

# Neutron Monitor model 2222



- Measured values are displayed in digital and bar- graph form on LCD
- Measuring both dose rate and dose
- Values stored in memory
- External pulse output
- Latest SMD technology
- Battery operated
- RS 232 for communication
- Win Pig software for Windows PC

## The Neutron Monitor 2222 measures both dose and dose rate

The Neutron Monitor 2222, Digipig, is a new digital version of the former famous model 2202. The proven measuring technology with the BF 3 detector and the neutron moderator containing polyethylene and boron plastic is integrated with the latest SMD-technology which means a very compact unit including  $\mu$ -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 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  $\mu$ Sv 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.

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.

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

### Win Pig

As an option the 2222 can be supplied with software (Windows PC) for usage in datacommunication 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

<b>Detector</b>	Boron trifluoride counter tube (BF3)	<b>Presentation dose</b>	Summarised dose in digital range 0.01 $\mu$ Sv - 999.9 mSv. 999.9 mSv indicates OVERFLOW
<b>Moderator</b>	Polyethylene and boron plastic	<b>Dose rate alarm</b>	Five preset values for dose rate manually selected by push button, selectable values are: 10 $\mu$ Sv/h, 100 $\mu$ Sv/h, 1 mSv/h, 10 mSv/h, 100 mSv/h
<b>Energy range</b>	0.025 eV - 17 MeV	<b>Pulse output</b>	Height +4V, length 500 ns, load 10 kohm min
<b>HV power supply</b>	Voltage +2200V - 2700V, drift 1V/ $^{\circ}$ C frequency from DC/AC converter. 50 kHz	<b>Power supply internal</b>	Alkaline batteries 6x1.5V IEC LR14 operational time 80h
<b>Neutron sensitivity</b>	0.35-0.5 cps/ $\mu$ Sv/h (individual variation)	<b>external</b>	Via connector "External Power" a battery eliminator can be used
<b>Gamma sensitivity</b>	2 Gy/h gives <5 $\mu$ Sv/h	<b>Power consumption in "Power off" mode</b>	0.30 mA
<b>Real-time clock</b>	Presentation of date time, example 990420 14:13	<b>Temperature range</b>	-10 - +40 $^{\circ}$ C
<b>Memory size</b>	200 values stored in RAM	<b>Dimensions</b>	Diameter 215 mm, length 325 mm, weight 10.5 kg, including batteries
<b>Output</b>	Connector RS-232 to terminal program		
<b>Display</b>	LCD with eligible background light interval		
<b>Presentation dose rate</b>	Analogue logscale, range 0.001 - 100 mSv/h Digital range 0.001 - 999.9 m Sv/h. 999.9 mSv/h indicates OVERFLOW		

