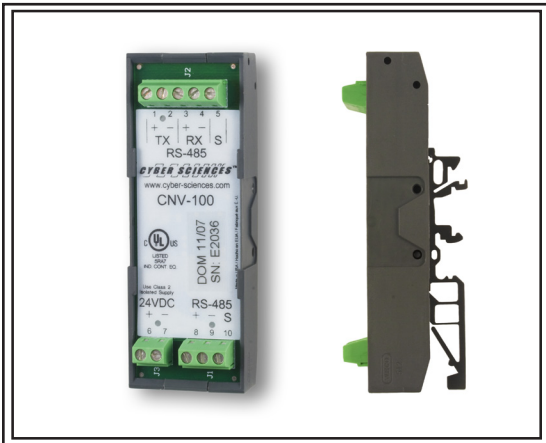


INSTRUCTION BULLETIN

CYBER SCIENCES RS-485 2-wire-to-4-wire Converter CNV-100



The CYBER SCIENCES CNV-100 converter can be used to connect 2-wire Modbus® devices to a 4-wire Modbus network or alternatively to connect a 4-wire Modbus device to a 2-wire network. Other configurations are also possible, such as converting from 4-wire to 2-wire and then back again. Per the Modbus specification, both 2-wire and 4-wire interfaces use RS-485 signal levels.

The CNV-100 converter works on Modbus networks operating at the following baud rates: 9600, 19200, and 38400 bps. No adjustment of the unit is required. Use of the CNV-100 converter on networks operating at other speeds is not recommended.

The CNV-100 converter is designed for DIN-rail mounting. LEDs indicate the presence of 24Vdc control power and serial data transfer in both directions (both 2-wire and 4-wire sides).

SAFETY PRECAUTIONS

! DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Only qualified workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Apply appropriate personal protective equipment (PPE) and follow safe electrical practices. For example, in the USA, see NFPA 70E.
- Turn off all power supplying the equipment in which the device is to be installed before installing and wiring.
- Always use a properly rated voltage sensing device to confirm that power is off.
- Beware of potential hazards, wear personal protective equipment, and carefully inspect the work area for tools and objects that may have been left inside the equipment.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.

Failure to follow these instructions will result in death or serious injury.

CYBER SCIENCES™

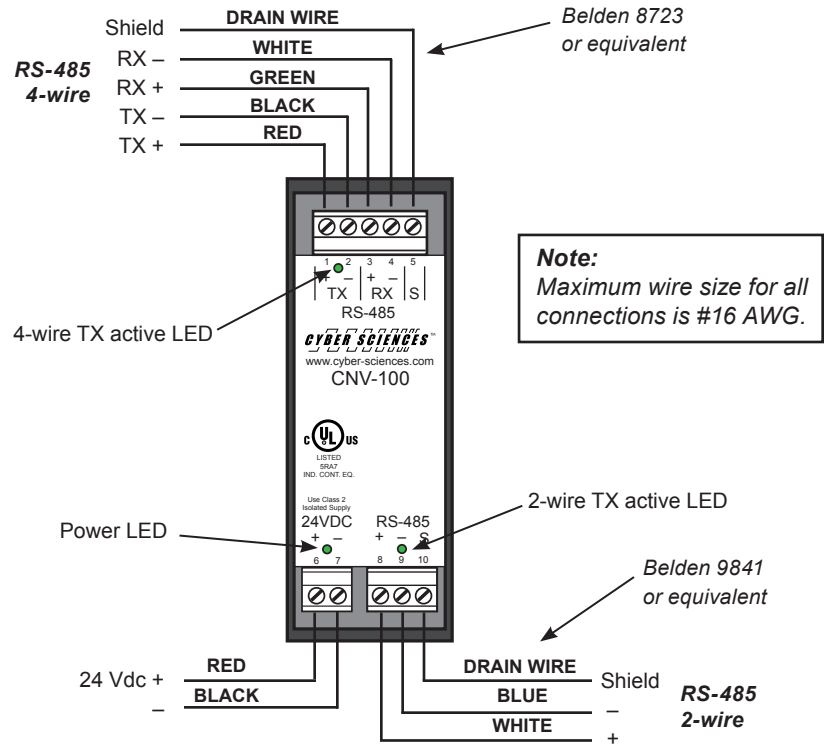
Power Reliability and Energy Efficiency. **Enabled.™**

WIRING

Wiring for the CNV-100 converter's 4-wire RS-485 connector (top) and control power and 2-wire RS-485 connectors (bottom) are shown below. Colors are for the Belden cable types indicated.

Installing and Wiring the CNV-100

- 1) Plan your 2-wire network.
- 2) Plan your 4-wire network.
- 3) Mount the CNV-100 (DIN-rail).
- 4) Wire the connections as shown.
- 5) Power up the CNV-100. (Power LED should be on steady.)
- 6) Test: The 4-wire LED will be on when valid data from the 2-wire network is re-transmitted over the 4-wire network.
- 7) Test: Conversely, the 2-wire LED will be on when valid data from the 4-wire network is re-transmitted over the 2-wire network.



TECHNICAL SPECIFICATIONS

Note:

The CNV-100 has been tested with Square D PowerLogic meters, Sepam relays and Masterpact breakers, all from Schneider Electric. For more information about Cyber Sciences products and applications with PowerLogic meters, please visit:

www.cyber-sciences.com/powerlogic



Doc. no: IB-CNV-01R6
Nov-2009

Cyber Sciences, Inc. USA

SPECIFICATIONS

Indicators	Three (3) green LEDs: Indicate control power and RS-485 serial data transfer in both directions (2-wire and 4-wire).
Data Rates	9600, 19200, 38400 bps
Power Requirements	24Vdc at approximately 50mA (Class 2, 3kV isolation)
Isolation	No isolation is provided by this device. An external power supply should maintain a minimum of 3kV rms isolation.
Surge Suppression	Bidirectional over-voltage surge suppression (all RS-485 lines)
Wire Sizes	The CNV-100 can accept #26 through #16 AWG
Environmental	-20°C to +70°C ambient operating temperature. -40°C to +85°C storage temperature. Humidity 5-95% (non-condensing) at 40°C.
Mounting	Standard DIN-rail
Dimensions	4.10 in. high, 1.50 in. wide, 1.50 in. deep (104 x 38 x 38 mm)
Weight	approximately 2 oz. (57 g)
Standards	UL-listed (UL 508)