

# **2B** Technologies, Inc.

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*An InDevR Company*

Technical Note No. 014

## **Manual Addenda for Models 202 and 205: Backup Pump and Analog Output Scaling Factor**

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This Tech Note provides two updates to the Model 202 and 205 Operation Manuals that will be incorporated in more detail in future revisions.

### **Backup Air Pump**

The previous Backup Pump upgrade is not standard on both Model 202 and 205 Ozone Monitors. Two air pumps and a flow meter are installed. One serves as the main air pump and the other as a backup pump. If the air flow rate drops below a critical value, the main pump is powered off and the backup air pump is powered on. When the backup pump is activated, an asterisk (\*) appears in the left hand corner of the display. If the second pump fails, the backup pump is turned off, and the main pump is powered again. At this point two asterisks (\*\*) appear on the display. If the flow is still out of range, the backup pump is tried again, and three asterisks (\*\*\*) appear on the display. Finally, if the flow is still two, both pumps are turned off to conserve power.

This feature allows the user to obtain the full lifetime of an air pump without significant loss of data. Once the main pump fails, the user typically will have up to several months of operation to replace the main pump.

The volumetric flow rate is continuously measured, output over the serial port as part of the data line and stored in the internal data logger. More details will be provided in the next revision of the instrument manual.

### **Analog Output Scaling Factor**

Previously there were four choices in the Menu for scaling the analog output: 1V=0.200, 1V=0.400, 1V=4 and 1V=40, corresponding to scalings of 1 volt equal to 0.2, 0.4, 4 and 40 ppmv (200, 400, 4000 and 40000 ppbv). The maximum analog output voltage is 2.5 volts, so the ranges covered are 0-500 ppb, 0-1 ppm, 0-10 ppm and 0-100 ppm for settings of 1V=.200, 1V=0.400, 1V=4 and 1V=40 settings, respectively.

The four choices have now been replaced by a continuously variable scaling factor. You can now use the Select switch to change the value in ppmv that corresponds to 1 V. The full range of the output is still 2.5 V.