Getting Started Guide

Data Logger

CR300 Series

Compact Datalogger

RELIABLE MONITORING SINCE 1974

Campbell SCIENTIFIC®
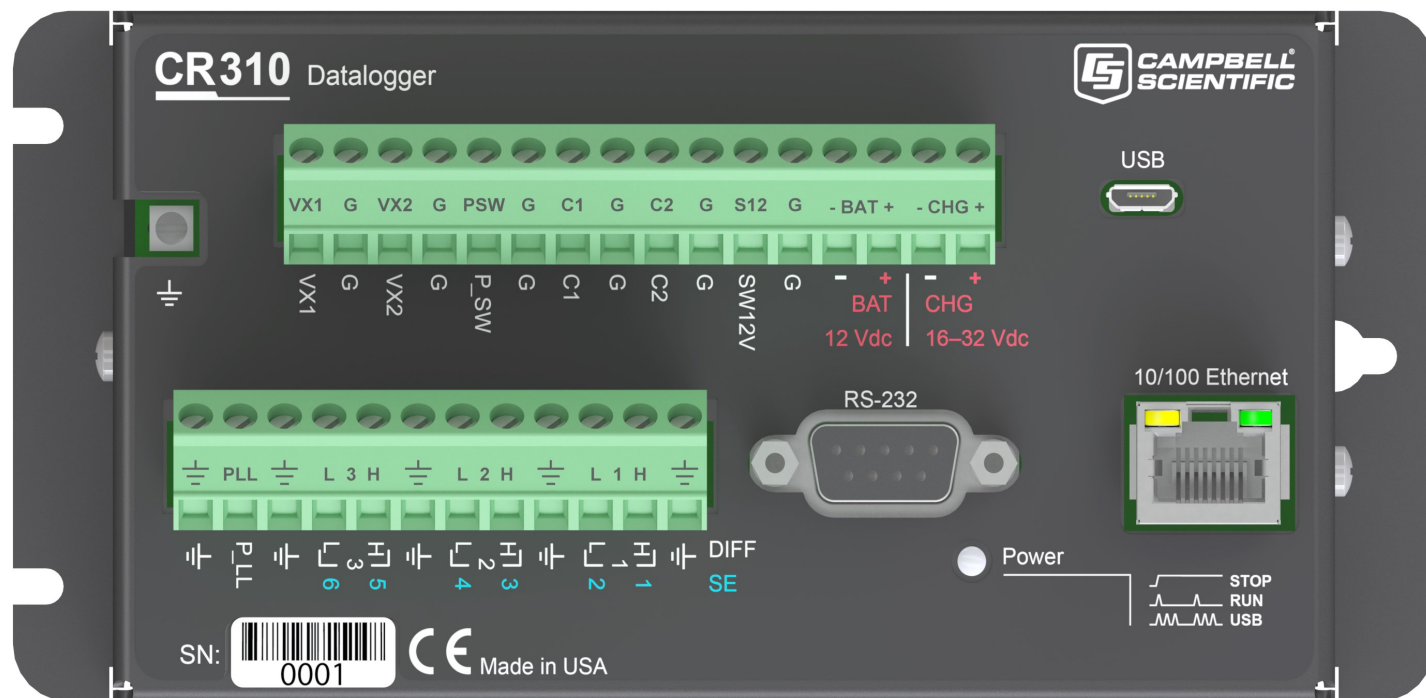
Table of Contents

1. Getting started

Getting started provides a cursory view of data acquisition and walks you through a procedure to set up a simple system. You may not find it necessary to progress beyond this. However, should you want to dig deeper into the complexity of the data logger functions or quickly look for details, extensive information is available in the full CR300 series manual.

This exercise guides you through the following steps:

- Connecting the data logger to a computer
- Attaching a sensor to the data logger
- Creating a program for the data logger to measure the sensor
- Making a simple measurement
- Storing measurement data on the data logger
- Collecting data from the data logger with a computer
- Viewing real-time and historical data with a computer

In addition to your data logger, the following items are used in this exercise (many are shipped with your data logger and all are available on www.campbellsci.com.au ⬈):

- Type T thermocouple, 4 to 5 inches long; one is shipped with the data logger
- Computer with a USB port
- USB cable
- Data logger support software such as *LoggerNet* or *PC400* installed on your computer

Additional Campbell Scientific publications are available online at www.campbellsci.com.au ⬈. Video tutorials are available at www.campbellsci.com.au/videos ▶. Generally, if a particular feature of the data logger requires a peripheral hardware device, more information is available in the help or manual written for that device.

2. USB communications

Setting up a USB connection is a good way to begin communicating with your data logger. Because this connection does not require configuration (like an IP address), you need only set up the communications between your computer and the data logger. Use the following instructions or watch the Quickstart videos at https://www.campbellsci.com.au/videos ▶.

> **TIP:**
> You will physically connect your data logger to your computer in step 6.

Follow these steps to get started. These settings can be revisited using the data logger support software **Edit Datalogger Setup** option 🖊.

