



# IR Communications Package for AR200

Software Interface and  
IR Docking Station

Instruction Manual

  
**Reichert**®



# IR Communications Package for AR 200 Refractometer Catalog No. 13951000

## 1.0 Introduction

The IR Communications Package for the AR200 includes both the IR Transceiver (AR200 Docking Station) and the IR Communications Software (on two floppy disks) for communicating with your computer. When used with the AR200, these allow downloading of data and uploading of custom channels (as many as three) into your AR200 digital refractometer.

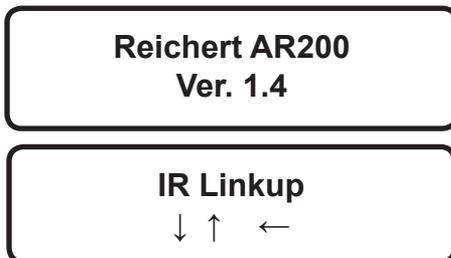
## 2.0 Set-UP & Getting Started

Requirements for set-up: 1) A PC running Windows 95 or higher with at least a 486/66 MHZ processor and 8 MB RAM; and 2) an RS232 serial port. To install the IR Communications Software, insert Disk 1 into the floppy drive of your PC. Begin installation by double-clicking Setup.exe. Follow the on-screen instructions and insert Disk 2 when prompted. The IR communications software will be inserted into the Program Files of your computer and should be available from the Start Menu. Next, with your PC shut down, insert the RS232 connector of the IR Transceiver into the serial port of your computer and place the AR200 in the IR Transceiver docking cradle. Restart your computer. You are now ready to begin the IR Communications software. Upon opening the program, a window will appear with five buttons and a red circle with "No Connection" written next to it (see figure below).

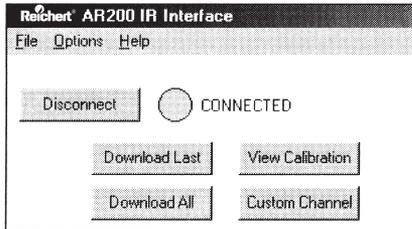
## 3.0 Getting Connected

Click on the CONNECT button. The circle will start blinking yellow and green with the words "Connecting to COM1" next to it. This indicates the program is searching for a linkup with the AR200 Refractometer. See section 8.0 to select an alternative COM port.

Start the AR200 and navigate through the menu until you find the IR Linkup option. When operating from the main reading screen, use the MENU key to enter the menu options, then use the READ or CAL key to find the IR LINKUP. With IR LINKUP on the screen, press the MENU key to start the connection with the IR Communications program.



A successful connection can be verified by watching the IR Interface window. The blinking yellow/green circle will change to a solid green circle and the words "Found Device" followed by "Connected" appear next to the green circle. The remaining buttons will also darken and be functional. The AR200 will also indicate a successful connection with the following messages: "Connecting;" „Host Found;“ and finally "Linkup Active."

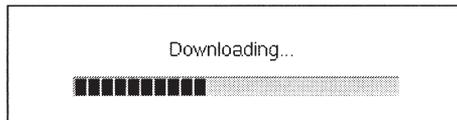


**NOTE: The AR200 will automatically shut down after 30 seconds of inactivity. If an IR-Link was active at shutdown, the AR200 will automatically re-establish the link when any button on the AR200 is pressed while still docked in the cradle (the PC can not wake the AR200 from shutdown mode).**



## 4.0 Downloading Data

Data can be downloaded using either DOWNLOAD LAST or DOWNLOAD ALL. DOWNLOAD LAST will download any new data since the last download, while DOWNLOAD ALL will download all 225 data sets. Both functions will ask the operator to save the data set as a TXT file. These can be easily opened in a spreadsheet or word processor program, i.e., Excel, for further analysis. Open the text file within Excel by choosing



the "delimited" format and selecting "tab" as the delimiter. For further information, contact your Reichert representative.

**Important Note:** The AR200's storage capacity is for 225 of the most recent readings. If you continue to take readings without downloading, the oldest data set in storage will be lost for each new reading taken. It is, therefore, important to download routinely using DOWNLOAD LAST to prevent data loss.

## 5.0 View Calibration

Calibration Data						
	nD	DT	TC	Cell	Set/Span	Time Date
0	1.33299	20.0	-0.000091	93.82	19.43879	1:57A 2/23/00
1	1.40229	25.0	-0.000382	332.10	0.993160	9:48P 1/26/00
2	1.45755	25.0	-0.000380	INACTIVE	0.000000	1:00A 1/1/00
3	1.48993	20.0	-0.000379	INACTIVE	0.000000	1:00A 1/1/00
4	1.51416	25.0	-0.000412	896.39	0.987600	9:52P 1/26/00

While the connection is still active, click on the VIEW CALIBRATION button to view the current calibration data used by the AR200. A table of the calibration values will appear. The table contains data for all five potential calibration values: displaying the point's refractive Index (nD); reference temperature (DT); temperature coefficient (TC); cell; and set/span. It will also show the time and date the point was last calibrated.

