Multi-line RDT Readerboards

NETWORK PART:	DESCRIPTION:	FOR USE WITH:	CABLE:
CDP7011-10-5xx	Echo RDT terminator plug	Echo RTDs	N/A
CDP8000-10-113	PC-to-Transmitter cable	PC-driven RDTs	Belden #8142
RS232:422 Xmtr	Transmitter; to RDTs	PC RS232 output	Belden #9271
RS422:232 Rcvr	Receiver; for RDTs	Master RDTs	Belden #9271
RS422 Expander	4x Network Expander	RDT Networks	Belden #9271

HSSI* Remote Echo RDT ReaderBoard Network

The HSSI network is used when two or more displays must run synchronized messages. Master / Remote Echo display connection, using Belden #8142 (25 conductor cable), runs from the DB25 ACCESSORY OUT port on the Master to the DB25 ACCESSORY IN port on the first remote Echo board. The cable for the next remote's ACCESSORY IN port, etc. A DB25 terminator plug is required at the ACCESSORY OUT port of the last Echo display. Refer to the attached PIN-OUT DIAGRAM and RDT NETWORK DIAGRAMS.

*High Speed Serial Interface (U.S. patent #4551720)

PC-Controlled Multiple Master RDT Readerboard Network

The two types of RDT networks described below are uni-direction; all information is sent from a PC to the individually addressable RDT displays in the network.

- **Linear Configuration:** The PC connects to an RS232:422 Transmitter (part number CDP8000-10-113); use Belden #9271 between the Transmitter and the first RDT's RS422:232 Receiver. Each master RDT must have its own receiver, with each Receiver wired to the next in line using Belden #9271. A 120 Ohm terminating resistor is required at the last RS422:232 receiver in the network. Refer to the attached RDT NETWORK INSTALLATION DIAGRAM.

- **"Star" or Multiple "Leg" Configuration:** The PC connects first to an RS232:422 Transmitter, which connects to an RS422 Network Expander. This Expander, which acts like four additional Rs232:422 Transmitters, is designed to be wired to RS422:232Receivers attached to master readerboards. Each Expander can be wired to another Expander to create additional "legs." 120 Ohm terminating resistors are required at the last Receiver in each "leg." See the RDT INSTALLATION or RS422 NETWORK EXPANDER DIAGRAMS.

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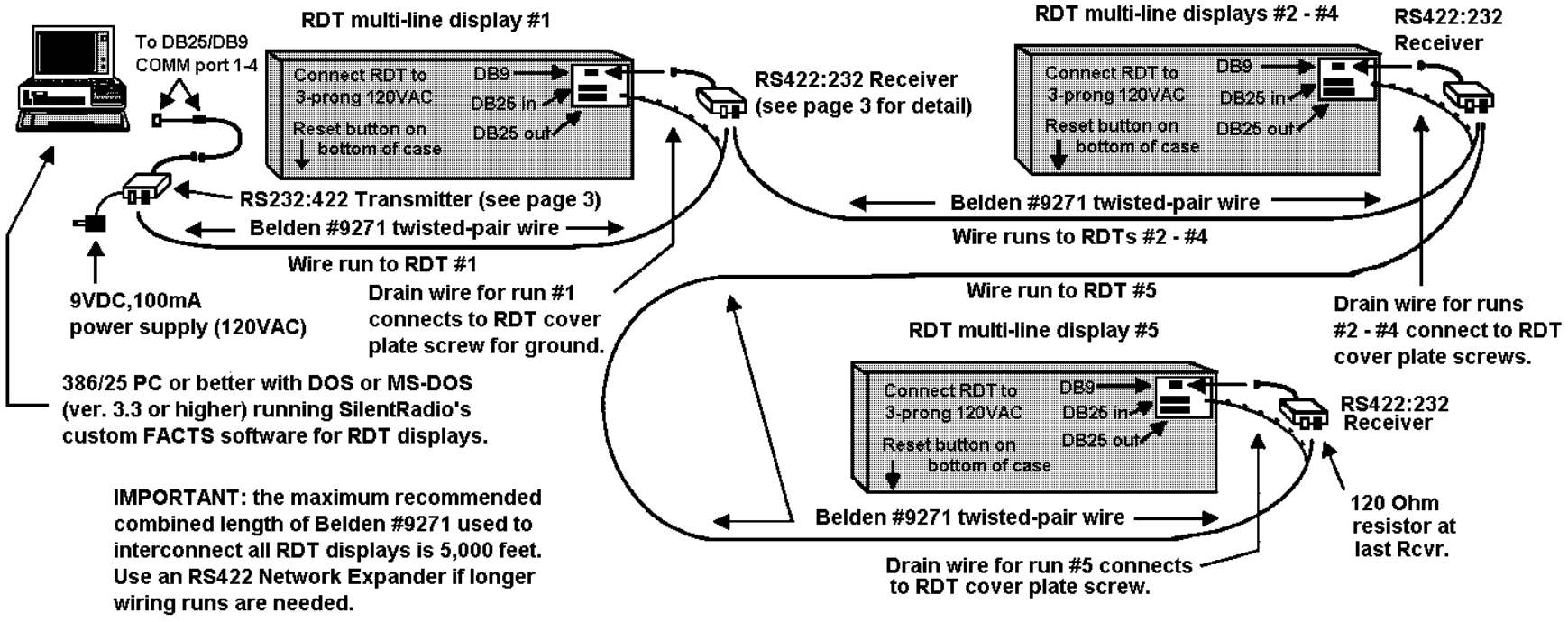
RS232:422 TRANSMITTER / RS422:232 RECEIVER
NETWORK DIAGRAM FOR RDT MULTIPLE-LINE DISPLAYS

All Daktronics direct-wired RDT displays are networked using one RS232:422 Transmitter connected to a PC (via PC-to-Xmtr cable #CDP8000-10-113) or other data source, and an RS422:232 connected to each RDT display's DB9 port this is a uni-directional (one-way) network configuration.

IMPORTANT: Use Belden #9271 shielded, twisted-pair wiring (or equivalent for the network run between the transmitter and the first receiver and between receivers. **Note:** Connect only one end of the drain (shield) wire from each Belden run to a cover plate screw on a RDT (see diagrams). If there are more that five RDTs in a network, or for star pattern networks, we recommend the use of our RS422 NET/EXP Network Expander, which supports up to four RDTs while maintaining power supply and signal strength. Each network Expander can be wired to another Network Expander to create additional "legs" of the display network (see page 4). A 120 Ohm terminating resistor must be installed at the red and black tabs of the last Receiver in the network and /or at the red and black tabs on the last Receiver connected to each Expander and at an Expander's unused signal OUTPUT terminals.

FOR UP TO FIVE ADDRESSABLE RDT DISPLAYS



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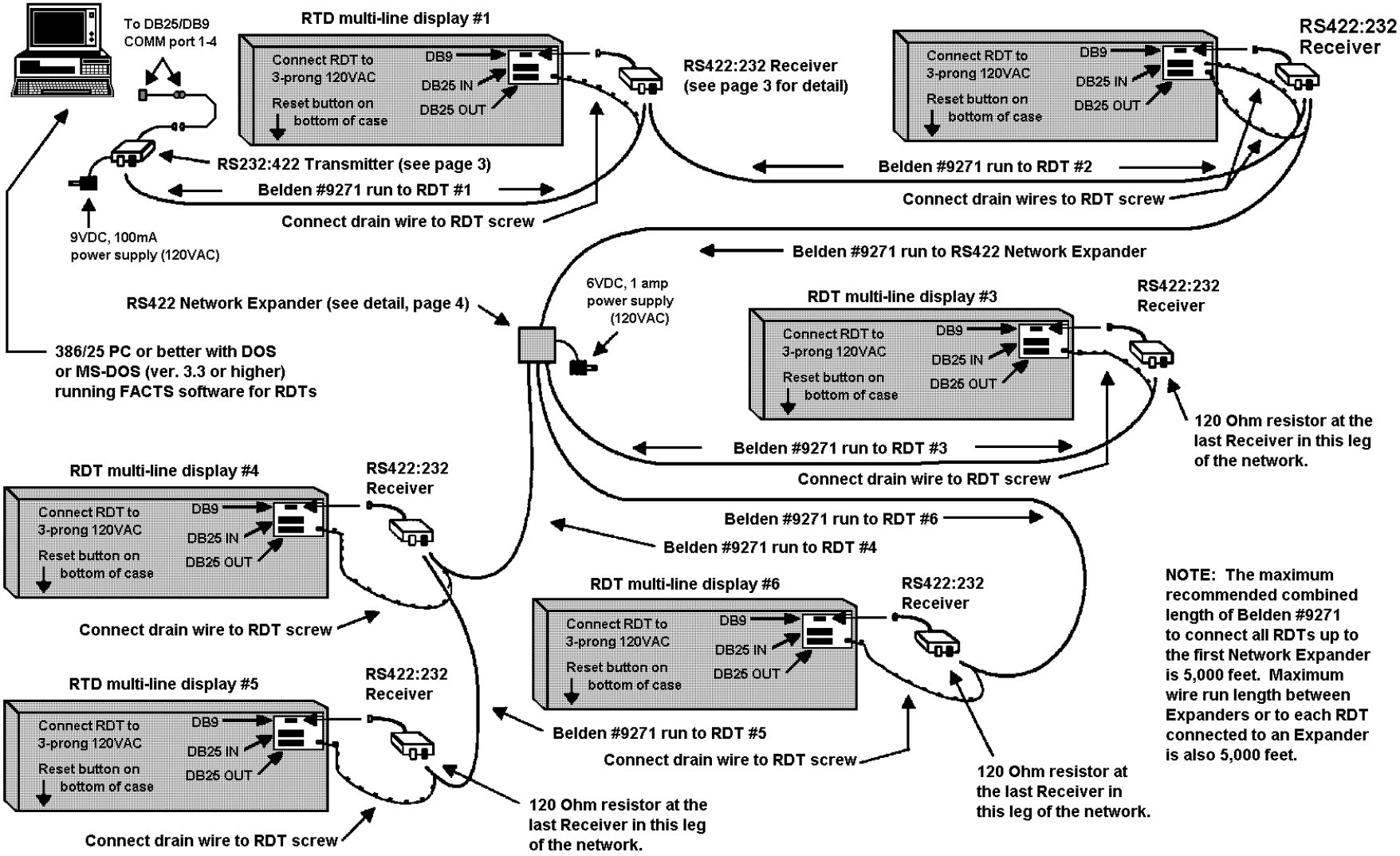
RS422:232 NETWORK DIAGRAM

