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WAVETRONIX Click 510 Comm. Tester User Guide

Click 510 Comm. Tester
INSTALLATION QUICK START GUIDE

Contents

Mount the device

The Click 510 mounts over a T-bus for power and communication:

1. If the Click 510 was shipped with the T-bus connector attached, remove the connector from the module.
2. Snap the connector onto the DIN rail by positioning it over the rail with the male connector pointing to the rights. Hook one arm over the edge of the DIN rail and press down on the other arm until it snaps into place.
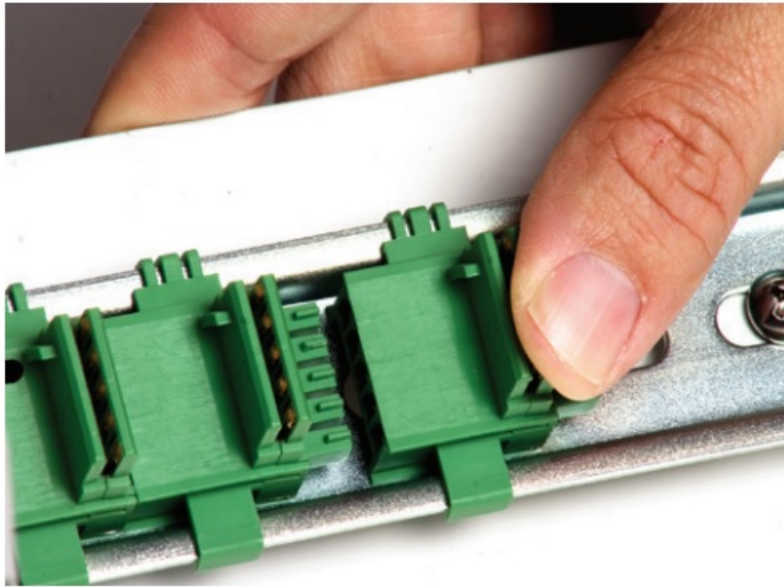
3. Connect the T-bus connector to the rest of the T-bus by sliding them together until you hear them snap into place.

4. Mount the Click 510 onto the DIN rail: position it properly over the T-bus connector, hook the lip over the lower edge of the DIN rail, and use a rocking motion to snap the module into place.

Wire power and communication

If you are using a Click 200 surge protector with the Click 510, power and communication are provided to the Click 10 through the T-bus (see the Click 200 Quick Start Guide). If you don't have a Click 200 surge protector, use the following steps to wire power and communication into the Click 510.

1. Plug a T-bus 5-screw terminal block into the first T-bus connector.

2. Wire DC power (10–30 V) from the power supply into the first screw terminal on the 5-screw terminal block; wire -DC into the second screw terminal.

3. Connect RS-485 communication (+485, -485, and GND) to either the remaining three screw terminals on the 5-screw terminal block or to the screw terminals in the pluggable screw terminal block on the top of the Click 510 (see labels for correct wiring).
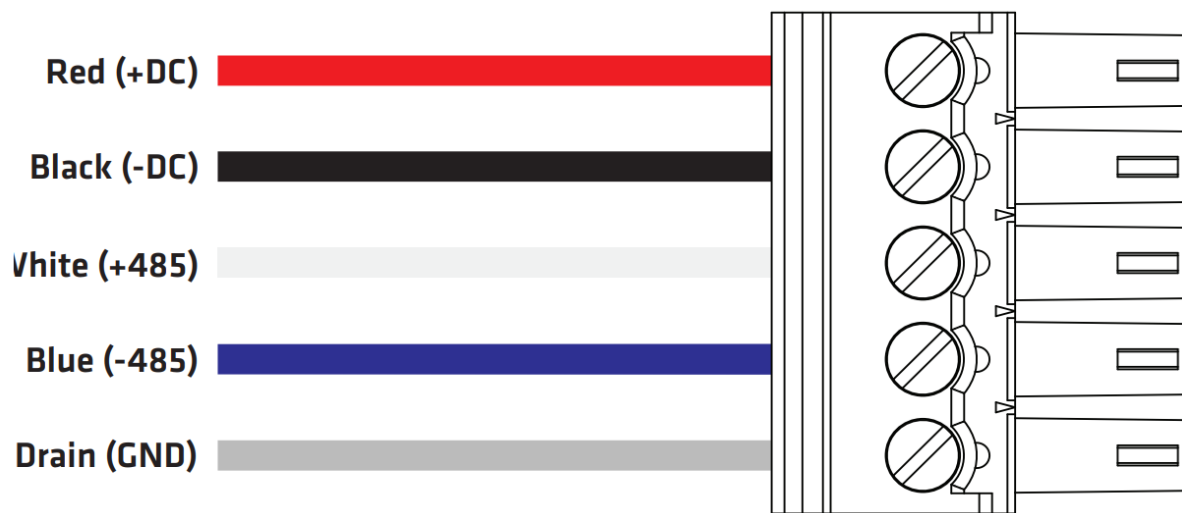
The Click 510 has three other communication ports.

