

eC370T Software Manual

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ennoLogic eC370T Software Manual

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<https://ennologic.com>

1. Overview

This manual describes the software that can be used to communicate with the ennoLogic eC370T calibrator. At this time, only Windows-based computers are supported.

The software allows you to display data both measured and generated by the eC370T calibrator on your computer. You can also control most input and output functions of the calibrator from within the software, for example setting an output current of 15mA.

The software package for the eC370T calibrator can be downloaded at the ennoLogic website:

<https://ennologic.com/downloads/eC370T%20Software%20PC%20LINK%20SCPI.zip>

After downloading you will need to unzip (extract all files) before proceeding. Then continue with the instructions below.

2. Install the USB Driver

The software package for the ennoLogic eC370T (called “eC370T Software PC LINK SCPI”) contains two folders: “Software” and “USB Driver Package”. Before you can run the software app located in the “Software” folder, you need to install the USB driver in the folder “USB Driver Package”. Otherwise the PC LINK SCPI software cannot communicate with the eC370T calibrator.

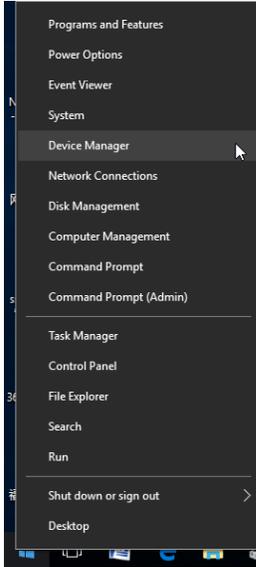
To install the USB driver, please follow the instructions in the “USB Driver Installation Guide eC370T” pdf document. It ensures you end up with a working driver install, and describes how to resolve errors that may happen during the installation process in some cases. You will find the “USB Driver Installation Guide eC370T” pdf in the “USB Driver Package” folder of the eC370T software package. Alternatively, you can download it by clicking the following link:

<https://ennologic.com/downloads/USB%20Driver%20Installation%20Guide%20eC370T.pdf>

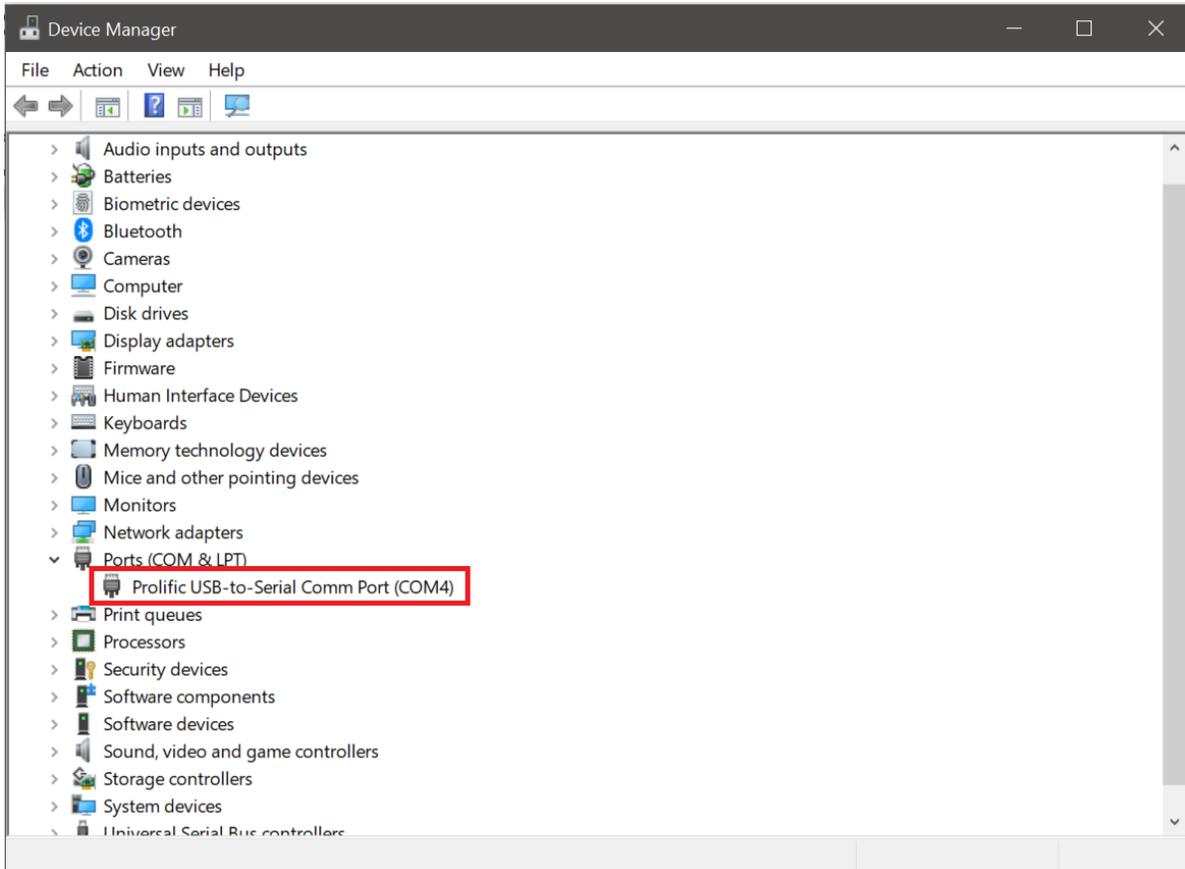
3. Connect the Calibrator to your Computer

