

RadStar RS300

Operating Instructions



RS300 FEATURES

- 12 or 24-hour start time delay option
- Accurate measurement in a wide range of temperatures and relative humidity
- Internal memory to retain data
- Nominal sensitivity: 16 cph/pCi/L



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1.0 SETTING UP THE RS300:

1.1 Plug power adapter that is marked “RadStar Power Supply” into any 120VAC outlet.

1.2 Plug free end of power adapter into left side of RS300-Green LED should come on. This tells you that the NiCad batteries are charging. Power cord should be left plugged in at all times during a radon test to ensure that the batteries remain charged. If there is no power available, such as in new construction, the unit may be run for a typical 48hr test on the batteries alone as long as the unit has been charging with the power adapter over night.

2.0 TURNING UNIT ON:

2.1 Insert key into unit and turn it one click to the right to the [Keypad On] position. The unit will beep.

3.0 ERASING STORED DATA:

3.1 Press and hold the [Hold to Clear] button. There will be an audible tone coming from the unit when this is done. Release the [Hold to Clear] button after the tone stops. There will be a short “beep” to signify that the memory has been erased. This is done to erase any prior test that has been stored in the memory so that the unit will test from the first hour. If this is not done, the unit will start testing from the hour that it was shut off on the last test.

4.0 MONITORING FOR RADON GAS:

4.1 You may begin monitoring for radon gas by turning the keyswitch to the [Measure On] position. The key may be removed in this position to prevent tampering with the unit.

4.2 The red LED next to the [Measure On] logo will stay on for forty seconds then go out. This is a normal condition. Every thirty seconds after there LED will blink. This is a normal condition.

Note: When the key is turned to the [Measure On] position to start a new radon test and the unit “beeps”, it means that the data needs to be erased from the prior test. See section 3.0.

Note: Test duration per EPA Protocols must be at least 48 hours.

5.0 OBTAINING A READING FROM THE RS300:

5.1 Any time during or after a test turn the keyswitch to [Keypad On] position.

Note: To continue testing at anytime when the keyswitch has been turned to the [Keypad On] or the [Off] position, simply turn the keyswitch to [Measure On] position. Note that the unit will “beep” to signify continued testing.

Note: When a test is continued by going from [Keypad On] to [Measure On] the hour that you were testing in starts over again. Also note that if you try to look at the readings before the first hour is up the PC or printer will read: “No Data”.

6.0 SETTING UP THE OPTIONAL PRINTER:

6.1 Plug the AC/DC adapter (the one marked “Printer Power Supply”) into any 120VAC outlet. Plug the power jack from the adapter into the back of the printer.

6.2 Connect the D-Sub cable supplied with the unit to the printer and the RadStar.

6.3 Turn the printer on via the rocker switch. The red LED on the printer should come on.

7.0 OBTAINING A TEST REPORT PRINTOUT:

7.1 After completing a test turn the keyswitch to [Keypad On] position.

7.2 Press and hold down [Print] button until unit beeps. The unit will print the test report. See Fig.A (p.6) for an explanation of the printout.

Note: If you try to get a printout within the first hour of testing, the printer will display “No Data to Print”.

7.3 To obtain multiple printouts, simply press the [Print] button again.

8.0 DOWNLOADING DATA FROM THE RADSTAR:

The RadStar comes with a Data Capture Utility Program (Windows XP and Vista compatible), and a USB/Serial Adapter Cable with driver. The accompanying RadStar Documentation Library describes the set-up and operation of these items. You may also view the Documentation and download the Program from the AccuStar Labs website www.accustarlabs.com.

8.1 Install the RadStar Data Capture Utility Program and cable driver on your PC. In the Program, setup the correct RadStar model number and the correct COM port. Refer to the RadStar Documentation Library for specific instructions.

8.2 Connect the PC cable to the Print Port on the RadStar, and to your PC. Turn the RadStar keyswitch to [Keypad On] position.

8.3 In the Data Capture Utility Program on your PC, click Download Data. The Set Delay menu will appear. No Delay, 12-Hour Delay, or 24-Hour Delay must be selected.

