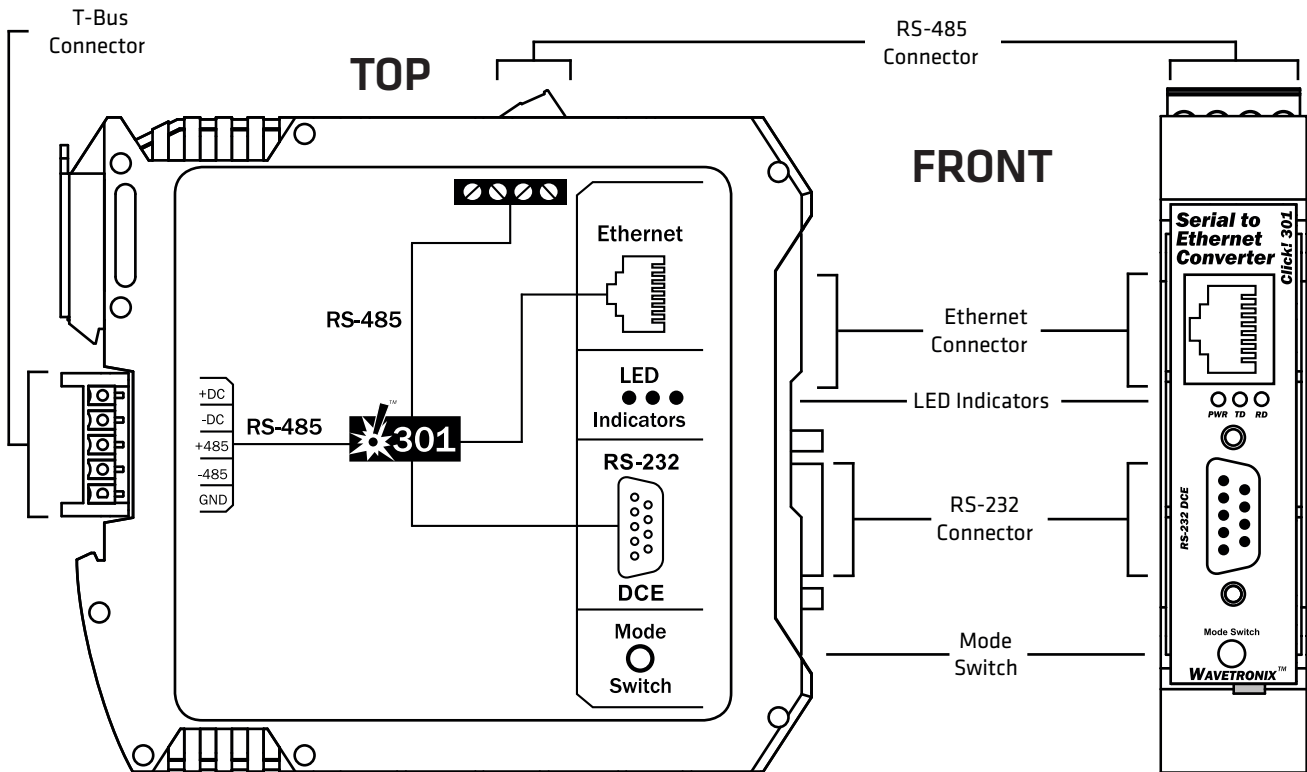


# Serial to Ethernet Converter

The Click 301 converts half-duplex RS-232 & RS-485 communication to Ethernet and vice versa. This device, tested to work over a -34°C to 74°C temperature range, can be used as part of a traffic cabinet to communicate between devices via Ethernet connections.

## Features

- Converts half-duplex serial to Ethernet and vice-versa
- Multiple communication ports, including RS-232, RS-485 and Ethernet
- Can be configured over either Ethernet or serial interfaces
- Snaps onto DIN rail for quick and easy installation
- Three LEDs on faceplate of device allow for easy monitoring of device functionality
- Auto-configures baud rates
- Supports Click Supervisor for easy setup and configuration on your computer
- Allows auto-reset of inactive sockets
- Applications include:
  - Controller closed loop Ethernet
  - Sensor to Ethernet
- Conformal coated
- Available in DIN rail or rack modules



## Technical Specifications

### Physical

- Weight: 0.2 lbs. (0.1 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

### Power

- Power supply voltage: 10 to 30 VDC
- Uses less than 1 W of average power at 24 VDC

### Connections

- Device has the following connection points:
  - Power: 5-position connector for connecting from the T-bus
  - RS-232: Through a DB-9 connector
  - RS-485: 5-position connector for connecting from the T-bus as well as one pluggable screw terminal
  - Ethernet: one RJ-45 jack on the front of the device