After the USB driver has been installed, you are ready to connect the eC370T calibrator to your computer and run the software. Plug the Mini-USB cable that was included with your calibrator into the USB jack at the top of the calibrator. Turn the calibrator on. Then plug the other end of the USB cable into a USB port of your computer.

The USB driver you installed in step 2 will create a virtual communications port on your computer that is used to communicate with the eC370T calibrator. Before we can run the software, we need to find out the number of this communications port, also called a “COM” Port. To find this COM Port number, open Device Manager by right-clicking the Start icon on your computer and selecting “Device Manager”.

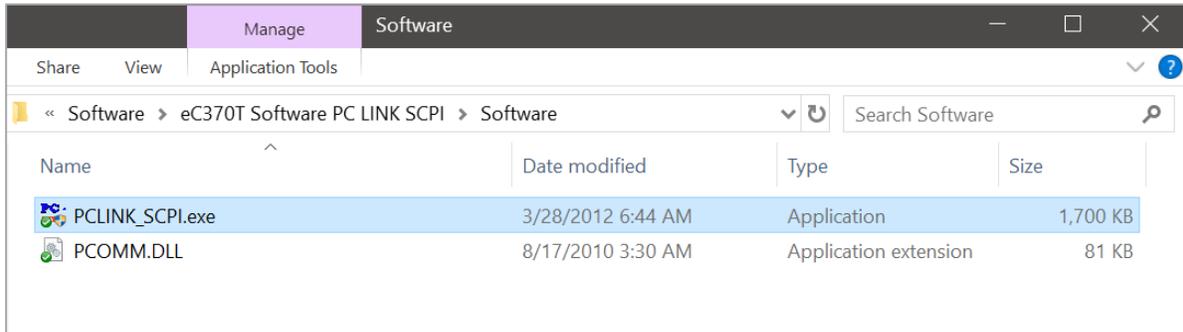


Inside Device Manager, expand the “Ports” section and look for a device called “Prolific USB-to-Serial Comm Port”. You will see a COM number in parentheses next to this device, in the example screenshot below it is “COM4”. You will need to know this number when you run and configure the software, explained in the following section.



