

# Quick Sheet for Operating the DataRAM4

- Remove the SWAGELOK protective cap from the inlet before powering up the instrument.
- Use the '∧' or '∨' arrow buttons to move the cursor in the vertical direction. The '<' or '>' arrow buttons to move in the horizontal direction. Use the '+' or '-' keys to increase or decrease number values or change parameters.

## PREPARATION IN THE FIELD

- **Site the DataRAM4** on a table in an open area away from obstructions such as trees or buildings, and away from external pollution sources (road dust, industrial pollution sources, and so forth).
- **Remove the protective SWAGELOK cap** from the inlet on top of the DataRAM4. Place the protective cap on the gray keeper located on the back of the DataRAM. **Never operate the instrument when the protective cap is covering the inlet.**
- **Attach the power supply/battery charger** (yellow cable with black box) onto the back of the DataRAM by lining up the two guide tabs, then screw on the connector. **Plug the power supply/battery charger into a 120-volt power source. Attach the RS-232 cable** (gray nine-pin cable) to the back of the DataRAM. Screw in the two side knobs to secure the connection.
- **Place the rain cover over the DataRAM** with the DataRAM screen visible through the plastic window. Push the DataRAM inlet through the opening on the top of the rain cover.
- **Attach the heater** (cylinder labeled 'HOT') to the inlet on top of the DataRAM. Pull up on the spring-loaded sleeve and press down firmly, letting the sleeve attach to the inlet. **Attach the PM<sub>2.5</sub> size cut-point device** (small black cone-like attachment) to the top of the heater. Pull up on the spring-loaded sleeve and press it firmly to attach it. **Attach the omnidirectional inlet device** (tall tube with flared top) to the top of the PM<sub>2.5</sub> size cut-point device.
- **Power up the DataRAM** by pressing and holding the 'ON/OFF' button. You will hear a beep and the 'MAIN MENU' screen will display.
- **Plug the heater** into a 120-volt power source.

## ZEROING THE DATARAM4

- At 'MAIN MENU > ZERO/INITIALIZE > ENTER':
- Perform the 'ZERO' in a clean environment to obtain a good background baseline. The screen will display 'SOURCE 1' and 'SOURCE 2'. These should read 'NORMAL'. If 'NORMAL' is not displayed for both sources, phone Thermo Electron Corp. at 866-282-0430, or MTDC at 406-329-3981.

## SETTING PARAMETERS

- At 'EDIT MENU > SETUP PARAMETERS > ENTER', set:

Recommended

DISPLAY AVG:	60 SEC
CAL FACTOR:	<b>0.37</b>
UNITS:	(MASS) $\mu\text{g}/\text{m}^3$
SIZE CORRECT:	<b>ENABLE</b>

- Press 'Next' and set:

RH CORRECTION:	<b>DISABLED</b>
TEMPERATURE:	<b>F</b>
Flow rate:	<b>2 lpm</b>

- Press 'Next' and set:

ANLG OUT:	<b>1:00 <math>\mu\text{g}/\text{m}^3</math></b>
SERIAL MODE:	<b>RS-232</b>
DEVICE #:	<b>1</b>

- Press 'Next' and set:

SET TIME:	<b>hour:min:sec</b>	← (Military time)
DATE:	<b>day-month-year</b>	
(Press 'ENTER' to set changes.)		

- Press 'Next' to set:

ALARM:	<b>DISABLED</b>
LEVEL:	<b><math>\mu\text{g}/\text{m}^3</math> 0</b>
AUTO ZERO:	<b>ENABLED</b>
INTERVAL:	<b>12 HRS</b>

- Press 'EXIT'.

## LOGGING DATA AND STARTING A RUN

- At 'EDIT MENU > LOGGING PARAMETERS > ENTER', set:

LOG DATA:	<b>ENABLED</b>	← (Press '+' or '-')
LOG PERIOD:	<b>00:05:00</b>	
TAG #:	<b>01</b>	
AUTO START:	<b>DISABLED</b>	

- Press 'EXIT'.

