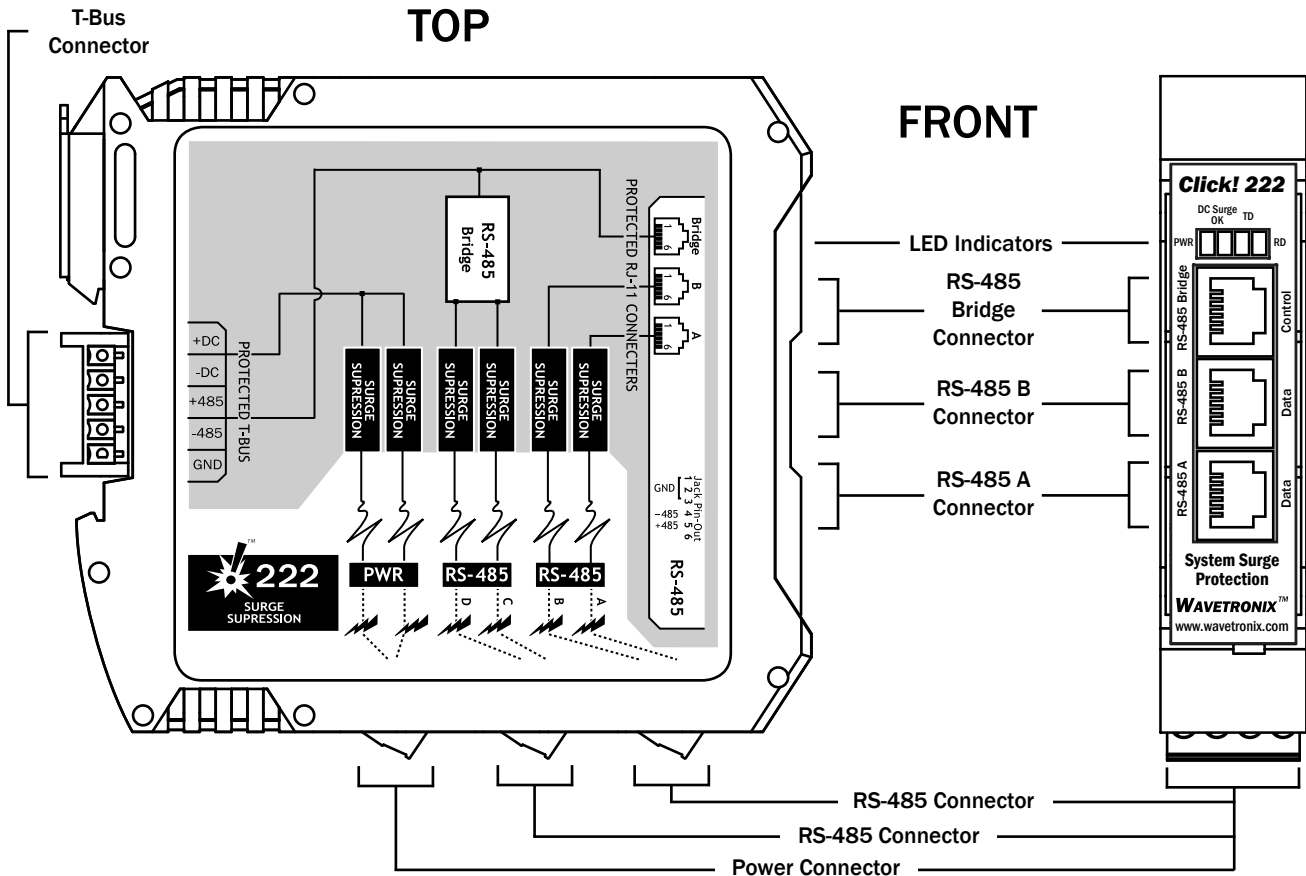


System Surge Protector

The Click!™ 222 system surge protection device is designed to prevent electrical surges conducted along underground cables from damaging the cabinet equipment. The device features a control bridge that connects electrically isolated RS-485 buses, eliminating communication problems caused by star networks.

Features

- Three-stage surge suppression design:
 - First stage gas tubes
 - Second and third stages: inductors and TVS diodes (power) or resistors and TVS diodes (communication)
- Low capacitance RS-485 protection
- Protects traffic monitoring devices and traffic cabinets
- Designed for use with all Click! devices
- DIN rail-mounted for easy installation
- Convenient, hot-swappable power and communication buses
- Electrically isolates RS-485 buses for better communication
- Pluggable screw terminals minimize problems caused by incorrect wiring
- LEDs indicate power, surge protection status, and data transmission/receipt
- Conformal coated
- Passed NEMA TS2-1998 environmental testing and IEC 61000-4-5 class 4 electrical surge testing





Technical Specifications

Physical

- Weight: 0.35 lbs (0.15 kg)
- Physical dimensions: 4.5 in. × 4 in. × 0.9 in. (11.4 cm x 10.2 cm x 2.3 cm)
- Ambient operating temperature: -29°F to 165°F (-34°C to 74°C)
- Humidity: up to 95% RH