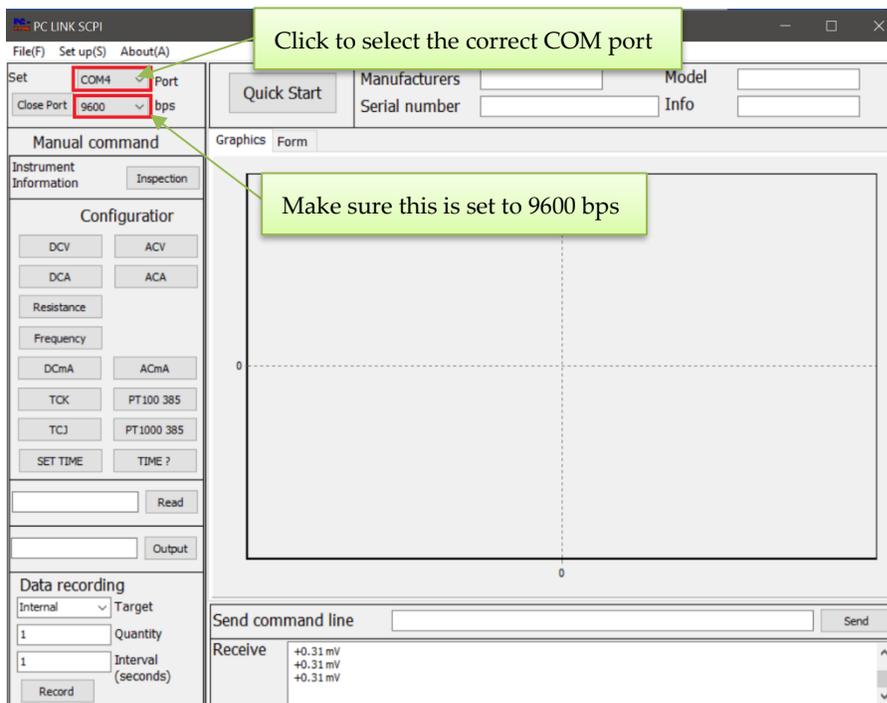
4. Run the Software

The PC LINK software is located inside the “Software” folder of the eC370T software package. To run it, execute (double-click) the file “PCLINK_SCPI.exe”. The software does not need to be installed, just double-click the file to run it.



