NL201
Network Link Interface

Serial to Ethernet Interface
Very low power

Overview

Campbell Scientific's 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 CSI 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 communications.

Benefits and Features

❯ Extremely low power consumption (650 mW)
❯ Provides access to the native Internet protocol capabilities of the 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 datalogger, 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 CR800, CR850, CR1000, and CR3000 (e.g., web page access, email, FTP). Adding a NL201 configured in this manner to a CR800 is analogous to adding a NL120 to a CR1000's peripheral port.

Ordering Information

Network Link Interface

NL201 Network Link Interface—shipped with an SC12 cable for connecting to the datalogger, USB cable for configuration, and hardware for mounting to an enclosure backplate

Temperature Range Options (choose one)

-ST Tested -25° to +50°C

-XT Tested -55° to +85°C

Power Peripherals

15966 AC/DC adapter allows NL201 to be powered from AC power outlet.

14291 Field power cable allows the NL201 to be powered from a suitable 12 Vdc battery.

Surge Protector

28033 Ethernet Surge Protector helps protect device from electrical surges. An Ethernet cable is required to connect the 28033 to the NL201. Another Ethernet cable such as the 28898 or 28899 is used to connect the 28033 to the computer or hub.

Serial and Ethernet Cables

10873 DB9 Female to DB9 Male Cable (6 feet)—connects the NL201 to the datalogger's RS-232 port

28900 CAT5e, unshielded straight through cable (10 ft). Recommended if the cable is run from a hub.

28898 CAT5e, unshielded straight through cable (6 in). This cable is often used with the 28033 Surge Protector

28899 CAT5e, unshielded straight through cable (2 ft). This cable is often used with the 28033 Surge Protector

Specifications

> 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, Mobus TCP/IP
> Dimensions: 16 x 6.73 x 2.54 cm (6.3 x 2.65 x 1 in)
> Weight: 177 g (6.3 oz)

Configuration
> Device Configuration Utility over USB or Ethernet
> Terminal menu over Telnet
> Terminal menu over RS-232

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

Communication Rate
> RS-232 Port: 1200 to 115.2k bps
> CS I/O Port: 9600 to 460.8k bps
> Ethernet: 10/100 Mbps

Compliance
> RoHS
> 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

Connections/Routes Supported
> Supports 20 simultaneous TCP connections
> Up to 10 of the 20 TCP connections can be used for TLS
> PakBus Router supports 50 routes
> Maximum number of Modbus Server Transactions: 15

Temperature Range
> Standard: -25° to +50°C
> Extended: -55° to +85°C