

## OPERATION of DMA-35 Using the Data Logger

Please read the following instructions carefully prior to using the DMA-35 and data logger for the first time. *These instructions do not eliminate the need to review the contained DMA-35 instruction handbook.*

The DMA-35 hydrometer is capable of storing one string of SG and temperature readings. Combined with the DMA-35, the data logger permits the user to store up to 8 strings of 256 sample readings. The sample readings can then be downloaded to a PC or desired location/device via the supplied RS-232 cable or IR Interface. Both the DMA-35 and data logger will retain their stored data even when turned OFF and their batteries are replaced.

### Configuration

The DMA-35 has been pre-configured to accurately measure the specific gravity of battery acid. The unit should display **SG 77/77 (F)** or **SG 20/20 (C)** and temperature compensation of  **$4 \times 10^{-4} \text{g/cm}^3/\text{K}$** . Data will not be measured correctly if the configuration has been altered. Refer to the enclosed manual for the configuration procedure.

## DMA-35 Operation

### Turning the DMA-35 On and Off

- Press the “ON/OFF” icon button. After a self-test, the instrument is in measuring mode.
- Press the “ON/OFF” icon button until “Power Off” appears on the display. The DMA-35 has been configured to automatically turn-off after 5 minutes of inactivity.

### Erasing All Stored Data in the DMA-35

- Press the “Menu” button and then select Measuring Data by pressing “OK”.
- Press the “Trash” icon button and arrow down to “Delete All” then select “OK”.

### Taking a Reading with the DMA-35

- Push down the pump lever.
- Submerge the filling tube into the sample fluid.
- Slowly release the pump lever.
- Wait until the displayed reading has stabilized.
- A long push of the “STORE” icon button on the back of the DMA-35 immediately stores the current measuring result in the memory together with a sample number.
- Push “OK” to accept the reading.
- The sample number starts at 1 and automatically increments with each stored measuring value.
- Push pump lever to flush sample fluid out of DMA-35 prior to another reading.

### DMA-35 Measurement Hints

- The measuring cell must be free of any bubbles. Bubbles critically interfere with the reading. Possible sources of bubbles are:
  - ✓ Leakage at the connection of the filling tube or screw plug.
  - ✓ Gas bubbles contained in the sample.
- The measuring cell has to be completely filled.
- Carefully clean the measuring cell with a neutral solvent after each series of measurements to avoid deposit coatings.

## Data Logger Operation

### Turning the Data Logger On and Off

- Press the “ON” button, after a self-test, the module LED’s will display string contents and string “A” will be selected.
- The data logger can be reset by a short push of the “ON” button.
- The data logger can be manually turned OFF by a long push of the “ON” button.
- The data logger will automatically turn OFF after 4 minutes of inactivity.

### LED Indications

- **Off**, the string is **empty** and **not selected**.
- **On (solid)**, the string **contains stored data** but is **not selected**.
- **Slow blink**, the string is **empty** and **selected**.
- **Fast blink**, the string **contains stored data** and is **selected**.

### Selecting a Particular String

- Press the “SEL/DEL” key once to scroll down to the next string

**CAUTION** pressing the “SEL/DEL” key during the self-test will erase **ALL** stored data.

### Erasing All Stored Data in the Data Logger

- Press the ON button. While all the red LED’s (A-H) are lit, press and hold the “SEL/DEL” button for approximately 8 seconds while the red LED’s turn off one at a time scrolling backwards from H to A. Then release the “SEL/DEL” button and wait for the red LED to scroll forward from A to H. Stored data will have been erased once this sequence is complete.

## Data Transfer

### Transferring Data from the DMA-35 to the Data Logger

- Turn on the data logger and DMA 35.
- Select the string on the data logger for which you want the desired data to be transferred.
- Line up the IR windows of the DMA-35 and Data logger.
- Use the “EXPORT ALL” function to initiate the data transfer by pushing the following buttons on the DMA-35 in sequence: (“Menu” – “OK” – “Export” – “OK”)

### Transferring Data from the Data Logger to a PC, I/R Printer, PDA or Battery Tester

- Connect the data logger to the PC or desired location/device with the supplied RS-232 cable.
- Turn on the data logger.
- Select the desired data string on the data logger.
- Start the downloading procedure from the PC software.
- Refer to the instruction manual for I/R receiving device transfer.

### Dedicated IR PC Mode

To improve IRDA reliability during IR transfer from the data logger to a PC or PDA (via IR) you may wish to enter dedicated IR PC transfer mode.

- To enter this mode, push and hold the “SEL/DEL” button **prior** to pushing the “ON” button. Then, release the “SEL/DEL” button when all the red LED’s (A-H) are lit.
- Dedicated IR PC mode is signified by ALL LED’s periodically flashing.
- During dedicated IR PC mode the data logger will **NOT** accept data from the DMA-35.
- To EXIT dedicated IR PC mode, reset the unit by pushing the “ON” button.

## Battery Replacement

- DMA-35 requires two AA alkaline batteries with a battery life of 30+ hours for normal use.
- Data logger requires a 6V lithium, type PX28L, 2CR-1/3N or L544BP with a battery life of 6 months.

*Further technical assistance can be reached at 770-433-8551.*

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