# Click!™ Product Catalog

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Wavetronix Dealers
Contact us and we’ll set up a meeting with you and an authorized Wavetronix dealer to deliver Click! product information in person.

DEMO
Click! product demonstrations are available upon request. Call or email today!

Click! Warranty
Wavetronix offers a warranty on each Click! product for a period of one (1) year following the sale and shipment of each device. This warranty ensures that each Click! device will be free from defects; if any Click! device fails under normal use, Wavetronix will repair or replace it at no charge. This warranty applies only to devices manufactured by Wavetronix, and does not apply to equipment that has been altered or repaired without Wavetronix’ permission, or to equipment that has not been properly installed. To find out more about this warranty, contact Wavetronix or an authorized Wavetronix dealer.
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Simple Connectivity

The Wavetronix Click!™ line’s broad range of easy-to-use, easy-to-integrate products makes it easy to connect power and communications for traffic systems.

Wavetronix Click!™ products are all about making the right connections. Click! devices are designed to connect various traffic components into one unified system, providing the power, communications and signaling solutions needed for effective traffic control and management. With a broad range of products that are easy to use, Click! products are built and tested to quickly integrate together and to operate under even the harshest environmental conditions.

Broad Family of Products

Click! offers a wide range of in-the-field components that support traffic systems and communication networks. The breadth of the Click! product line makes Wavetronix the one-stop source for components compatible with many types of field cabinets.

Available components include:
- 900 MHz Radio
- 802.11b (WiFi) Radio
- GPRS Cellular Radio
- Bluetooth Radio
- Serial to Ethernet Converter
- RS-232 to RS-485 Converter
- Serial to Fiber Converters
- Surge Suppressors
- Power Supplies
- Contact Closure Modules

All components are easy-to-use and quickly integrate together to form a complete network. While the power and surge
DIN rail mountable modules are available in three form factors: DIN rail mountable modules; rack cards; and 170 Controller modem cards. This way, for most in-field communications, Wavetronix can provide the communication interface required for any type of traffic cabinet.

**Easy Integration**

Each product in the Click! line has been designed and tested to work together, reducing the amount of time required to integrate devices from multiple vendors as well as the time needed to solve the problems that can arise from integrating dissimilar devices. Two unique features help make Click! easy to integrate: first, Click! modules share a common power and communication bus, so each module literally “clicks” together for instant integration; second, Click! modules mount to a DIN rail, so the physical integration of all required modules into a single cabinet is simple, clean and easy to expand in a well-defined way without cluttering up the cabinet with different-sized boxes and power supplies.

The photograph below illustrates how easy it is to integrate Click! devices into a traffic monitoring cabinet. In this example, the cabinet is a fiber optic, AC-powered SmartSensor™ station with surge protection, power and communication modules all contained within a 12 inch by 14 inch by 8 inch fiberglass cabinet. Notice how the shared modular architecture and the simple wiring design of the Click! devices eliminates the mess of jumbled boxes and tangled wires common in traffic cabinets.

In addition to being clean and compact, the DIN rail mounting and hot-swappability of the Click! modules make it easy to upgrade or customize the cabinet without disrupting any other devices in the network. For example, a technician could convert this cabinet from fiber optic to wireless communications by simply removing the Click! 700™ Serial to Fiber converter and replacing it with a Click! 400™ 900 MHz radio. The exchange can be made without rewiring cables or drilling new holes; Click!’s “click and go” design does the job without causing unnecessary interruptions to the rest of the network.

**Reliable Solutions**

The Click! family’s common hardware and software platforms reduce the complexities of designing, building and maintaining a traffic monitoring system, while providing the power and communication solutions needed for effective traffic management. Contact Wavetronix to learn more about the value Click! products can add to your system. See the inside front cover for details.
Click! and Go Design

Modular architecture and intelligent configuration tools make the Wavetronix Click! products the easiest, most reliable way to build a traffic system.

The simple connectivity of the Wavetronix Click! product family makes it easy to design and implement traffic systems. From power and surge protection devices to in-the-field data communication solutions, Click! products have been engineered to simplify system design and standardize performance.

The technology that supports Click!’s simple connectivity is unique in the traffic equipment industry. First, each communication product shares a common communication interface for improved integration of multiple devices. Second, each Click! product is extensively tested throughout the design and manufacturing process to ensure that each device operates properly in even the harshest roadside conditions. Third, Click! products have a common architecture that makes it easy to install each device, and they share common software tools that simplify the configuration process. This common architecture makes the entire Click! line easy to maintain, with hot-swappable modular components, at-a-glance operation verification and diagnostic tools that help technicians quickly identify Click! devices that may not be operating properly.

Communication Interface
All Click! communication components are built with a standard form factor and they feature a common communication interface, or “T-Bus,” so that they can be easily hooked together. All communication coming into a Click! module is converted to RS-485 and distributed, along with power, to other Click! modules through the T-Bus, a daisy-chainable connector located at the base of each module. This common interface makes it easy to connect multiple Click! modules together in a variety of configurations.

For example, in the illustration above, users can create a 900 MHz to Ethernet conversion by simply plugging two T-Bus connectors together, snapping them onto a DIN rail and attaching the necessary Click! devices.

Built to Last
To ensure the longevity and reliability of each device, all Click! modules are subjected to a battery of tests. During development, every Click! module is subjected to NEMA TS2 specified vibration, temperature and shock testing; they also undergo all Click! products are manufactured to the strictest standards with aggressive environmental testing to ensure durability and reliability.
long-term extended temperature range testing before going into production; then, during the production and manufacturing stage, each device is tested to verify that it is working properly to minimize problems in the field. By the time a Click! module is installed and configured, it has been rigorously tested to ensure its performance and durability.

**Easy Installation**
The installation of Click! devices involves putting a DIN rail into the cabinet, clicking the modules into place and connecting a few wires. It’s that simple. Even the wiring has been simplified with Click!’s removable screw terminals, allowing technicians to pop out the terminal, wire the cable outside the cabinet and then plug back in the completed cable. Click! reduces the amount of hand-wiring required to install each device and saves the user time and money while mitigating the opportunity for errors.

Once the necessary Click! communication components have been installed, they must be configured to operate properly. Simple configurations are performed using the push-button mode switch on the face of each communication device. Using this button, technicians can auto-baud to a device, reset the module to factory defaults or set up a test link between modules. For example, using only the mode switch, the Click! 400™ 900 MHz radio can be set up as a client or server; it can perform a link test; and it can automatically find the baud rate of the SmartSensor or other serial device to which it is connected.

**Configuration Software**
Occasionally, a more complex configuration may be required. Wavetronix has created the Click! Supervisor™, a single Windows®-based configuration package that can be used for Click! modules. For example, some serial to Ethernet conversion devices can only be configured through a terminal program or through a Web interface, making it difficult to set up the device unless the technician knows its IP address or can navigate through the cryptic terminal program interface. Click! Supervisor simplifies this process with an easy-to-navigate interface that is designed to configure Click! devices; technicians only need to learn one configuration program, regardless of the number of Click! modules being used. This alone greatly reduces the time and expense of training people on different software packages.

Additionally, Click! Supervisor includes a library of custom drivers that already have all the configuration settings required to communicate with specific traffic devices. Users simply select the device they want to communicate with, and Click! Supervisor configures the Click! device with the appropriate settings. As a result, Click! Supervisor only exposes the user to those settings that absolutely must be changable.

**Simple Maintenance**
All Click! modules are hot-swappable, so if a device needs to be replaced for any reason, a technician can remove and exchange it without affecting the rest of the network. The LED displays on the front of each Click! device let technicians see at a glance if individual modules are operating properly, and Click! Supervisor includes diagnostic tools if a more intensive examination is required: simply connect to any Click! device through its RS-232 connector and run the diagnostic tool in Click! Supervisor to determine if there are any problems. All of these features simplify the maintenance of all Click! products, reducing the amount of time needed to identify and correct problems that might affect the performance of their entire system.

Click!’s simple connectivity, test-proven reliability, easy installation and configuration and simple maintenance make it easy to connect even the most complex traffic monitoring systems. Contact Wavetronix to learn more about the technology behind Click! and the benefits that simple connectivity can bring to your system. See the inside front cover for details.
Click! 100 — 16-Output Contact Closure Module

Creates contact closure outputs from SmartSensor data

Contact closures are a common component in traffic control systems. The Click! 100 16-Output Contact Closure module converts serial data from the Wavetronix SmartSensor™ into contact closures, which can then be input into a data logger or attached to a relay to interface with other devices. The Click! 100 is available in a standard, DIN rail-mountable format and is compatible with the SmartSensor 105, 125 and 200 models.

The Click! 100 offers four modes of operation: the Presence and Pulse modes support dual-loop speed trap emulation; the Actuation and One-loop Speed modes support single loop emulation. Each mode converts SmartSensor data into contact closures accessible on the module’s 16 output channels. Four control LEDs on the Click! 100’s front panel display the various modes while an additional 16 LEDs provide visual verification of the contact closure outputs.

**Features**
- 16 contact closures
- 8 lanes, dual loop traps
- Auto-bauds to SmartSensors
- Auto-configures loop trap emulation
- Keyed removable screw terminals
- 16 LEDs for contact closure verification
- 4 LEDs for mode selection
- Compatible with SS105, SS125, SS200
- Conformal coated

**Operating Modes**
- Presence: dual-loop speed trap emulation with dynamic closure duration
- Pulse: dual-loop speed trap emulation with fixed closure duration (125 ms)
- Actuation: single loop emulation (true presence)
- One-Loop Speed: single loop emulation with contact closure duration based on speed

**Dual-loop Speed Trap Emulation**
The Presence mode outputs a primary contact closure (loop 1) followed by a secondary contact closure (loop 2); the duration of each represents a vehicle’s duration in the emulated loop. Similarly, the Pulse mode outputs first a primary, and then a secondary, contact closure, but each output is a fixed duration of 125 ms.

**Single Loop Emulation**
The Actuation mode signals true presence information with 5 ms resolution. This mode can be used to signal a detection to a traffic controller or to increase the accuracy of occupancy data when traffic is slowing or stopping. Meanwhile, the One-loop Speed mode outputs contact closures based on vehicle speed and length. Both of these modes only output contact closures on the Click! 100’s primary channels.

**Easy Configuration and Integration**
The Click! 100 auto-configures by polling the SmartSensor for loop spacing and baud-rate information. Once the auto-configuration is complete, the Click! 100 defaults to Presence mode.

Interfacing with the Click! 100 is easy. As illustrated below, keyed, removable screw terminals can be wired before the unit is in place, reducing the chance for mistakes. The keyed terminals guarantee that the proper terminals are used for the primary and secondary channels, and are a feature of all Click! DIN rail mount modules.

Contact Wavetronix and find out how the Click! 100 can improve the contact closure outputs of your traffic system. See the inside front cover for details.
**Click! 100 Specifications**

- **Weight:** 0.20 lbs
- **Physical Dimensions:** 4.5 in. × 4 in. × 0.9 in.
- **Ambient Operating Temp:** -34°C to +74°C
- **Humidity:** Up to 95% RH
- **Power Supply Voltage:** +10 to +30 VDC
- **RS-485 Voltage Range:** -9 to +14 VDC
- **Baud Rate Setup:** Auto-detect
- **Baud Rates:** 9,600 to 57,600 bps
- **Power Consumption:** 0.6 W
- **Communications:** RS-485
- **Contact Closure Outputs:** 16
- **Number of Lanes (Speed Trap):** 8

**Ordering Information**

Click! 100 DIN Rail Mount ........................................ WX-SC-100

**Accessories**

- 20 AWG Shielded 2-Conductor Cable 9.5" .......... WX-SC-855
- 5-position T-bus Screw Terminal ..................... WX-SC-652
- DIN Rail 9" .................................................. WX-SC-650
- DIN Rail 12" ............................................... WX-SC-650-012

**Related Products**

- Click! 201 1 Amp Power Supply ......................... WX-SC-201
- Click! 202 2 Amp Power Supply ......................... WX-SC-202
- Click! 205 AC Surge Protector .......................... WX-SC-205
- Click! 206 0.5 Amp Circuit Breaker .................... WX-SC-206
- SmartSensor ................................................... WX-SS-105
- SmartSensor HD ............................................. WX-SS-125
- SmartSensor Advance ...................................... WX-SS-200

*More accessories and related products available.*
Click! 172/174 — Contact Closure Rack Cards

Easily integrates the Wavetronix SmartSensor with traffic controllers

**Features**  
- Automatically sets baud rate  
- Sets signaling mode and enables sensor output  
- Displays speed and detection count  
- Uses industry-standard RS-485 bus  
- Failsafe  
- Compatible with NEMA TS1 and TS2, 170, and 2070 traffic controllers  
- Conformal coated

**Applications**  
- Signalized intersection control  
- Dynamic warning systems

**Operating Modes**  
- Presence: dual-loop speed trap emulation with dynamic closure duration  
- Pulse: dual-loop speed trap emulation with fixed closure duration (125 ms)  
- Actuation: single loop emulation (true presence)  
- One-Loop Speed: single loop emulation with contact closure duration based on speed

**Models**  
- Click! 172 Rack Card: 2 channels  
- Click! 174 Rack Card: 4 channels

As traffic detection technologies have advanced, it has grown increasingly more challenging to incorporate these intelligent devices into legacy systems. The Click! 172 and 174 Contact Closure modules have been specifically designed to easily integrate the Wavetronix SmartSensor™ with existing traffic controllers, providing industry-standard contact closures for NEMA TS1, TS2, 170 and 2070 controllers.

The Click! 172 and 174 modules are similar in most respects, but they do have some key differences that help differentiate the two: the 172 module provides two channels of contact closures and occupies a single rack slot; the 174 module offers four channels of contact closures and fills two rack slots. Both are easy to install and operate, with standard operations controlled by a three-position Settings toggle switch: the first two positions are for configuration; the third position is for normal operation (see the illustration below right). Each toggle position represents one part in a three-step process for configuring and operating the Click! 172 and 174 devices.

**Step One**  
When the toggle switch is set to position 1, the module automatically connects to the SmartSensor associated with that module. Once connected, users press the Select button to select the sensor’s output mode. The selected mode will be shown on the LED display. At the same time, the module will be configured to generate the corresponding type of contact closure.

**Step Two**  
When the toggle switch is moved to position 2, the module is ready to map the SmartSensor’s outputs to contact closure channels. First, users specify a channel to configure by repeatedly pressing the Channel button until the desired channel number is shown on the LED display. Next, they assign a SmartSensor output to the selected channel by repeatedly pressing the Select button until the LED shows the desired output. Technicians simply repeat this process for each contact closure channel.

**Step Three**  
Move the toggle switch to position 3 and the module begins normal operation, providing contact closures based on its configuration. When a contact closure is being generated, the corresponding channel LED lights up, making it easy to verify operation. While in normal operating mode, the module continually checks its connection with the SmartSensor. If the connection is compromised for any reason, the module automatically enters a failsafe mode and signals a constant call on all channels.

These three simple steps make it easy to integrate SmartSensor’s consistently accurate vehicle detections with existing traffic controllers. Contact Wavetronix to find out how the Click! 172 and 174 Contact Closure modules can be a vital part of your traffic system. See the front inside cover for details.
Click! 172/174 Specifications

Weight: 0.40 lbs
Physical Dimensions: 4.5 in. x 1.13/2.32 in. x 7 in. (8 in. w/handle)
Ambient Operating Temp: -34°C to +75°C
Humidity: Up to 95% RH
Contact Closure Outputs: 2/4 Card edge contacts

Electrical Specifications

Maximum Current: 45 mA
Power Supply Voltage: +10 to +30 VDC
RS-485 Voltage Range: -9 to +14 VDC
Closed Switch Resistance: 100 Ohms
Maximum Switch Current: 30 mA
Maximum Switch Voltage: 50 VDC
Output Ratings: Opto-isolator Semiconductor Switch
Output Power Dissipation: 600 W
Output Surge Current: 100 A

Operational Features

Communications: RS-485 Connection
Baud Rates: 9,600 bps to 57,600 bps
Configuration: Auto configure w/SmartSensor
Output Indicator: 2/4 Red LEDs
Display: Dual 7 segment display w/power saving disable

Surge Properties

DC Power: Withstands differential DC power surge voltage of up to 4 kV- Common surge voltage up to 4 kV
Peak Surge Current: 10 kA (8 x 20us)

Ordering Information

Click! 172/174 Rack Cards........................WX-SC-172/WX-SC-174

Accessories

8” RS-485 Patch Cord (RJ-11)........................WX-SC-660
60” RS-485 Patch Cord (RJ-11).......................WX-SC-661

More accessories and related products available.
Click! 200 — Surge Protector
Protect devices from power surges over DC power and serial communication lines

Features
- Three-stage suppression design:
  - First stage gas tubes
  - Second stage inductors and TVS diodes
  - Third stage resettable fuses and varistors
- Convenient, hot-swappable power and communication buses
- Surge protection for RS-485, RS-232 and DC power
- DIN rail mounted for quick installation
- Pluggable screw terminals minimize problems due to incorrect wiring
- Designed for use with other Click! devices
- Conformal Coated

Models
- Click! 200 DIN Rail Mount

Power surges are one of the most common reasons for the failure of traffic devices installed in the field. The Click! 200 Surge Protection module features a three-stage surge suppression design that protects the Wavetronix SmartSensor™ and other devices from power surges over DC power and RS-232 and RS-485 communication lines.

The Click! 200 surge protector is hot-swappable, and the module features both protected and unprotected sides. The unprotected side of the Click! 200 should be wired to the cable most likely to conduct a power surge, and the surge ground (GND) on the unprotected side should be connected to earth ground. For example, in a pole-mount cabinet where all other lines coming into the cabinet are protected, the most likely source for a surge is the SmartSensor cable, so this cable should be wired to the unprotected side of a single Click! 200 module.

Some installations require more than one Click! 200 device for complete surge protection. In the illustration below, the installation has cabling that runs underground from the SmartSensor to the traffic cabinet. In this example, the buried cable is the most likely source of power surges and will require one Click! 200 to protect the sensor and another to protect the cabinet. Technicians would mount one Click! 200 as close to the sensor as possible, connecting the cable from the sensor to the module’s protected side; the second Click! 200 is mounted in the traffic cabinet, and both ends of the buried cable are connected to each Click! module’s unprotected side. If the distance between sensor and cabinet is greater than 250 feet, it is recommended that the RS-232 line on the unprotected side remain unconnected, as RS-232 will not reliably communicate with SmartSensor at longer distances.

Effective surge protection is a vital part of a traffic system. Contact Wavetronix and find out how the Click! 200 Surge Protection module can help protect your system’s components and your agency’s investment. See the inside front cover for details.
Click! 200 Specifications

- **Weight:** 0.30 lbs
- **Physical Dimensions:** 4.5 in. × 4 in. × 0.9 in.
- **Ambient Operating Temp:** -34°C to +74°C
- **Humidity:** Up to 95% RH
- **Lines Protected:** RS-485, RS-232 with CTS/RTS, DC Power
- **Protected Types:** Multi-stage Differential and Common Modes
- **RS-485 Surge:** Differential and Common Modes up to 4 kV, Clamping Voltage 8 VDC
- **RS-232 Surge:** Differential and Common Modes up to 4 kV, Clamping Voltage 11 VDC
- **DC Power:** Differential and Common Modes up to 4 kV, Clamping Voltage 26 VDC
- **Peak Surge Current:** 10 kA (8 X 20 us)
- **Power Consumption:** 0 W, Passive

Ordering Information

- Click! 200 DIN Rail Mount ........................................ WX-SC-200

Accessories

- 9.5” 20 AWG Shielded 2 Conductor Cable .............. WX-SC-855
- 5-position T-bus Screw Terminal .............................. WX-SC-652
- DIN Rail 9”................................................................ WX-SC-650-012
- DIN Rail 12”............................................................ WX-SC-650-012
- SmartSensor Cable .............................................. WX-SC-H701-040

Related Products

- Click! 201 1 Amp Power Supply .............................. WX-SC-201
- Click! 202 2 Amp Power Supply .............................. WX-SC-202
- Click! 205 AC Surge Protector ............................... WX-SC-205
- Click! 206 0.5 Amp Circuit Breaker ........................... WX-SC-206
- SmartSensor .......................................................... WX-SS-105
- SmartSensor HD ...................................................... WX-SS-125
- SmartSensor Advance ............................................ WX-SS-200

More accessories and related products available.
Click! 201/202 — Power Supply

Converts AC to DC and supplies power to all Click! DIN rail mount modules

Features

- Converts AC to DC power
- DIN rail mounted
- Meets NEMA TS2-1998 environmental specification
- UL listed
- Internal surge protection
- Pluggable keyed screw terminals
- DC OK LED

Models

- Click! 201 DIN Rail Mount: 1 Amp @ 24 VDC
- Click! 202 DIN Rail Mount: 2 Amp @ 24 VDC

One of the most important parts of any Click! installation is the power supply. Often technicians need to incorporate custom transformers or adapters for every communication product in a cabinet. The Click! 201 and 202 Power Supply modules make power management easy by providing power to every Click! DIN rail mounted product. Simply hook up a Click! power supply module and attach the power lines to the T-bus to supply power to every Click! module connected to that T-bus.

The Click! 201 and 202 modules convert AC to DC power, outputting 1 or 2 amps respectively at +24 VDC. All Click! devices have been thoroughly tested to work with either module. The illustration below shows a common power solution using the Click! 202 2-amp power supply; a Click! 205 surge suppressor to protect the Click! 202 from AC power surges; and a Click! 206 circuit breaker that uses replaceable fuses and allows connected devices to be quickly powered on or off.

In this example, the AC line is connected to the bottom of the Click! 206 circuit breaker, and continues from the top of the Click! 206 to the bottom of the Click! 205. AC ground and neutral go directly into the bottom of the Click! 205; the AC line and neutral continue from the top of the Click! 205 into the top of the Click! 202 power supply. The Click! 202 then converts the AC into DC power that comes out of the bottom of the Click! 202, where it can be used by other Click! modules.

When used together, these modules provide the easiest way to meet the power requirements of the Click! communication modules. Contact Wavetronix and find out how the Click! 201 and 202 Power Supply modules can simplify the power management needs of your system. See the inside front cover for details.
**Click! 201/202 Specifications**

- **Weight:** 0.46/0.55 lbs
- **Physical Dimensions:** 4.5 in. × 3.9 in. × 0.9 in./4.5 in. × 3.9 in. × 1.7 in.
- **Ambient Operating Temp:** -25°C to +74°C
- **Humidity:** Up to 95% RH
- **Input Voltage Range:** +85 to +264 VAC
- **Output Voltage:** +24 VDC ±1%
- **Output Current:** 1 A/2 A
- **Internal Fuse:** T1.25 AL 250 V/2.5 AT
- **Transient Surge Protection:** Varistor
- **Frequency:** 45 Hz to 65 Hz
- **Shock:** 30 g all spaces and directions

**Ordering Information**

- Click! 201 DIN Rail Mount ........................................... WX-SC-201
- Click! 202 DIN Rail Mount ........................................... WX-SC-202

**Accessories**

- 12 AWG Power Cable ........................................... WX-SC-640
- 8’ Male Plug Power Cord ........................................... WX-SC-669

