

## Thermo Scientific pDR-1500 and ADR-1500 Version 01.35.00

### Introduction

The Thermo Scientific pDR-1500 Monitor and the ADR-1500 Monitor require an update to the operating firmware from all previous versions of firmware.

**IMPORTANT:** All logged data in the pDR-1500 instrument will become unusable to the newer version firmware, so be sure to download all required logged data before upgrading the pDR-1500 firmware.

### Description

Obtain the current hex file from the Thermo Scientific Air Quality Instruments Online Library and follow the instructions identified in this Technical Note. Please note the folder location where the firmware was saved:

1. Connect the instrument to your computer using the USB cable (or the round RS-232 connection on the pDR-1500 only).
2. Turn on the instrument normally until the display reads "OPERATE" (do not start a RUN).
3. Run pDR Port (used for both the pDR-1500 and ADR-1500) and set the serial connection (under "Settings", select "ComPort") if it has not already been established. You can select "Show instrument panel" to confirm connection is established. If the instrument display appears, all connections are proper .
4. Back up the settings by selecting from the menu items in pDR Port: "File", then "Update firmware", and then "Backup Settings".
5. Now the new firmware will be uploaded to the instrument. From the menu, select "File", then "Update pDR-1500 firmware" and then "Load new firmware".
6. A dialogue box will open, go to the folder where the firmware file was saved. Click on a file and select "Open".
7. Restore settings is required next. To initiate this, the USB or serial cable must be connected between the instrument and the computer and communication reestablished. Back up the settings by selecting from the menu items in pDR Port: "File", then "Update firmware", and then "Restore settings".

## **Reformat Memory – Required**

Any residual data in the memory is stored in a format incompatible with the newer version firmware. To clear all data memory it must be reformatted. This is accomplished using the PDR PORT software.

1. Open the pDR PORT software on the PC.
2. Connect power to and turn on the instrument.
3. Establish connection to the instrument (if not already attached).
4. We will now clear the memory and reformat the instrument. From the menu, select "File", then "Update pDR-1500 firmware" and then "Re-format data memory".

**Note:** Any instrument running firmware version 1.26 or earlier should be returned to the factory for required upgrades on the instrument.

## **RELEASE NOTES**

### **Version 01.35.00 changes relative to version 01.34.00:**

1. Add option in instrument configuration to readout in mg/m<sup>3</sup> (milligrams per cubic meter) units in Configure > Units.

### **Version 01.34.00 changes relative to version 01.33.00:**

1. Improved serial RS232 and USB communication to and from pDR 1500 and ADR1500.
2. Improved instrument error checking and diagnostics.
3. Added units of measure in (mg) after the ALARM\_LEVEL print out in data tag.

### **Version 01.33.00 changes relative to version 01.31.00:**

1. The V245 command is executing to backup firmware variables during RUN mode causing the unit to lockup. You cannot perform a V245 in RUN mode.
2. When the unit exits RUN mode and is using the Analog Output to log concentration, the Analog Output signal remains at the last value of concentration. The Analog Output should instead drop to zero.
3. Add functionality for new displays.

### **Version 01.31.00 changes relative to version 01.30.00:**

1. Modify the initialization procedure to solve a display problem.

### **Version 01.30.00 changes relative to version 01.29.00:**

1. Add temperature compensation coefficient to correct the concentration.
2. Add command "V 245" to backup settings from FRAM to flash memory.
3. Add command "V 246" to restore settings from flash to FRAM.
4. Modify equations to compute the ADR1500 batt voltage
5. Stop the alarm concentration when instrument is not sampling
6. When instrument is in ZERO mode display "ZEROING" & "PLEASE WAIT".
7. Add streaming data.