

Keithley Instruments
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Model 4200-Compiler

Model 4200-SCS and Model 4200A-SCS systems do not include a preinstalled compiler, unless you specifically order it when you purchase your system. The compiler should only be used with versions prior to 1.6.

NOTE

You need a compiler if:

- You are using Keithley User Library Tool (KULT) to create user test modules (UTMs).
- You want to modify the standard UTMs supplied with KULT.
- You plan to do custom C++ programming to control the system or other equipment.

If you need the compiler, you are encouraged to order it when you are ordering your system, because it will be installed at the factory. If you already have a system that does not include a compiler, you can order the compiler using the catalog number 4200-Compiler.

System requirements

The 4200-Compiler, DVD version 4200COMPILER-850-01A, requires a 4200-SCS system running KTEI V9.1SP1 or later, or a 4200A-SCS system running Clarius+ V1.0 or later, with an external DVD drive.

Any user libraries and user modules that are compiled using the 4200-Compiler, DVD version 4200COMPILER-850-01A, can only be used on a 4200-SCS system running KTEI V9.1SP1 or later, or used on a 4200A-SCS system running Clarius+ V1.0 or later.

Compiler installation instructions

If you purchased the 4200-Compiler from Keithley Instruments for post-factory installation, perform the following procedure to install it on your system.

The installation procedure will take about one to two hours to complete.



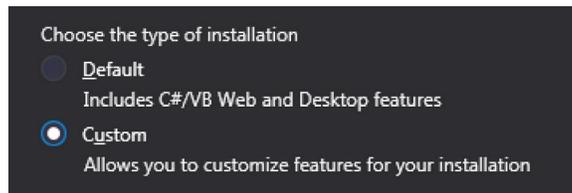
Post-factory 4200-Compiler installation procedure

NOTE

Make sure that your system has an active connection to the internet before installing.

To install the 4200-Compiler on your system:

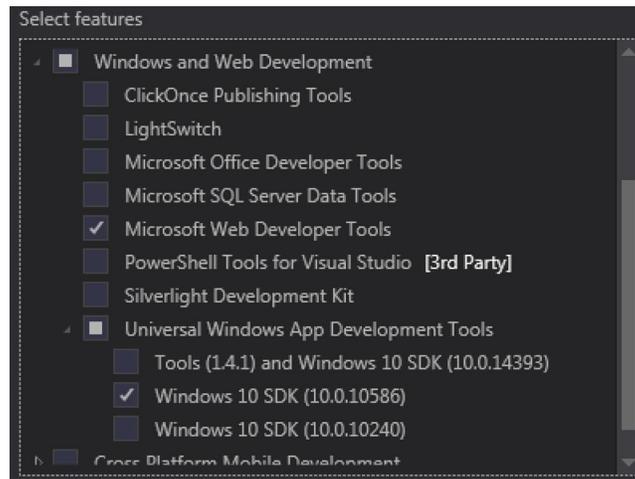
1. Close all software applications running on your system.
2. Insert the 4200-Compiler into the DVD drive. If installation does not begin immediately, go to the Windows Explorer view and find the .exe file; double-click to start the installation process.
3. Select **Custom** installation:



4. Select **Next**.
5. In the dialog box, select **Common Tools for Visual C++ 2015**.



6. In the same dialog box, scroll down and select **Windows 10 SDK (10.0.10586)**.



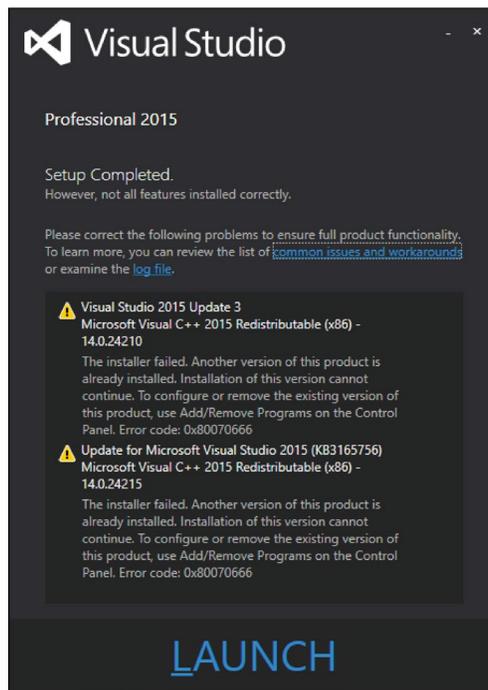
NOTE

Depending on your version of Windows®, more than one option may be available under the Universal Windows App Development Tools option. Make sure to select only **Windows 10 SDK (10.0.10586)**.

7. Select **Next** and **Install**.

NOTE

If your 4200A-SCS has Clarius+ V1.5 installed, you will see the following dialog box. This is normal, as some Microsoft® Visual Studio® components on your instrument are newer than those provided with the compiler installer.



8. Restart the computer if you are prompted, then start Microsoft® Visual Studio®. Otherwise, you can select Launch (see the previous figure) to start Microsoft® Visual Studio®.
9. When the compiler starts up, you are prompted to create or log in to an existing Microsoft® account.

NOTE

Creating a Microsoft account is optional. To skip it, click the **Not now, maybe later** link at the bottom of the window.

10. From the Menu, select **Help**.
11. Select **Register Product**.
12. Select the **Unlock with a Product Key** link and enter your product key. The last page of this document contains your product key.
13. Select **Apply**.
14. Select **Close** after the product key is accepted.

Initialization procedure

After installing the 4200-Compiler, you must initialize each user account.

CAUTION

Each user account must be properly initialized before attempting to use the compiler.

NOTE

You must separately initialize each of the two default factory accounts and any additional accounts added by the system administrator.

The two default factory accounts are:

User name	Password
kiadmin	kiadmin1
kiuser	Leave blank; no password (4200-SCS KTEI V9.1SP1 systems and newer and 4200A-SCS Clarius+ V1.0 to V1.3)
	kiuser1 (4200A-SCS Clarius+ V1.4 and newer)

To initialize a user account:

1. From the main Microsoft® Windows® login screen, type the user name and password of the account to be initialized.
2. When Microsoft® Windows® has completed startup, select **Start > All Programs > Keithley Instruments > Initialize New User**. This will initialize only the presently logged-in user account.
3. Log out of the account to return to the login screen.
4. Repeat the initialization steps for both default factory accounts and for any additional accounts added by the system administrator.

Rebuild user libraries procedure

To rebuild the user libraries:

1. After all accounts have been initialized, start the **Command Prompt** window.
2. Type and execute the **reBuildKILibs** command in the command prompt window.
3. As soon as the user libraries rebuild process has completed, your compiler is ready for use.

The **reBuildKILibs** command only rebuilds the Keithley-provided user libraries. Any custom-created user libraries should be rebuilt separately using the KULT application or the **kulupdate** command. Before rebuilding, you must delete the `C:\s4200\kiuser\usrlib\LibraryName.pdb` file, where *LibraryName* is the name of the user library.

Otherwise, the KULT build will produce an error, for example: "LINK:fatal error Link 1207: Incompatible PDB format in `C:\s4200\kiuser\usrlib\LibraryName.pdb`, delete and rebuild."

NOTE

This procedure is not user specific and can be executed once from any initialized account.

Contact information

If you have any questions after you review the information in this documentation, please contact your local Keithley Instruments office, sales partner, or distributor. You can also call the corporate headquarters of Keithley Instruments (toll-free inside the U.S. and Canada only) at 1-800-935-5595, or from outside the U.S. at +1-440-248-0400. For worldwide contact numbers, visit the [Keithley Instruments website \(tek.com/keithley\)](http://tek.com/keithley).

Product key

Activation

Use the following product key to activate the 4200-Compiler software before use:

```
3NGRJ-Q2PQ3-YDFK3-GVG2F-X2D9Y
```

The following safety precautions should be observed before using this product and any associated instrumentation. Although some instruments and accessories would normally be used with nonhazardous voltages, there are situations where hazardous conditions may be present.

