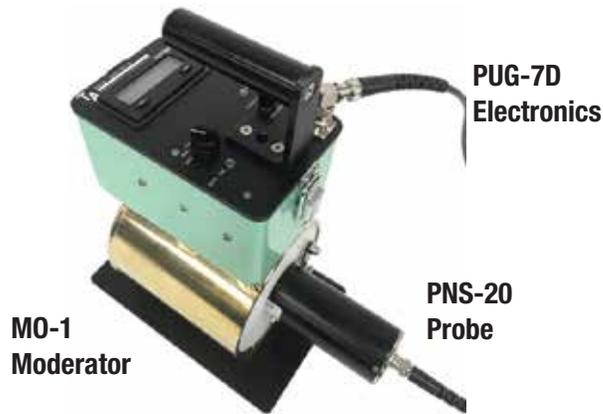




**PUG-7N-D
System**

DIGITAL NEUTRON PUG

Model: Pug-7N-D System



**MO-1
Moderator**

**PUG-7D
Electronics**

**PNS-20
Probe**

Features

- The PNS-20 External Probe Detects Slow (Thermal) Neutrons
- The PNS-20 Probe in the Moderator Detects Fast (Thermal) Neutrons
- Digital; Single Range; Five Decades
- Gamma Rejection to 1R/h
- **Optional:** Serial Port
- Alarm User Settable - Audio / Visual
- PNS-20 Neutron Probe (Standard)
- **Optional:** PNS-20H Neutron Probe (High Neutron Flux)
- **Optional:** Neutron Probes – PN-17, PNS-19
- External Connector for GM or Scintillator Detector
- Easy to Carry - Less Than 9 Pounds
- Battery Operated - **Optional:** AC Power
- **IP64; CE Mark**

Application

Neutron count rate monitoring in and about nuclear reactors, accelerators, neutron sources, neutron generators, customs inspection, etc.

Description: Probes

The **PUG-7N-D** is a complete fast-slow neutron monitor system. It includes the **PUG-7D**, five-decade survey meter with attached detection system: the **MO-1** Moderator, and the PNS-20 Probe.

The **PUG-7N-D** System, or “Neutron PUG” detects fast or slow neutrons by means of a thermal neutron scintillation detector and a moderator. When the detector (**PNS-20**) or (**PNS-20H**) 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-7D** instrument.

The **PNS-20** probe has enhanced sensitivity for detection of slow Neutrons. The **PNS-20H** detects slow Neutrons for a high Neutron flux.

When the **PNS-20** probes are in the moderator they detect fast Neutrons. When the **PNS-20** probes are external, they detect slow Neutrons.

Moderator:

The polyethylene moderator is surrounded by a cadmium shield. The cadmium shield absorbs thermal neutrons and allows fast 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”.

Direct measurement of thermal neutrons is available due to the removable detector inside the moderator housing.



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