16 Output Contact Closure Module

The Click 100 collects real-time data from the Wavetronix SmartSensor™ and translates it into contact closure outputs. Sixteen separate outputs emulate up to eight lanes of two-loop data. The module mounts to a DIN rail and includes a hot-swappable power and communication bus for easy installation.

**Features**

- 16 contact closures
- 8 lanes, dual loop traps
- Autobauds to SmartSensors
- Auto-configures loop trap emulation
- Keyed removable screw terminals
- 16 LEDs for contact closure verification
- 4 LEDs for mode selection
- Compatible with SmartSensor V, SmartSensor HD and SmartSensor Advance
- Conformal coated
- NEMA tested
- 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
Technical Specifications

Physical
- Weight: 0.3 lbs. (0.14 kg)
- Physical dimensions: 4.5 in. × 4 in. × 0.9 in. (11.4 cm × 10.2 cm × 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 24 VDC
- Power consumption: 0.6 W

Connections
- Pluggable screw terminals for easy pre-wiring
- 5-position connector for power and RS-485 to and from the T-bus

Configuration Features
- The automatic configuration process shall include the following steps:
  - Establish communication with the RVSD via RS-485 bus
  - Retrieval of sensor units (English or metric)
  - Emulated loop spacing distance
- Data stored to memory and retained when power is disconnected
- LEDs on faceplate show vehicle detections

Data Conversion
- Converts real-time serial data to contact closure data

Contact Closure Out-surge Dissipation
- Dissipates up to a 600 W power surge received on the individual contact closure output terminals
- Maximum switching voltage: < 50 V

NEMA TS2-1998 Testing
- Complies with the applicable standards stated in the NEMA TS2-1998 Standard
- Test results available for each of the following tests:
  - Shock pulses of 10g, 11 ms half sine wave
  - Vibration of .5 Grms up to 30 Hz
  - 300 V positive/negative pulses applied at one pulse per second at minimum and maximum DC supply voltage
  - Stored at -49°F (-45°C) for 24 hours
  - Stored at 185°F (85°C) for 24 hours

Ordering Information

Click 100 16 output contact closure module
CLK-100

Wavetronix
78 East 1700 South
Provo, UT 84606
801.734.7200
sales@wavetronix.com
www.wavetronix.com

- Operation at -29.2°F (-34°C) and 10.8 VDC
- Operation at -29.2°F (-34°C) and 26.5 VDC
- Operation at 165.2°F (74°C) and 26.5 VDC
- Operation at 165.2°F (74°C) and 10.8 VDC

Testing
- Device is tested by the manufacturer before shipment

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)
Click 100 Bid Specification

1.0 General. This item shall govern the purchase and installation of a 16 output contact closure module (CCM) equivalent to the Wavetronix Click 100. The CCM 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 CCM shall convert real-time serial data from the RVSD to contact closure data, allowing the RVSD to emulate loop-based traffic detection systems without replacing existing contact closure data collection infrastructure.

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

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

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

The CCM shall operate in up to 95% humidity.

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

5.0 Power. The CCM shall accept 9 to 24 VDC and shall operate using 0.6 W of average power.

6.0 Connections. The CCM shall have five pluggable screw terminals allowing communication to a contact closure data collector.

The CCM shall have a 5-position connector for connecting power and RS-485 communications to and from the T-bus.

7.0 Configuration Features. After the CCM is properly connected to the RVSD, and the RVSD is configured to the user’s desired specifications, then the user shall initiate the automatic configuration process. The CCM shall establish communication on the CCM RS-485 communication bus at one of the four available baud rates (9600 bps, 19200 bps, 38400 bps and 57600 bps). After communication between the CCM and RVSD is established the CCM shall retrieve sensor units (in either English or metric) and emulated loop spacing distance, and this data shall be stored to memory and shall be retained when power is disconnected.

The CCM shall have an individual LED for each emulated loop allowing the customer to visually see vehicle detections. There shall be eight red LEDs representing the primary loops and eight yellow LEDs representing the secondary loops.

8.0 Data Conversion. The CCM shall collect real-time per vehicle data from a single RVSD and shall immediately output the collected information as contact closure data.

