LabMetric Translation Table Add-On

Software for the LabMetric, Inc. ohmSOURCE and ohmSOURCE+
Resistance Decade Boxes

Getting Started With
Translation Tables

Contents

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- Software for the LabMetric, Inc. ohmSOURCE and ohmSOURCE+ Resistance Decade Boxes

Hardware Configuration

Items Needed
- ✓ ohm*SOURCE* or ohm*SOURCE*+ (OS/OS+) Resistance Decade Box (LabMetric P/N 01.0001 or 01.0002)
- ✓ 5' communications cable assembly with attached adapter (LabMetric P/N 91.0003)
- ✓ PC-compatible computer w/ Windows 95 $^®$ or higher operating system

Hardware Set-Up
1. Connect the adapter to the DB9 serial port of your computer noting which port it is (COM1, COM2, etc.).
2. Plug the communications cable into the OS/OS+ communications port at the top of the device.
3. Turn device on by pressing "enter".

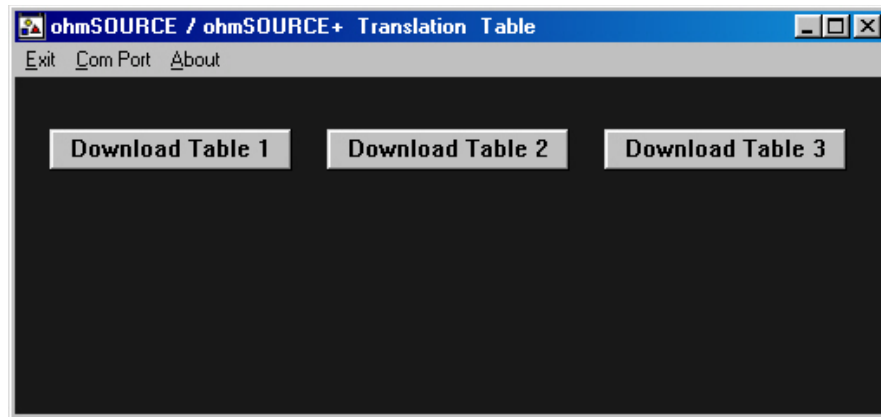## Software Overview

Applications for Use
The LabMetric Translation Table Add-on enables the user to download and store data tables in the ohmSOURCE / ohmSOURCE+ Resistance Decade Box for translating a known, user-definable physical characteristic (i.e. temperature) into a resistance value. It is extremely useful in simulating any transducer that converts a physical phenomenon into an output resistance value: thermistors, conductivity sensors, etc.
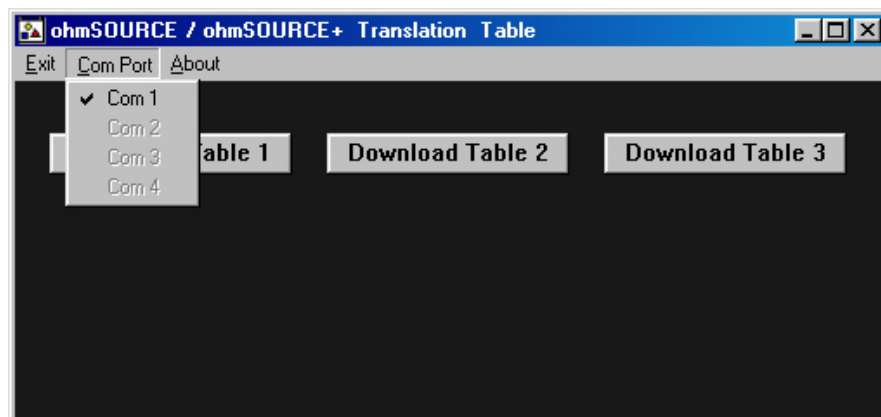
Sample Translation Tables
Provided with the LabMetric Translation Table Add-on software package are several sample translation tables. These tables are provided to illustrate the functionality of the software using simple examples. Please visit www.decadebox.com to download the latest sample translation tables or to suggest ideas for new ones.

Downloading Translation Tables

1. Copy all the files from the included floppy disk to a permanent directory on your PC (Windows 95® or higher operating system). Launch the main Translation Table Download program. The main program screen is shown below.
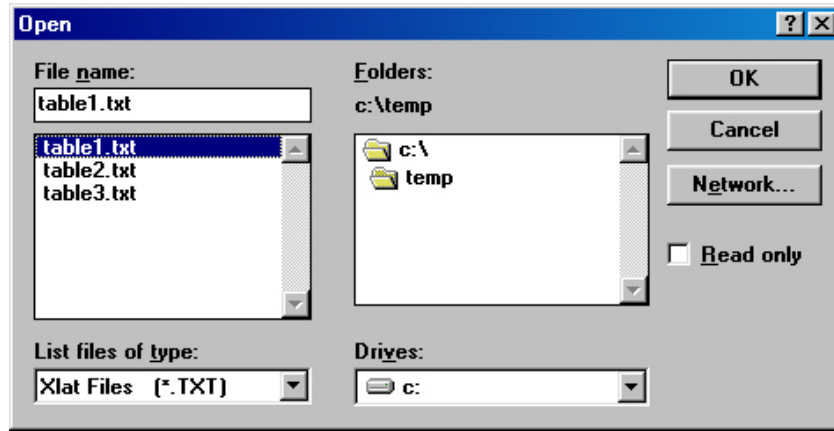

2. Pull down the **Com Port** menu, and select the appropriate Com port the OS/OS+ device is connected to (COM 1, COM 2, etc.). The program will attempt to locate the correct port automatically.

3. Click the **About** button to view the Translation Table Add-On version information.

4. To download a translation table to the OS/OS+ device, select the **Download Table** button corresponding to the desired storage location (1 – 3). Another window will appear requesting the location of the table data file to be downloaded. Select the desired data file.
(*NOTE: The OS/OS+ device must be turned on to successfully download a table data file.)

5. Upon successfully completing a translation table download, a prompt on your computer screen will indicate a successful download and the OS/OS+ device will be placed into Table Mode.

Using Translation Tables

Normal Mode vs. Table Mode
In order to use the translation table feature, the device must be placed into Table Mode. To enter Table Mode, press the 'table' key followed by the '1', '2', or '3' key to activate Table 1, Table 2, or Table 3, respectively. The device screen will indicate which table is in use and a one-line description of the table in use. To change between translation tables, press the 'table' key followed by the '1', '2', or '3' key. To exit Table Mode and return to Normal Mode, press the 'table' key followed by the '0' key.
(*NOTE: After successfully downloading a translation table, the device will automatically be placed into Table Mode.)

Entering Values in Table Mode
In Table Mode, the screen will show two lines of numbers: the top number is the value being translated, and the bottom number is the output resistance value. To translate, input the desired value to be translated using the keypad or rotary switch. The device will then implement the corresponding output resistance value.
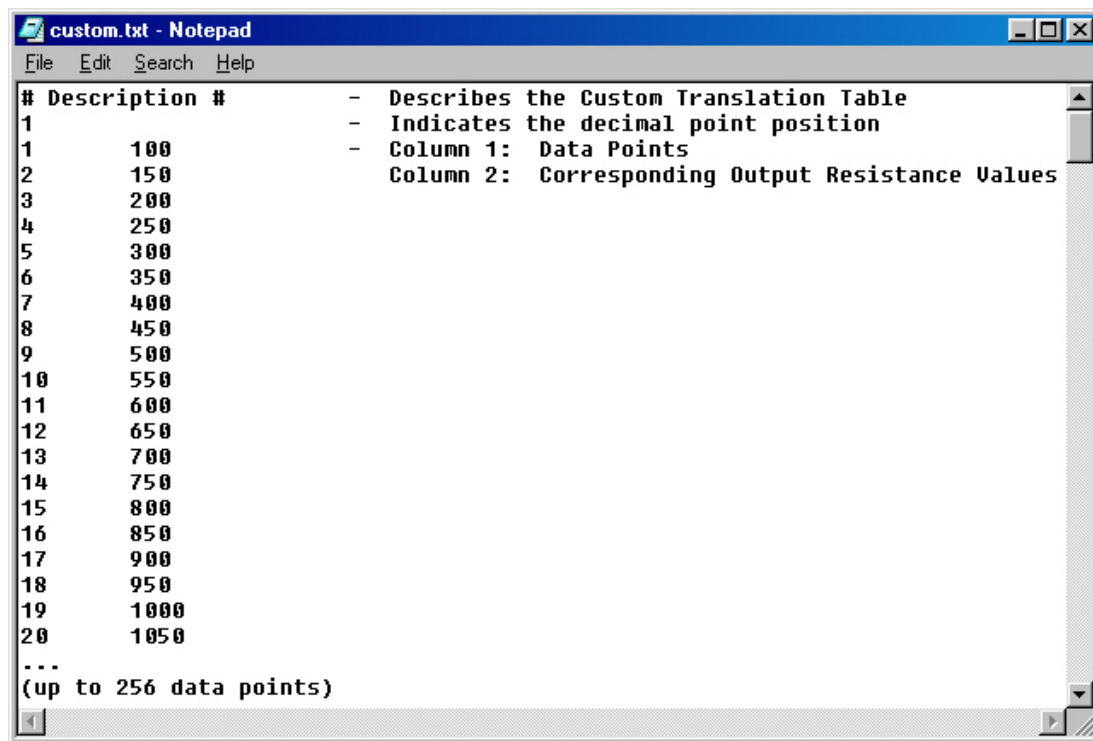
It is important to note that changing the value to be translated may not always result in a change in the output resistance value. This is due to how the device interpolates the data points of the stored table data file.

Creating Custom Translation Tables

Using the Custom Table Template
It is very simple to make custom translation tables for the OS/OS+ device. Included on the floppy disk provided in the Translation Table Add-On package is a file entitled "custom.txt". This file is constructed in the basic format necessary for developing custom OS/OS+ translation tables (see illustration below). To create a custom translation table from this file, please follow these instructions:

1. Open the file "custom.txt" using a text editor program (i.e. Microsoft ® Notepad).
2. Save the table data file using a name other than "custom.txt" to your computer (i.e. "table1.txt").
3. Enter the table description (max. 20 characters) on line 1.
4. Enter the decimal point position value (i.e. the number of places after the decimal; 5 places maximum) of the value to be translated on line 2.
5. Enter the data points of the custom translation table into the left column of values starting with the lowest (max. 256 different data points).
6. Enter the desired output resistance values corresponding to the table data points into the right column.
7. Save the final table data file.

```
 custom.txt - Notepad                                         _ □ ✕
File   Edit   Search   Help
# Description #           -   Describes  the Custom Translation Table
1                         -   Indicates  the decimal point position
1          100            -   Column 1:  Data Points
2          150                Column 2:  Corresponding Output Resistance Values
3          200
4          250
5          300
6          350
7          400
8          450
9          500
10         550
11         600
12         650
13         700
14         750
15         800
16         850
17         900
18         950
19         1000
20         1050
...
(up to 256 data points)
```

Downloading a Custom Translation Table
The instructions for downloading a custom translation table to the OS/OS+ device are the same as those for downloading any other type of translation table. Please refer to the section entitled "Downloading Translation Tables" on page 4.