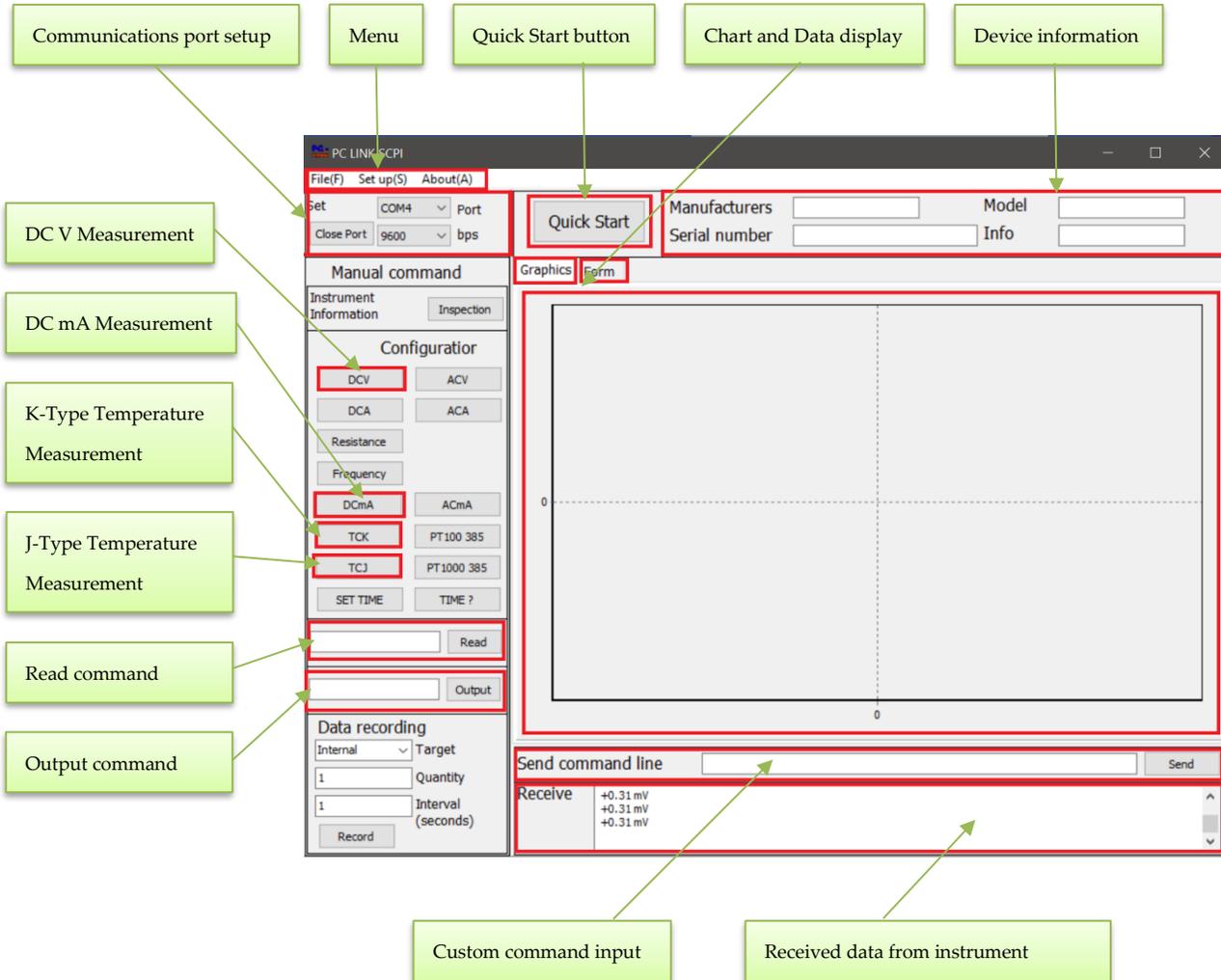
5. Set the COM Port and Baud Rate

After you launched the software, take a look in the upper right corner. Set the COM port to match the COM port number you found by reviewing the communication port settings of the USB driver in Device Manager (see step 3 above and screenshot below). Also make sure the baud rate displayed in the box below the Port number is set to 9600 bps.



6. Software Interface

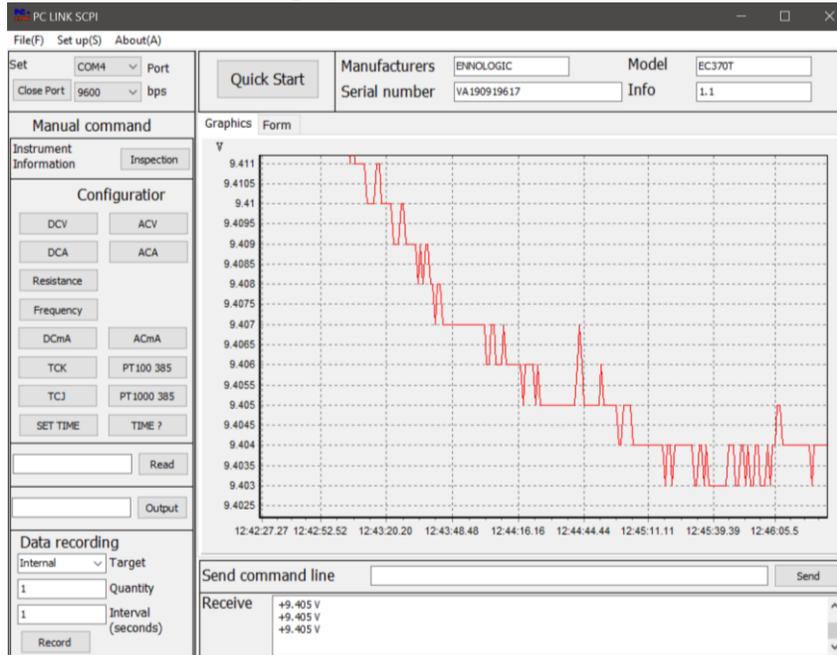
To get familiar with the software interface, please review the diagram below. Please note that the PC LINK software was designed to be used with a variety of instruments, and **not all** functions are available for the ennoLogic eC370T calibrator. The functions relevant to the eC370T are highlighted below.



