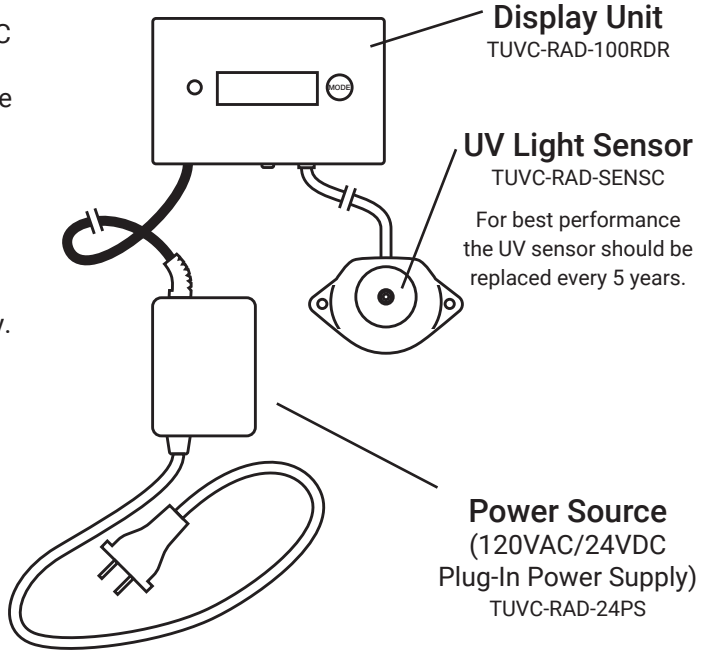
FRESH-AIRE UV
The Indoor Air Quality Expert

UV Radiometer & Lamp Life Monitor

The TUV-RAD-100-DL radiometer is designed to continuously monitor UV light output and provide lamp monitoring function. It is not intended to be used as a calibrated test instrument for UVC lamp output, but rather to document the lamp UV irradiance at start-up and throughout the lamp life cycle. When lamp irradiance decreases to 70%, it is an indication that the lamp(s) need to be replaced.

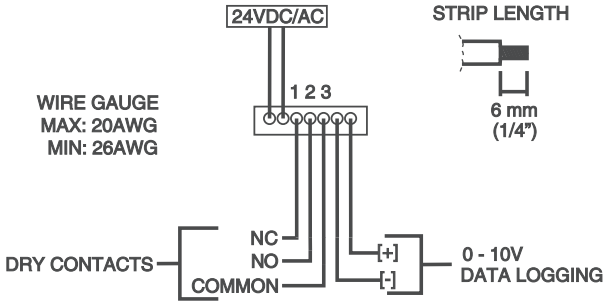
Parts Included



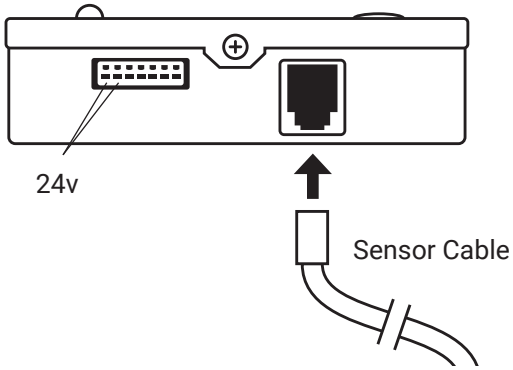
Installation

Power Source

The power supply is wired directly to the underside of the display. Plug into a 120VAC outlet near the location of the display. Do not use the power supply to power additional devices. Power the radiometer with the power supply, do not use power from another 24VDC source.



To remove a wire from the terminal block, insert a small slotted screwdriver (1/16" wide) into wire lock below the terminal and gently pull out the wire when it is unlocked.

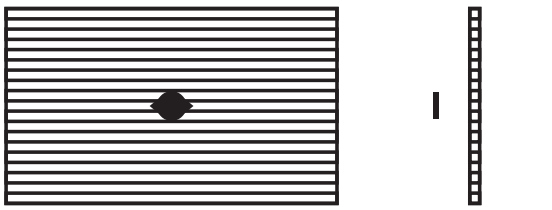


This unit is not weather resistant. Do not mount outdoors unless within a waterproof enclosure.

