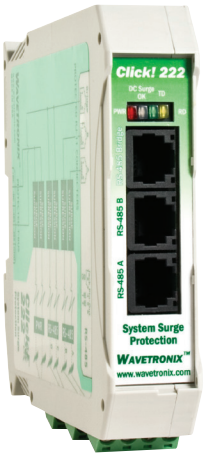
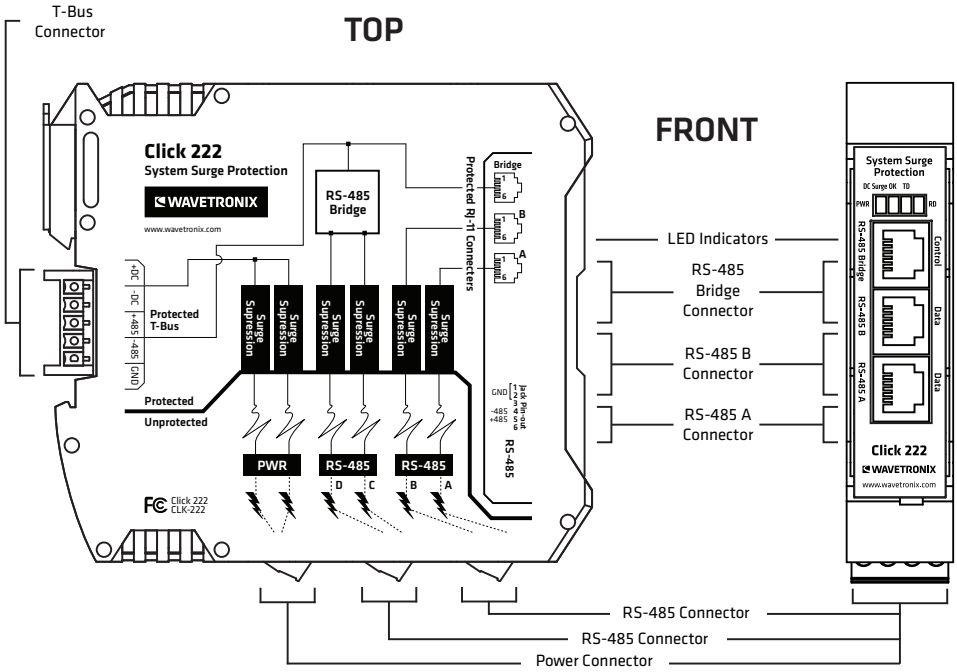
Using the Click 222

The Click 222 system surge protection device is designed to prevent electrical surges conducted along underground cables from damaging the cabinet equipment. The power and RS-485 serial connections on the device are protected from these incoming surges. It can be used with a number of devices, including the SmartSensor Matrix.



Physical Features

The physical features of the Click 222 include communication and power connections.



Connections

The faceplate of the Click 222 has three RJ-11 jacks, which provide the following three independent serial connections:

- **Topmost jack –** control bridge

- **Middle jack –** dedicated communications for sensor 2 detection calls
- **Lowest jack –** dedicated communications for sensor 1 detection calls

The back of the Click 222 features a 5-position connector that plugs into a T-bus connector and provides power and RS-485 communication to the device. It also passes RS-485 communication from the module to all other devices on the T-bus.

The bottom of the Click 222 has three pluggable screw terminal blocks with four terminals each, for a total of twelve connections. These terminals are used for wiring in the cable from the sensor. The terminals have four different RS-485 connections, each consisting of a +485 and a -485 terminal; two of these connections are for detection calls and two for the control bridge, allowing two sensors to be wired in to each Click 222. This will be explained in greater detail in the Installation section of this document.

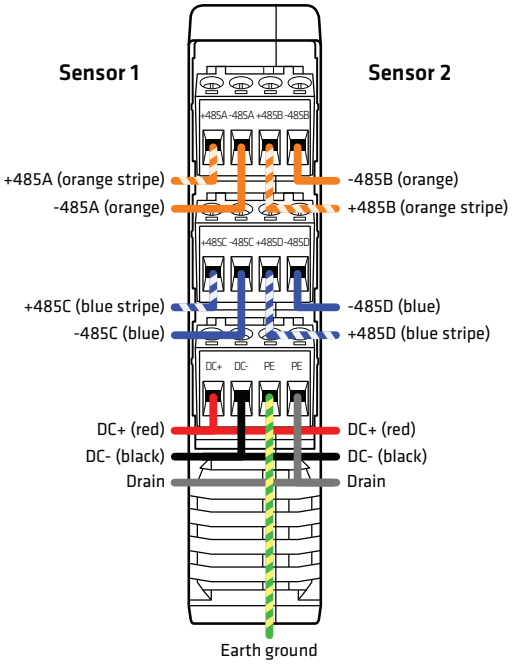
Configuration Features

The front of the Click 222 has four LEDs that indicate device activity and status:

- PWR (red) lights up to indicate that the device has power.
- DC Surge OK (blue) lights up to indicate DC surge protection is working.
- TD (green) lights up to indicate when data is transmitted over the T-bus or over the control bridge. This LED does not indicate data transmitted on the A or B ports.
- RD (yellow) lights up to indicate when data is received over the T-bus or over the control bridge. This LED does not indicate data received on the A or B ports.

Installation

The Click 222 is commonly used with the SmartSensor Matrix and SmartSensor 6-conductor cable; the steps that follow in this section are specific to this application. If you do not plan on using the 6-conductor cable, you can skip the steps below and simply wire your power and communications by following the labels on the screw terminals; in this case, be aware that you should use the terminals marked 485A and 485B for detection calls.



Wiring the Click 222

The steps below refer to how to install and wire a Click 222. If you are using a SmartSensor Matrix preassembled cabinet, the device will already be installed and wired; all you will have to do is wire the plug on the terminal block.

A single Click 222 can be connected to two sensors. If you have a four-sensor approach, you will install a second Click 222 next to the first by repeating the steps below.

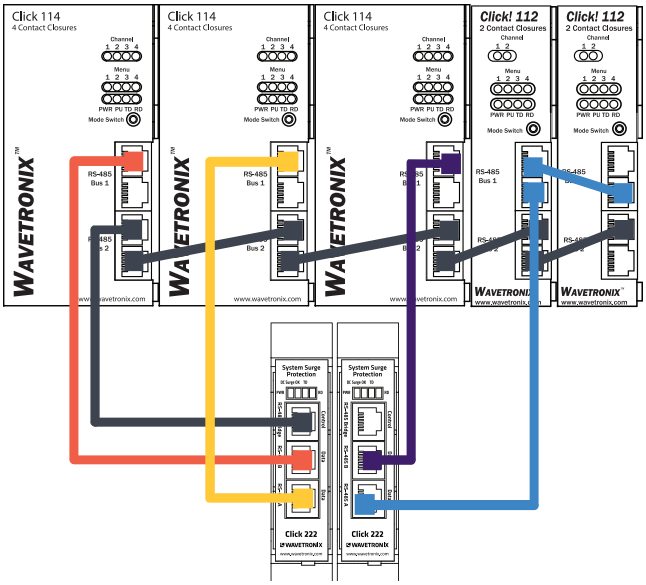
1. Using a rocking motion, mount the Click 222 onto the DIN rail, making sure it's on the T-bus with the devices it's supposed to protect.

Note. *Depending on your installation, your Click 222 may be wired in different ways. If you're using terminal blocks on the lowest DIN rail, you will wire your sensor cable into those, and then wire from the terminal blocks to the Click 222. If you are not using terminal blocks, you will wire your sensor cable directly into the Click 222.*

2. Wire the cable from sensor 1 to the frontmost pluggable screw terminal block: connect the orange and white–striped wire to the screw terminal marked +485A. Connect the orange wire to the screw terminal marked -485A. (For ease, you can remove the terminal block from the device, wire it, then reinsert it.)
3. Wire the cable from sensor 1 to the middle pluggable screw terminal block: connect the blue and white–striped wire to the screw terminal marked +485C. Connect the blue wire to the screw terminal marked -485C.
4. If you are using a second sensor, repeat steps 2 and 3 using that sensor's cable. The orange and orange-striped wires go into -485B and +485B; the blue and blue-striped wires go into -485D and +485D.
5. Wire the backmost pluggable screw terminal block: connect the red wire into the screw terminal marked +DC and the black wire into -DC. Wire the drain into either of the terminals marked PE. If you are using two sensors, these three terminals will both have two wires (one from each cable) terminated in them.
6. Connect a 14 AWG wire between the other terminals marked PE to a grounded location, such as a grounding lug or an earth ground terminal block (if you are using terminal blocks).
7. If you are using two Click 222 devices, you can either ground them seperately or ground one of them and then connect the second one to it (by connecting a 14 AWG wire from one of its PE terminals to the free PE terminal on the first device).

The Click 222 is designed to be used with the Click 112/114 detector rack cards. To connect to the cards:

1. Connect a patch cord from the Click 222 RS-485 A port to a bus 1 port on the appropriate rack card.
2. Connect a patch cord from the Click 222 RS-485 B port to a bus 1 port on another rack card.
3. If you are using Click 112 cards, use a short patch cord to share bus 1 between cards dedicated to the same sensor, as shown with the two rightmost cards in the figure below.
4. If you have more than two sensors in your system, repeat steps 1–3 for all remaining rack cards.



5. Connect a patch cord from one of the Click 222 bridge ports to bus 2 of the rack cards.
6. Use short patch cords to daisy-chain bus 2 together on all the cards. This bus will be used for configuration.

See the knowledge base article *0518 Using the Click 112/114* for more information on configuring and using the detector rack cards.