### Communication

- Converts RS-232 to RS-485 and vice versa
- Communicates serial to Ethernet and vice versa

### Baud Rates

- Supports the following baud rates:
  - 1200 bps
  - 2400 bps
  - 4800 bps
  - 9600 bps
  - 19200 bps
  - 38400 bps
  - 57600 bps
  - 115200 bps

### Configuration Features

- Push-button has the following functions:
  - Autobauds device to a SmartSensor or other serial device
  - Resets device to factory defaults
- LEDs:
  - Red LED illuminates when device has power
  - Yellow LED (TD) illuminates when data is transmitted
  - Green LED (RD) illuminates when data is received

## Ordering Information

Click 301 serial to Ethernet converter  
(DIN rail)  
**CLK-301**

Click 301 serial to Ethernet converter  
(rack mount)  
**CLK-301-001**

## Wavetronix

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## Pocket PC & PC Configuration Software

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

## 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

## 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
- 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**

- Tested by manufacturer 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 301 Bid Specification

**1.0 General.** This item shall govern the purchase and installation of a hardened RS-485 and RS-232 serial to Ethernet converter module (SECM) equivalent to the Wavetronix Click 301 that is used to convert two-wire RS-485 communications and RS-232 to IP-addressable Ethernet standard. Test results and other documentation demonstrating performance and capabilities shall be provided.

**2.0 Product Description.** The SECM shall be a converter module for use with radar vehicle sensing devices (RVSD) equivalent to the Wavetronix SmartSensor™. The SECM shall be capable of converting two-wire half-duplex RS-485 communication and RS-232 communication to IP-addressable Ethernet protocol and vice versa. All serial ports shall pass data on one port to all other ports. Any data coming to or from the Ethernet port shall simultaneously be sent to all RS-485 and RS-232 ports.

**3.0 Physical.** The SECM shall not exceed 0.2 lbs. (0.1 kg) in weight.

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

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

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

**5.0 Power.** The SECM shall have a power supply voltage of 10 to 30 VDC.

The SECM shall operate using less than 1 W of average power at 24 VDC.

**6.0 Connections.** The SECM shall include the following connections for power and communication:

**6.1 Power.** The SECM shall include a 5-position connector, with two contact points reserved for connecting power through the bus.

**6.2 RS-232.** The SECM shall feature a DB-9 connector for RS-232 communication.

**6.3 RS-485.** The SECM shall feature a pluggable screw terminal for RS-485 communication. The 5-position connector shall have three contact points reserved for connecting RS-485 through the bus.

**6.4 Ethernet.** The SECM shall feature an RJ-45 jack for Ethernet.

**7.0 Communication.** The SECM shall have the following communication capabilities:

**7.1 Serial Protocol Conversion.** The SECM shall allow communications with any serial device that has a serial connection by converting 2-wire half-duplex RS-485 communication to half-duplex RS-232 communication, and vice versa.

**7.2 Ethernet.** The SECM shall convert RS-232 and RS-485 protocol to Ethernet, allowing communication with any device connected to the SECM via an Ethernet network.

**8.0 Baud Rates.** The SECM shall support baud rates of 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps and 115200 bps.

**9.0 Configuration Features.**

**9.1 Push-button.** The front of the SECM shall include a push-button that causes the SECM to autobaud to a SmartSensor or other serial device. It shall also be able to reset the SECM to factory defaults.



**9.2 LEDs.** The front of the SECM shall include a red LED for power and green and yellow LEDs, which shall illuminate when corresponding data is successfully transmitted or received.

**10.0 Pocket PC & PC Configuration Software.** The SECM 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 the serial baud rates
- Can remotely and directly upgrade the SECM firmware to add new features to the SECM
- Allows users to save a configuration to a file, and to open existing files and save to a device, allowing a common configuration to be easily programmed into many devices
- Has customizable drivers that are stored as XML files that describe the graphical user interface for that driver

**11.0 Upgradeability.** The SECM 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.

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

- Shock pulses of 10g, 11 ms half sine wave
- Vibration of 0.5 Grms up to 30 Hz
- 300 V positive/negative pulses applied at one pulse per second at minimum and maximum DC supply voltage
- Cold temperature storage at -49°F (-45°C) for 24 hours
- High temperature storage at 185°F (85°C) for 24 hours
- Low temp, low DC supply voltage at -29.2°F (-34°C) and 10.8 VDC
- Low temp, high DC supply voltage at -29.2°F (-34°C) and 26.5 VDC
- High temp, high DC supply voltage at 165.2°F (74°C) and 26.5 VDC
- High temp, low DC supply voltage at 165.2°F (74°C) and 10.8 VDC

**13.0 Testing.** Before shipping, each SECM shall have passed a manufacturer's test.

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

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

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