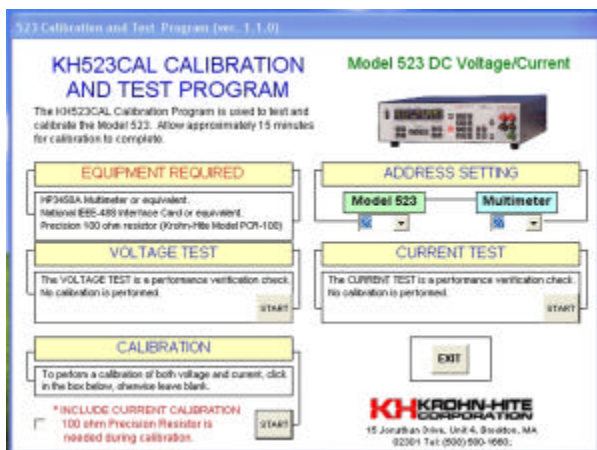


KH523CAL

*Automatic Calibration and Testing Software
for Model 523 DC Source/ Calibrator*



KH KROHN-HITE CORPORATION
User's Guide.

KH523CAL

*Automatic Calibration and Testing Software
for Krohn-Hite Model 523 DC Source/ Calibrator*

User's Guide



Unit 4, 15 Jonathan Drive, Brockton, MA 02301-5566

Tel: (508) 580-1660, Fax: (508) 583-8989

www.krohn-hite.com, e-mail info@krohnHITE.com

Printed in U.S.A.

Version 1.05

Revised April 2004

Copyright © 2004 Krohn-Hite Corporation All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise, without the prior written permission of Krohn-Hite Corporation.

Information furnished in this manual is believed to be accurate and reliable. However, no responsibility is assumed by Krohn-Hite Corporation for its use; nor for any infringements of patents or other rights of third parties which may result from its use.

END-USER LICENSE AGREEMENT

BY ACCEPTING, YOU (ORIGINAL PURCHASER) INDICATE YOUR ACCEPTANCE OF THESE TERMS. IF YOU DO NOT WISH TO ACCEPT THE PRODUCT UNDER THESE TERMS YOU MAY CHOOSE NOT TO ACCEPT BY SELECTING "I decline..." AND NOT INSTALLING THE SOFTWARE.

The Krohn-Hite 523CAL (the Software) is Copyright © Krohn-Hite, 2001–2004. All rights are reserved. The ORIGINAL PURCHASER is granted a LICENSE to use the software only, subject to the following restrictions and limitations.

1. The license is to the original purchaser only, and is not transferable without prior written permission from Krohn-Hite Corporation.
2. The Original Purchaser may use the Software to calibrate and or test a single Model 523 calibrator. You may not use the Software on more than a single Model 523 even if you own or lease all of them without the written consent of Krohn-Hite.
3. The Original Purchaser may not engage in, nor permit third parties to engage in, any of the following:
 - A. Providing or permitting use of or disclosing the Software to third parties.
 - B. Providing use of the Software in a computer service business, network, timesharing or multiple user arrangement to users who are not individually licensed by Krohn-Hite.
 - C. Making alterations or copies of any kind in the Software (except as specifically permitted above).
 - D. Attempting to un-assemble, de-compile or reverse engineer the Software in any way.
 - E. Granting sublicenses, leases, or other rights in the Software to others.
 - F. Making copies, or verbal or media translations, of the users guide.
 - G. Making telecommunication data transmission of the software.

Krohn-Hite has the right to terminate this license if there is a violation of its terms or default by the Original Purchaser. Upon termination for any reason, all copies of the Software must be immediately returned to Krohn-Hite, and the Original Purchaser shall be liable to Krohn-Hite for any and all damages suffered as a result of the violation or default.

