

AP821

8 PORT RS-422 STACKABLE HUB AND RS-232 CONVERTER



Description

The AP821 is an 8 port RS-422 hub designed to build RS-422 networks of intelligent control systems equipped with a RS-422 port. RS-422 networks provide a reliable way to interconnect devices using full duplex serial communication to a computer. Up to 8 systems can be connected to one hub. The built-in RS-232 null modem port provides a direct link to the computer's COM port running the software. The RS-422 uplink port on the AP821 can be connected to a RS-422 input port of another hub to act as a repeater or to extend the number devices on the network. All ports are protected by transient voltage suppressors (TVS). Hand shake and data flow control is provided by software.



Installation planning

Since the RS-232 port of the hub will be connected to the computer, you normally plan to mount it within 15.25 metres (50 ft) of it. If multiple AP821 hubs are required on your RS-422 network, an inversion in the cable between two hubs is needed. See Pin out and specifications below. (RS-422 network schematic on page 2)

Up to 1000 meters can separate two devices using the RS-422 serial protocol using two twisted pair UTP Cat 5 cables terminated with RJ11 jacks. Flat modular cables can be used when the devices are within 25 ft/7.7 M of the hub.

Regular 4 pair UTP Cat 5 computer network cables terminated with RJ45 connectors can be used for RS-422 networking since the RJ11 jack will fit in the RJ45 connector. Flat modular cables can be used to join the RS-422 devices to the Cat 5 cables.

Specifications

Standard EIA RS-422 Physical Media Twisted Pair Network Topology Point-to-point

Maximum Distance RS-422 1500 metres (4,900 ft)

Maximum distance RS-232 15.25 metres (50 ft) with straight cable or 44 metres (147 ft) using UTP Cat 5 cable

Mode of Operation Differential

Maximum Baud Rate RS-422 100 kbit/s – 10 Mbit/s

Maximum Baud Rate RS-232 115kbit/s

Voltage Levels - 6V to +6V (maximum differential Voltage)

Mark(1) Negative Voltages

Space(0) Positive voltages

Available Signals Tx+, Tx-, Rx-, Rx+ (Full Duplex)

RS-422 connector type RJ11

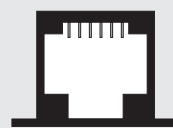
RS-232 connector type DB9 male

Ordering information

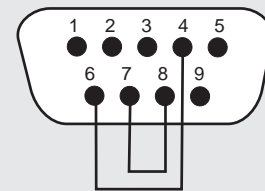
Item No.	Description
70-060	AP821 hub with 110/230 volts to 9 volts DC power supply
70-040-X	Modular RS-422 cable (RJ11) <u>straight</u> 3 M (10 ft) X = Additional meters
70-041-X	Modular RS-422 cable (RJ11) <u>inverted</u> 3 M (10 ft) X = Additional meters
70-042-X	2 twisted pair UTP Cat 5 cable with RJ11 jacks (inverted cable) 3 M (10 ft) X = Additional meters
70-010	RS-232 null modem cable 3 M (10 ft)

AP821 Connectors PIN out

NC, Tx+, Tx-, Rx-, Rx+, NC



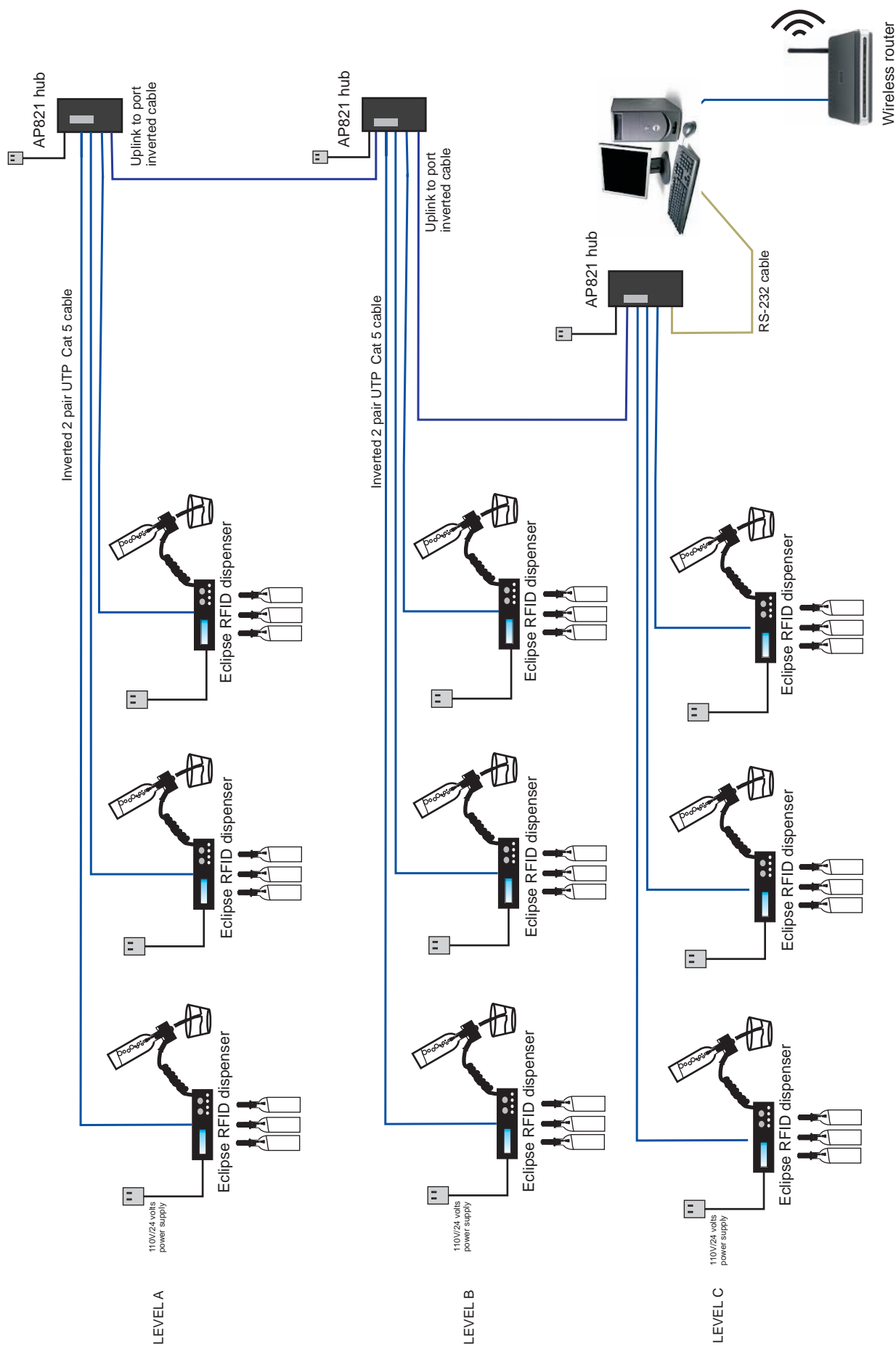
RS-422 RJ11



RS-232 DB9F

Pin 1 NC
Pin 2 Rx
Pin 3 Tx
Pin 4 DTR
Pin 5 GND
Pin 6 DSR
Pin 7 RTS
Pin 8 CTS
Pin 9 NC

* DTR & DSR shorted on board
RTS & CTS shorted on board



AP821 RS-422 network schematic

© Auper Electronic Controls Inc 2012