9.0 Contact Closure Out-surge Dissipation. The CCM shall dissipate up to a 600 W power surge received on the individual contact closure output terminals. The CCM shall have a maximum switching voltage not to exceed 50 V.

10.0 NEMA TS2-1998 Testing. The SSM shall comply with the applicable standards stated in NEMA TS2-1998. Test results shall be made available for each of the following tests:

- Shock pulses of 10g, 11 ms half sine wave
- Vibration of .5 Grms up to 30 Hz
- 300 V positive/negative pulses applied at one pulse per second at minimum and maximum DC supply voltage
- Stored at -49°F (-45°C) for 24 hours
- Stored at 185°F (85°C) for 24 hours
- Operation at -29.2°F (-34°C) and 10.8 VDC
- Operation at -29.2°F (-34°C) and 26.5 VDC
- Operation at 165.2°F (74°C) and 26.5 VDC
- Operation at 165.2°F (74°C) and 10.8 VDC
11.0 Testing. Before shipping, each SCM shall have passed a manufacturer's test.

12.0 Extended Support. Extended support options shall be available. Contact the manufacturer representative for more information.

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

Features

- 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

Diagram:

- T-Bus Connector
- RS-232 Connector
- RS-485 Connector
- Outputs 1-2 Connector
- Outputs 3-4 Connector
- LED Indicators
- Mode Switch
- Rotary Switch
- Bus 1 Data
- Bus 2 Control
- Bus 2 Data
- Contact Closures
- +DC
- -DC
- +485
- -485
- GND
- +485
- -485
- Bus 1 Data
- Mode Switch
- Click 104
Technical Specifications

Physical
- Weight: 0.3 lbs. (0.14 kg)
- Physical dimensions: 4.5 in. x 4 in. x 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: 9–30 VDC
- Power consumption: 1 W

Connections
- Three connections for bus 1:
  - Two RJ-11 jacks for RS-485
  - 1 pluggable screw terminal for RS-232
  - 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

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 protec-
tion 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
Click 104 Bid Specification

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

The CCM 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 operate using 1 W of average power at 9–30 VDC.

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.
Detector Rack Cards

The Click 112/114 are 2-/4-channel contact output rack cards that plug into any standard detector rack card slot in any cabinet type. Each output is electrically isolated and is normally open. When the cards receive the appropriate serial message from SmartSensor™ sensors, they will close the contact outputs.

Features

- Compatible with NEMA TS1 and TS2, 170, and 2070 traffic controllers
- Plugs into any standard input file rack card slot
- 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
- Displays detection via LEDs on faceplate
- Automatically sets baud rate
- Solid state outputs
- Configurable via hardware (DIP switches) or software (front panel interface or Click Supervisor)
- Software configuration is read-only when in Hardware Configuration mode
- Conformal coated
Technical Specifications

Physical
- Weight: 0.25 lbs. (0.11 kg) / 0.29 lbs. (0.13 kg)
- Physical dimensions: 8.3 in. x 4.5 in. x 1.2 in. (21.1 cm x 11.4 cm x 3 cm) / 8.3 in. x 4.5 in. x 2.4 in. (21.1 cm x 11.4 cm x 6.1 cm)
- Ambient operating temp: -29°F to 165°F (-34°C to 74°C)
- Humidity: up to 95% RH

Mounting
- Inserts into an input file rack

Power
- Power supply voltage: 9–30 VDC
- Power consumption: 1 W

Connections
- Detection and power: 44 terminal card edge connector
- Four RJ-11 jacks: two for RS-485 bus 1 and two for RS-485 bus 2

Communication
- Has two independent RS-485 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

DIP Switch Configuration Features
- Separate DIP switches for baud rate and channel mapping selection
- DIP switch settings disable faceplate or software configurability

Faceplate Configuration Features
- Mode Switch controls menu operation
- Detection LEDs (red) display the current detection state
- Menu LEDs (Level 2) (red) lets you view and set menu options
- Menu LEDs (Level 1) displays menu item selected, as well as the following status indications:
  - Red LED (PWR) indicates the device has power
  - Blue LED (PU) is reserved for future use
  - 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

Software Configuration Features
- Comes with Click Supervisor, configuration software with the following features:
  - Runs on Pocket PC or Windows desktop or laptop PC (Windows XP 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 as 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
- 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

Pocket PC & PC Configuration Software
- 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
  - 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

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
- Tested under NEMA TS2-2003

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)
Click 112/114 Bid Specification

1.0 General. This item shall govern the purchase and installation of a detector rack card (DRC) equivalent to the Wavetronix Click 112/114. The DRC 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 DRC shall convert real-time serial data from the RVSD to contact closure data, providing 2- or 4-channel contact closure outputs, depending on the model. The device shall plug into a detection card slot and have two independent RS-485 buses.

