

# SUPERIOR UNIVERSAL ELECTRONICS

## Model Series- PUG-7

### Models – PUG-7-D ~ PUG -7-DF

#### FEATURES:

- ACCEPTS GM AND SCINTILLATION PROBES
- ALPHA, BETA, NEUTRON, X-RAY OR GAMMA
- PORTABLE
- BATTERY OPERATED
- DIGITAL
- FIVE DECADES
- ALARM: FLASHING RED LED AND AUDIBLE SONALERT. PROPORTIONAL TO COUNT RATE.
- NO RANGE SWITCHING REQUIRED
- COMPENSATION FOR COINCIDENCE
- **OPTIONAL:** RECHARGEABLE BATTERIES CHARGER

#### PUG-7-D SERIES:

- PUG-7-D – BUILT-IN, USER SETTABLE ALARM
- PUG-7-DF – FULL SYSTEM INCLUDES: ELECTRONICS AND PGS-3 GAMMA PROBE
- **OPTIONAL:** PUG-7-A AND PUG-7-AF (ANALOG)



PUG-7-D ELECTRONICS



#### APPLICATION:

Any Alpha, Beta, Neutron, X-ray or Gamma monitoring program, whether aimed at the measurement or control of radiation levels or of contamination, is served by the versatile PUG-7-D electronics, combined with a T/A probe.

This universal instrument can be used with any P series, Geiger, or scintillation probe in the T/A line.

#### DESCRIPTION:

The **PUG-7-D** electronics utilizes continuously adjustable regulated high voltage supply 1500V (2,500 volts Optional) to operate GM or scintillation detectors delivering a one millivolt or above pulse. An adjustable discriminator allows full control over system sensitivity. The pulse input is zener diode protected so that probes may be interchanged without shutting off instrument.

**PUG-7-DF is a full system and includes PUG-7-D, and a Probe - PGS-3 (one inch NaI(Tl) scintillator).** Readout is in microR/h (or SI units).

Read out on the PUG instrument is in CPS; optionally in SI units or mR/h or other units. Calibration for different probes or situations is accomplished by inputting constant calibration content which can be accomplished using the 2 front panel buttons after unlocking them from standard mode.

The shell of the instrument is smoothly finished, attractive baked enamel over aluminum case. The cover is machined, anodized aluminum with highly visible markings.



**TECHNICAL ASSOCIATES**

7051 ETON AVENUE, CANOGA PARK, CALIFORNIA 91303

PHONE: 818-883-7043 | FAX: 818-883-6103

SALES@TECH-ASSOCIATES.COM | TECH-ASSOCIATES.COM | USNUCLEARCORP.COM

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#### SENSITIVITY:

- **Ranges:** 5 Decades with no range changing required.  
See chart below for different probe ranges.

**RANGES:** Choose any probe below or any TA or compatible probe including silicone solid state.

Some choices include:

PROBE	DESCRIPTION	RANGE						UNITS
<b>ALL PROBES</b>	ALL PROBES	0.1	1	10	100	1,000	10,000	cps
<b>GM</b>	Thin window Alpha-Beta, Gamma, X-ray,							
<b>P-15</b>	2" dia Pancake		.02	.2	2	20	200	mR/h
<b>P-6LB</b>	Low background		.1	1	10	100	1,000	mR/h
<b>SCINTILLATOR</b>	GAMMA SCINTILLATION							
<b>PGS-3</b>	Gamma			.05	.5	5	50	mR/h
<b>PGS-3T</b>	Low Energy Gamma			.01	.1	1	10	mR/h
<b>PGS-3L</b>	Low/mid Energy Gamma			.03	.3	3	30	mR/h
<b>BGS-2505</b>	Low Energy BGO probe			.01	.1	1	10	mR/h
<b>PNS-20</b>	Neutron Scintillator	0.1	1	10	100	1000	10,000	n/cm <sup>2</sup> /s

#### SPECIFICATIONS:

##### Digital Display:

Length = 6-digit rate, 8 digit total dose  
Other meter scale markings are available.

##### Engineering Units:

User can input correct conversion factor and change to any units OR stipulate at time of order.

##### Front Panel Controls:

On-Off, Alarm-mute, Rate, Integrate, Alarm Set and Reset.

##### Recessed or Internal:

Discriminator level, high voltage

##### Other adjustable settings:

See calibration.

##### Detectors:

Any GM (P-13, P-15, P-6LB, etc.) or Alpha, Beta, Gamma or Neutron scintillator (PAS-8, PAS-9, PGS-3, PNS-19, etc.).

##### Alarm:

Flashing Red LED and Audible Sonalert.  
Proportional to count rate.

##### Probe Holder:

Probe Holder is provided for probe purchased.

##### Input Sensitivity:

Adjustable from less than 1 millivolt to 100 millivolt

##### Accuracy:

±10%



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<b>Anti-Saturation &amp; Dead-time Corrections:</b>	Differentiation circuit provides highly effective compensation for coincidence loss. This allows all five decades to accurately read with scintillation detectors.
<b>Calibration:</b>	Digital input of calibration factor gives high precision adjustment.
<b>Probe Connector:</b>	BNC (optionally MHV) low noise Teflon insulated.
<b>Battery:</b>	9-volt battery (150-300 hours typical life).
<b>Dimensions:</b>	3-1/4" H, 4-1/4" W, 7-1/4" long excluding probe holder and handle.
<b>Weight:</b>	2 lbs. 4 oz.

### PUG-7 Series:

<b>PUG-7-DF:</b>	Full system with PUG-7-D (Digital) electronics. Includes Probe PGS-3.
<b>OPTIONAL:</b>	<b>PUG-7-AF:</b> Full system with PUG-7-A (Analog) electronics. Includes Probe PGS-3.
<b>Detector:</b>	<b>PGS-3:</b> One inch NaI(Tl) scintillator comes with the PUG-7-D case and may be removed and separated on a one meter included cable. Comes with a probe mount.

### Options:

Rechargeable batteries with charger



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