

Click 104 Contact Closure

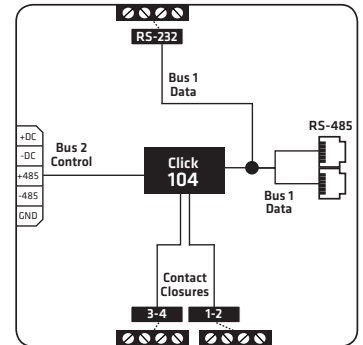
INSTALLATION QUICK START GUIDE

The Click 104 is a 4-channel contact output device for use with Wavetronix SmartSensors. For more information about this product, visit wavetronix.com.

1 Understand buses

The 104 installation process will make more sense if you understand its two buses:

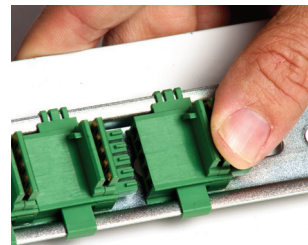
- △ **Bus 1: Data** – The RJ-11 jacks (for RS-485) and the RS-232 screw terminals are connected; they'll be used for receiving detection calls.
- △ **Bus 2: Control** – The connector on the back connects to the T-bus (shared RS-485 bus for multiple Click devices) and is isolated from bus 1; it should be used to connect to the Click 104 with a computer so you can configure it.



2 Mount the device

The Click 104 mounts over a T-bus for power and for the control bus (bus 2):

- 1 If the Click 104 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 right. 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 104 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.



3 Wire power and RS-485 communication

If you are using a Click 200 surge protector with the Click 104, power and communication are provided to the Click 104 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 104:

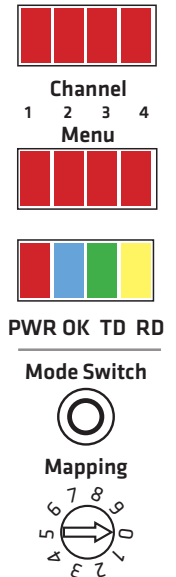
- 1 Plug a T-bus 5-screw terminal block into the first T-bus connector.
- 2 Wire DC power (9–28 V) from the power supply into the first screw terminal on the 5-screw terminal block; wire -DC into the second screw terminal.
- 3 Connect RS-485 communication (+485, -485, and GND) to the remaining three screw terminals on the 5-screw terminal block.



4 Understand the device's configuration features

The following physical features allow you to configure the Click 104:

- △ **Channel LEDs** – The top bank of LEDs; indicate vehicle detection.
- △ **Level 2 LEDs** – Indicate configuration options. When the device is not in menu mode, these LEDs are off.
- △ **Level 1 LEDs** – Indicate menu options while cycling through the menu. They also have the following functions:
 - **Red (PWR)** – Indicates the presence of power to the device.
 - **Blue (OK)** – Indicates the device is operating properly; goes out if the device is in fail-safe mode.
 - **Green (TD)** – Indicates serial communication transmit data on RS-485 bus 1 or 2.
 - **Yellow (RD)** – Indicates serial communication receive data on RS-485 bus 1 or 2.
- △ **Mode Switch** – Lets you cycle through and select menu and configuration options.
- △ **Rotary Switch** – Aids in input channel mapping.



5 Select configuration method

The Click 104 can be configured in one of three ways: Click Supervisor, the front panel menu, and the rotary switch. Each option has pros and cons, and each lets you change different parameters; some parameters can only be set via one option, while others can be set using any of the three. The table at right gives you an idea of which parameters can be set using which configuration options.

	Rotary Switch	Front Panel Menu	Click Supervisor
Baud Rate	No	Yes	Yes
Channel Input Map	Yes	Yes	Yes
Autobaud	No	Yes	No
Reset to Default	No	Yes	Yes
Description	No	No	Yes
Location	No	No	Yes
Device ID	No	No	Yes
Fail-safe Settings	No	No	Yes

Note: If the channel input mapping is set by the rotary switch, it can't be changed by the front panel menu or by Click Supervisor.

6 Configuration option 1: rotary switch

The rotary switch on the faceplate lets you configure the channel input mapping—that is, you can map four of the input data channels coming from the sensor to the Click 104's four output channels. The outputs are assigned sequentially, so if you set the switch to 3, then input 9 will be mapped to channel 1, input 10 will be mapped to channel 2, and so on. See the table at the left for switch/input channel information.

Note: 0 (Software mode) means that if mapping isn't set by the rotary switch, it can be changed via the front panel menu or Click Supervisor.

Switch	Channels	Switch	Channels
0	Software mode	5	17–20
1	1–4	6	21–24
2	5–8	7	25–28
3	9–12	8	29–32
4	13–16	9	33–36

7 Configuration option 2: front panel menu

The front panel menu allows you to configure input mapping and baud rates. It can also reset the device to factory defaults, and is the only place on the device to access the autobaud function.

