

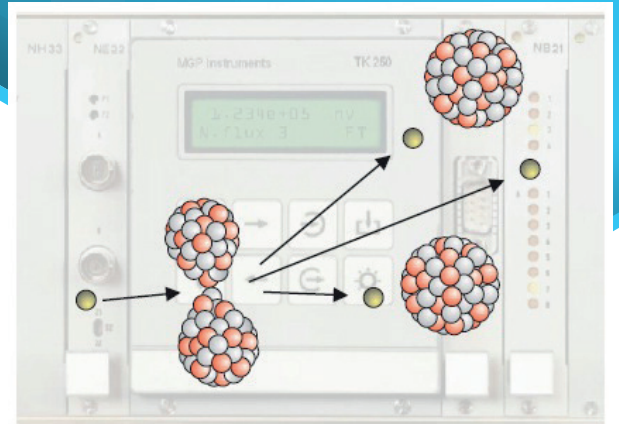


PROTK

DAK 250™

Digital Start-up Channel

Neutron flux monitoring in the pulse and intermediate range in combination with pulse detectors.



FEATURES

- Signal filtering with adaptive time constant
- Calibration to neutron flux signal (nV, P/Pn)
- Calculation of the flux change rate (reciprocal of the reactor period)
- Generation of analog and binary signals for the reactor protection system
- Linear and/or logarithmic analog outputs
- Remote test signal generators
- Optional: calculation of the reactor reactivity

DESCRIPTION

The DAK 250 digital start-up range channel forms part of the proTK™ product line.

It has been designed for neutron flux monitoring in the pulse and intermediate range in combination with pulse detectors, e.g. BF₃-counters and neutron ionization chambers. Hardware and software of the DAK 250 are designed and qualified for applications at the level of the reactor protection system.

DETECTORS AND PREAMPLIFIERS

- **Pulse detectors for DAK 250-i:**
 - BF3- or He3-counter tubes
 - B10-proportional counters
 - Fission chambers in pulse mode
- **Pulse preamplifier NV 320:**
 - Input and output impedance matched to the impedance of the cables
 - Remote pulse generator for testing
- Ionisation chambers for DAK 250-g: compensated or non-compensated
- Current-to-frequency-converter NV 102H: 10 decades of measuring range
- Detector supply 0 ... 0.5/1/2/4 kV located in the central electronic unit

DIGITAL SIGNAL PROCESSING

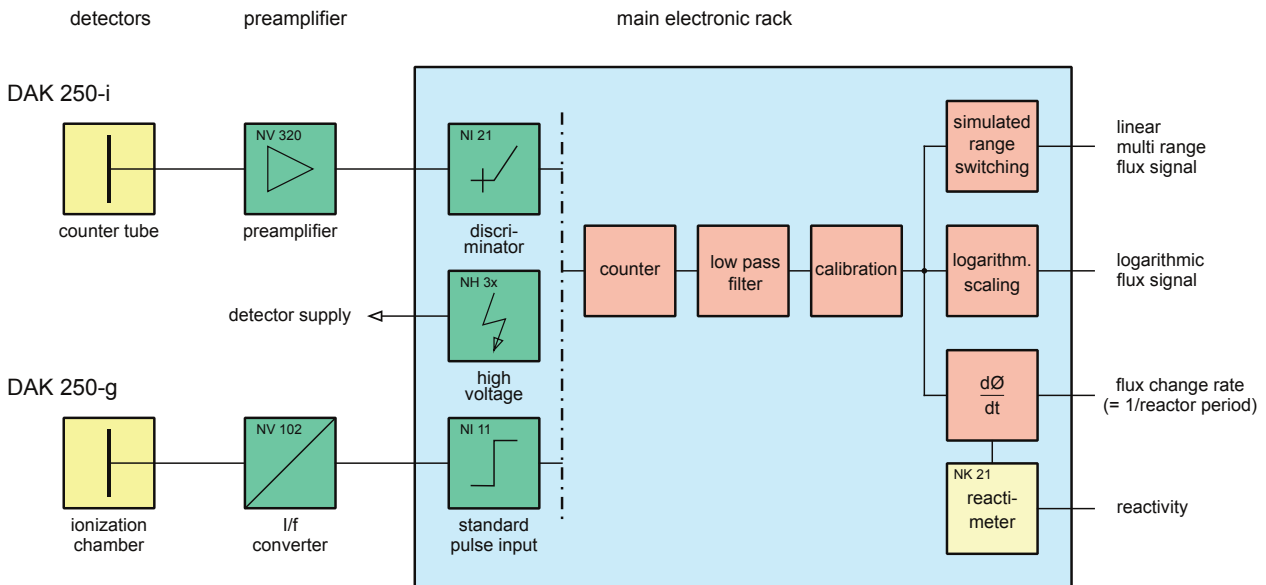
- 80C31/32 multi-processor system
- Program memory: EPROM
- Parameter memory: CMOS-RAM with integrated Li-battery
- Data interface: RS 232 and/or RS 485
- Internal LC-display: 2 x 16 characters

OUTPUT SIGNALS

- Linear and/or logarithmic count rate or neutron flux
- Neutron flux change rate = 1 / reactor period to be configured, e.g. -1.25 ... 0 ... 12.5 %/s corresponding to -80 ... ∞ ... +8 s reactor period
- Analog outputs: 0/4 ... 20mA/600 Ω, insulated
- Binary outputs: insulated relay change overs, 60V/0.5A or 125V/1A
- Optional: reactivity meter on a single additional interface board NK 21

OTHER CHARACTERISTICS

- DC power supply: 18 ... 33 VDC, approx. 1.6A at 24 V
- Optional: AC power supply: 230 VAC or 115 VAC +10%/-15%, approx. 40 VA
- Operating temperature: 0 ... 70°C (32 ... 158°F) for the main electronics
- Mechanical vibrations: < 5 g, 5 ... 100 Hz
- 19" modular system according to IEC 60297
- Rack size (W×H×D): 483 mm × 133 mm × 280 mm (19 in × 5.2 in × 11 in)
- Plug-in boards: 100 mm × 160 mm (3.9 in × 6.3 in)



Featuring:

