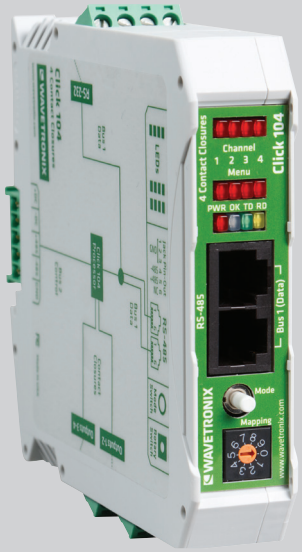
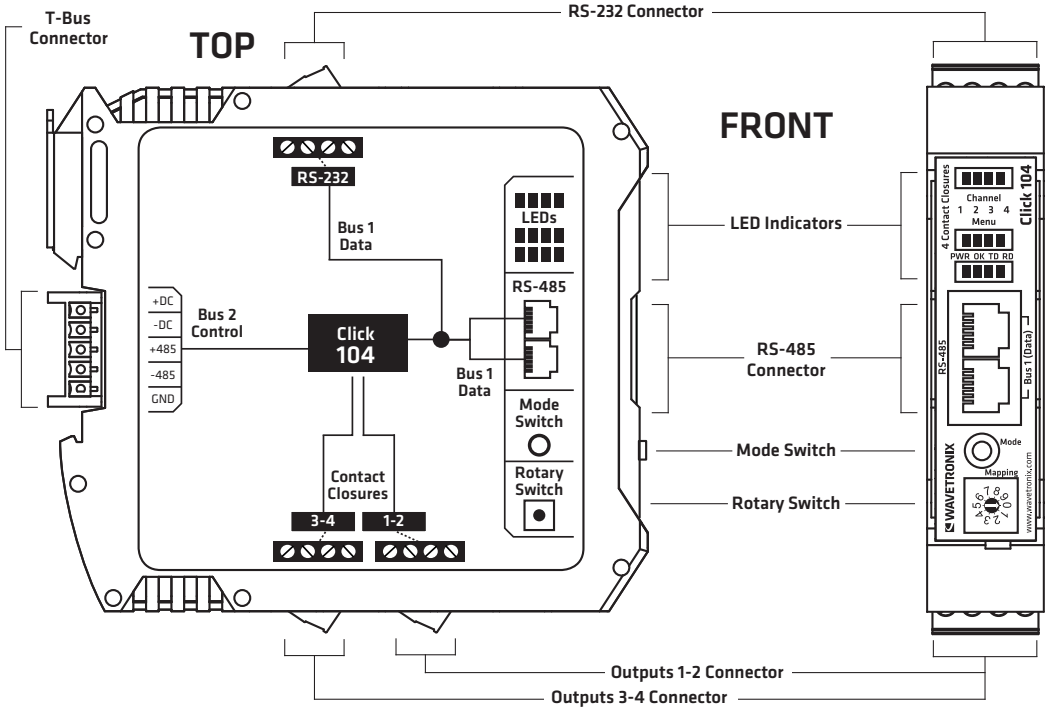
4-channel DIN rail contact closure module

The Click 104 is a 4-channel contact output device that mounts onto a DIN rail, allowing it to be mounted on a hot-swappable power and communication bus for easy installation. The device receives serial messages from SmartSensor sensors and sends them on as contact closure outputs.