Menu and configuration options are displayed on the Level 1 and Level 2 LEDs on the faceplate. Navigate through the menu using the mode switch:

- 1 Press and hold the mode switch to enter Menu mode. The Level 1 LEDs will start to light up to indicate that the device is cycling through all menu options.
- 2 When the LEDs light up in the way that indicates the menu option you want (see the figure below), release the mode switch.
- 3 Quickly press and release the mode switch to select the current menu option. The Level 2 LEDs will light up to let you configure the options for the selected menu option.
- 4 Press and hold the mode switch to cycle through available values for the selected menu option. The Level 2 LEDs display the currently selected value.
- 5 Press and release the mode switch to accept the displayed value. The device will exit the menu.

See the figure for how to use the LEDs to configure the parameter.

Channel Input Mapping

This function lets you map four of the input data channels coming from the sensor to the four output channels on the device. See Part 5 of this guide for more information.

Note: If this is set with the rotary switch, you won't be able to change it with the front panel menu.

Autobaud

This function initiates an autobaud on the RS-485 bus you select. If the autobaud is successful, the LEDs will display the baud rate found, using the same LED patterns used for the baud rate (see figure). If it fails, all four LEDs will flash, and then the device will exit the menu.

Baud rate for bus 1 and bus 2

This function lets you set the baud rate for bus 1 and bus 2. The two buses can be configured separately.

Reset to Default

This function will restore all configuration settings to factory defaults (even those not configured using the front panel menu): baud rate, channel map, description field, location field, and device ID.

R B G Y

Autobaud

Menu LEDs

1 2 3 4

 Cancel

 Bus 1

 Bus 2

R B G Y

Input Mapping

Menu LEDs

1 2 3 4

 Cancel

 1-4

R B G Y

Bus 1 Baud Rate

Menu LEDs

1 2 3 4

 Cancel

 9600

R B G Y

Bus 2 Baud Rate

Menu LEDs

1 2 3 4

 Cancel

 9600

R B G Y

Reset to Default

Menu LEDs

1 2 3 4

 Cancel

 Reset

Rotary Switch

1800

450

900

1800

0 = SW

1 = 1-4

2 = 5-8

3 = 9-12

4 = 13-16

5 = 17-20

6 = 21-24

7 = 25-28

8 = 29-32

9 = 33-36

8 Configuration option 3: Click Supervisor

Click Supervisor is the third available way to configure the Click 104. To install it, download the setup file from www.wavetronix.com (under **Support**) and double-click on the file to run the setup wizard.

Make a connection and select a driver

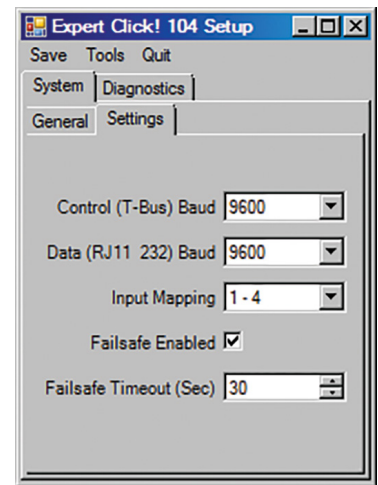
- 1 Make sure the Click 104 is mounted on the same T-bus as a device that's connected to your computer.
- 2 Run the software and click **Communication**. Use the serial option (unless it's an Ethernet connection).
- 3 Change any needed settings under the **Settings** link. Click **Connect**. (Keep the Click ID set to 0.)
- 4 In the next screen, Click Supervisor will display all the devices it discovers. When the desired Click 104 appears, select it and click **Select**. Click Supervisor will connect to the device.
- 5 Select **Setup Click** on the main screen. In the next screen, select the **Expert** driver and click **OK**.

Configure the module

The **System > General** tab has text parameters that cannot be changed anywhere else: description/location, which are for informational purposes only; and device ID, which usually shouldn't be changed.

The **Settings** tab lets you set channel input mapping and select baud rates for the two buses. **Failsafe Enabled** sets whether or not your device can enter fail-safe mode.

Note: Remember that if channel input mapping is set by the rotary switches, you will only be able to view, not change, it here.



9 Complete wiring

Now connect the Click 104 to the sensor (so that it can receive detection data) and to the controller or other contact closure device. To get detection data to bus 1:

- △ For a SmartSensor Matrix or Advance (meaning a Click 222 or 223 surge protector): connect a jumper cable to the Click 222 RJ-11 jack for the sensor you want to get data from. Connect the other end to either of the RJ-11 jacks on the faceplate of the Click 104. If you need more than four output channels for that sensor, daisy-chain multiple 104s together, as shown at right.
- △ For a SmartSensor HD (meaning a Click 200): set the HD to push Z4 data on the RS-232 port. Attach wires to the TD and RD screw terminals on the protected side of the Click 200; attach the other ends to the TD and RX screw terminals on the 104. Also connect a ground wire from the Click 200 ground terminal to the Click 104 ground terminal. If needed, daisy-chain multiple 104s together with jumper cables.

How you wire the contact closures will vary based on the controller or other device you use. Just be aware there are eight output screw terminals: a + and a – for each output channel.