1. Using data logger support software, launch the EZSetup Wizard.

   > **NOTE:**
   > New software installations automatically open the EZSetup Wizard the first time they run.

   - *LoggerNet* users, click **Setup** 🔧, select the **View** menu and ensure you are in the **EZ (Simplified)** view, then click **Add Datalogger** ➕.
   - *PC400* users, click **Add Datalogger** ➕.

2. Click **Next**.

3. Select CR300 Series from the list. In the **Datalogger Name** field, type a meaningful name for your data logger (for example, a site identifier or project name), and click **Next**.

4. Select the **Direct Connect** connection type and click **Next**.

5. If this is the first time connecting this computer to a CR300 series via USB, click **Install USB Driver**, select your data logger, click **Install**, and follow the prompts to install the USB driver.

6. Plug the data logger into your computer using a USB cable. The USB connection supplies 5 V power as well as a communications link, which is adequate for setup, but a 12 V power source is necessary to power cellular functions of CR300-CELL series models. A 12 V battery will be needed for field deployment as the USB connection cannot power most sensors.

> **NOTE:**
> The Power LED on the data logger indicates the program and power states. Because the data logger ships with a program set to run on power-up, the Power LED flashes three times every 10 seconds when powered over USB. When powered with a 12 V battery, it flashes once every 10 seconds. When no program is running, the LED is always on.

7. From the **COM Port** list, select the COM port used for your data logger. It will appear as CR300 series (COM number).

8. USB connections do not typically require a **COM Port Communication Delay**; this type of delay allows time for hardware devices to "wake up" and negotiate a communications link. Accept the default value of **00 seconds** and click **Next**.

9. You **must match** the PakBus address hardware settings of your data logger. A USB connection does not require a baud rate selection, keep the default. The default PakBus address is **1**.

10. Set an **Extra Response Time** if you have a difficult or marginal connection and you want the data logger support software to wait a certain amount of time before returning a communications failure error. Accept the default value of **00 seconds**.

11. Set a **Max Time On-Line** to limit the amount of time the data logger remains connected. When the data logger is connected, communications with it are terminated when this time limit is exceeded. A value of **0** in this field indicates that there is no time limit for maintaining a connection to the data logger.

12. Leave the **Neighbor PakBus Address** as the default of **0**.

13. Click **Next**.

14. By default, the data logger does not use a security code or a PakBus encryption key. Therefore, the **Security Code** can be set to **0**, and the **PakBus Encryption Key** can be left blank. If either setting has been changed, enter the new code or key.

15. Click **Next**.

16. Review the **Setup Summary**. If you need to make changes, click **Previous** to return to a previous window and change the settings.

17. Setup is now complete. The EZSetup Wizard allows you to **Finish**, or you may click **Next** to test communications, set the data logger clock, and send a program to the data logger. See Test the connection (p. 12) for more information.

3. Cellular communications option

The CR300-CELL and CR310-CELL can be purchased with an integrated 4G LTE cellular module. This section refers to the CR300-CELL series but it also applies to the CR310-CELL.

Use of the CR300-CELL series requires a cellular line of service. The products compatible with Verizon, AT&T, T-Mobile, Vodafone, and Telstra are shown in the following table.

Product	Cellular protocol	Market	Verizon	AT&T	T-Mobile	Vodafone	Telstra	Other[1]
CELL205	4G LTE with automatic 3G fallback[2]	North America		✓	✓			✓
CELL210	4G LTE CAT-1	United States	✓					
CELL215	4G LTE with automatic 3G and 2G fallback	EMEA				✓		✓
CELL220	4G LTE with automatic 3G fallback	Australia and New Zealand					✓	✓
CELL225	4G LTE	Japan						✓

[1] More than 600 other providers are available worldwide through Campbell Scientific.

[2] AT&T ended support of their 3G network service on February 22, 2022. To continue operation the CR300-CELL series requires operating system 2.030 or newer. Use the web interface to find the CR300-CELL series OS version on the OS Date field of the Status Tab.

3.1 Pre-installation

3.1.1 Establish cellular service

For better security, we recommend using Konect PakBus® Router with a private dynamic IP address. This method allows only incoming PakBus communications. No other incoming communications are supported. However, all forms of outbound communications from the data logger are supported, including but not limited to PakBus, email, and FTP.

Private dynamic IP addresses are standard with Telstra SIMs if no additional services have been provisioned on the account by a Telstra partner.

> **NOTE:**
> When the data logger is connected to both Ethernet and a cellular modem, `IPRoute()` may be used to specify which interface to use for the outbound communications, such as email, FTP, and HTTP.

A public static IP address can also be used. This provides more incoming communications functionality, but is less secure and more vulnerable to unsolicited traffic.

3.1.1.1 Selecting a data service

Before installing a data logging system with telemetry, you will need a SIM card and data plan. For most applications, Telstra will offer the best coverage, especially in regional areas. Telstra and Optus coverage maps can be found on each provider's respective websites.