ENTIRE RISK

THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE SOFTWARE IS WITH YOU THE PURCHASER. KROHN-HITE DOES NOT WARRANT THAT THE SOFTWARE OR ITS FUNCTIONS WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE SOFTWARE WILL BE UNINTERRUPTED OR ERROR FREE OR THAT ANY DEFECTS WILL BE CORRECTED. NO LIABILITY FOR CONSEQUENTIAL DAMAGES - IN NO EVENT SHALL KROHN-HITE OR ITS VENDORS BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR THE LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OR INABILITY TO USE THE SOFTWARE, EVEN IF KROHN-HITE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Windows and MS-DOS are registered trademarks of Microsoft Corporation.

All other trademarks and copyrights referred to are the property of their respective owners.

Table of Contents

<i>Section</i>	<i>Title</i>	<i>Page</i>
1	Introduction	
1-1.	Introduction to the KH523CAL Software	1-1
1-2.	Description.....	1-1
1-3.	Software Usage Terms And Conditions	1-2
2	Installation and Operation	
2-1.	Included Contents.....	2-1
2-2	Supported Platforms.....	2-1
2-3	Hardware Requirements	2-2
2-4	KH523CAL Installation.....	2-2
2-5	Running KH523CAL	2-4
2-6	Removing the Program	2-5
3	General Program Information	
3-1.	Main Program Window.....	3-1
3-2.	Performing a Voltage Test.....	3-2
3-3.	Performing a Current Test	3-4
3-4.	Calibrating the Model 523	3-6
3-5.	Viewing/Printing Test Results.....	3-7
3-6.	Technical Support	3-8

List of Illustrations

<i>Section</i>	<i>Title</i>	<i>Page</i>
2	Installation and Operation	
2-1.	KH523CAL Software Installation Screen	2-3
2-2.	KH523CAL Starting Window.....	2-4
3	General Program Information	
3-1.	Main Program Window.....	3-1
3-2.	Test Using 90 Day or 1 Year Specs	3-2
3-3.	Voltage Test using 90 Day Specs.....	3-3
3-4.	Current Test using 90 Day or 1 Year Specs	3-4
3-5.	Current Test using 1 Year Specs	3-5
3-6.	Include Current check box.....	3-6

NOTE: Errata and addendum (if any) will appear in the back of this manual

Section 1

Introduction

1-1 Introduction to the KH523CAL Software

This guide provides the user with the information needed to install and operate the Krohn-Hite KH523CAL software. Using this software with a calibrated HP 3458A system meter, the Krohn-Hite Model 523 can be tested and calibrated without removing its covers. The automated calibration can be completed in less than 15 minutes.

1-2 Description

The KH523CAL software was designed to provide the Model 523 user with a simple, easy to use, calibration and testing program. KH523CAL features a familiar Windows-based interface that makes it easy for users to learn and use, reducing your training and support costs, while making your operators more productive.

Automated calibration that is both easy and powerful, the KH523CAL software offers several important benefits. At first glance, most people see it as a way to perform calibrations faster. But the most significant benefit is consistency. With embedded calibration procedures, you can ensure that all operators complete all tests and collect appropriate test data the same way every time the calibration is performed. Automation with KH523CAL can often significantly reduce the time it takes to perform a calibration, thus reducing your cost per calibration.

The software uses a calibrated 8 1/2 digit meter to measure the 523's output and then adjusts the output of the 523 to match the meter. When complete, your information is saved to the hard drive the program was installed on, which you can review on screen or print.

1-3 Software Usage Terms and Conditions

The conditions for Krohn-Hite KH523CAL software usage are described in the License Agreement included with this package. The supplied registration card is the confirmation of your legal purchase and usage of KH523CAL on your system. Each License unlocks one unique serial number, allowing that Model 523 to be calibrated.

Under current legislation, the License Agreement is considered a contract between you and Krohn Hite Corporation. The contract is a legal document and its violation may result in legal action.

Illegal use and/or distribution of this software will be prosecuted.

This page Intentionally left blank.

Section 2

Installation and Operation

2-1 Included Contents

The KH523CAL software package includes:

- An installation CD
- User Guide
- Registration card

2-2 Supported Platforms

KH523CAL Software runs on a variety of Windows platforms, e.g. Windows 98, Windows ME, Windows NT, Windows 2000, or Windows XP. However, this guide describes only installation on machines running Microsoft Windows XP.