7. Functions

Quick Start Button

Click on the Quick Start button to start reading data from the calibrator set to measurement mode. The received data will be displayed in a chart.



To see the data as a list of numerical values, click on the “Form” tab next to the “Graphics” tab above the chart.

The screenshot shows the PC LINK SCPI software interface with the 'Form' tab selected. The 'Form' tab is highlighted with a red box. The table displays the following data:

Index	Time	Main_Number	Main_Function	Sub_Number	Sub_Function	T_Number	T_Function
117	16:12:58.58	9.436	V				
118	16:12:59.59	9.435	V				
119	16:13:00.0	9.433	V				
120	16:13:01.1	9.432	V				
121	16:13:02.2	9.432	V				
122	16:13:03.3	9.431	V				
123	16:13:04.4	9.43	V				
124	16:13:05.5	9.429	V				
125	16:13:06.6	9.428	V				
126	16:13:07.7	9.429	V				
127	16:13:08.8	9.429	V				
128	16:13:09.9	9.428	V				
129	16:13:10.10	9.428	V				
130	16:13:11.11	9.427	V				
131	16:13:12.12	9.426	V				
132	16:13:13.13	9.425	V				
133	16:13:14.14	9.425	V				
134	16:13:15.15	9.425	V				
135	16:13:16.16	9.424	V				
136	16:13:17.17	9.424	V				
137	16:13:17.17	9.424	V				
137	16:13:18.18	9.424	V				

The 'Receive' window shows the following data:

```
+9.424 V
+9.424 V
+9.424 V
```

DCV

Click on the DCV button to measure DC voltage. The received data will be displayed as shown below.

Send command line	<input type="text"/>	Send
Receive	set mv input +0.31 mV +0.32 mV	^ - v

DCmA

Click on the DCmA button to measure DC milliamp current. The received data will be displayed as shown below.

Send command line	<input type="text"/>	Send
Receive	set mA input +0.089 mA -0.001 mA	^ - v

TCK

Click on the TCK button to measure K-Type thermocouple temperatures. The received data will be displayed as shown below.

Send command line	<input type="text"/>	Send
Receive	set TCK input M +68.9 F tck S +50 F	^ - v

TCJ

Click on the TCJ button to measure J-Type thermocouple temperatures. The received data will be displayed as shown below.

Send command line	<input type="text"/>	Send
Receive	set TCJ input M +69.0 F tcj S +50 F	^ - v

Read

Clicking this button will display what function the calibrator is currently set to. In the example below, the calibrator is set to measure K-Type thermocouple temperatures.

Send command line	<input type="text"/>	Send
Receive	Function: TCin: typek M +68.7 F tdk S +50 F	

Output

Use the “Output” button in combination with its text box to set the calibrator to output mode at a specified mode and value. For example, if you want to output 1V DC, type “1 V” into the text box (make sure to type a “space” character between the “1” and the “V”), then click the “Output” button. The calibrator will be set to output mode and apply a DV voltage of 1V to its “V” and “COM” terminals. To output a current of 5mA, type “5 mA” and click the “Output” button. For a full list of options please review the Command Protocol section below.