- Compatible with NEMA TS1 and TS2, 170, and 2070 traffic controllers
- Mounts on a DIN rail for easy connection to power and communication bus
- Fail-safe mode in case of interruption of data flow
- Dual communications ports for separate data and configuration communication
- Uses industry-standard RS-485 communications
- Automatically sets baud rate
- Displays detection via LEDs on faceplate
- Solid state outputs
- Configurable via hardware front panel interface or Click Supervisor
- Keyed removable screw terminals for ease of wiring
- Conformal coated



Technical specifications

Physical

- Weight: 0.3 lbs. (0.14 kg)
- Physical dimensions: 4.5 in. × 4 in. × 0.9 in. (11.4 cm x 10.2 cm x 2.3 cm)
- Ambient operating temp: -29°F to 165°F (-34°C to 74°C)
- Humidity: up to 95% RH

Mounting

- DIN rail–mountable
- Hot-swappable

Power

- Power supply voltage: 9 to 28 VDC
- Power consumption: 1 W

Connections

- Connections for bus 1:
  - Two RJ-11 jacks for RS-485
  - 1 pluggable screw terminal for RS-232
- Connections for bus 2:
  - 5-position connector for power and RS-485 to and from the T-bus
  - 2 pluggable screw terminals for contact closure outputs

Communication

- Has two independent communication buses, so that the device can be configured without interrupting data flow
- Vehicle information to traffic controller via contact closures

Baud rates

- Supports the following baud rates:
  - 9600 bps
  - 19200 bps
  - 38400 bps
  - 57600 bps

Faceplate configuration features

- Mode switch controls menu operation
- Rotary switch aids in channel configuration
- Detection LEDs (red) display the current detection state
- Menu LEDs (Level 2) (red) let you view and set menu options
- Menu LEDs (Level 1) display menu item selected, as well as the following status indications:
  - Red LED (PWR) indicates the device has power
  - Blue LED (PU) indicates proper system operation; extinguishes during fail-safe mode
  - Green LED (TD) indicates device is transmitting data
  - Yellow LED (RD) indicates device is receiving data
- Supports configuration of baud rate and channel mapping settings

Ordering information

Click 104
CLK-104

Contact us

801.734.7200
sales@wavetronix.com
www.wavetronix.com

Software configuration features

- Comes with Click Supervisor, configuration software with the following features:
  - Runs on Pocket PC or Windows desktop or laptop PC (Windows 2000 and newer)
  - Configures serial communication settings including serial baud rates
  - Configures channel mapping settings
  - Can remotely and directly upgrade the device firmware to add new features to the device
  - Can save/open a configuration to/from a file, allowing a common configuration to be easily programmed into many devices
  - Has customizable drivers that are stored in an XML file that describes the settings for a device as well the graphical user interface for that driver in the configuration software

Data conversion

- Outputs traffic data as contact closures specified by a Wavetronix SmartSensor

Fail-safe mode

- Enters a fail-safe mode if it has lost communications with a sensor for more than 10 seconds (or as configured)
- In fail-safe mode, all channel outputs are asserted
- Fail-safe mode will be exited when communication with sensor is restored

Class 4 compliance

- Complies with the EN 61000-4-5 Class 4 lightning surge protection on the DC input

Contact closure outputs

- Dissipates up to a 600 W power surge received on any contact closure output terminal
- Contact closure output terminals can withstand 50 V continuously
- Contact closure outputs are less than 8 ohms in conduction state
- Contact closure outputs in non-conducting state leak less than 1uA

- Contact closure outputs can switch up to 150 mA

Remote upgradeability

- Flash memory can be remotely upgraded to add functionality to the firmware when new features have been developed to improve the performance of the installation

Testing

- Passes manufacturer's test before shipping

Extended support

- Extended support options are available from Wavetronix; contact a Wavetronix representative for more information

Warranty

- One-year warranty against material and workmanship defect (see Click Warranty datasheet for complete details)

Bid specifications

1.0 General. This item shall govern the purchase and installation of a contact closure device (CCD) equivalent to the Wavetronix Click 104. The CCD shall be used to output contact closure data from a radar vehicle sensing device (RVSD) equivalent to the Wavetronix SmartSensor. Test results and other documentation demonstrating performance and capabilities shall be provided.

2.0 Product description. The CCD shall convert real-time serial data from the RVSD to contact closure data, providing 4-channel contact closure outputs. The device shall mount on a DIN rail and have two independent communication buses.