Note:

This software is a 32-bit application only. If you have not yet upgraded your system from Windows 3.1 stop now. The software will not install properly on any server or workstation that is not running one of the 32-bit version Operating Systems mentioned above. Upgrade to a 32-bit version of Windows before continuing with the installation.

2-3 Hardware Requirements

The minimum requirements for a standalone Workstation installation are as follows:

- IBM PC or compatible with at least a Pentium 133M microprocessor
- VGA monitor
- 64 megabytes of RAM (128 recommended)
- 25 megabytes available on the hard drive. Installation space is approximately 16 megabytes, however additional space will be required for data growth
- 32-bit Windows. The software will not run on 16-bit operating systems.

2-4 KH523CAL Installation

To install the KH523CAL software:

Insert the installation CD into your drive.

The starting screen lists the options as shown in Figure 2-1 on the next page.

- View the readme.txt file.
- View the users guide PDF format (this file).
- Install the KH523CAL software
- View the Model 523 specifications PDF format.
- View the Model 523 operators manual PDF format
- View the Krohn-Hite Catalog

To install the software, click on the link “Install the KH523CAL Software”. This will run the install program that will install the KH523CAL software on your computer.

The interactive Windows setup program takes you through the necessary steps to install the KH523CAL software. You can exit the setup at any time by pressing the **Cancel** button.

After the accepting the license agreement and reading the readme file, click **Next** and the summary screen shows what will be installed. Click **Next** to start the installation. After the program is installed, click **Finish** to close the installation program.

2-5 Running KH523CAL

To run KH523CAL from Windows, start by selecting **Start» All Programs» KH523CAL » KH523CAL**. This will bring the KH523CAL main window onto the screen.



Figure 2-1 KH523CAL Software Installation Screen

From this screen, you can run a calibration if the 523, perform a current test, voltage test, and set the IEEE bus address for the system meter and the 523 calibrator.

2-6 Removing the Program

Complete the following steps to uninstall KH523CAL from your PC.

1. Select **Start» Control Panel**.
2. Click **Add or Remove Programs** to open the Add/Remove Programs dialog box.
3. Select **KH523CAL** from the list of programs.
4. Click the **Remove** button to start the KH523CAL uninstaller.
5. You will be prompted by a question asking if you want to remove the KH523CAL from your system.
6. Click the **Yes** button to start the removal.

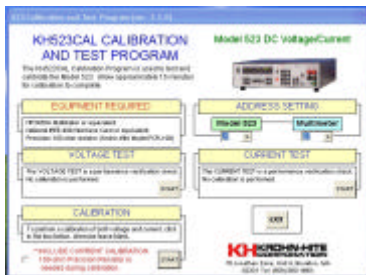


Figure 2.2 KH523CAL Starting Window

Section 3

General Program Information

3-1 Main Program Window

To run KH523CAL from Windows, start by selecting Start» All Programs» KH523CAL » KH523CAL. This will bring the KH523CAL main window onto the screen.

From this screen, you can run a calibration of the 523, perform a current test, voltage test, and set the IEEE bus address for the system meter and the 523 calibrator.

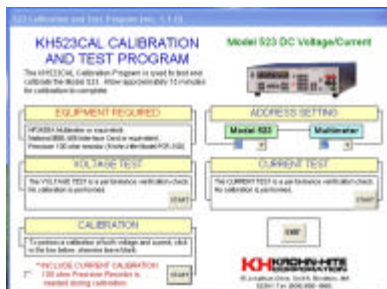


Figure 3.1 KH523CAL Main Program Window

3-2 Performing a Voltage Test

Check to confirm that both Model 523 and the system meter are connected to the computer via a GPIB interface cable; and that the computer has the KH523CAL software running on it.

To perform a Voltage Test, connect the system meter analog input terminals to the Model 523 output terminals. It is recommended that low thermal leads be used for the voltage test.

Start the test by clicking the start button in the Voltage Test section. The Model 523 will go into the remote mode and the program will ask you whether to use the 90 day or 1 year specifications for the test.



Figure 3.2 Test using 90 day or 1 year Specs.