3.0 Physical. The two-channel DRC shall not exceed 0.25 lbs. (0.11 kg) in weight. The four-channel DRC shall not exceed 0.29 lbs. (0.13 kg) in weight.

The two-channel DRC shall not exceed 8.3 in. x 4.5 in. x 1.2 in. (21.1 cm x 11.4 cm x 3 cm) in its physical dimensions. The four-channel DRC shall not exceed 8.3 in. x 4.5 in. x 2.4 in. (21.1 cm x 11.4 cm x 6.1 cm) in its physical dimensions.

The DRC shall operate over a temperature range of -29°F to 165°F (-34°C to 74°C). The DRC shall operate in up to 95% humidity.

4.0 Mounting. The DRC shall mount in an input file rack slot.

5.0 Power. The DRC shall accept 9–30 VDC and shall operate using 1 W of average power.

6.0 Connections. The DRC shall have a 44 way edge connector for detection and power.

The DRC shall also have four RJ-11 jacks, two each for its two RS-485 buses.

7.0 Communication. The DRC shall have two independent RS-485 buses, allowing it to be configured without interfering with data communication.

The DRC’s connection to the detector rack shall allow it to pass vehicle information to a traffic controller via contact closures.

8.0 Baud Rates. The DRC shall support baud rates of 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps and 57600 bps.

9.0 DIP Switch Configuration Features. The DRC shall feature separate DIP switches for baud rate and channel mapping selection. When these switches are on, faceplate and software configuration options shall be disabled.

10.0 Faceplate Configuration Features. The DRC shall have a mode switch for controlling menu operation.

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 DRC has power
- 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 DRC faceplate configuration features shall support the configuration of baud rate and channel mapping settings.

11.0 Software Configuration Features. The DRC shall be provided with configuration software that:

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

12.0 Data Conversion. The DRC shall output traffic data as contact closures specified by the RVSD.

13.0 Fail-safe Mode. The DRC 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 DRC shall exit fail-safe mode when communication with the RVSD is restored.

14.0 Class 4 Compliance. The DRC shall comply with the EN 61000-4-5 Class 4 lightning surge protection on the DC input.

15.0 Contact Closure Outputs. The DRC shall dissipate up to a 600 W power surge received on any contact closure output terminal.

The contact closure output terminals on the DRC shall be able to withstand 50 V continuously. The DRC’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.

16.0 Remote Upgradeability. The DRC 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.

17.0 Testing. Before shipping, each DRC shall have passed a manufacturer’s test.

The DRC shall comply with the applicable standards stated in the NEMA TS2-2003 Standard.

18.0 Extended Support. Extended support options shall be available.

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

The Click 120/121 provide an interface between Click contact closure devices and signaling systems. Isolations, signal translation, and noise immunity are all inherent to these relays.

Features

- Super thin design
- Features vibration-resistant plug-in bridge system
- Integrated input wiring and protective circuit
- Terminals feature easy-to-use screw connection (Click 120) or spring cage (Click 121) technology
- Relay section can be easily removed using engagement lever if it needs to be replaced
- High level of operational safely
- Relay portion features cadmium-free, environmentally friendly power contacts
- 4 kVrms electrical isolation between input and output on relay
- Status-indicating LED
Technical Specifications

Physical
■ Weight: 0.08 lbs. (36 g)
■ Physical dimensions: 3.1 in. x 0.2 in. x 3.7 in. (8 cm x 0.6 cm x 9.4 cm)
■ Ambient operating temperature: -4°F to 140°F (-20°C to 60°C)

Mounting
■ DIN rail-mountable

Connections
■ Coil side: two screw terminals (Click 120) or spring cage terminals (Click 121) for wiring in from contact closure card or controller
■ Contact side: three screw terminals (Click 120) or spring cage terminals (Click 121) for wiring to load(s)