3.0 Physical. The CCD shall not exceed 0.3 lbs. (0.14 kg) in weight.

The CCD shall not exceed 4.5 in. × 4 in. × 0.9 in. (11.4 cm x 10.2 cm x 2.3 cm) in its physical dimensions.

The CCD shall operate over a temperature range of -29°F to 165°F (-34°C to 74°C).

The CCD shall operate in up to 95% humidity.

4.0 Mounting. The CCD shall mount to a DIN rail with a hot-swappable power and communication bus for quick installation and replacement.

5.0 Power. The CCD shall accept 9 to 28 VDC and shall operate using 1 W of average power.

6.0 Connections. The CCD shall have three connections for its first independent communication bus, consisting or two RJ-11 jacks for RS-485 and a pluggable screw terminal for RS-232.

The CCD shall have a 5-position connector for connecting power and RS-485 communications to and from the T-bus; this 5-position connector shall be part of the second independent communication bus.

The CCD shall have two pluggable screw terminals for contact closure outputs.

7.0 Communication. The CCD shall have two independent communication buses, allowing it to be configured without interfering with data communication.

The CCD shall pass vehicle information to a traffic controller via contact closures.

8.0 Baud Rates. The CCD shall support baud rates of 9600 bps, 19200 bps, 38400 bps and 57600 bps.

9.0 Faceplate configuration features. The CCD shall have a mode switch for controlling menu operation. It shall also have a rotary switch to aid in channel configuration.

The DRC shall have three banks of LEDs. The first bank shall have red LEDs used for detection; these shall indicate the current detection state.

The second bank of LEDs shall aid in viewing and setting menu options and shall consist of red LEDs. The third bank shall display menu items for selecting; they shall also have the following status-indicating functions:

- One LED shall illuminate to indicate the CCD has power
- One LED shall illuminate to indicate proper device operation; if the CCD goes into fail-safe mode, this light will go out
- One LED shall illuminate to indicate when the device is transmitting data
- One LED shall illuminate to indicate when the device is receiving data

The CCD faceplate configuration features shall support the configuration of baud rate and channel mapping settings.

10.0 Software configuration features. The CCD shall be provided with configuration software that:

- Runs on both a Pocket PC and a Windows desktop or laptop PC (Windows 2000 and newer)
- Configures serial communication settings including serial baud rates
- Configures channel mapping settings
- Can remotely and directly upgrade the CCD firmware to add new features to the CCD

- Can save/open a configuration to/from a file. This allows a common configuration to be easily programmed into many devices.
- Has a customizable driver that is stored in an XML file that describes the settings for a device as well the graphical user interface for that driver in the configuration software.

11.0 Data conversion. The CCD shall output traffic data as contact closures specified by the RVSD.

12.0 Fail-safe mode. The CCD shall enter a fail-safe mode if it loses communications with the RVSD for more than ten seconds. In fail-safe mode, all channel outputs shall be asserted.

The CCD shall exit fail-safe mode when communication with the RVSD is restored.

13.0 Class 4 compliance. The CCD shall comply with the EN 61000-4-5 Class 4 lightning surge protection on the DC input.

14.0 Contact closure outputs. The CCD shall dissipate up to a 600 W power surge received on any contact closure output terminal.

The contact closure output terminals on the CCD shall be able to withstand 50 V continuously. The CCD's contact closure outputs shall be less than 8 ohms in conduction state. Outputs in a non-conducting state shall leak less than 1uA. They shall also be able to switch up to 150 mA.

15.0 Remote upgradeability. The CCD shall have flash memory that can be remotely upgraded to add functionality to the firmware when new features have been developed to improve the performance of the installation.

16.0 Testing. Before shipping, each CCD shall have passed a manufacturer's test.

17.0 Extended support. Extended support options shall be available.

18.0 Warranty. The CCD shall be warranted to be free from material and workmanship defects for a period of one year from date of shipment.