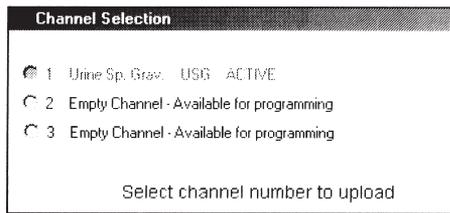
Active calibration points can be identified with a number in the «cell» column. Inactive points are identified with the word «Inactive» in this same column. In the example shown in the previous column, the 1.33299, 1.40229 and the 1.51416 calibrations are active, while the 1.45755 and 1.48993 calibration points are inactive.

## 6.0 Custom Channels

The AR200 Refractometer has the ability to use up to three custom-programmed or user-defined channels (scales). For example, if a urine specific gravity channel is needed, a formula in the form of a text file (txt) can be uploaded into the AR200 using the CUSTOM CHANNEL button found on the IR Communications window from your PC. This formula will contain all the information to read specific gravity of urine and display the result on the screen as specific gravity units (USG).

To view custom channel information, click the CUSTOM CHANNEL button. A table will appear with the custom channel's Name, Units of measure and status („Active“ if the channel is programmed, or „Empty Channel“ if the channel is not programmed). Below is the example of channel 1 occupied by the Urine Specific Gravity scale. The name of the channel is Urine SG., the units are designated USG and the channel is ACTIVE.

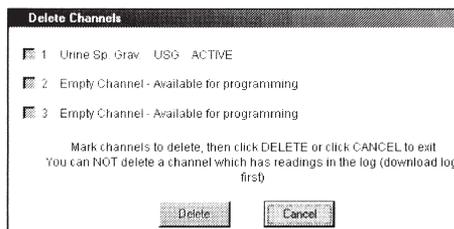
Using the custom channel data window, new channels can be uploaded into, or deleted from, the AR200. Click on UPLOAD CHANNEL and a window will appear indicating occupied channels and those available for programming. Choose the channel to be programmed and click OK. You'll be asked next to find the text file (txt) for the custom channel to be uploaded. Click on CANCEL to exit any time. Click on DELETE CHANNEL to remove a selected custom channel from the AR200. Click DELETE to begin deletion or CANCEL at any time to exit.



**Important Note: Deletion of a custom channel cannot occur unless the stored data generated using the custom channel has been downloaded. Be sure to “Download Last” all the latest stored data from the AR200 before programming custom channels.**

## 7.0 Terminal Window

The Terminal Window function is found in the Options portion of the top menu bar and allows the operator to observe in real-time the downloading and uploading of data into the AR200 using Hyperterminal or equivalent. This function is typically reserved for diagnostic purposes by Reichert Technical Support.



## 8.0 ComPort

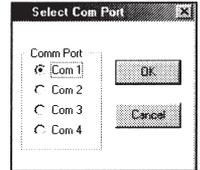
A ComPort option allows selection of the proper communications port of your PC (most users will have one port and use Com Port 1) to link up with the AR200/IR Transceiver. To verify the use of a functioning com port, a flashing red light underneath the docking station will appear when attempting a IR Linkup connection.

## 9.0 Help

Contains version number and Reichert contact information.

## 10.0 AR200 with Custom Channels

Uploading custom channels into your AR200 yields an additional menu option in the instrument SELECT CHANNEL. When the new custom channel is selected, you may also need to change READING MODE to the appropriate units required. Changing batteries will not erase custom channels.



## 11.0 Additional Notes

The AR200 IR Linkup will not operate via the IrDA port found on many notebook computers. Contact Reichert for additional instructions and information on using this exclusive feature. IR communications using a third-party IR transmitter with the AR200 and IR Communications software is not recommended by Reichert Inc..





## **Reichert Analytical Instruments**

### **Reichert, Inc.**

3362 Walden Ave.  
Depew, NY 14043  
USA

Toll Free: 888-849-8955

Phone: 716-686-4500

Fax: 716-686-4555

email: [ai@reichert.com](mailto:ai@reichert.com)

[www.reichert.com](http://www.reichert.com)

### **Reichert GmbH**

Hubertusstrasse 2  
D-82229 Seefeld  
Germany

Tel: +49-8152-993530

ISO-9001 Certified

