



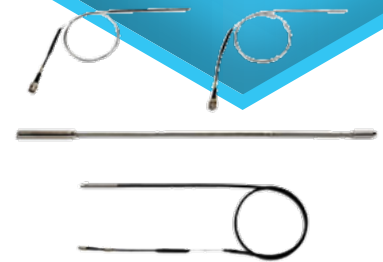
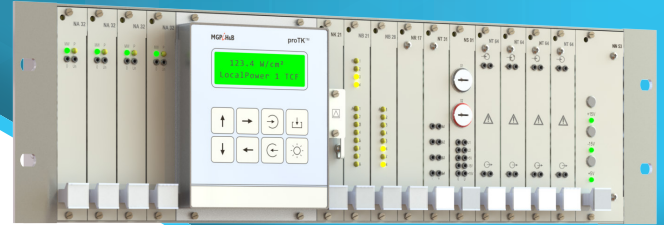
PROTK

PDM 501™

Power Distribution Monitor

(In-Core Neutron Flux Instrumentation)

Power distribution monitor used with fission chamber for in-core neutron flux distribution monitoring in the power range.



FEATURES

- Up to four in-core fission chambers per DSK 250
- Compatible with in-core fission chambers of various sensitivities
- High reliability of fission chamber for severe environmental conditions (temperature, pressure...)
- Individual adjustable detector supply
- No preamplifier required between detector and DSK 250
- Coaxial cable to DSK 250: no limitation length
- Signal filtering with adaptive time constant
- Neutron flux signal for each detector
- Linear analog outputs
- Generation of analog and binary outputs for the reactor protection system
- Built in test signal generators (remote activation possible)
- Option: DMK 250 processing unit for average power range monitoring (for BWR applications)

DESCRIPTION

The power distribution monitor PDM 501 forms part of the digital Neutron Flux Monitoring Systems (NFMS) product line proTK™. It is used, in combination with fission chamber, for in-core neutron flux distribution monitoring in the power range.

The associated processing unit DSK 250 has been designed and is qualified (in hardware and software) to meet requirements applicable at the level of the reactor protection system.

IN-CORE FISSION CHAMBERS

For in-core applications, during power operations, the fission chambers are used in current mode. They are designed to withstand severe environmental conditions and are extremely radiation resistant.

Depending on the type of fission chamber required, but different types of connectors (HN, Submax...) can be mounted on the integrated mineral cable of the detector.

For movable application inside the reactor core, miniature fission chambers are available for measurements close to the physical phenomenon.

TYPICAL CHARACTERISTICS OF THE DETECTORS

- Maximum operating temperature: 350°C (662°F)
- Nominal operating voltage: 150 VDC
- Maximum fluence: 1.5E+20 nvt (neutrons/cm²)
- Maximum gamma flux: 1E+7 Gy/h
- Diameter of the integrated mineral cable: 1 mm
- Different diameters and sensitivities of detection are available (1)

(1) Please consult Mirion Technologies for complementary information

DIGITAL PROCESSING UNIT (DSK 250)

- Modular, multi-processor system
- Program code & configuration parameters, fixed in EPROM
- Non-volatile parameter memory (CMOS-RAM with integrated Li-battery)
- Data interface: up to two RS 232 and/or RS 485 (with optional built in firewall)
- Alphanumeric LCD: 2 x 16 characters (measurement values, status, diagnostic, parameters, thresholds...)
- Alarm and status LEDs on the front panel
- Independent adjustable detector voltage: 0 ... -200 V
- Up to four in-core fission chambers per DSK 250
- Detector current range: 30 µA to 4 mA
- Dimensions: standard 19" x 3U rack (IEC60297)

ENVIRONMENTAL CHARACTERISTICS (For Electronics)

- Temperature: 0°C to +70°C (+32°F to +158°F)
- Relative humidity: max. 75% RH

ELECTRICAL CHARACTERISTICS

- Power supply: 24 VDC or 115/230 VAC (50/60 Hz)
- Isolated analog outputs: 0/4-20 mA, 0/2-10 V
- Binary outputs (isolated relays): 60 V/0.5 A or 125 V/1 A

REFERENCE STANDARDS

- Qualification: IEC60780, IEEE323, KTA3505
- EMC/RF: IEC61000-6-2, IEC61000-6-4

VERSIONS

- 24 VDC or 115/230 VAC (50/60 Hz)
- Various In-core fission chambers
- Various detector cable lengths
- Number and type of input and output modules adjustable

ACCESSORIES

- Seismic cabinet or wall-mounted cabinet
- Field cables (length on customer's specification)

Featuring:

MGPiH&B