Click the 90 day specs button or the 1 year specs button to start the test that you want.

While the test is running, the screen will display the setting, readings, error, max error allowed, and the % of max error.

When the test is complete the box at the bottom of the screen will show that the unit passed, or the number of points that where out of specification will be listed. The results will stay on the form and you can scroll to look at any of the 90 readings. The results are also saved in a file for future viewing or printing. To return to the programs main window click the 'Exit to Menu' button.

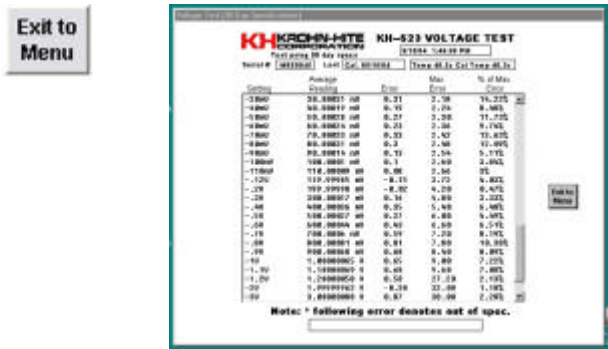


Figure 3.3 Voltage Test using 90 day Specs.

3-3 Performing a Current Test

To perform a Current Test, connect the system meter analog input terminals to the sense terminals of the 100 ohm shunt (Krohn-Hite model PCR-100 or equivalent). Connect the Model 523 output terminals to the drive terminals of the 100 ohm shunt.

Start the test by clicking the start button in the Current test section. The Model 523 will go into the remote mode and the program will ask you whether to use the 90 day or 1 year specifications for the test.



Figure 3.4 Current Test using 90 day or 1 year Specs.

Click the 90 day specs button or the 1 year specs button to start the test that you want.

While the test is running, the screen will display the setting, readings, error, max error allowed, and the % of max error.



Figure 3.5 Current Test using 1 Year Specs.

When the test is complete the box at the bottom of the screen will show that the unit passed, or the number of points that were out of specification will be listed. The results will stay on the form and you can scroll to look at any of the 46 readings. The results are also saved in a file for future viewing or printing. To return to the programs main window click the 'Exit to Menu' button.



3-4 Calibrating the Model 523

To Calibrate the Model 523, connect the system meter analog input terminals to the Model 523 output terminals. It is recommended that low thermal leads be used for the voltage test.

Start the calibration by clicking the **START** button in the Calibration section. The default setting will only calibrate the voltage ranges. Click the **Include Current Calibration** box if you want to calibrate both the voltage and current ranges.



Figure 3.6 Include Current Check Box.

The calibrator will go into the remote mode and the screen will show the calibration progress in a window.

If you are calibrating both voltage and current, the program will stop after the voltage section. Connect the current range sense resistor to the meter and Model 523. After the resistor is connected click the **START CURRENT CALIBRATION** button to start the current calibration.



After the calibration is complete the program will return to the main window.

3-5 Viewing/Printing Test Results

Results from Voltage and Current tests are stored in a folder installed in the KH523CAL folder. The folder is named Report Data. The data file is an ASCII file that can be opened with notepad, wordpad; any spreadsheet, database or word processing program

File naming format are:

- [serial-number]V90.txt - Voltage results using 90 day specifications
- [serial-number]V1yr.txt - Voltage results using 1 year specifications
- [serial-number]CUR90.txt - Current results using 90 day specifications
- [serial-number]CUR1yr.txt - Current results using 1 year specifications

Multiple tests are stored in the same file, with the latest data appended to the file. Make sure that the data file is not opened or being used by another program when you run a test.

Note: It may be helpful to set up a Windows shortcut to the Report Data folder in the Krohn-Hite software folder on the START Menu.

3-6 Technical Support

If you have problems with Krohn-Hite's KH523CAL Software, please check to see that you are using the latest version. The main window shows the version information at the top of the window. Contact the factory or your local distributor if you are using the latest version and still have problems.

The latest version can be found at www.krohn-hite.com.
Alternatively you can use the following email addresses:
support@krohn-hite.com

Notes