FOR OVER FIVE ADDRESSABLE RDT DISPLAYS WITH AN RS422 NETWORK EXPANDER



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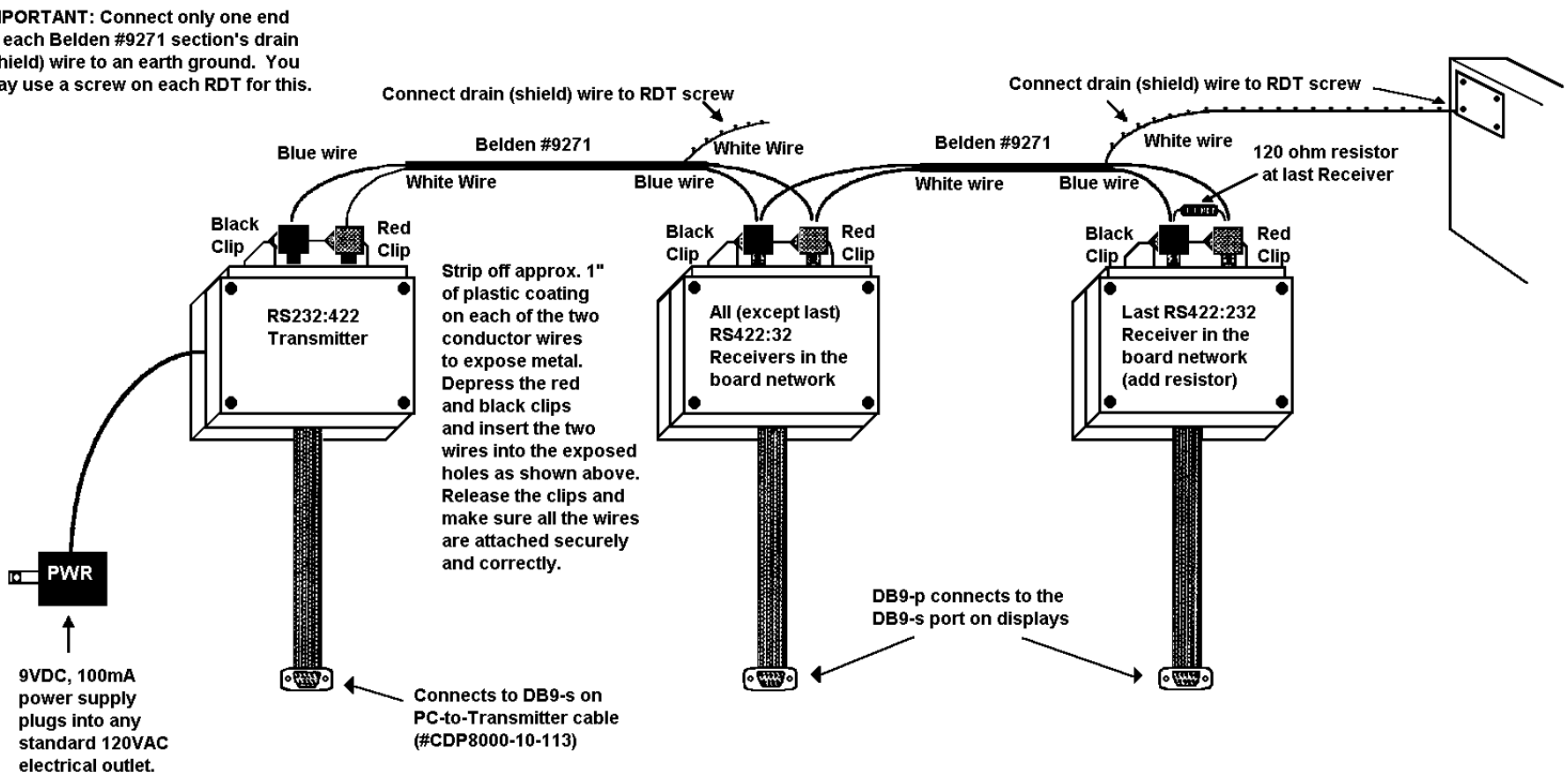
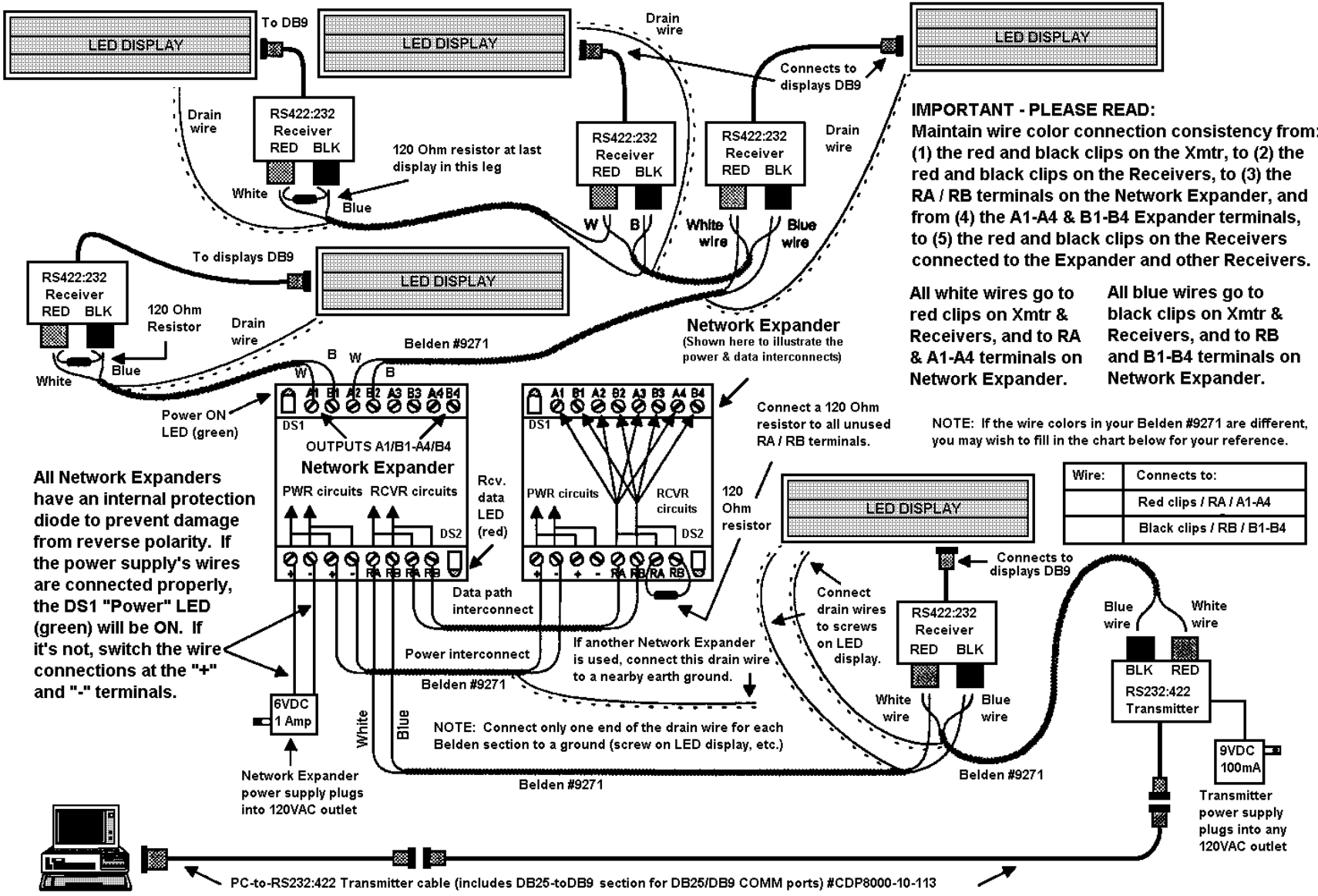
RS232:422 XMTR / RS422:232 RCVR WIRING DIAGRAM