Mounting

- DIN rail-mountable
- Hot-swappable

Connections

- Pluggable screw terminals for easy pre-wiring:
 - 1 pair for DC power
 - 2 terminals for protective earth
 - 4 pairs for RS-485 communication (485A, 485B, 485C, 485D)
- 3 RJ-11 jacks for connecting to detector rack cards:
 - One connected to 485A
 - One connected to 485B
 - One connected to 485C and 485D
- 5-position connector for power and RS-485 to and from the T-bus

Communications

- Routes RS-485 communications between screw terminals, 5-position connector, and RJ-11 jacks
- RJ-11 jacks labeled RS-485 A and RS-485 B send contact closure information to rack cards
- RJ-11 jack labeled RS-485 Bridge connects to the device's control bridge, which electrically isolates RS-485 buses connected to it for more reliable communication; also connected to T-bus

Three-stage Protection

- First stage: gas tubes
- Second and third stages: inductors and TVS diodes (power) or resistors and TVS diodes (communication)

DC Power Protection

- Complies with the applicable standards stated in the IEC 61000-4-5 class 4 standard for DC power lines
- Maximum working voltage: 28 V
- Test results available for the following test conditions:
 - Surge voltages ±0.5kVA, 1kVA, 2kVA and 4kVA
 - Common mode (input to ground)
 - Differential mode (input to input)
 - 8x20µs waveform
 - 2 ohm generator impedance
 - Minute-long pause between surges

RS-485 Protection

- Complies with the applicable standards stated in the IEC

Ordering Information

Part Number — **WX-CLK-222**

Wavetronix

78 East 1700 South

Provo, UT 84606

Phone: 801-764-0277

Fax: 801-764-0208

Email: sales@wavetronix.com

Website: www.wavetronix.com

- 61000-4-5 class 4 standard for communication lines
- Maximum working voltage: 5 V
- Test results available for the following test conditions:
 - Surge voltages ±0.5kVA, 1kVA, 2kVA and 4kVA
 - Common mode (input to ground)
 - Differential mode (input to input)
 - 8x20µs waveform
 - Minute-long pause between surges

Testing

- Device is tested by the manufacturer before shipment
- 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

Click! 222 Bid Specification

1.0 General. This item shall govern the purchase and installation of a system surge protector module (SSP) equivalent to the Wavetronix Click!TM 222. Test results and other documentation demonstrating performance and capabilities shall be provided.

2.0 Product Description. The SSP shall suppress electrical surges conducted along underground cables, protecting the power and RS-485 serial connections on the device from these incoming surges. The SSP shall be designed to protect a radar vehicle sensing device (RVSD) equivalent to the Wavetronix SmartSensorTM from surges coming from a traffic cabinet, or protect a cabinet from surges coming from the RVSD.

3.0 Physical. The SSP shall not exceed 0.35 lbs. (0.15 kg) in weight.

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

The SSP shall operate in the temperature range of -29°F to 165°F (-34°C to 74°C).

The SSP shall operate in humidity up to 95% RH.

4.0 Mounting. The SSP shall mount to a DIN rail with hot-swappable surge protected power and communication buses for quick installation and replacement.

5.0 Connections. The SSP shall have pluggable screw terminals to make installation easy and to minimize incorrect wiring. The screw terminals shall consist of one pair of terminals for DC power, one for protective earth, and four pairs for RS-485 communications.

The SSP shall also have 3 RJ-11 connectors for RS-485 communication. One shall be connected to the first pair of RS-485 screw terminals, one shall be connected to the second pair, and the third shall be connected to both the third and fourth pairs.

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

6.0 Communications. The SSP shall pass RS-485 communications between its screw terminals, 5-position connect, and RJ-11 jacks.

The SSP's RJ-11 jacks shall have the following functions: the first shall send data to a contact closure device from the RVSD connected to the first pair of RS-485 screw terminals. The second shall send data to a contact closure device from the RVSD connected to the second pair of RS-485 screw terminals. The

third shall connect from the final two pairs of RS-485 screw terminals to a control bridge; this bridge shall electrically isolate the RS-485 buses connected to it for more reliable communications. This jack shall also connect to the T-bus.

7.0 Three-stage Protection. The SSP shall have a three-stage surge suppression design. The first stage shall be gas tubes. The second third stages shall both consist of inductors and TVS diodes (for the power lines) or resistors and TVS diodes (for the communication lines).

8.0 DC Power Protection. The SSP shall comply with the applicable standards stated in the IEC 61000-4-5 class 4 standard for DC power lines. The SSP shall have a maximum working voltage of 28 V. Test results shall be made available for the following test conditions:

- Surge voltages ±0.5kVA, 1kVA, 2kVA and 4kVA
- Common mode (input to ground)
- Differential mode (input to input)
- 8x20µs waveform
- 2 ohm generator impedance
- Minute-long pause between surges

9.0 RS-485 Protection. The SSP shall comply with the applicable standards stated in the IEC 61000-4-5 Standard for communication lines. The RS-485 communication bus shall have a maximum working voltage of 5 V. Test results shall be made available for the following test conditions:

- Surge voltages ±0.5kVA, 1kVA, 2kVA and 4kVA
- Common mode (input to ground)
- Differential mode (input to input)
- 8x20µs waveform
- Minute-long pause between surges

10.0 Testing. Each SSP shall be tested by the manufacturer before shipment.

Each SSP shall comply with the applicable standards stated in the NEMA TS2-2003 Standard.

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

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