RADON NORTH

Exclusive Canadian Radon Measurement Products Representative of

Rad Elec Inc.

SPER-1E
Electret Voltage Reader

Application:

- non-contact, surface potential (voltage) measurement of electrets
- lab or field measurements

Features:

- large, easy to read display
- precision stainless steel electret shutter mechanism
- electroplated Cu voltage measurement electrode
- rugged construction
- reference & "zero" electrets

The SPER-1E Electret Voltage Reader is specifically designed to make non-contact surface potential (voltage) measurements for all the electret types used in Rad Elec Inc.'s Radon Measurements Products Line. Equally suitable for field or laboratory measurements, the SPER-1E can be operated from line voltage or batteries. It features a precision, stainless steel electret shutter mechanism; combined with an electroplated copper electrode for accurate non-contact surface potential measurements. For each electret "reading," an on-board microprocessor calculates the average of approximately 20 sequential voltage measurements (after removing the high & low values) and displays the result on the LCD. The same microprocessor also measures and displays ambient temperature (in °C or °F), and the time the shutter was open (in milliseconds).

Each SPER-1E is shipped with a rugged carrying case and two reference electrets.

SPER-1E
Electret Voltage Reader

Specifications:

Physical

Dimensions . . . . . 110.5 mm x 189 mm x 40.5 mm (4.35" x 7.44" x 1.6")
Material (body). . . . . high impact ABS
Mass (with batteries) . . . . . 633 g (22.3 oz.)

Measurement Components

Electrode (electric field). . . . . electroplated Cu
Electret Shutter . . . . . stainless steel
Electret Receptacle . . . . . aluminum

Error

Electret Voltage Measurement . . . . . ± 1 V FS

Typical Operating Conditions

Temperature . . . . . 0 to 40°C (32 to 104°F)
Relative Humidity (non-condensing) . . . . . to 75%

User Interface (7 Digit Alpha-Numeric LCD)

Electret Voltage Reading. . . . . to 1600 V
ON . . . . . shutter lever
OFF . . . . auto off after 2 minutes of no shutter activity
LO BAT . . . . . battery voltage ≤ 2.25 V
ER FAST . . . . . shutter pulled open too fast
ER OPEN . . . . . shutter held open too long
ERSLIDE . . . . . error when opening shutter
ER SLOW . . . . . shutter pulled open too slow
ER WAIT . . memory not cleared from previous reading

I/O Interfaces

Mini USB . . . . . currently used as a power source
PS/2. . . . . not enabled on base unit
RS-232 . . . . . outputs electret voltage reading

Power Supply

AC Adaptor . . . . . 117 VAC, 60 Hz
Output . . . . . 4.5 to 7 VDC, 200 mA (nom.)
Rt. Angle Barrel Connector . . . 1.2 x 3.5 x 9 mm plug (0.05" x 0.14" x 0.36")

Batteries (2) AA. . . . . 1.2 VDC, 600 mAh NiCd
or
Batteries (2) AA. . . . . 1.5 VDC alkaline
DO NOT use alkaline batteries with AC adaptor!

Included Accessories

Reference Electret (2) . . . stable 250 V potential (typ.)
ZERO Electret . . . . . 0 V potential (for meter zeroing)
Desiccant Canister . . . . . silica gel
Carry Case . . . . . cushioned, high-impact ABS

Evaluated/Utilized By:

Canadian Nuclear Laboratories; Canadian National Radon Proficiency Program; Oak Ridge National Laboratory; Health Canada - Radiation Protection Bureau; Ontario Power Generation, Pickering NGS; U.S. Department of Energy - Savannah River Site; U.S. Environmental Protection Agency; U.S. National Institute of Standards and Technology; U.S. National Radon Proficiency Program; and U.S. National Radon Safety Board.

Ordering Information

To order, contact Radon-North
22 Wrenwood Place
Kitchener, ON
Canada N2A 4C7

E-mail: radon-north@gto.net **Phone:** (519) 603-1850 **Website:** www.radonnorth.com