The CELL220 and CR300-CELL220 will work with standard data plans. No extra steps are necessary because of the complimentary Konect Pakbus Router service. A micro-SIM (3FF) is the correct size for use with the CELL220.

3.1.2 Install the SIM card

1. Remove the SIM card cover.

2. Note the location of the notched corner for correct alignment. The gold contact points of the SIM face down when inserting the SIM card as shown in the following figure. **Gently** slide the card into the slot until it stops and locks into place. To eject the SIM card, press it in slightly and release.
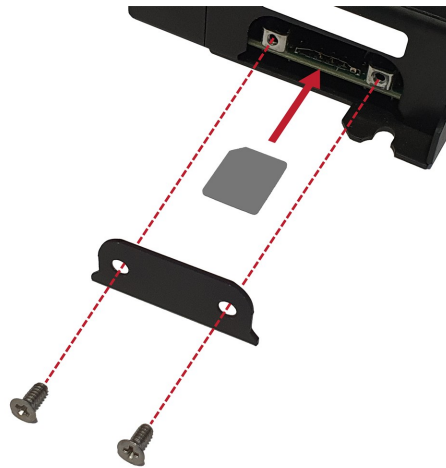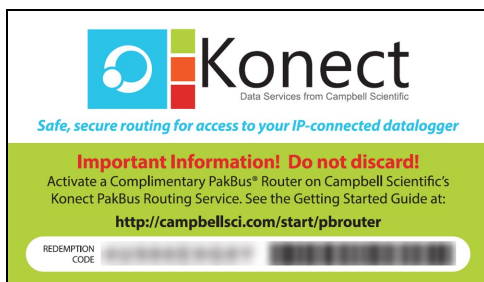
3. Replace the SIM card cover.

Figure 3-1. SIM card installation

3.1.3 Konect PakBus Router setup

3.1.3.1 Get started

You will need the Konect PakBus Router redemption code that came on a card with the CR300-CELL series.

Open a web browser and go to www.konectgds.com⧉.

First-time users need to create a **free account**. After you submit your information, you will receive two emails up to five minutes apart. One email will contain a Passport ID and the other your Password. If emails are not received, check your email junk folder.

3.1.3.2 Set up Konect PakBus Router

1. Sign in to www.konectgds.com⬀ using your Passport ID and Password found in the two received emails. Once logged in, you will be at the Welcome page.

2. Click **Devices and services** ✖ on the command bar to the left and select **Redeem PakBus Router Code**. Enter your complimentary Router Code found on the included card with your cellular-enabled device and click **Submit**.
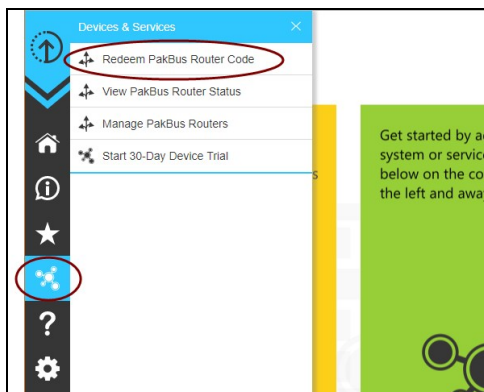
3. The next screen shows the assigned **DNS** address and **Port** for the router. Enter a **TCP Password** and select a unique **PakBus Address** for your data logger.

> TIP:
> **Make note of this information**; it will be required for data logger configuration as well as *LoggerNet* setup. Please note your **DNS**, **Port**, **TCP Password** and **PakBus address**; you will need them later.

3.2 Installation

3.2.1 Modules using Konect PakBus Router (private dynamic IP)

3.2.1.1 Configure data logger

1. Connect the cellular antenna, if it is not already connected. When using a MIMO antenna with multiple cellular connections, connect the primary cable to **Cellular** and the secondary to **Diversity**. If the cables are not marked in this way, they can be connected to either antennna port.

2. Connect to your data logger by using *Device Configuration Utility*.

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3. On the **Datalogger** tab, change the data logger **PakBus Address** and **PakBus/TCP Password** to match the values entered in the Konect PakBus Router setup. The **PakBus/TCP Password** will make the data logger authenticate any incoming or outgoing PakBus/TCP connection.

4. On the **Network Services** tab in the **PakBus/TCP Client** field, enter the DNS address and Port number noted during the Konect PakBus Router setup.

5. On the **PPP** tab, set **Config/Port Used** to **CS I/O SDC8** or **RS-232**, depending on how you are connected to the data logger.

6. (Optional) On the **PPP** tab, set **User Name** and **Password** if required by your cellular carrier (usually outside of the United Sates).

7. (Optional) If your cellular carrier requires user name and password authentication, on the **Settings Editor** > **Cellular** tab, set **PDP Authentication Type**, **PPP Authentication Username** and **PPP Authentication Password**.