**Related Products**

- Click! 206 0.5 Circuit Breaker ................................... WX-SC-206
- Click! 206 2 Amp Circuit Breaker .............................. WX-SC-206-02
- Click! 206 10 Amp Circuit Breaker ............................. WX-SC-206-10
- 20 Amp Circuit Breaker ........................................... WX-SC-863
- Click! 205 AC Surge Protector ................................... WX-SC-205
- Click! 200 Surge Protector ........................................ WX-SC-200
- 120 VAC Relay ..................................................... WX-SC-860

More accessories and related products available.
Click! 301 — Serial to Ethernet Converter

Easily adds network connectivity to serial devices

Features
- Converts half-duplex serial to Ethernet and vice-versa
- Includes multiple communication ports
- Uses either Ethernet or serial interfaces to configure baud rates
- Passed testing for the NEMA TS2-1998 environmental specification
- Supports the Click! Supervisor for easy setup and configuration
- Auto-reset of inactive sockets
- Conformal coated

Applications
- Controller Closed Loop Ethernet
- Sensor to Ethernet

Driver Library
- 170 Controller 1200 bps
- Point to Point
- Point to Multipoint
- Opticom
- SmartSensor (105, 125, 200)
- Others

Models
- Click! 301 DIN Rail Mount
- Click! 301 Rack Card
- Click! 301 170 Controller Card

As communication infrastructures grow, networked access to traffic equipment becomes a more common, more useful option for traffic agencies. Many devices in a typical traffic cabinet use RS-232 or RS-485 serial communications and cannot be accessed over a TCP/IP network. The Click! 301 Serial to Ethernet Converter brings network connectivity to serial devices, allowing agencies to take advantage of existing TCP/IP infrastructures.

The Click! 301 is an intelligent converter designed for easy integration. It provides simple connectivity between serial and Ethernet devices, quickly adding easy network access to serial equipment and enabling seamless communication between devices. Easy-to-use configuration tools simplify the installation process; with the “click and use” design of the Click! line, users can literally have the Click! 301 installed, configured and running in a matter of minutes.

Configuring devices for access to a TCP/IP network can be a daunting task. Typically, dozens of specialized parameters must be set to specific values in order for the configuration to be successful. Wavetronix has simplified this process by providing drivers for various types of devices. These drivers only require a few pieces of key information and automatically set the rest of the parameters to acceptable settings. This simplified driver technology literally reduces the configuration process down to a single screen and can be accessed using Click! Supervisor, the configuration software for Click! devices. Users can even save configurations to a file that can then be used as the starting point for additional device configurations.

The Click! 301 also features multiple connection points. Technicians can use the RS-232 DB-9 connector on the module’s front panel, the T-bus or the pop-out RS-485 connector to establish serial connections for Ethernet conversions. Any device attached to these connectors can communicate with the Click! 301 and immediately becomes part of the network.

The Click! 301 easily expands systems and adds connectivity to serial-based networks. Contact Wavetronix to find out how the Click! 301 can help add network access to your traffic system. See the front inside cover for details.
Click! 301 Specifications

Weight: 0.20 lbs
Physical Dimensions: 4.5 in. x 4 in. x 0.9 in.
Ambient Operating Temp.: -34°C to +74°C
Humidity: Up to 95% RH
Power Supply Voltage: +10 to +30 VDC
RS-485 Voltage Range: -9 to +14 VDC
RS-232 Voltage Range: ±25 VDC
Baud Rate Setup: Auto-detected
RS-485 Turnaround Time: 1.1 mS
Power Consumption: 1 W
Communications: Ethernet, RS-485 & RS-232 DCE
Baud Rates: 300 to 115,200 bps
Ethernet Speed: 10/100 Mb Auto-negotiate

Ordering Information
Click! 301 DIN Rail Mount ........................................ WX-SC-301
Click! 301 Rack Card ...................................... WX-SC-301-RACK
Click! 301 170 Controller Card ........................ WX-SC-301-170A

Accessories
Ethernet Inline Surge ................................................ WX-SC-668
Straight-through RS-232 Modem Cable .......................... WX-SC-679
6’ CAT5 Ethernet Cable ................................................ WX-SC-690
9.5” 20 AWG Shielded 2 Conductor Cable .................. WX-SC-855
5 Position T-bus Screw Terminal ............................... WX-SC-652
DIN Rail- 9” ...................................................... WX-SC-650
DIN Rail- 12” .................................................... WX-SC-650-012

Related Products
Power Over Ethernet & Surge Protection .................. WX-SC-203
CAT5 Lightning Surge Protector ................................. WX-SC-208
8 Port Ethernet Switch .............................................. WX-SC-600
Click! 202 2 Amp Power Supply ................................ WX-SC-202

More accessories and related products available.
Click! 304/305 — RS-232 to RS-485/USB

Improves serial communications and easily expands serial networks

Features
• Click! 304 converts data between RS-232 and RS-485
• Click! 305 converts RS-232 and RS-485 to USB
• Auto-bauds to serial port devices
• Meets NEMA TS2 1998 environmental specifications
• Conformal Coated

Applications
• Convenient connectivity to laptop through USB
• Range extension of an RS-232 bus
• RS-485 repeater/range extender

Models
• Click! 304/305 DIN Rail Mount

• Click! 304/305 Rack Card
• Click! 304/305 170 Controller Card

Serial communication is commonly used in traffic systems, but not all devices support both RS-232 and RS-485 communications. The Click! 304 and 305 devices are basic data conversion modules that quickly translate communication inputs on any port and output the communication on all other ports at the same time. All Click! communication devices operate the same way, ensuring that a system can support RS-232 and RS-485 communications regardless of what Click! module is being used.

The Click! 304 converts half-duplex RS-232 to half-duplex RS-485 and vice versa. One application for the Click! 304 is extending an RS-232 bus: if a traffic sensor or other RS-232 serial device exceeds the 250 foot range, the Click! 304 can be used to convert RS-232 to RS-485, extending the range of transmission up to 2000 feet, even with surge suppressors on both ends of the transmission line.

The Click! 305 converts serial communications but also adds a port for serial to USB conversions. With this device, laptop computers that do not have built-in RS-232 ports can still communicate with standard serial devices. After installing the appropriate driver, technicians can plug a USB cable between the laptop and the Click! 305 and communicate with all serial devices connected to the Click! 305 module.

The Click! 304 and 305 modules improve serial communications and extend the capabilities of a serial network. Contact Wavetronix to find out how these devices can ensure the reliability of your serial communications. See the front inside cover for details.
Click! 304/305 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Weight</td>
<td>0.20 lbs</td>
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<tr>
<td>Physical Dimensions</td>
<td>4.5 in. × 4 in. × 0.9 in.</td>
</tr>
<tr>
<td>Ambient Operating Temp</td>
<td>-34°C to +74°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>Up to 95% RH</td>
</tr>
<tr>
<td>Input Voltage Range</td>
<td>+10 to +30 VDC</td>
</tr>
<tr>
<td>RS-485 Voltage Range</td>
<td>-9 to +14 VDC</td>
</tr>
<tr>
<td>RS-232 Voltage Range</td>
<td>±25 VDC</td>
</tr>
<tr>
<td>Baud Rates</td>
<td>300 to 115,200 bps</td>
</tr>
<tr>
<td>RS-485 Turnaround Time</td>
<td>1.1 ms</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>0.25 W</td>
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<tr>
<td>Click! 304 Communications</td>
<td>RS-485 and RS 232 DCE</td>
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<td>Click! 305 Communications</td>
<td>USB 1.1, RS-485 and RS-232 DCE</td>
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<tr>
<td>Communication Direction</td>
<td>Bidirectional, Half Duplex</td>
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</table>

Ordering Information

Click! 304/305 DIN Rail Mount ...................... WX-SC-304/305
Click! 304/305 Rack Card ..................... WX-SC-304/305-RACK
Click! 304/305 170 Controller Card..... WX-SC-304/305-170A

Accessories

DB9F to DB9F Null Modem Adapter ................. WX-SC-695
Straight-through RS-232 Modem Cable .......... WX-SC-679
RJ-11 Patch Cord 60” ............................. WX-SC-661
20 AWG Shielded 2-Conductor Cable 9.5” ........ WX-SC-855
5-position T-bus Screw Terminal ............... WX-SC-652
DIN Rail 9” ........................................ WX-SC-650
DIN Rail 12” ...................................... WX-SC-650-012

Related Products

Click! 200 Surge Protector ...................... WX-SC-200
Click! 201 1 Amp Power Supply .................. WX-SC-201
Click! 202 2 Amp Power Supply .................. WX-SC-202

More accessories and related products available.
Modern, advanced technologies are allowing transportation agencies to deploy traffic systems over greater distances and in even more remote locations. The Click! 400 is a wireless, spread-spectrum radio that supports serial communication over line-of-sight distances of up to 20 miles. With the Click! 400, agencies can retrieve data from sensors in remote areas, and they can access several sensors at once from one location. The Click! 400 also simplifies installation when the sensor and the traffic cabinet with which it needs to communicate are located on opposite sides of a roadway.