Note: To meet EPA protocols minimum test durations are 48, 60 and 72 hours for No Delay, 12-Hour Delay, or 24-Hour Delay respectively.

On the RadStar, press the [Print] button once. The data will download to the PC.

Note: Clicking Download Data on the PC after pressing Print on the RadStar Unit will result in incomplete data and an error message when exporting results to the Excel Chart.

Note: If you try to download data from the RadStar within the first hour of testing, the PC will display "No Data".

8.4 The test data downloaded into the Data Capture Utility can then be exported into a text file, comma delimited file or Excel chart. README files with the software describe the set-up and operation of the Data Capture Utility. Data Exported depends on the Delay selected when the Data was downloaded.

"No Delay" - All data from hour 001 is exported. Hours 001-004 are ignored when calculating Average, Min and Max. Plot on Excel chart starts at hour 005.

"12-Hour Delay" - All data from hour 013 is exported. Hours 013-016 are ignored when calculating Average, Min and Max. Plot on Excel chart starts at hour 017.

"24-Hour Delay" - All data from hour 025 is exported. Hours 025-028 are ignored when calculating Average, Min and Max. Plot on Excel chart starts at hour 029.

9.0 TRANSPORTING THE RADSTAR TO A PC OR PRINTER:

9.1 If desired, you may transport the RadStar to a PC or printer to retrieve the data. Turn keyswitch to [Off] position remove key and disconnect power supply. When your destination is reached, simply insert key into unit and turn to [Keypad On] and print or download the data.