8. Verify the **Modem Dial String** setting is blank.

9. If connecting through RS-232, on the **Comport Settings** tab, set **RS232 BaudRate** to **115200 Fixed**.

10. Click **Apply**.

11. Shut down *Device Configuration Utility* and start it again. This will activate the **Cellular** tab needed for the next step.

12. On the **Cellular** tab, enter the **APN** provided by your cellular provider. For standard Telstra SIMs, this will be **telstra.internet**.

13. Click **Connect** to reconnect in the *Device Configuration Utility*.

14. Go to the **Settings Editor** > **Network Services**. Set **Maximum TCP Segment Size** to **1000** for compatibility with all cellular networks.
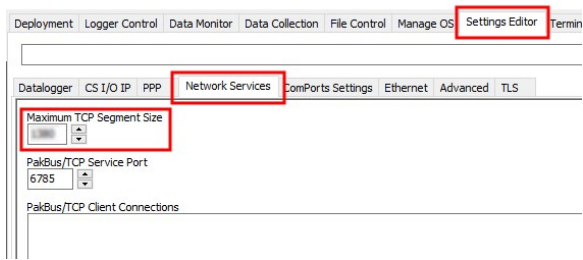
15. Click **Apply**.

16. Click **Disconnect** and close *Device Configuration Utility*.

3.2.1.2 Set up *LoggerNet*

The *LoggerNet* Network Map is configured from the **LoggerNet Setup** screen.

> **NOTE:**
> Setup has two options, EZ (simplified) and Standard. Click on the **View** menu at the top of the Setup screen, and select **Standard** view.

From the *LoggerNet* toolbar, click **Main** > **Setup** and configure the Network Map as described in the following steps:

1. Select **Add Root** > **IPPort**.

2. Select **PakBusPort** and **pbRouter**.
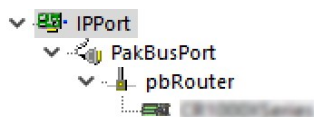
3. Add a data logger to the **pbRouter**.

4. From the Entire Network, on the left side, select the **IPPort**. Enter the Konect PakBus Router DNS address and port number as noted in the Konect PakBus Router setup (Set up Konect PakBus Router [p. 7]). Enter them into the **Internet IP Address** field in the format DNS:Port with a colon separating DNS and Port. For example, axanar.konectgds.com:pppp where pppp is the port number.
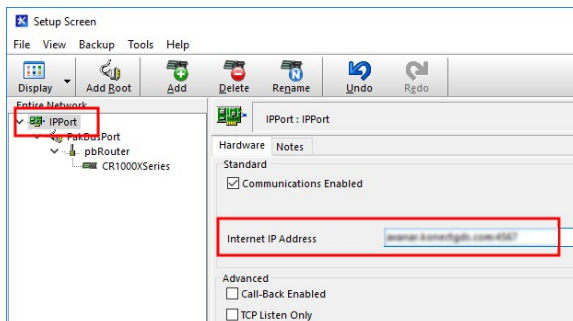
5. Leave the default settings for the **PakBusPort**. **PakBus Port Always Open** should **not** be checked. In the **TCP Password** field enter the TCP Password; this must match the value entered in the Konect PakBus Router setup and *LoggerNet* setup.
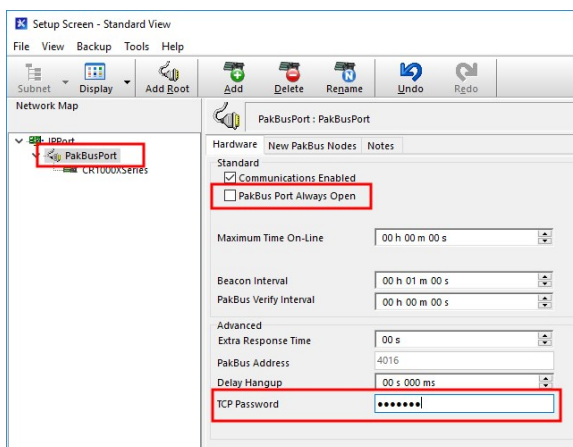
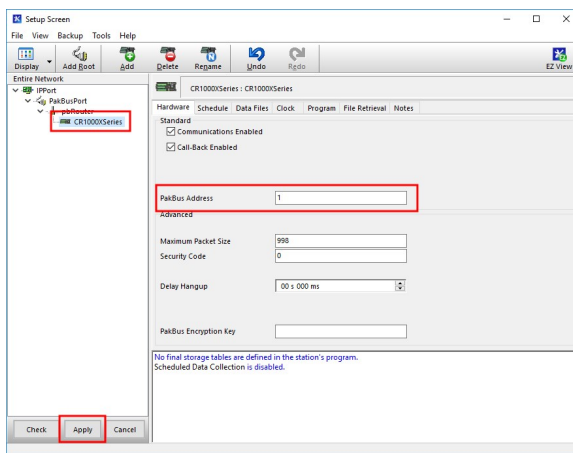6. Select the pbRouter in the Network Map and set the **PakBus Address** to **4070**.
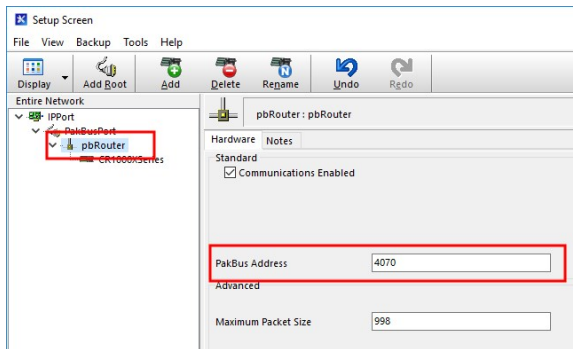
7. Select the data logger in the Network Map and set the **PakBus Address** to match that of the data logger (default address in the data logger is 1). If a **PakBus Encryption Key** was entered during data logger setup, also enter it here. Click **Apply** to save the changes.