One of the challenges of setting up long-distance communications is debugging a faulty link and finding out where data is getting lost. Communication problems can be caused by a number of things: a sensor may not be working properly; radios may not be set up to communicate with each other correctly; or different devices may not be running at the same baud rate.

Wavetronix has created several easy-to-use tools to simplify the testing and debugging of Click! devices, and one of the most effective tools is a link test.

To test the link of a Click! 400, technicians need to set one module as a server by pressing and holding the push-button mode switch on the Click! 400’s front panel until the blue “Wireless Link” LED begins to blink; they need to set another Click! 400 module as a client by pressing and holding the mode switch until the blue “Wireless Link” LED is solid. Click! 400 modules that have been auto-bauded to a SmartSensor are set as clients by default (see the Click! 402 article on page 26 for more information on how to auto-baud a Click! module).

When a Click! 400 is in server “link test” mode, the red and blue LEDs will stay on and the green LED will blink, indicating that data is being transmitted (See the illustration below left). When the module is in client “link test” mode, the red LED will stay on: if the client and server are connected, then the blue LED will come on; if the client is not receiving data from the server, the yellow LED will come on; if the yellow LED is blinking, then the client is receiving bad data; and if the green LED is blinking, then the module is receiving good data in the right order. Technicians can exit the “link test” mode by quickly pressing and releasing the mode switch.

Easy-to-use debugging tools make the Click! 400 the perfect solution for long distance communications. Contact Wavetronix to find out how the Click! 400 can improve the communications in your traffic system. See the inside front cover for details.
**Click! 400 Specifications**

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<tr>
<th>Specification</th>
<th>Details</th>
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<td>Weight</td>
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<tr>
<td>Physical Dimensions</td>
<td>4.5 in. × 4 in. × 0.9 in.</td>
</tr>
<tr>
<td>Ambient Operating Temp.</td>
<td>-34°C to +74°C</td>
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<tr>
<td>Humidity</td>
<td>Up to 95% RH</td>
</tr>
<tr>
<td>Power Supply Voltage</td>
<td>+10 to +30 VDC</td>
</tr>
<tr>
<td>RS-485 Voltage Range</td>
<td>-9 to +14 VDC</td>
</tr>
<tr>
<td>RS-232 Voltage Range</td>
<td>±25 VDC</td>
</tr>
<tr>
<td>RS-485 Turnaround Time</td>
<td>1.1 mS</td>
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<tr>
<td>Power Consumption</td>
<td>1.6 W Typical</td>
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<td>Communications</td>
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<td>Baud Rates</td>
<td>1,200 to 115,200 bps</td>
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<tr>
<td>RF Transmit Power</td>
<td>1 W maximum (adjustable)</td>
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<tr>
<td>RF Connector</td>
<td>Reverse Polarized SMA</td>
</tr>
</tbody>
</table>

**Ordering Information**

- Click! 400 DIN Rail Mount .................................................. WX-SC-400
- Click! 400 Input File Rack ............................................... WX-SC-400-RACK
- Click! 400 170 Controller Card ........................................... WX-SC-400-170A

**Accessories**

- Universal Antenna Mount w/ U-Bolt Kit .................................. WX-SC-451
- Straight-through RS-232 Modem Cable .................................... WX-SC-679
- 1’ N-Male to RPSMA Male Cable ............................................ WX-SC-665
- 9.5” 20 AWG Shielded 2-conductor Cable .................................. WX-SC-855
- 5-position T-bus Screw Terminal ......................................... WX-SC-652
- DIN Rail 9” ........................................................................... WX-SC-650
- 7” 900 MHz Omni-directional Antenna ..................................... WX-SC-461
- 5 dBi Omni-directional 900 MHz Antenna ................................... WX-SC-452
- 9 dBi Directional 900 MHz Yagi Antenna ................................... WX-SC-453

**Related Products**

- N-Female to N-Female Bulkhead Coaxial Surge ......................... WX-SC-207
- Click! 201 1 Amp Power Supply ............................................. WX-SC-201
- Click! 202 2 Amp Power Supply ............................................. WX-SC-202

*More accessories and related products available.*
Click! 401 — Serial to 802.11b Radio

Convenient remote access for mobile data collection

Features
- Provides TCP/IP access to serial devices
- Includes TCP/IP stack with embedded web server interface
- Converts data between RS-485 and 802.11b protocols
- Converts data between RS-485 and RS-232 protocols
- Auto-bauds to serial port devices
- Offers password and 64/128-bit WEP protection
- Meets NEMA TS2 1998 Environmental Specifications
- Auto reset of inactive sockets
- Conformal coated

Models
- Click! 401 DIN Rail Mount
- Click! 401 Rack Card
- Click! 401 170 Controller Card

Applications
- Remote Data Access
- Wire Replacement
- Cabinet to Cabinet Network

Driver Library
- SmartSensor (105, 125, 200)
- Point-to-point
- Point-to-multipoint
- Others

Mobile data collection from in-the-field devices poses a number of problems. In addition to environmental conditions, technicians also take huge risks whenever they attempt to work near a road, especially on corridors with a heavy traffic flow. The Click! 401 Serial to 802.11b radio is an easy way to make mobile data collection safer, more convenient and more efficient. The Click! 401 can streamline the mobile data collection process; technicians don’t even need to leave their vehicles but can park, establish a wireless connection between their laptop and the Click! 401 in the cabinet and begin downloading data.

The Click! 401 allows serial devices to communicate wirelessly by converting either RS-232 or RS-485 to 802.11b and vice versa. The 401 module features an embedded TCP/IP stack that converts serial data streams into Internet packets; each serial device connected to a Click! 401 will have an IP address so it can be accessed remotely and securely.

Configuring the Click! 401 is easy. The Click! Supervisor configuration tool provides a simple interface that allows users to make point to point, point to multi-point, and basic SmartSensor™ connections.

Click! 401 improves mobile data collection by protecting technicians from environmental elements; by protecting technicians from the dangers of working near a busy roadway; and by improving the efficiency of a mobile data collection system. Contact Wavetronix to find out if Click! 401 is the right answer for your system’s mobile data collection needs. See the inside front cover for details.

