removed from this layer and leave behind a positively charged region. The positive charge remains trapped in the oxide layer for many years.

By screening the electric potential of the gate electrode, this positive charge changes the electrical characteristics of the transistor.



Specifications

Power Supply	12 V DC 1 A
Max power consumption	< 3W
Channels	4
Dosimeter type	2 p-RADFETs per channel
Readout current	490 μ A
Readout voltage	up to 27 V
Readout voltage noise	<60 μ V (typ.)
ADC resolution	24 bit
Bias voltage	0–30 V, adjustable in steps of 230 mV, each channel can be grounded individually
Communication	Ethernet, TCP/IP
Form factor	1 U rack unit (19-inch)
Dimensions	483 x 60 x 43 mm
Weight	1000 g
Standard Dosimeter	Cat 5 RJ45 Ethernet cable for field connection

Deliverables

- DOSFET PLUS
- Radfet Mount Board (4 pieces) holder for RADFET dosimeters
- **Optional:** RADFET dosimeters

Applications

- Particle accelerators
- Nuclear industry