3.2.1.3 Test the connection

Use the **Connect** screen to test the connection. Click on the appropriate station and click **Connect** to initiate a call to the data logger. The data logger must have 12 V power.

> **TIP:**
> The connection time is subject to many external factors. It is often less than 30 seconds but could be up to 15 minutes. Be patient.

If the connection is successful, the connectors icon at the bottom of the screen will come together and clock information from the data logger will be displayed in the **Station Date/Time** field. If the connection fails, a **Communications Failure** message will be displayed.
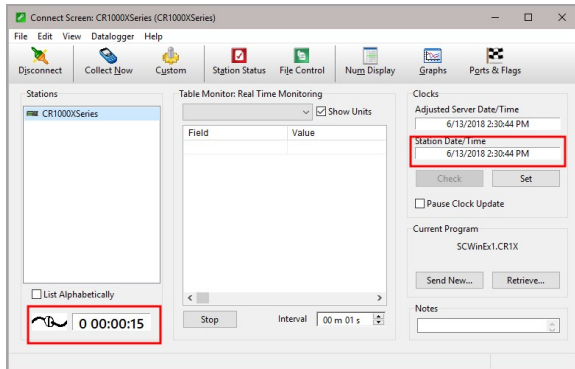
3.3 Cellular (TX/RX) LED Indicator

When the data logger is powered, the cellular LED will turn on according to cellular modem communications states:

- **Off**: Cellular modem off, insufficient power, or failure to establish a connection with the provider (periodic retries will occur).
- **Solid**: Cellular modem is powering up and attempting to establish a connection with a provider.
- **Quick Flashing** (approximately 1 second duration): Indicates successful network registration.
- **Flashing**: Flashes with network activity.

3.4 Signal strength and quality

Both signal strength and quality contribute to successful cellular data communications. The factors that influence signal strength and quality include but are not limited to:

- proximity to the cellular tower
- tower load
- competing signals
- physical barriers (mountains, buildings, vegetation)
- weather

Because signal strength and quality can vary due to many factors, they may not give a true indication of communications performance or range. However, they can be useful for activities such as:

- determining the optimal direction to aim a Yagi antenna
- determining the effects of antenna height and location
- trying alternate Yagi antenna (reflective) paths
- seeing the effect of vegetation and weather over time

3.4.1 Signal strength

Signal strength is how strong the received signal is. The closer your CR300-CELL series is to the cellular tower, the more signal the antenna will pick up. Signal strengths are lower the farther away from the tower the CR300-CELL series is.

For 3G networks, signal strength is reported as RSSl (Received Signal Strength Indicator). For 4G, it is RSRP (Reference Signal Received Power).

Signal strength units are –dBm; –70 is a stronger signal than –100.

Table 3-1: Signal strength		
Strength estimate	RSSI (3G) dBm	RSRP (4G) dBm
Excellent	-70 or greater	-90 or greater
Good	-71 to -85	-91 to -105
Fair	-86 to -100	-106 to -115
Poor	less than -100	less than -115

3.4.2 Signal quality

Signal quality shows how much interference there is between the cellular tower and CR300-CELL series, or how noisy a band is. Cellular signal noise comes from reflections, ghosting and other interference. Better signal quality is an indicator of more successful communications during precipitation events such as rain and snow.

For 3G networks, signal quality is ECIO (Energy to Interference Ratio). For 4G, this is RSRQ (Reference Signal Received Quality).

Signal quality units are –dBm; 0 is a better signal than –10.

Table 3-2: Signal quality		
Quality estimate	ECIO (3G) dBm	RSRQ (4G) dBm
Excellent	0 to -6	>-9
Good	-7 to -10	-9 to-12
Fair to poor	-11 to -20	-13 or less

4. Creating a *Short Cut* data logger program

You must provide a program for the data logger in order for it to make measurements, store data, or control external devices. There are several ways to write a program. The simplest is to use the program generator called **Short Cut**. For more complex programming, *CRBasic Editor* is used. The program file may use the extension `.CR300`, `.CRB`, or `.DLD`.