Monitoring Feature
■ Status monitoring feature: LED

Replaceability
■ Main relay portion can be easily removed and replaced using engagement lever

Coil Side
■ Nominal input voltage: 24 VDC
■ Contact type: SPDT
■ Nominal input current: 7 mA
■ Limiting continuous current: 6 A
■ Typical response time: 5 ms
■ Contact material: AgSnO
■ Typical release time: 2.5 ms
■ Maximum switching voltage: 250 V AC/DC
■ Coil resistance: 3390 Ohm ± 10% (at 68°F/20°C)

Contact Side
■ Contact type: SPDT
■ Contact material: AgSnO
■ Switching voltage: 12–250 VAC/VDC
■ Minimum switching current: 10 mA
■ Limiting continuous current: 6 A
■ Interrupting rating (ohmic load) max.: 140 W (for 24 V DC)
■ Interrupting rating (ohmic load) max.: 23 W (for 110 V DC)
■ Interrupting rating (ohmic load) max.: 40 W (for 220 V DC)
■ Interrupting rating (ohmic load) max.: 1500 VA (for 250 V AC)

Testing
■ Passes manufacturer’s test before shipping

Ordering Information

Click 120 screw terminal relay
CLK-120
Click 121 spring cage relay
CLK-121

Wavetronix
78 East 1700 South
Provo, UT 84606
801.734.7200
sales@wavetronix.com
www.wavetronix.com

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)
Click 120/121 Bid Specification

1.0 General. This item shall govern the purchase and installation of a relay module (RM) equivalent to the Wavetronix Click 120/121. Test results and other documentation demonstrating performance and capabilities shall be provided.

2.0 Product Description. The RM shall be a relay module that accepts electrical impulses from contact closure modules or traffic controllers and uses them to open and close the switch on the coil side of the device.

3.0 Physical. The RM shall not exceed 0.08 lbs. (36 g) in weight.

The RM shall not exceed 3.1 in. x 0.2 in. x 3.7 in. (8 cm x 0.6 cm x 9.4 cm) in its physical dimensions.

The RM shall operate in the temperature range of -4°F to 140°F (-20°C to 60°C).

4.0 Mounting. The RM shall mount onto a DIN rail.

5.0 Connections. The RM shall have two screw terminals or spring cage terminals (depending on the model) on the coil side for wiring in from the contact closure card or controller and out to ground. The contact side of the RM shall have three screw terminals or spring cage terminals (depending on the model) for wiring to a load or loads and a power supply.

6.0 Monitoring Feature. The RM shall feature an LED for monitoring purposes; this LED shall illuminate when the RM is receiving power into its coil side.

7.0 Replaceability. The main relay portion shall be able to be removed from the base, allowing for the replacement of just that portion in case of damage or failure.

8.0 Coil Side. The RM’s coil side shall accept 24 VDC.

The RM’s coil side’s contact type shall be SPDT (single pole, double throw).

The RM’s coil side shall accept a current of 7 mA.

The RM’s coil side shall have a limiting continuous current of 6 A.

The RM’s coil side’s typical response time shall be 5 ms.

The RM’s coil side’s contact material shall be a silver and tin oxide (AgSnO).

The RM’s coil side shall have a typical release time of 2.5 ms.

The RM’s coil side shall have a maximum switching voltage of 250 VAC/VDC.

The RM’s coil side shall have a coil resistance of 3390 Ohm ±10% (at 68°F/20°C).

9.0 Contact Side. The RM’s contact side’s contact type shall be SPDT (single pole, double throw).

The RM’s contact side’s contact material shall be a silver and tin oxide (AgSnO).

The RM’s contact side shall have a switching voltage of 250 VAC/VDC.

The RM’s contact side shall have a minimum switching current of 10 mA.

The RM’s contact side shall have a limiting continuous current of 6 A.

The RM’s contact side shall have the following interrupting rating (ohmic load) max.:

- 140 W (for 24 V DC)
• 23 W (for 110 V DC)
• 40 W (for 220 V DC)
• 1500 VA (for 250 V AC)

10.0 Testing. Before shipping, each RM shall have passed a manufacturer’s test.

11.0 Extended Support. Extended support options shall be available. Contact the manufacturer’s representative for more information.

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