FIGURE A

EXAMPLE RS300 TEST RESULT PRINTOUT

<pre> RadStar RS300 Radon Detector/Monitor Version 1.0 Serial#: 01309 Calib.#: 36358 TestID#: 30000 </pre> <hr/> <pre> Interval Report </pre> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Hour</th> <th style="text-align: left;">T</th> <th style="text-align: left;">B</th> <th style="text-align: left;">AC</th> <th style="text-align: left;">Alpha</th> <th style="text-align: left;">pCi/L</th> </tr> </thead> <tbody> <tr><td>001</td><td></td><td></td><td></td><td>0824</td><td>067.8</td></tr> <tr><td>002</td><td>*</td><td>*</td><td>*</td><td>0938</td><td>074.6</td></tr> <tr><td>003</td><td></td><td></td><td></td><td>0940</td><td>075.7</td></tr> <tr><td>004</td><td></td><td></td><td></td><td>0955</td><td>083.2</td></tr> <tr><td>005</td><td></td><td></td><td></td><td>0960</td><td>086.0</td></tr> <tr><td>006</td><td></td><td></td><td></td><td>0823</td><td>082.4</td></tr> <tr><td>007</td><td></td><td></td><td></td><td>0962</td><td>086.5</td></tr> <tr><td>008</td><td></td><td></td><td></td><td>0961</td><td>086.4</td></tr> <tr><td>009</td><td></td><td></td><td></td><td>0958</td><td>086.1</td></tr> <tr><td>010</td><td></td><td></td><td></td><td>0960</td><td>086.8</td></tr> <tr><td>011</td><td></td><td></td><td></td><td>0823</td><td>082.5</td></tr> <tr><td>012</td><td></td><td></td><td></td><td>0844</td><td>085.3</td></tr> <tr><td>013</td><td></td><td></td><td></td><td>0960</td><td>086.2</td></tr> <tr><td>014</td><td></td><td></td><td></td><td>0961</td><td>084.0</td></tr> <tr><td>015</td><td></td><td></td><td></td><td>0960</td><td>086.2</td></tr> <tr><td>016</td><td></td><td></td><td></td><td>0975</td><td>089.2</td></tr> <tr><td>017</td><td></td><td></td><td></td><td>0745</td><td>085.8</td></tr> <tr><td>018</td><td></td><td></td><td></td><td>0743</td><td>085.5</td></tr> <tr><td>019</td><td></td><td></td><td></td><td>0971</td><td>089.0</td></tr> <tr><td>020</td><td></td><td></td><td></td><td>0963</td><td>086.6</td></tr> <tr><td>021</td><td></td><td></td><td></td><td>0971</td><td>088.4</td></tr> <tr><td>022</td><td></td><td></td><td></td><td>0744</td><td>085.7</td></tr> <tr><td>023</td><td></td><td></td><td></td><td>0981</td><td>090.7</td></tr> <tr><td>024</td><td></td><td></td><td></td><td>0998</td><td>093.1</td></tr> </tbody> </table> <pre> Avg: 087.6 Max: 093.1 Min: 082.4 </pre> <p>Start Date/Time _____</p> <p>End Date/Time _____</p> <p>Address _____</p> <p>Location of Instrument _____</p> <p>Tested By _____</p>	Hour	T	B	AC	Alpha	pCi/L	001				0824	067.8	002	*	*	*	0938	074.6	003				0940	075.7	004				0955	083.2	005				0960	086.0	006				0823	082.4	007				0962	086.5	008				0961	086.4	009				0958	086.1	010				0960	086.8	011				0823	082.5	012				0844	085.3	013				0960	086.2	014				0961	084.0	015				0960	086.2	016				0975	089.2	017				0745	085.8	018				0743	085.5	019				0971	089.0	020				0963	086.6	021				0971	088.4	022				0744	085.7	023				0981	090.7	024				0998	093.1	<p>UNIT SERIAL NUMBER</p> <p>UNIT CALIBRATION FACTOR</p> <p>CUSTOMER TEST ID NUMBER</p> <p>* [INTERRUPT] REPRESENTS LOSS OF AC POWER</p> <p>* [INTERUPT] REPRESENTS LOW BATTERY</p> <p>* [INTERRUPT] REPRESENTS PHYSICAL TAMPERING OF INSTRUMENT</p> <p>ALPHA COUNT</p> <p>RUNNING MEASUREMENT TIME IN HOURS</p> <p>RADON CONCENTRATION AVERAGED FROM THE 19TH TO THE 20TH HOUR</p> <p>AVERAGE RADON CONCENTRATION OVER TOTAL MEASUREMENT TIME [1ST 4HRS EXCLUDED]</p> <p>MAXIMUM RADON READING TAKEN OVER TOTAL MEASUREMENT TIME [24TH HOUR]</p> <p>MINIMUM RADON READING TAKEN OVER TOTAL MEASUREMENT TIME [6TH HOUR]</p> <p>USER ENTRY DATA</p>
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Manufactured by
RadonAway
3 Saber Way
Ward Hill, MA 01835

RS300 Instrument Specifications

Mode:	Continuous Monitor, Passive Diffusion
Principle of Operation:	Pulse Mode Ionization Chamber
Minimum Sensitivity:	0.27 cpm/pCi/L (minimum 64 alpha counts per hour @ 4 pCi/L)
Units:	picoCuries per liter (pCi/L)
Dynamic Range:	0.5 to 150 pCi/L
Linearity:	+/- 10% Best Straight Line
Data Storage (Nonvolatile):	Up to 240 hourly readings, wrap on over-run.
Power:	120VAC 60Hz Transformer, 8 days rechargeable battery operation.
Indicators:	Green AC Power LED, Red Testing LED
Key Switch:	3 Position, Removable Key [Off] [Keypad On] [Measure On]
Pushbuttons:	Momentary [Print] [Hold to Clear]
Communications:	RS-232 port for printing or computer uploads
Tamper Protection:	Tilt switch, AC power fail detection, key switch lock-out.
Operating Range:	Temperature 50° F – 90° F Humidity 0-80%, non-condensing
Size:	Height 7 inches (includes Carrying Handle) Width 8 inches Depth 4 ½ inches Weight 2 ½ pounds
Color:	Green/Black
Mounting:	(2) ¼"x 20 Threaded Tripod Mounts



Technical Support, Calibration
and Repair Service.

800-767-3703
M-F 8:30am - 5:30pm ET

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