Neutron Monitor model 2222A He-3

- Measured values are displayed in digital and bar- graph form on LCD
- Measuring both dose rate and dose
- He-3 neutron counter meeting IATA transport regulations
- External pulse output
- Fulfils IEC 61005
- Battery operated
- Internal data memory, RS 232 for communication
- Win Pig software for Windows PC

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The Neutron Monitor 2222A He-3 measures both dose and dose rate

The Neutron Monitor 2222A He-3, Digipig, is a new version of the former famous model 2222A. To apply new IATA transport regulations He- 3 detector is used, with moderator containing polyethylene and boron plastic. Integration with SMD-technology give a very compact monitor including including µ-processor, memory functions and real-time clock. With these electronics a number of new functions have been integrated.

The 2222 is intended as a general purpose instrument for radiation protection purposes as well as for continuous monitoring of levels of neutron radiation in locations where permanent dose monitoring is required.

The instrument measures the neutron dose rate in the unit of mSv/h with approximately correct ICRP Sv response curve in the energy range from thermal neutrons to 17 MeV. The instrument is essentially independent of direction of the source and has a very low sensitivity to gamma radiation.

Each unit is delivered with calibration protocol. The dose rate is presented in analogue as well as digital form. The instrument is also measuring the accumulated dose presented in µSv and mSv.

Average dose rate values during 5 minutes intervals are stored in RAM-memory for up to 16 hours operation. The content of the memory can be sent to RS232 terminal.

0. 632 µSv/h 970801 10:14
1. 275 µSv/h 970801 10:19
1. 895 µSv/h 970801 10:24
2. 485 µSv/h 970801 10:29
3. 092 µSv/h 970801 10:34
3. 719 µSv/h 970801 10:39
4. 342 µSv/h 970801 10:44
4. 947 µSv/h 970801 10:49

The instrument is also equipped with five presettable dose rate alarm levels, one in each decade. Pulse output for an external counter can be connected to the unit for remote readings.

Win Pig

As an option the 2222 can be supplied with software (Windows PC) for usage in data communication applications. Data is transferred to a PC by a communication protocol. In addition alarm levels, date, time can be programmed remote via a PC. If a preprogrammed alarm level is reached the 2222 alerts the PC and forwards the alarm. WinPig software supports the PC application and gives advanced graphics to stored data.

SPECIFICATIONS

Detector	Helium tri filled counter (He-3)
Moderator	Polyethylene and boron plastic
Energy range	0.025 eV - 17 MeV
HV power supply	Voltage +1260V - 1340V, drift 1V/°C frequency from DC/AC converter. 50 kHz
Neutron sensitivity	0.35-0.5 cps/µSv/h (individual variation)
Gamma sensitivity	1 Gy/h Cs-137 gives < 5 µSv/h
Real-time clock	Presentation of date time, example 990420 14:13
Memory size	200 values stored in RAM
Output	Connector RS-232 to terminal program
Display	LCD with eligible background light interval
Presentation dose rate	Analogue logscale, range 0.001 - 100 mSv/h Digital range 0.001 - 999.9 m Sv/h. 999.9 mSv/h indicates OVERFLOW
Presentation dose	Summarised dose in digital range 0.01 µSv - 999.9 mSv. 999.9 mSv indicates OVERFLOW
Dose rate alarm	Five preset values for dose rate manually selected by push button, selectable values are: 10 µSv/h, 100 µSv/h, 1 mSv/h, 10 mSv/h, 100 mSv/h
Pulse output	Height +2.8 V, length 700 ns, load 10 kohm min
Power supply	
internal	Alkaline batteries 6x1.5V IEC LR14 operational time 80h
external	Via connector ”External Power” a battery eliminator can be used
Power consumption	Power off mode 0.25 mA Power on mode 75 mA
Temperature range	-10 - +40°C
Dimensions	Diameter 215 mm, length 325 mm, weight 10.5 kg, including batteries

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