- RJ-11 jack – Connect a jumper cable here for RS-485 communication.
- DB-9 connector – Connect a straight-through cable here for RS-232 communication.
- RS-232/RS-485 terminals – This is on top of the device and is usually not used.

Use on-device configuration features

Next, use the Click 510's configuration to make sure it's wired and working properly. The Click 510 has four LEDs that monitor activity and help you select tasks and operating modes. It also has two banks of LEDs: one of the yellow LEDs that represent submenu 1 and one of red for submenu 2. It also has a push-button, labeled Mode Switch, also used for tasks and operating modes.
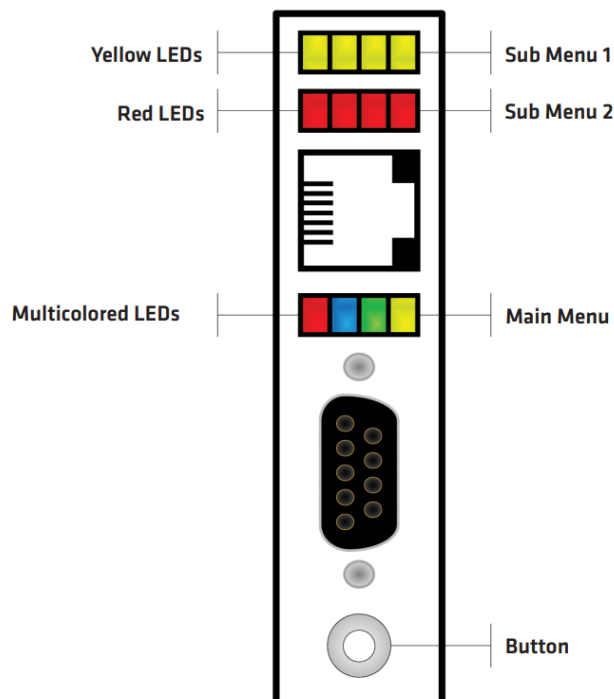
LED activity indicating functions:

Red – The device has power

Yellow – Device is transmitting data

 Green – The device is receiving data

The blue LED has no activity-indicating function.

1. Check the LEDs to make sure the device has power.
2. Select the baud rate for the device by autobaud as outlined below.

   If you'd rather manually set the baud rate, see Part 5 below.

LED task-indicating functions (operating mode functions will be covered later

Select ion	Operating mode	Running	Completed
	Autobaud – Hold the push button down. Release it when the green LED is solid, then press quickly once, to autobaud to the sensor.		failure: will return to previous mode success (will then return to the previous mode)
	Reset – Hold the push button down. Release it when the red LED is blinking, then press quickly once, to reset to factory defaults.		

Use the Mode Switch to navigate through mode and task menus

Select a task or operation function by navigating through the main menu (multicolored LEDs) and the submenus (yellow and red LEDs) using the Mode Switch push-button as described below:

1. Enter the main menu and cycle through it by holding the Mode Switch down.
2. Release the Mode Switch once the cycle reaches the desired function.
3. Press the Mode Switch again to select the function. Once selected, the function will either start running or the first submenu (yellow LEDs) will start.
4. Hold the Mode Switch to cycle through the first submenu.
5. Release the Mod Switch once the desired menu selection is displayed.
6. Press the Mode Switch again to select the function. Once selected, the function will either start running or the second submenu (red LEDs) will start.
7. Hold the Mode Switch to cycle through the second submenu.
8. Release the Mode Switch once the desired submenu selection is displayed.
9. Press the Mode Switch again to select the function. The function will now run.

Manually set baud rate (optional)

Note. This step is optional because if you prefer not to select the baud rate manually, you can also autobaud the device (see part 3 of this guide).

1. Hold the Mode Switch down, then release when the green LED starts flashing.
2. Press the Mode Switch again to select the baud rate task. The LED indicating the current baud rate will turn on (see table).