With Click! 401, traffic data can be downloaded from inside a vehicle.
**Click! 401 Specifications**

- **Weight:** 0.20 lbs
- **Physical Dimensions:** 4.5 in. × 4 in. × 0.9 in.
- **Ambient Operating Temp:** -34°C to +74°C
- **Humidity:** Up to 95% RH
- **Power Supply Voltage:** +10 to +30 VDC
- **RS-485 Voltage Range:** -9 to +14 VDC
- **RS-232 Voltage Range:** ±25 VDC
- **RS-485 Turnaround Time:** 1.1 mS
- **Power Consumption:** 2 W
- **Communications:** 802.11b, RS-485 and RS-232 DCE
- **Baud Rates:** 300 to 115,200 bps
- **RF Transmit Power:** 100 mW Maximum (adjustable)
- **RF Connector:** Reverse Polarized SMA

**Ordering Information**

- Click! 401 DIN Rail Mount ........................................ WX-SC-401
- Click! 401 Rack Card ...................................... WX-SC-401-RACK
- Click! 401 170 Controller Card ......................... WX-SC-401-170A

**Accessories**

- Universal Antenna Mount with U-Bolt Kit.......... WX-SC-451
- Straight-through RS-232 Modem Cable .............. WX-SC-679
- 1’ N male to RPSMA Male Cable .......... WX-SC-665
- 9.5” 20 AWG Shielded 2 Conductor Cable .......... WX-SC-855
- 5 Position T-bus Screw Terminal ............. WX-SC-652
- DIN Rail 9” .......................................................... WX-SC-650
- DIN rail 12” .......................................................... WX-SC-650-012
- N-Female to N-Female Bulkhead Coaxial Surge .. WX-SC-207
- 2.4GHz 2.5dBi Indoor Whip Antenna .......... WX-SC-846
- 12dBi Mini Directional Antenna ............. WX-SC-455

**Related Products**

- Click! 202 2 Amp Power Supply ......................... WX-SC-202
- Click! 201 1 Amp Power Supply ......................... WX-SC-201

*More accessories and related products available.*
Click! 402 — Serial to GPRS Radio

Provides cell-based remote access to serial traffic equipment

**Features**
- TCP/IP addressable
- Optional static IP address
- Accepts inbound connections
- Uses GPRS network
- Auto-connects to network
- Approved Cingular network device
- Auto reset of inactive sockets
- Conformal coated

**Applications**
- Remote data download
- Remote management

**Driver Library**
- SmartSensor (105, 125, 200)
- Others

**Models**
- Click! 402 DIN Rail Mount
- Click! 402 Rack Card
- Click! 402 170 Controller Card

General Packet Radio Service (GPRS) is a powerful communication protocol that allows cell phone service providers to allocate portions of their cell bandwidth for data transmissions. The Click! 402 Serial to GPRS radio takes advantage of this technology, adding cell-based TCP/IP access to any attached serial device.

Once service is established, users can connect to their serial equipment without having to run communication lines to remote cabinets. As a result, users can access serial devices in the field and download data or change configuration settings remotely from their desk, saving agencies the time and expense required to visit each remote location to collect data or manage devices.

Like all Click! communication modules, the Click! 402 features a mode switch that allows users to cycle through various modes of operation, including factory reset and auto-baud. The auto-baud mode simplifies the connection process because users do not need to know the baud rate of an attached serial device in order to successfully link the device to the communications network.

To activate the auto-baud mode, users press and hold the mode switch until the solid green LED comes on. As the device automatically determines the baud rate of the connected device, the green LED will be solid and the red LED will be on but blinking every few seconds. As illustrated below, there are two possible outcomes for the auto-baud process: if the auto-baud is successful, then the red LED will be solid and all other LEDs will be off (the yellow LED may flash intermittently as the module receives data); if the auto-baud fails, then both the red and yellow LEDs will be solid.

Auto-baud can also be used as a diagnostic tool to verify the communication link without the use of external test equipment. Consider a system that places three cabinets between a sensor and the final destination. After all devices have been installed, users can test the communication flow by running auto-baud on a Click! device in Cabinet A – the cabinet farthest from the sensor. A successful test means that communication with the sensor is intact, and a failed test means the communication link is broken. If the link is broken, then users would run auto-baud on a Click! device in Cabinet B – the cabinet next closest to the sensor: success in Cabinet B would indicate the link is broken between Cabinets A and B. Once the link is repaired, users would run auto-baud again in Cabinet A; a successful auto-baud means that the link has been properly repaired.

Remote access, combined with auto-baud’s configuration and diagnostic capabilities, makes the Click! 402 an invaluable part of any traffic system. Contact Wavetronix to find out how to add flexible, cell-based TCP/IP to your serial traffic devices. See the inside front cover for details.
**Click! 402 Specifications**

- **Weight:** 0.20 lbs
- **Physical Dimensions:** 4.5 in. × 4 in. × 0.9 in.
- **Ambient Operating Temp:** -34°C to +74°C
- **Humidity:** Up to 95% RH
- **Power Supply Voltage:** +10 to +30 VDC
- **RS-485 Voltage Range:** -9 to +14 VDC
- **RS-232 Voltage Range:** ±25 VDC
- **Baud Rates:** 1200 to 115,200 bps
- **RS-485 Turnaround Time:** 1.1 ms
- **Power Consumption:** 2 W
- **Communications:** GPRS, RS-485 and RS-232 DCE
- **RF Transmit Power:** 1 W
- **RF Connector:** Reverse Polarized SMA

**Ordering Information**

- Click! 402 DIN Rail Mount ........................................ WX-SC-402
- Click! 402 Rack Card ........................................ RX-SC-402-RACK
- Click! 402 170 Controller Card .......................... WX-SC-402-170A

**Accessories**

- Universal Antenna Mount w/ U-bolt Kit................. WX-SC-451
- Straight-through RS-232 Modem Cable............... WX-SC-679
- N Male to RPSMA Male Cable .......................... WX-SC-665
- 20 AWG Shielded 2-conductor Cable 9.5”........... WX-SC-855
- 5-position T-bus Screw Terminal .................... WX-SC-652
- DIN Rail 9”............................................... WX-SC-650
- DIN Rail 12”............................................. WX-SC-650-012
- N Female to N Female Bulkhead Coaxial Surge .... WX-SC-207
- Cellular/PCS/GPRS Antenna ........................ WX-SC-854

**Related Products**

- Click! 201 1 Amp Power Supply ....................... WX-SC-201
- Click! 202 2 Amp Power Supply ....................... WX-SC-202

More accessories and related products available.
Click! 403 — Serial to Bluetooth® Radio

Easily adds the convenience of Bluetooth to traffic devices

**Features**
- Converts half-duplex serial communication to Bluetooth® and vice-versa
- Auto-bauds to serial devices
- Includes two RS-232 ports and two RS-485 ports for device pass-through
- Uses either Bluetooth® or serial interface to configure the device
- Conformal coated

**Applications**
- Direct cable replacement with a distance of 150 feet (in a non-metal cabinet)
- Monitor and configure sensors without physically connecting to the sensor

**Models**
- Click! 403 DIN Rail Mount
- Click! 403 Rack Card
- Click! 403 170 Controller Card

Serial communications are commonly used in traffic systems, but most new laptops and Pocket PC® devices do not have serial ports, so they cannot be used to configure serial devices. Also, most traffic system installations require that technicians be able to monitor traffic as they configure devices; on busy roadways, a technician may need to connect to a sensor from across the roadway, from a location upstream from the sensor, or from inside a vehicle. Serial communications do not offer this level of flexibility or convenience.

The Click! 403 Serial to Bluetooth® radio solves these problems by providing untethered, wireless connections to serial devices. With a Click! 403 and a laptop or Pocket PC that supports Bluetooth, it is possible to quickly make wireless serial connections and to configure and retrieve data without physically connecting to the installed equipment.

As illustrated below, wireless Bluetooth connections can be a powerful tool in a traffic monitoring system. The Click! 403 has a line-of-sight range of up to 150 feet if installed in a non-metal cabinet; if the cabinet is metal, simply keep the cabinet door open. A technician can stand at the side of a road or in a bucket truck and configure a SmartSensor using a laptop or Pocket PC to communicate with a Click! 403 installed in a nearby traffic cabinet.