The screenshot shows the PC LINK SCPI software interface. At the top, there are menu options: File(F), Set up(S), and About(A). Below this is a 'Set' section with 'COM4' selected for the Port and '9600' for the baud rate. A 'Quick Start' section displays 'Manufacturers' as ENNOLOGIC, 'Model' as EC370T, and 'Serial number' as VA190919617. The 'Manual command' section is currently empty. The 'Instrument Information' section shows 'Inspection' mode. The 'Configurator' section has several buttons for different measurement modes: DCV, ACV, DCA, ACA, Resistance, Frequency, DCmA, ACmA, TCK, PT100 385, TCJ, PT1000 385, SET TIME, and TIME ?. Below the configurator is a 'Read' button and a text box containing '1 V' with an 'Output' button next to it. The 'Data recording' section is set to 'Internal' target, with '1' for both Quantity and Interval (seconds), and a 'Record' button. On the right, a 'Graphics' window shows a plot of voltage (V) over time. The y-axis ranges from 0 to 1.0 V, and the x-axis shows time from 16:35:11.11 to 16:36:01.1. A red line shows the voltage rising from 0 to approximately 0.999 V. At the bottom, there is a 'Send command line' field and a 'Receive' area showing three '+0.999 V' readings.

8. Command Protocol

Command Summary

Command	Short Command	Purpose
*IDN?	*IDN?	Return instrument identification
READ	READ	Return currently active function
CONFIG	CONF	Set/Read measurement function
OUTPUT	OUT	Set output mode
INPUT	INP	Set input mode

Command Syntax

Note: When entering a command into the command line field of the PC LINK software please do not add the <\r\n> (carriage return \ new line) characters. They are only needed when communicating with the instrument using a terminal program, or third party software that sends commands via the virtual serial port.

1. *IDN?

Return instrument identification, including manufacturer, model, serial number, and version information.

Example:

Command sent:

*IDN?<\r\n> or [INPUT] *idn?<\r\n>

Reply received:

<Manufacturer>,<Model>,<SN>,<Version><\r\n>

2. READ

Determine what function we are using now.

Example:

Command sent:

READ? <\r\n> or [INPUT] read? <\r\n>

Reply received:

Function: V□INP□1□V<\r\n>

In this example, the returned information tells us the device is in voltage measurement mode.

3. CONFIG

Set the function/mode.

Syntax: CONFIG:<command parameter>

Allowed command parameters:

VOLTAGE (or VOLT)
MCURRENT
TCK
TCJ
TCR
TCN
TCB
TCS
TCT

Examples:

Command sent:

CONFIG:VOLTAGE<\r\n> or conf:volt<\r\n> or conf:mvol<\r\n>

Reply received:

set mv input

Command sent:

CONFIG:MCURRENT<\r\n> or conf:mcur<\r\n>

Reply received:

set mA input

Command sent:

CONFIG:TCK<\r\n> or conf:tck<\r\n>

Reply received:

set TCK input

4. OUTPUT

Set the instrument to the specified output function and output a specified value.

Syntax: OUTPUT:<value> <command parameter>

Allowed command parameters:

V
MV
MA
CEL (centigrade)

F (Fahrenheit)

Examples:

Command sent:

OUTPUT:5 V<\r\n> or out:5 v<\r\n>

Reply received:

set V output:

Command sent:

OUTPUT:5 MV<\r\n> or out:5 mv<\r\n>

Reply received:

set mv output:5

Command sent:

OUTPUT:5 mA<\r\n> or out:5 ma<\r\n>

Reply received:

set mA output:

Command sent:

OUTPUT:50 CEL<\r\n> or out:50 cel<\r\n>

Reply received:

set TC output:CEL

Command sent:

OUTPUT:50 F<\r\n> or out:50 f<\r\n>

Reply received:

set TC output:FAH

5. INPUT

Set the instrument to the specified input function.

Syntax: INPUT:<command parameter>

Allowed command parameters:

VOLTAGE (or VOLT)

MCURRENT

TCK

TCJ

TCR

TCN

TCB

TCS

TCT

Examples:

Command sent:

INPUT:VOLTAGE<\r\n> or inp:volt<\r\n> or inp:mvolt<\r\n>

Reply received:

set mv input

Command sent:

INPUT:MCURRENT<\r\n> or inp:mcur<\r\n>

Reply received:

set mA input

Command sent:

INPUT:TCK<\r\n> or inp:tck<\r\n>

Reply received:

set TCK input

9. Hardware Settings (COM Port)

Baud rate: 9600 bps

Data bits: 8bit

Parity bits: none

Stop bits: 1bit

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