This product is intended for use by personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product. Refer to the user documentation for complete product specifications.

If the product is used in a manner not specified, the protection provided by the product warranty may be impaired.

The types of product users are:

Responsible body is the individual or group responsible for the use and maintenance of equipment, for ensuring that the equipment is operated within its specifications and operating limits, and for ensuring that operators are adequately trained.

Operators use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and contact with hazardous live circuits.

Maintenance personnel perform routine procedures on the product to keep it operating properly, for example, setting the line voltage or replacing consumable materials. Maintenance procedures are described in the user documentation. The procedures explicitly state if the operator may perform them. Otherwise, they should be performed only by service personnel.

Service personnel are trained to work on live circuits, perform safe installations, and repair products. Only properly trained service personnel may perform installation and service procedures.

Keithley products are designed for use with electrical signals that are measurement, control, and data I/O connections, with low transient overvoltages, and must not be directly connected to mains voltage or to voltage sources with high transient overvoltages. Measurement Category II (as referenced in IEC 60664) connections require protection for high transient overvoltages often associated with local AC mains connections. Certain Keithley measuring instruments may be connected to mains. These instruments will be marked as category II or higher.

Unless explicitly allowed in the specifications, operating manual, and instrument labels, do not connect any instrument to mains.

Exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. The American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30 V RMS, 42.4 V peak, or 60 VDC are present. A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.

Operators of this product must be protected from electric shock at all times. The responsible body must ensure that operators are prevented access and/or insulated from every connection point. In some cases, connections must be exposed to potential human contact. Product operators in these circumstances must be trained to protect themselves from the risk of electric shock. If the circuit is capable of operating at or above 1000 V, no conductive part of the circuit may be exposed.

For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.

For safety, instruments and accessories must be used in accordance with the operating instructions. If the instruments or accessories are used in a manner not specified in the operating instructions, the protection provided by the equipment may be impaired.

Do not exceed the maximum signal levels of the instruments and accessories. Maximum signal levels are defined in the specifications and operating information and shown on the instrument panels, test fixture panels, and switching cards.

Chassis connections must only be used as shield connections for measuring circuits, NOT as protective earth (safety ground) connections.

The **WARNING** heading in the user documentation explains hazards that might result in personal injury or death. Always read the associated information very carefully before performing the indicated procedure.

The **CAUTION** heading in the user documentation explains hazards that could damage the instrument. Such damage may invalidate the warranty.

The **CAUTION** heading with the  symbol in the user documentation explains hazards that could result in moderate or minor injury or damage the instrument. Always read the associated information very carefully before performing the indicated procedure. Damage to the instrument may invalidate the warranty.

Instrumentation and accessories shall not be connected to humans.

Before performing any maintenance, disconnect the line cord and all test cables.

To maintain protection from electric shock and fire, replacement components in mains circuits — including the power transformer, test leads, and input jacks — must be purchased from Keithley. Standard fuses with applicable national safety approvals may be used if the rating and type are the same. The detachable mains power cord provided with the instrument may only be replaced with a similarly rated power cord. Other components that are not safety-related may be purchased from other suppliers as long as they are equivalent to the original component (note that selected parts should be purchased only through Keithley to maintain accuracy and functionality of the product). If you are unsure about the applicability of a replacement component, call a Keithley office for information.

Unless otherwise noted in product-specific literature, Keithley instruments are designed to operate indoors only, in the following environment: Altitude at or below 2,000 m (6,562 ft); temperature 0 °C to 50 °C (32 °F to 122 °F); and pollution degree 1 or 2.

To clean an instrument, use a cloth dampened with deionized water or mild, water-based cleaner. Clean the exterior of the instrument only. Do not apply cleaner directly to the instrument or allow liquids to enter or spill on the instrument. Products that consist of a circuit board with no case or chassis (e.g., a data acquisition board for installation into a computer) should never require cleaning if handled according to instructions. If the board becomes contaminated and operation is affected, the board should be returned to the factory for proper cleaning/servicing.

Safety precaution revision as of June 2017.