3. Hold down the Mode Switch. The yellow LEDs will cycle through the eight possible baud rates, first by lighting up solid and then by flashing, as shown in the table below.

	1st LED	2nd LED	3rd LED	4th LED
Submenu 1 (Yellow LEDs)	1 second	0.25 – 1 second	Switch (when the pushbutton is pressed)	–
Submenu 2 (Yellow LEDs)	17"–60' 30–60 mph	Random traffic	Diagnostic traffic	–

First test mode: Sensor Emulation

Sensor Emulation mode tests the connection between a sensor and other devices. The Click 510 can mimic a SmartSensor 105 and send traffic data, allowing you to see if breaks in communication are caused by the communication channel or by the sensor itself. It also allows you to check the functionality of an assembled traffic cabinet before attaching a sensor. In both of these cases, the device should be connected to a contact closure module such as Click 100 or 172/174 so the response can be monitored.

1. Hold the push button down, then release it when the blue LED starts flashing.
2. Press the push button to select. The first yellow LED will turn on to let you use that submenu.
3. To pick how often the device wills end data, hold down the push button and it will cycle through the time options shown in the table below. Release when you reach the one you want.
4. Press the push button to select. The first red LED will turn on to let you use that submenu.
5. To pick what kind of data the device will send, hold down the push button and it will cycle through the traffic options shown in the table below. Release when you reach the one you want.
6. Press the push button to select.

	1st LED	2nd LED	3rd LED	4th LED
Submenu 1 (Yellow LEDs)	1 second	0.25 – 1 second	Switch (when the pushbutton is pressed)	–
Submenu 2 (Yellow LEDs)	17"–60' 30–60 mph	Random traffic	Diagnostic traffic	–

7. Connect the device to a contact closure device, such as a Click 172/174. Set up the contact closure device (see the pertinent quick start guide) and the mode will begin to run. As the mode runs, the blue LED will flash fast and the submenu LEDs will light up if the Click 510 is pushing data. Monitor the contact closure device to see if data is
received.

Second test mode: Test Pattern

Test Pattern mode tests communication channels by sending data packets over the channel. It's helpful for debugging because it locates the break in your channel of communication.
To use it, connect two Click 510 devices together or connect a Click 510 to a computer. The responses can be monitored with serial terminal software or by watching the LEDs on the receiving 510.

1. Hold the push-button down, then release it when the blue LED comes on solid.
2. Press the push button to select. The first yellow LED will turn on to let you use that submenu.
3. To pick how often the device will send data, hold down the push button and it will cycle through the time options shown in the table below. Release when you reach the one you want.
4. Press the push button to select. The first red LED will turn on to let you use that submenu.
5. To pick what kind of data the device will send, hold down the push button and it will cycle through the traffic options shown in the table below. Release when you reach the one you want.
6. Press the push button to select. The mode will run. Observe the connected Click 510 or computer to monitor that the packets are being received.

	1st LED	2nd LED	3rd LED	4th LED
Submenu 1 (Yellow LEDs)	1 second	0.25 – 1 second	Switch (when the pushbutton is pressed)	–
Submenu 2 (Yellow LEDs)	LED flash	LED sequence	ASCII sequence	ASCII text

See the Click Series User Guide for more information.

Third test mode: Latency Test

This test measures the time it takes data packets to travel across your communication channel. For this mode, two Click 510 devices must be connected, with both of them set in this mode.

1. On both devices, hold the push-button down, then release it when the yellow LED is solid.
2. Press both push buttons to select. The results from the last latency test will appear in the LEDs.
3. Press the push button again on either one of the devices to start the test.
4. While the test runs, the red and yellow LEDs will flash as the 510 tries different packet sizes.

When the test is finished, the results can be viewed in two ways:

- Before the test, connect via serial from a computer to the device that is initiating the test, then after the test, look at the results in a serial terminal program.
- Look at the LEDs on the device running the test. See the graphic to the right for what the LEDs mean.

See the Click Series User Guide for more information.

Each red flash =
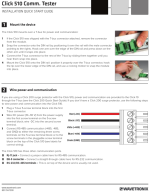100 msec delay

Each red flash =
1 sec delay

Timed out or
corrupt data

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WX-500-0194

Documents / Resources

WAVETRONIX Click 510 Comm. Tester [pdf] User Guide
Click 510, Comm. Tester, Click 510 Comm. Tester, Tester

References

- ◤ **Wavetronix**