Data logger programs are executed on a precise schedule termed the scan interval, based on the data logger internal clock.

Measurements are first stored in temporary memory called variables in the **Public** table. Data stored in variables is usually overwritten each scan. Periodically, generally on a time interval, the data logger stores data in tables. The data tables are later copied to a computer using your data logger support software.

Use *Short Cut* software to generate a program for your data logger. *Short Cut* is included with your data logger support software.

This section guides you through programming a CR300 series data logger to measure the voltage of the data logger power supply, the internal temperature of the data logger, and a thermocouple. With minor changes, these steps can apply to other measurements.   Use the following instructions or watch the Quickstart part 3 video ▶:

1. Using data logger support software, launch *Short Cut*.

     • *LoggerNet* users, click **Program** then *Short Cut* ⏱.

     • *PC400* users, click *Short Cut* ⏱.

2. Click **Create New Program**.

3. Select **CR300 Series** and click **Next**.

> **NOTE:**
> The first time *Short Cut* is run, a prompt asks for a noise rejection choice. Select **60 Hz Noise Rejection** for North America and areas using 60 Hz ac voltage. Select **50 Hz Noise Rejection** for most of the Eastern Hemisphere and areas that operate at 50 Hz.

> A second prompt lists sensor support options. **Campbell Scientific, Inc. (US)** is usually the best fit outside of Europe.
>
> To change the noise rejection or sensor support option for future programs, use the **Program** menu.

4. Lists of **Available Sensors and Devices** and **Selected Measurements Available for Output** are displayed. Battery voltage `BattV` and internal temperature `PTemp_C` are selected by default. During operation, battery and temperature should be recorded at least daily to assist in monitoring system status.

5. Use the Search feature or expand folders to locate your sensor or device. Double-click on a sensor or measurement in the **Available Sensors and Devices** list to configure the device (if needed) and add it to the **Selected** list. For the example program, expand the **Sensors** and **Temperature** folders and double-click **Type T Thermocouple**.

6. If the sensor or device requires configuration, a window displays with configuration options. Click **Help** at the bottom of the window to learn more about any field or option. For the example program, accept the default options:

    - **1 Type T TC** sensor
    - **Temp_C** as the **Temperature** label, and set the units to **Deg C**
    - **PTemp_C** as the **Reference Temperature Measurement**

7. Click the **Wiring** tab at the top of the page to see how to wire the sensor to the data logger. With the power disconnected from the data logger, insert the wires as directed in the diagram. Ensure you clamp the terminal on the wire, not the colored insulation. Use the included flat-blade screwdriver to open and close the terminals.

8. Click **OK**.

9. Click **Next**.

10. Use the **Output Setup** options to specify how often to make measurements and how often outputs are to be stored. Type **1** in the **How often should the data logger measure its sensor(s)?** box. Leave the units as **Seconds**.

11. Multiple output intervals can be specified, one for each output table (**Table1** and **Table2** tabs). For the example program, only one table is needed. Click the **Table2** tab and click **Delete Table**.

12. In the **Table Name** box, type a name for the table. For example: **OneMin**.

13. Select a **Data Output Storage Interval**. For example: **1** minute.

14. Click **Next**.

15. Select a measurement from the **Selected Measurements Available for Output** list, then click an output processing option to add the measurement to the **Selected Measurements for Output** list. For the example program, select **BattV** and click the **Minimum** button to add it to the **Selected Measurements for Output** list. Do not store the exact time that the minimum occurred. Repeat this procedure for an **Average PTemp_C** and **Average Temp_C**.

Average						
Selected Measurements Available for Output				**Selected Measurements for Output**		

Selected Measurements Available for Output

Sensor	Measurement
◢ CR350	
◢ Default	BattV
	PTemp_C
Type T TC	Temp_C

Buttons: Average, ETo, Maximum, Minimum, Sample, StdDev, Total, WindVector

Selected Measurements for Output

1 OneMin

Sensor	Measuremen	Processing	Output Labe	Units
Default	BattV	Minimum	BattV_MIN	Volts
Default	PTemp_C	Average	PTemp_C_AV	Deg C
Type T TC	Temp_C	Average	Temp_C_AVG	Deg C

16. Click **Finish** and give the program a meaningful name such as a site identifier. Click **Save**.

17. If *LoggerNet* or other data logger support software is running on your computer, and the data logger is connected to the computer, you can choose to send the program. Generally it is best to collect data first; so, we recommend sending the program using the instructions in Sending a program to the data logger (p. 20). Click **No**, do not send the program to the data logger.

> **TIP:**
> It is good practice to always retrieve data from the data logger before sending a program; otherwise, data may be lost. See Collecting data (p. 23) for detailed instruction.

18. Make note of the newly generated program location and filename. By default, programs created with *Short Cut* are stored in `C:\Campbellsci\SCWin\`.