Contact Wavetronix to find out how the Click! 403 can add the power of Bluetooth to your traffic system. See the inside front cover for details.
Click! 403 Specifications

- **Weight:** 0.20 lbs
- **Physical Dimensions:** 4.5 in. x 4 in. x 0.9 in.
- **Ambient Operating Temp:** -34°C to +74°C
- **Humidity:** Up to 95% RH
- **Power Supply Voltage:** +10 to +30 VDC
- **RS-485 Voltage Range:** -9 to +14 VDC
- **RS-232 Voltage Range:** ±25 VDC
- **RS-485 Turnaround Time:** 1.1 mS
- **Power Consumption:** 0.5 W
- **Communications:** Bluetooth, RS-485 and RS-232 DCE
- **Baud Rates:** 1,200 to 115,200 bps
- **RF Transmit Power:** 50 mW Effective (adjustable)
- **RF Connector:** N/A, Internal Antenna

Ordering Information

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<thead>
<tr>
<th>Product Description</th>
<th>Part Number</th>
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<tbody>
<tr>
<td>Click! 403 DIN Rail Mount</td>
<td>WX-SC-403</td>
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<tr>
<td>Click! 403 Rack Card</td>
<td>WX-SC-403-RACK</td>
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<tr>
<td>Click! 403 170 Controller Card</td>
<td>WX-SC-403-170A</td>
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<tr>
<td>Accessories</td>
<td></td>
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<tr>
<td>Straight-through RS-232 Modem Cable</td>
<td>WX-SC-679</td>
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<tr>
<td>9.5” 20 AWG Shielded 2 Conductor Cable</td>
<td>WX-SC-855</td>
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<tr>
<td>5-position T-bus Screw Terminal</td>
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<td>DIN Rail 9”</td>
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<td>DIN Rail 12”</td>
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Related Products

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<tr>
<td>Click! 202 2 Amp Power Supply</td>
<td>WX-SC-202</td>
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</table>

More accessories and related products available.
Many cities have a fiber-optic infrastructure in place and need a way to integrate it with their traffic systems. The Click! 700 and 701 Serial to Fiber-optic Converter modules are a simple way to link serial data devices with an existing fiber-optic network, especially for that all-important “last-mile” connection. Both modules use multi-mode optics; the Click! 700 has a maximum range of 1 mile; the range of the Click! 701 reaches up to 2 miles.

Form Factors
Like all Click! communication products, the Click! 700 and 701 are available in three form factors that support a wide array of installation options.

Features
- Converts data between RS-485 and Fiber-optic protocols
- Converts data between RS-485 and RS-232 protocols
- Auto-bauds to serial devices
- Provides fiber-optic link test
- Conformal coated

Applications
- Last mile connectivity
- TOC Network
- Cabinet-to-cabinet network
- Remote data access
- Master to local controller

Models
- Click! 700/701 DIN Rail Mount
- Click! 700/701 Rack Card
- Click! 700/701 170 Controller Card

The DIN rail mount form factor’s compact size and convenient connection methods make it an ideal choice for many crowded cabinets. Wavetronix offers additional Click! DIN rail mount devices for power, power conditioning, communication, and signaling.

The Click! rack cards plug directly into a cabinet’s rack and take their power from the backplane for hassle-free operation. All you need to use a Click! rack card is a free slot in your rack.

The Click! 170 Controller Modem card extends the reach of 170 controllers without requiring custom programming. The serial interface between the controller and the Click! device provides a transparent data path to a communications engine that connects the 170 to the outside world.

Simple Configuration
The Click! Supervisor software tool provides simple access to the few configuration parameters required to set up a communications link. Setup is especially quick and easy when you use one of the simplified drivers included with Click! Supervisor.

Modular Design
Each Click! product features a modular design. For example, all three Click! 700 and 701 form factors are configured and operate in exactly the same way; the same circuit board found in the DIN rail mount version is used as a daughter board in the rack card and 170 Controller modem card versions. This same modular design is found in all Click! communication converters.

Three form factors and only one configuration process makes the Click! product line a perfect solution for simple system expansion. Contact Wavetronix to find out how the Click! 700 and 701 can help your system take advantage of existing fiber-optic networks no matter what installation option is required. See the front inside cover for details.
**Click! 700/701 Specifications**

<table>
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<td>Ambient Operating Temp</td>
<td>-34°C to +74°C</td>
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<td>Humidity</td>
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</tr>
<tr>
<td>RS-485 Voltage Range</td>
<td>-9 to +14 VDC</td>
</tr>
<tr>
<td>RS-232 Voltage Range</td>
<td>±25 VDC</td>
</tr>
<tr>
<td>RS-485 Turnaround Time</td>
<td>1.1 mS</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>0.6 W</td>
</tr>
<tr>
<td>Communications</td>
<td>Fiber, RS-485 and RS-232 DCE</td>
</tr>
<tr>
<td>Baud Rates</td>
<td>300 to 115,200 bps</td>
</tr>
<tr>
<td>Wavelength</td>
<td>820 nm / 1300 nm</td>
</tr>
<tr>
<td>Maximum Distance</td>
<td>1 mile / 2 miles</td>
</tr>
<tr>
<td>Fiber Type</td>
<td>Multimode with ST connector</td>
</tr>
</tbody>
</table>

**Ordering Information**

- Click! 700/701 DIN Rail Mount......................... WX-SC-700/701
- Click! 700/701 Rack Card............................ WX-SC-700/701-RACK
- Click! 700/701 170 Controller Card........... WX-SC-700/701-170A

**Accessories**

- Straight-through RS-232 Modem Cable............... WX-SC-679
- 9.5" 20 AWG Shielded 2-conductor Cable .......... WX-SC-855
- 5-position T-bus Screw Terminal..................... WX-SC-652
- DIN Rail 9"........................................... WX-SC-650
- DIN Rail 12".......................................... WX-SC-650-012

**Related Products**

- Click! 202 2 Amp Power Supply...................... WX-SC-202
- Click! 201 1 Amp Power Supply...................... WX-SC-201

*More accessories and related products available.*
Click! 800 — Alert Module
A versatile device perfect for a variety of traffic applications

Wavetronix has taken the simple connectivity, affordability and reliability of the Click! product line and is creating a series of devices designed for more complex traffic applications. The versatile Click! 800 Alert module is the first of these devices. It filters the event data it receives from a traffic sensor; pairing a Click! 800 module with the Wavetronix SmartSensor HD™ produces a highly accurate system perfect for a number of different applications.

The Click! 800 works by polling a SmartSensor™ at user-defined intervals. As events are received from the sensor, the module filters the data based on vehicle speed and length. Events that meet the user-defined threshold are passed on to a Click! contact closure module, while events that do not meet the criteria are ignored. The data can be transmitted to the Click! 800 over any Click! communication module, creating a low-cost, easy-to-install system.

The illustration below shows a common deployment using the Click! 800 in a Truck Rollover Warning system. In this example, a SmartSensor HD has been installed on the off-ramp to track vehicles and speeds. This data is sent wirelessly from the sensor to a Click! 800 module which is configured to look for vehicles longer than 20 feet traveling over 50 mph. If the data meets this criteria, it is passed onto a Click! 100 Contact Closure module, which interfaces with a relay that activates the flashers on the warning sign.

The same Click! 800 module can be used in a queue detection system as well. Instead of filtering vehicles longer than 20 feet traveling over 50 mph, the Click! 800 can be configured to filter vehicles traveling slower than 20 mph. The contact closure can then activate a variable message sign warning drivers of the slowdown ahead.

Combined with SmartSensor’s consistent accuracy and the versatility of the Click! communication products, the Click! 800 is a powerful tool for sophisticated traffic applications. Contact Wavetronix to find out how the Click! 800 can improve your traffic systems. See the inside front cover for details.

