

NEUTRON PUG

Model # PUG-7N

FEATURES:

- DETECTS FAST OR SLOW NEUTRONS
- GAMMA REJECTION TO 100R/hr
- EASY TO CARRY - LESS THAN 9 POUNDS
- OPERATES ON STANDARD D CELLS
- FOUR RANGES

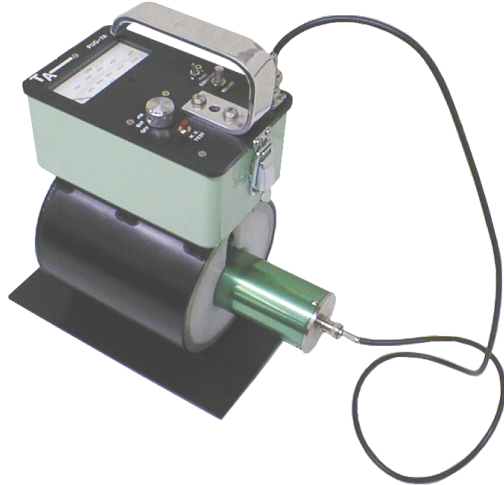


Figure 1: PUG-7N

INTRODUCTION: The PUG-7N is a complete fast-slow neutron monitor. It includes the PUG-7N, four-range survey meter with attached detection system. Ranges are 0-500; 5,000; 50,000; and 500,000 cpm. Detection system includes PNS-20 plus moderator with polyethylene inner sleeve and cadmium outer shield.

DESCRIPTION: The PUG-7N, or "Neutron PUG" detects fast or slow neutrons by means of a thermal neutron scintillation detector and a moderator. When the detector (Model # PNS-20) is external to the moderator, thermal neutrons are detected and measured by means of counts produced in the scintillator as read on the meter of the PUG instrument.

The polyethylene moderator is surrounded by a cadmium shield. The cadmium shield absorbs thermal neutrons and allows other neutrons to enter the moderator. The moderator "thermalizes" the entering neutrons thus allowing them to affect the scintillator. When the thermal neutron detector is within the moderator, thermal neutrons are excluded by the cadmium layers and the detector measures only fast neutrons which have entered the moderator and been "thermalized". (See also the specification sheets on the PUG-7N survey meter and PNS-20 probe.)

SPECIFICATIONS:

Class:	Portable - Survey meter used with moderator and probe.
Principle of Operation:	Boron - 10 in ZnS (Ag) scintillator matrix (neutron, alpha reaction) and photomultiplier tube, polyethylene moderator.
Energy:	Epithermal to fast (Probe in moderator) Thermal (Probe removed from moderator)
PNS-20 Probe Size:	2" diameter x 8" L
Moderator Size:	Approximately 5" diameter x 6" L
Weight:	8-3/4 pounds total weight
Shipping Weight:	15 pounds
Dimensions:	10-1/4" L x 10" H x 6" W, including handle
Batteries:	2 each 9 Volt transistor battery, Eveready # 1222 or equivalent
Ranges:	0-500; 5,000; 50,000; 500,000 cpm Corresponds with 0-8; 80; 800; 8,000 thermal neutrons/cm ² /sec. (Nominal)
Gamma Rejection:	Insensitive to gamma in field up to 100R/hr.
Other Probes:	Any alpha, beta or gamma probes of the P and PS series can be used with this electronics by unplugging and plugging in their BNC connector and cable.

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TECHNICAL ASSOCIATES

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