19. Close *Short Cut*.

If your data acquisition requirements are simple, you can probably create and maintain a data logger program exclusively with *Short Cut*. If your data acquisition needs are more complex, the files that *Short Cut* creates are a great source for programming code to start a new program or add to an existing custom program using CRBasic. See the *CRBasic Editor* help for detailed information on program structure, syntax, and each instruction available to the data logger https://help.campbellsci.com/crbasic/cr300/ ⬀.

> **NOTE:**
> Once a *Short Cut* generated program has been edited with *CRBasic Editor*, it can no longer be modified with *Short Cut*.

5. Sending a program to the data logger

> **TIP:**
> It is good practice to always retrieve data from the data logger before sending a program; otherwise, data may be lost. See Collecting data (p. 23) for detailed instruction.

Some methods of sending a program give the option to retain data when possible. Regardless of the program upload tool used, data will be erased when a new program is sent if any change occurs to one or more data table structures in the following list:

- Data table name(s)
- Data output interval or offset
- Number of fields per record

- Number of bytes per field
- Field type, size, name, or position
- Number of records in table

Use the following instructions or watch the Quickstart part 4 video ▶.

1. Connect the data logger to your computer.

    - *LoggerNet* users, select **Main** and **Connect** 🔗 on the *LoggerNet* toolbar, select the data logger from the **Stations** list, then **Connect** 🖊.

    - *PC400* users, select the data logger from the list and click **Connect** 🖊.

2. *LoggerNet* users, click **Send New...** (located in the **Current Program** section on the right side of the window).

    PC400 users, click **Send Program...** (located in the **Datalogger Program** section on the right side of the window).

3. *PC400* users, confirm that you would like to proceed and erase all data tables saved on the data logger. Click **Yes**.

4. Navigate to the program, select it, and click **Open**. For example: navigate to **C:\Campbellsci\SCWin** and select **MyTemperature.CR300**. Click **Open**.

5. *LoggerNet* users, confirm that you would like to proceed and erase all data tables saved on the data logger. Click **Yes**.

6. The program is sent and compiled.

7. Review the **Compile Results** window for errors, messages and warnings.

8. *LoggerNet* users, click **Details**, select the **Table Fill Times** tab.

   PC400 user click **OK** then click *Station Status* ☑, select the **Table Fill Times** tab.

   Ensure that the times shown are expected for your application. Click **OK**.
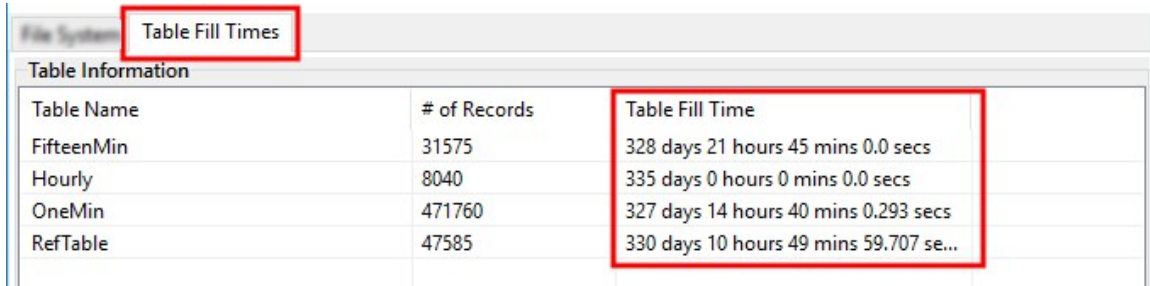
Table Name	# of Records	Table Fill Time
FifteenMin	31575	328 days 21 hours 45 mins 0.0 secs
Hourly	8040	335 days 0 hours 0 mins 0.0 secs
OneMin	471760	327 days 14 hours 40 mins 0.293 secs
RefTable	47585	330 days 10 hours 49 mins 59.707 se...

After sending a program, it is a good idea to monitor the Public table to make sure sensors are taking good measurements. See Working with data (p. 22) for more information.

6. Working with data

6.1 Default data tables

By default, the data logger includes three tables: **Public**, **Status**, and **DataTableInfo**. Each of these tables only contains the most recent measurements and information.

- The **Public** table is configured by the data logger program, and updated at the scan interval set within the data logger program. It shows measurement and calculation results as they are made.
- The **Status** table includes information about the health of the data logger and is updated only when viewed.
- The **DataTableInfo** table reports statistics related to data tables. It also only updates when viewed.
- User-defined data tables update at the schedule set within the program.

For information on collecting your data, see Collecting data (p. 23).

Use these instructions or follow the Connect Window tutorial ▶ to monitor real-time data.