Features
- Filters vehicle detection data
- Compatible with SS105 & SS125
- User configurable call duration
- User configurable polling interval
- Automatically starts/stops polling for vehicle detection data
- LED display for normal/configuration modes
- Conformal Coated

Models
- Click! 800 DIN Rail Mount

Applications
- Truck Rollover Warning
- Queue Detection
- Overspeed Detection

Driver Library
- Overspeed
- Underspeed
- MaxLength
- Truck Overspeed
- Others

Wavetronix
Truck Rollover Warning System

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Wavetronix
Truck Rollover Warning System
### Click! 800 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>0.20 lbs</td>
</tr>
<tr>
<td>Physical Dimensions</td>
<td>4.5 in. × 4 in. × 0.9 in.</td>
</tr>
<tr>
<td>Ambient Operating Temp</td>
<td>-34°C to +74°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>Up to 95% RH</td>
</tr>
<tr>
<td>Power Supply Voltage</td>
<td>+10 to +30 VDC</td>
</tr>
<tr>
<td>RS-485 Voltage Range</td>
<td>-9 to +14 VDC</td>
</tr>
<tr>
<td>RS-232 Voltage Range</td>
<td>±25 V</td>
</tr>
<tr>
<td>RS-485 Turnaround Time</td>
<td>1.1 mS</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>0.25 W</td>
</tr>
<tr>
<td>Communications</td>
<td>USB 1.1, RS-485 and RS-232 DCE</td>
</tr>
<tr>
<td>Baud Rates</td>
<td>300 to 115,200 bps</td>
</tr>
<tr>
<td>Communication Direction</td>
<td>Bidirectional, Half Duplex</td>
</tr>
</tbody>
</table>

### Ordering Information

- **Click! 800 DIN Rail Mount**: WX-SC-800

### Accessories

- Straight-through RS-232 Modem Cable: WX-SC-679
- 9.5 “ 20 AWG Shielded 2 Conductor Cable: WX-SC-855
- 5 Position T-bus Screw Terminal: WX-SC-652
- DIN Rail 9”: WX-SC-650
- DIN Rail 12”: WX-SC-650-012
- T-Bus Power Only connector: WX-SC-870
- 120 VAC Relay with 24 VDC Input: WX-SC-860

### Related Products

- **Click! 202 2 Amp Power Supply**: WX-SC-202
- **Click! 100 Contact Closure**: WX-SC-100
- **Click! 200 DC, RS-485, RS-232 Surge Protector**: WX-SC-200
- **SmartSensor HD**: WX-SS-125
- **SmartSensor 105**: WX-SS-105

*More accessories and related products available.*
## Product Selection Guide

<table>
<thead>
<tr>
<th>Category</th>
<th>Module Description</th>
<th>Page</th>
<th>Model</th>
<th>Module Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Detector Outputs</strong></td>
<td>16-Output Contact Closure Module</td>
<td>10</td>
<td>100</td>
<td>Creates contact closure outputs from SmartSensor data</td>
</tr>
<tr>
<td></td>
<td>2-Channel Rack Card</td>
<td>12</td>
<td>172</td>
<td>2 channels, TS1, TS2, 2070, 170 detector racks</td>
</tr>
<tr>
<td></td>
<td>4-Channel Rack Card</td>
<td>12</td>
<td>174</td>
<td>4 channels, TS1, TS2, 2070, 170 detector racks</td>
</tr>
<tr>
<td><strong>Detection Alarms</strong></td>
<td>Speed / Length Alert Module</td>
<td>32</td>
<td>800</td>
<td>A versatile device perfect for a variety of traffic applications</td>
</tr>
<tr>
<td><strong>Power Supplies</strong></td>
<td>AC to DC Power Supply</td>
<td>16</td>
<td>201</td>
<td>Converts AC to DC and supplies power to all Click! DIN rail mount modules</td>
</tr>
<tr>
<td></td>
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<td>16</td>
<td>202</td>
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</tr>
<tr>
<td><strong>Surge Protectors</strong></td>
<td>DC Surge Protector</td>
<td>14</td>
<td>200</td>
<td>Protect devices from power surges over DC power lines</td>
</tr>
<tr>
<td><strong>Wired Communications</strong></td>
<td>Serial to Ethernet Converter</td>
<td>18</td>
<td>301*</td>
<td>Easily adds network connectivity to serial devices</td>
</tr>
<tr>
<td></td>
<td>Serial Converter</td>
<td>20</td>
<td>304*</td>
<td>RS-485 to RS-232 converter</td>
</tr>
<tr>
<td></td>
<td>Serial to USB 1.1 Converter</td>
<td>20</td>
<td>305*</td>
<td>Serial to USB 1.1 com port converter with RS-485 to RS-232 converter</td>
</tr>
<tr>
<td></td>
<td>Serial to Fiber Optic Converter</td>
<td>30</td>
<td>700*</td>
<td>Allows serial-based traffic systems to communicate serial lines</td>
</tr>
<tr>
<td></td>
<td>Serial to Fiber Optic Converter</td>
<td>30</td>
<td>701*</td>
<td>Allows serial-based traffic systems to communicate serial lines</td>
</tr>
<tr>
<td><strong>Wireless Communications</strong></td>
<td>Serial to 900 MHz Radio</td>
<td>22</td>
<td>400*</td>
<td>A wireless cable replacement system with extended range</td>
</tr>
<tr>
<td></td>
<td>Serial to 802.11b Radio</td>
<td>24</td>
<td>401*</td>
<td>Convenient remote access for mobile data collection</td>
</tr>
<tr>
<td></td>
<td>Serial to GPRS Radio</td>
<td>26</td>
<td>402*</td>
<td>Provides cell-based remote access to serial traffic system</td>
</tr>
<tr>
<td></td>
<td>Serial to Bluetooth Radio</td>
<td>28</td>
<td>403*</td>
<td>Easily adds the convenience of Bluetooth to traffic systems</td>
</tr>
</tbody>
</table>

*These Click! modules are available in form factors supporting DIN rails, card racks (TS1, TS2, 170, and 2070), and 170 Controllers.
<table>
<thead>
<tr>
<th>Details</th>
<th>DIN-mount</th>
<th>Rack Card</th>
<th>Outputs</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor data</td>
<td>●</td>
<td>●</td>
<td>16</td>
<td>Detector Outputs</td>
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<tr>
<td>xs</td>
<td>●</td>
<td>●</td>
<td>2 channels</td>
<td></td>
</tr>
<tr>
<td>xs</td>
<td>●</td>
<td>●</td>
<td>4 channels</td>
<td></td>
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<table>
<thead>
<tr>
<th>Speed</th>
<th>Length</th>
<th>Protocol</th>
<th>Category</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>SS105</td>
<td>Detection Alarms</td>
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</table>

<table>
<thead>
<tr>
<th>120/240 VAC Input</th>
<th>24 VDC Output</th>
<th>Amperage (A)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>1</td>
<td>Power Supplies</td>
</tr>
<tr>
<td>●</td>
<td>●</td>
<td>2</td>
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</tr>
</tbody>
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<table>
<thead>
<tr>
<th>DC Power Lines</th>
<th>RS-232 Lines</th>
<th>RS-485 Lines</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Surge Protectors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wired Communications</th>
<th>Point-to-point</th>
<th>Point-to-multipoint</th>
<th>Max range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>330 feet</td>
</tr>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>2,000 feet</td>
</tr>
<tr>
<td>RS-232 &amp; RS-485 interfaces</td>
<td>●</td>
<td>●</td>
<td>15 feet</td>
</tr>
<tr>
<td>Indicate over existing fiber-optic networks</td>
<td>●</td>
<td></td>
<td>1 mile</td>
</tr>
<tr>
<td>Indicate over existing fiber-optic networks</td>
<td>●</td>
<td></td>
<td>2 miles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wireless Communications</th>
<th>Point-to-point</th>
<th>Point-to-multipoint</th>
<th>Max range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contained range</td>
<td>●</td>
<td>●</td>
<td>20 miles</td>
</tr>
<tr>
<td>Reception</td>
<td>●</td>
<td>●</td>
<td>12 miles</td>
</tr>
<tr>
<td>Traffic equipment</td>
<td>●</td>
<td>●</td>
<td>cell coverage</td>
</tr>
<tr>
<td>Traffic devices</td>
<td>●</td>
<td>●</td>
<td>150 feet</td>
</tr>
</tbody>
</table>