DO NOT MOUNT OUTDOORS

Sensor Placement

Locate the sensor within the AHU near the center of the cooling coil. The sensor should be at a distance of 10"-12" from the coil face for optimal output readings.



Display

Locate the display outside the AHU within a mechanical room or equipment closet. Make sure the display is easily accessible and at an appropriate height to observe output readings, change settings and silence alarms.

Sensor

The UVC sensor comes with a 20 ft cable. Do not extend or splice additional cable to the sensor cable. Use the optional Repeater (TUVC-RAD-RPT) to extend the length of the sensor up to 10,000 ft. Mounting to a center support in the coil is preferred. Orient it to directly face the UV lamp. Drill a 3/8" hole to pass the sensor cable through the AHU wall as close as possible to the radiometer display location. Protect the sensor cable from extensive UV exposure by shielding with split plastic wire loom and secured with zip ties.

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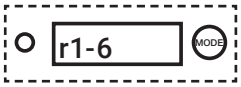
Operation

Screen 1

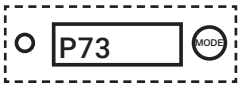


Upon powering up the unit, the software revision will be displayed for about 5 seconds. If the "MODE" button is depressed the screen will stop showing the revision and jump to the next screen.

Example: r1-6 = Revision 1.6

If optional data logging is installed, after the revision the unit will scroll "data logger."

Screen 2

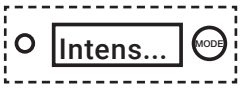


Next, the unit will advance to the default screen to indicate "Pxyz" where "P" equals the percentage of UV light detected as referenced to the baseline* and "xyz" represents the value of "P." See instructions for SCREEN #5 to learn how to set the baseline.

Example: "P73" = measured intensity is 73% of the maximum set intensity.

Screen 3

Tap the "MODE" key to advance to SCREEN #3.

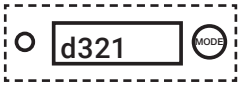


SCREEN #3 scrolls "Intensity xxxx" to indicate absolute UV measured intensity 2 2 times 10, in µW/cm where "xxxx" is the value of measured intensity in µW/cm x 10.

Example: "Intensity 1234" = the absolute measured intensity is 1234 x 10 – 12,340 µW/cm2 (microwatts per square centimeter).

Screen 4

Tap the "MODE" key to advance to SCREEN #4.



SCREEN #4 displays "dxyz" to indicate the number of days elapsed since the baseline* reset where "d" signifies days and "xyz" is the measured value of days elapsed.

Example: "d321" = the lamp has been used for 321 days since the baseline* reset.

Screen 5

Tap the "MODE" key to advance to SCREEN #5.

SCREEN #5 scrolls "Hold To Reset". By holding down the "MODE" key for more than 3 seconds the radiometer will reset the lamp percentage's reading to 100% and days elapsed to 0. **This displays how long the lamp(s) have been operating so users know when to replace them.**

*This is to reset the baseline of all measurements with the exception of the absolute intensity measurement (SCREEN #3).

Error Screens

The following scrolling screens will indicate abnormal operations of the radiometer. The radiometer will revert to normal operation once the problem is corrected:

"Connect Sensor" – a proper sensor is not attached to the radiometer. To correct this error check that the sensor is properly plugged into the unit.

"Sensor Saturated" – the sensor detects UV intensity greater than 21,300 µW/cm2. To correct this error move the sensor to a more suitable distance from the UV source being measured.

LED color indication:

Green:	75% - 100% UV Intensity
Yellow:	60% - 74% UV Intensity
Red:	40% - 59% UV Intensity
Blinking RED :	0% - 39% UV Intensity

Building Automation Integration: Dry Contacts

Dry Contacts for Building Automation Integration. The radiometer includes a pair of dry contacts (NO and NC). Dry contacts make it possible for the radiometer to be easily tied to a building automation system.

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