Note: The colors of the two conductor wires in the Belden #9271 may be different from the colors indicated/ Just be sure to connect the same colored wires to the same colored clips on the RS232:422 transmitter and RS422:232 receivers. For instance, attach all the black wires to the clack clips and all the grey wires to all the red clips. If all RDT's after a certain point do not receive any messages, check for reversed wire colors first, and then try reseating the wires in the clips. Twist wires of the same color together before inserting them into the same clip.

RS422 NETWORK EXPANDER WIRING DIAGRAM



IMPORTANT - PLEASE READ:
Maintain wire color connection consistency from: (1) the red and black clips on the Xmtr, to (2) the red and black clips on the Receivers, to (3) the RA / RB terminals on the Network Expander, and from (4) the A1-A4 & B1-B4 Expander terminals, to (5) the red and black clips on the Receivers connected to the Expander and other Receivers.

All white wires go to red clips on Xmtr & Receivers, and to RA & A1-A4 terminals on Network Expander.

All blue wires go to black clips on Xmtr & Receivers, and to RB and B1-B4 terminals on Network Expander.

All Network Expanders have an internal protection diode to prevent damage from reverse polarity. If the power supply's wires are connected properly, the DS1 "Power" LED (green) will be ON. If it's not, switch the wire connections at the "+" and "-" terminals.

NOTE: If the wire colors in your Belden #9271 are different, you may wish to fill in the chart below for your reference.

Wire:	Connects to:
	Red clips / RA / A1-A4
	Black clips / RB / B1-B4

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