- At 'MAIN MENU > START RUN > ENTER', the data collection screen displays:

17:44:57	18-JUL-2002
CONC	18.8 $\mu\text{g}/\text{m}^3$
L TWA	20.4 $\mu\text{g}/\text{m}^3$
RUN TIME:	00000:06:03

- The 'L' verifies the data is being logged into memory.

- Place the battery supply and the RS-232 cable into the back portion of the rain shelter and only partially zip it up because the instrument needs ventilation—especially on hot days.

## VERIFYING SATELLITE SETUP AND COMMUNICATION

### SATELLITE SETUP—

- The DataRAM4 must be in 'RUN' mode prior to turning on the remote satellite system.
- Screw the antenna onto the magnetic base and attach the cable to the briefcase. The antenna should be as high off the ground as possible.
- Attach the satellite RS-232 cable (included with the telemetry unit) to the DataRAM and to the serial connector on the briefcase.
- Attach the three-prong power cord on the side of the briefcase to 120-volt power source.
- Turn 'ON' the telemetry unit.

### SATELLITE VERIFICATION (LED BOX)—

- The top or right red LED illuminates when the modem has power.
- The middle red LED illuminates in about 5 minutes, indicating the modem is receiving information from the DataRAM. The LED will turn off and on.
- The bottom or left green LED will turn off and on as satellites come into view and a signal is received. If the green LED does not illuminate within 10 minutes, reposition the antenna.
- Within 2 hours, the data will be posted on the Internet (<http://www.satguard.com/usfs>) and updated hourly.

If there are any problems with the remote satellite system, phone Airsis, Inc., at: 619-585-0435.

## TERMINATING A RUN

- At the data collection screen, press 'EXIT'.
- To 'TERMINATE' a run, press 'ENTER'.

## TRANSFERRING DATA TO THE LAPTOP USING THE DATARAM4 SOFTWARE

- Connect the RS-232 cable from the DataRAM4 to the laptop.

- Open 'DR4com.exe'. Click on the 'Data Text' tab.
- At the 'MAIN MENU' of the DataRAM, go to 'VIEW/TRANSFER DATA > ENTER'.
- 'TRANSFER TEXT FILE > ENTER'.
- Data will appear on the 'Data Text' page.

## TRANSFERRING DATA TO THE LAPTOP USING HYPERTERMINAL

- Connect the RS-232 cable from the DataRAM to the laptop.
- On the laptop, click on the 'HyperTerminal' icon. 'Connected' should display on the bottom of the screen.
- On the top menu bar, click on 'Transfer > Capture Text'.
- On the DataRAM, click on 'MAIN MENU > VIEW/TRANSFER DATA > ENTER'.
- 'TRANSFER TEXT FILE > ENTER'.
- 'SENDING DATA' will display on the DataRAM screen.
- Data will scroll down the laptop screen.
- Stop the 'Capture Text' on the laptop by clicking on 'Transfer > Capture Text > Stop'.
- Terminate the connection on the laptop by clicking on the disconnected phone icon on the top button bar of the laptop screen.

## DELETING DATA FROM DATARAM4

- At 'MAIN MENU > VIEW/TRANSFER DATA > ENTER':
- 'DELETE ALL DATA > ENTER'.
- 'DELETE ALL DATA > ENTER'.
- Press 'ENTER' to confirm.
- Press 'EXIT'.
- Turn the DataRAM 'OFF', disassemble the accessory parts, and place the SWAGELOK protective cap on the inlet.

### WEB SITES AND PHONE NUMBERS

Air Resource Specialists  
ForestService and BLM DataRAM4 cache  
Web site: <http://www.air-resource.com>  
Phone: 970-484-7941

Thermo Electron Corp.  
DataRAM4 Sales & Service  
Web site: <http://www.thermo.com>  
Phone: 866-282-0430

MTDC  
Intranet: <http://fsweb.mtdc.wo.fs.fed.us>  
Phone Andy Trent: 406-329-3912  
Phone Mary Ann Davies: 406-329-3981