LoggerNet users, select the **Main** category and **Connect** 🔗 on the *LoggerNet* toolbar, then select the data logger from the **Stations** list, then click **Connect** 🦃. Once connected, select a table to view in the **Table Monitor**.
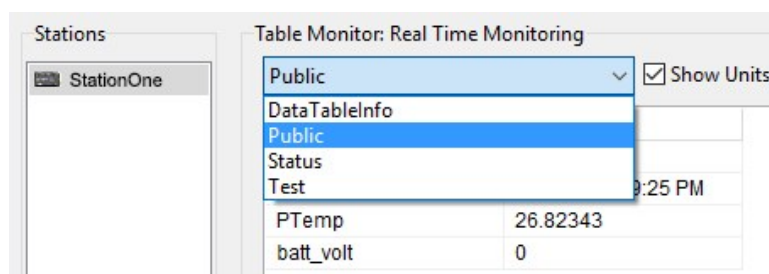
PC400 users, click **Connect** 🦃, then **Monitor Data**. When this tab is first opened for a data logger, values from the **Public** table are displayed. To view data from other tables, click **Add** ⊞, select a table or field from the list, then drag it into a cell on the **Monitor Data** tab.
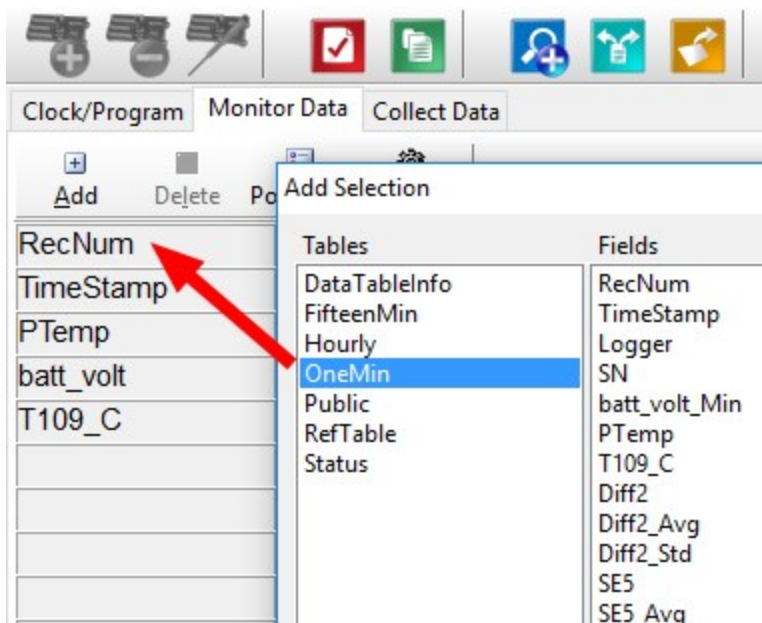
6.2 Collecting data

The data logger writes to data tables based on intervals and conditions set in the CRBasic program. After the program has been running for enough time to generate data records, data may be collected by using data logger support software. During data collection, data is copied to the computer and still remains on the data logger. Collections may be done manually, or automatically through scheduled collections set in *LoggerNet* **Setup**. Use these instruction or follow the Collect Data Tutorial ▶.

6.2.1 Collecting data using *LoggerNet*

1. From the *LoggerNet* toolbar, click **Main** and **Connect** 🔗, select the data logger from the **Stations** list, then **Connect** 🔧.

2. Click **Collect Now** 📱.

3. After the data is collected, the **Data Collection Results** window displays the tables collected and where they are stored on the computer.

4. Select a data file, then **View File** to view the data. See Viewing historic data (p. 24)

6.2.2 Collecting data using *PC400*

1. Click **Connect** on the main *PC400* window.

2. Go to the **Collect Data** tab.

3. By default, all output tables set up in the data logger program are selected for collection. Typically, the default tables (DataTableInfo, Public, and Status) are not collected.

4. Select an option for **What to Collect**. Either option creates a new file if one does not already exist.

   - **New data from data logger (Append to data files)**: This is the default, and most often used option. Collect only the data, in the selected tables, stored since the last data collection from this instance of *PC400* and append this data to the end of the existing files on the computer.

   - **All data from data logger (Overwrite data files)**: Collects all of the data in the selected tables and overwrites (or replaces) the existing data files on the computer.

5. Click **Start Data Collection**.

6. After the data is collected, the **Data Collection Results** window displays the tables collected and where they are stored on the computer.

7. Select a data file, then **View File** to view the data. See Viewing historic data (p. 24)

6.3 Viewing historic data

View Pro contains tools for reviewing data in tabular form as well as several graphical layouts for visualization. Use these instructions or follow the View Data Tutorial .

Once the data logger has had enough time to store multiple records collect and review the data.

1. To view the most recent data, connect the data logger to your computer and collect your data (see Collecting data (p. 23) for more information).

2. Open View Pro:

   - *LoggerNet* users click **Data** then **View Pro** on the *LoggerNet* toolbar.

   - *PC400* users click **View Data Files via View Pro** .

3. Click **Open** , navigate to the directory where you saved your tables (the default directory is **C:\Campbellsci***[your data logger software application]*). For example: navigate to the **C:\Campbellsci\LoggerNet** folder and select **OneMin.dat**.

4. Click **Open**.

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