

ALPHA-BETA PROBE

NSN: 6665-01-671-4479
LMI Part Number: V040005

The RDS Alpha-Beta Probe is used for the measurement of surface contamination -- a survey meter of both alpha and beta radiation. It has dual detection capability, having both a phosphor scintillator and a zinc sulfide PMT. The probe can discriminate between Alpha and Beta simultaneously. Designed and tested for military ruggedness to meet both military/defense requirements and industrial applications.

The Alpha-Beta Probe is a smart probe containing a microprocessor and high voltage circuitry for creating its own high voltage. No high voltage is transferred across the interface cable. When the probe is connected to the Base Unit, the display will show the probe's image and radiation measurements. The Alpha-Beta Probe's onboard memory stores the probe type and calibration information.



FEATURES

- Military-grade durability
- ZnS(Ag) scintillation detector
- Simultaneous display of alpha and beta readings
- Part of the RDS radiation detecting probe family
- Alpha/Beta/Gamma surface contamination measurement
- Simple removable protective grate for decontamination
- Built-in mesh screen for extra protection
- Base Unit to probe connector cable can be used with any RDS probe
- Hot-swapping Smart Probe Technology
- Calibration resident on probe (does not require a paired Base Unit)
- Complies with ANSI N42.17 using Cs-137 as reference source
- Data transferred via Rad-Extender
- Comfortable, easy to use ergonomic design
- Robust cable connections

SPECIFICATIONS

Usage

Survey for alpha and beta radiation

Radiological

Detector Type	ZnS(Ag) scintillator adhered to thick plastic scintillator
Active Detection Area	100 cm ² (15.5 in ²)
Dose Rate Units	Count Rate - cpm, cps. Count Rate per Unit Area - cpm/cm ² , cps/cm ²
Detection Range	Alpha range - 3 MeV - 8 MeV Beta range - 100 keV - 5 MeV
Cross Talk	Alpha to Beta (Am-241) < 15% Beta to Alpha (Sr-90/Y-90) < 1%
Measurement Range	0 to 1.5 Mcpm
Gamma Sensitivity	>35 cps per µGy/hr
Ambient Background	10 µR/hr field: Alpha < 3.0 cpm, Beta < 300 cpm
Response Uniformity	±10% from average reading
Efficiency (4π)	Beta: 10% C-14, 18% Tc-99, 25% for Sr/Y-90, 30% for Ru/Rh-106 Alpha: 4% Gd-148, 14% Th-230, 17% Am-241, 13% U-238, 17% Pu-239, 24% Cf-252

Operational

Display	RDS Base Unit
Alarms	Saved in Base Unit memory, ability to set thresholds for Alpha channel & Beta channel

Electrical

Power	Supplied by RDS Base Unit
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Mechanical

Dimensions	11.6" x 3.7" x 3.8" (29 x 9 x 10 cm)
Probe Housing	Anodized aluminum
Weight	1.9 lb. (0.86 kg)
Protective Grate	22 ga 0.076 cm (0.030 in.) stainless steel hex 0.64 cm (0.25 in.), 81% open

Environmental

Operating Temp.	22° to 122° F (-30° to 50° C)
Storage Temp.	-58° to 140° F (-50° to 60° C)
Relative Humidity	3% to 100%
Ingress Protection	IP 54 - Contaminated Mylar Window should be replaced
Cleaning	Decontaminate with mild detergent and water
Salt Fog	Resistant (MIL-STD 810 G, Method 509.5)
Explosive Atmosphere	Intrinsically safe

Standards Compliance

CE	CE Compliant, EMC (2014/30/EU), Low Voltage (2014/30/EU)
FCC	FCC Part 15, Sub-part B, Class B
ANSI	ANSI N42.17 and ANSI N42.34
MIL-STD	MIL-STD 461F, MIL-STD 1686C, & MIL-STD 810G

Ordering Information

V040005	Alpha-Beta Probe
V038429	Base Unit
V038863	FIDLER Probe
V038313	Sensitive Gamma Probe
V038820	ABG Pancake Probe
V038276	Beta-Photon Probe
V039097	Neutron Probe
V041227	Telescoping Probe Handle
V038669	Base Unit to Probe Cable
V062817	Rad-Extender

