



# Serial to Ethernet Interface

Very low power

## Overview

The NL201 is a serial-to-Ethernet interface that provides a wired Ethernet network connection to dataloggers, peripherals, and other serial devices. The NL201 supports sophisticated networking capabilities for PakBus devices and networks. Using a unique technique to bridge the Ethernet

and CS I/O ports, the NL201 can provide direct access to the integrated IP functionality of some Campbell Scientific dataloggers. The NL201 can also act as a standard TCP serial server, serial client, Modbus TCP/IP gateway, and TLS proxy server for HTTPS and user-defined-port communication.

## Benefits and Features

- ▶ Extremely low power consumption (650 mW)
- ▶ Provides access to the native Internet protocol capabilities of the CR6, CR800, CR850, CR1000, and CR3000
- ▶ Rugged serial-to-Ethernet server for networking devices and peripherals
- ▶ PakBus routing and device initiated connections

## Technical Description

The NL201 connects to an Ethernet network using a 10Base-T/100Base-TX, full or half duplex, Ethernet interface. It has CS I/O and RS-232 ports for connecting a Campbell Scientific data logger, peripheral, Modbus RTU, or other serial-based device. A USB micro B connection is provided for on-site configuration using Device Configuration Utility software.

The NL201 can act as a PakBus router, TCP serial server, TCP serial client, Modbus TCP/IP gateway, and TLS proxy server for HTTPS and user-defined-port communications.

The NL201 also provides a unique mode that bridges the Ethernet and CS I/O ports. This allows access to the internal IP functionality of the CR6, CR800, CR850, CR1000, and CR3000 (for example, web page access, email, FTP). Adding an NL201 configured in this manner to a CR800 is analogous to adding an NL121 to a CR1000's peripheral port. Adding an NL201 configured in this manner to a CR800 is analogous to adding an NL120 to a CR1000's peripheral port.

## Specifications

Transmission Distance or Area    Worldwide

Power Connector

CS I/O port or DC barrel connector (not powered over USB)

Power Requirements	7 to 20 Vdc
CS I/O Port	SDC 7, 8, 10, or 11 (does not support ME)
RS-232 Port	DTE
USB Port	Micro-B
Ethernet Port	10Base-T and 100Base-TX (full and half duplex), Auto-MDIX, Auto-IP (APIPA), IPv4, IPv6, ICMP/Ping, ICMPv6/Ping, TCP, DHCP Client, SLAAC, DNS Client, HTTPS Proxy, Telnet Server, TLS, PakBus, Modbus TCP/IP
Connections/Routes Supported	<ul style="list-style-type: none"> <li>› Supports 50 simultaneous TCP connections.</li> <li>› Up to 10 of the 50 TCP connections can be used for TLS.</li> <li>› PakBus Router supports 50 routes.</li> <li>› 15 Modbus Server Transactions (maximum)</li> </ul>
Temperature Range	<ul style="list-style-type: none"> <li>› -55° to +85°C (extended)</li> <li>› -25° to +50°C (standard)</li> </ul>
Configuration	<ul style="list-style-type: none"> <li>› Terminal menu over Telnet</li> <li>› Terminal menu over RS-232</li> <li>› Device Configuration Utility over USB or Ethernet</li> </ul>

Service Requirements	Ethernet access
Dimensions	16 x 6.73 x 2.54 cm (6.3 x 2.65 x 1 in.)
Weight	177 g (6.3 oz)

### Current Drain

Active	50 mA (@ 13 Vdc)
Forced Standby	2 mA (available when using Ethernet-to-CS I/O Bridge Mode)

### Communication Rate

RS-232 Port	1200 bps to 115.2 kbps
CS I/O Port	9600 bps to 460.8 kbps
Ethernet	10/100 Mbps

### Compliance

RoHS	Compliant
European Standards	Meets requirements for a class B device under European Standards.
Application of Council Directive(s)	2004/108/EC
Standards to Which Conformity Is Declared	EN61326-1;2013

For comprehensive details, visit: [www.campbellsci.eu/nl201](http://www.campbellsci.eu/nl201) 

