Jackson Research Ltd

JRNET100

RS485 8-Port Network Hub

Features

- **8 Independent Half Duplex RS485 Ports**
- **One CMOS Output per Port**
- **One CMOS Input per Port**
- **12V with 2 Amp polyswitch per Port**
- **Dual USB 2.0 communication ports**
- **Hub Configurable on USB P1**
- **RS485 to USB 2.0 Translator on USB P2**
- **FCC Class B EMI Compliant**
- **CE Certified**
- **RoHS Compliant**
- **Enclosure NEMA Rating 4**

Description

The hub supports eight independent RS485 networks with two control lines and power. Status indicators on the front panel correspond to the state of the CMOS input line on each port. Command line instructions configure the hub on USB port 1. Communication with any one of the eight selected RS485 networks is accomplished by command line instructions on USB port 2. Any legacy security device can be connected which includes passive BMS, passive infrared motion sensors and other devices that send status over USB port 1. Power at 12V on each port is current limited to 2 Amp by polyswitch current limiters. The sum total of the current drawn by all ports must not exceed 10 Amps.

The USB ports are accessed on the PC like RS232 ports by applications such as Hyperterm, Putty or Hercules on Windows systems or Putty, CuteCom or a standard terminal interface on Linux systems using command line instructions. There should be two windows open on the PC at once; one (P1) for issuing commands and monitoring the status of each input port line and the other (P2) for communications on the RS485 port selected by instructions given on the command line through the other window (P1).

Absolute Maximum Ratings

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Supply Voltage ............................................................ +13V
Supply Current ...........................................................   10A
Storage Temperature ................................... -55°C to 125°C
Operating Temperature Range ...................... -20°C to 70°C
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Operational Characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Supply Voltage	over temperature range	11	12	13	V
Current per Port	current limited		2		Amps
CMOS Voltage Level High	standard CMOS switching		11.95		V
CMOS Voltage Level Low	standard CMOS switching		0.05		V
CMOS Output Line Current	maximum		6.8		mA
Enclosure Material			Aluminum		
External HxWxD			53.5x169.5x160.5		mm
Weight			1.2		Kg

Applications Information

General

The JRNET100 features a legacy interface to existing security devices such as magnetic contacts. Each input sensor line has a 10KOhm resistor connected for either any contact switch to ground or open collector transistor operations. The normal state is low. The input line change of state from low to high (the corresponding LED on the front panel switches from green to red) is identified by port number and observed in window 1 connected to USB P1.

The CMOS output line on each port sends a 1 msec pulse by command line instructions sent through the window connected to USB P1. This pulse will be sent down the output line corresponding to the actively selected port. This function can be used for actions such as "remote test" or "device reset". All units with their input lines connected in parallel on that port will receive the pulse.

Mounting

The all anodized aluminum NEMA Class 4 hub standard mounting is desktop. Brackets are available for wall mounting which should always be oriented with the back panel, RJ12 connectors, pointing down to avoid accumulation of contaminants and moisture within the enclosure. Except for the RJ12 connectors on the back panel, the unit is sealed.

Network Device Configuration

One possible configuration is one legacy magnetic contact per port. More than one magnetic contact may be in parallel on the same port, but the message on USB P1 will only indicate a fault on that port and not identify which contact opened. Any connected device other than a contact switch, such as a motion sensor, must have open collector output for proper operation all of which may be connected in parallel.

One RS485 serial network string may be connected to each port or any combination of RS485 networks and sensors.

Care should be exercised not to exceed the individual port output current on any line. If more power is needed, it should be supplied near the attached device by an external source.
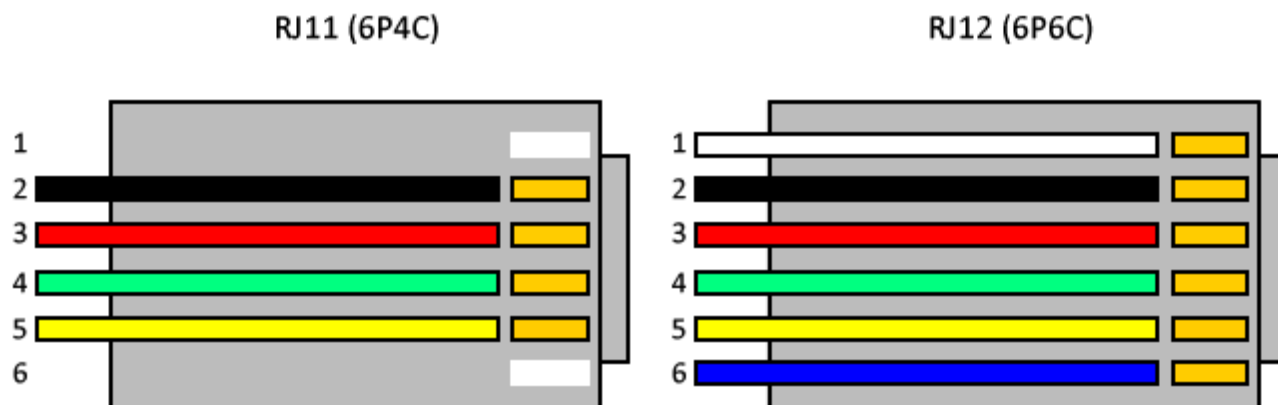
Network Port Cables

There are eight (8) RJ12 modular P6C6 connectors suitable for standard six conductor telephone cables and jacks.

Operation

See the manual for full operation instructions, command line instructions and wiring configurations.

Simplified Schematic

Cables

The RJ12 hook is underneath (bottom). Both ends of the cable must look like this. The wire designations are as follows:

Color Code	RJ11 (P6C4)	RJ12 (P6C6)
White	none	RS485 Line B
Black	GND	GND
Red	12V	12V
Green	Input Open Collector	Input Open Collector
Yellow	Output CMOS	Output CMOS
Blue	none	RS485 Line A

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