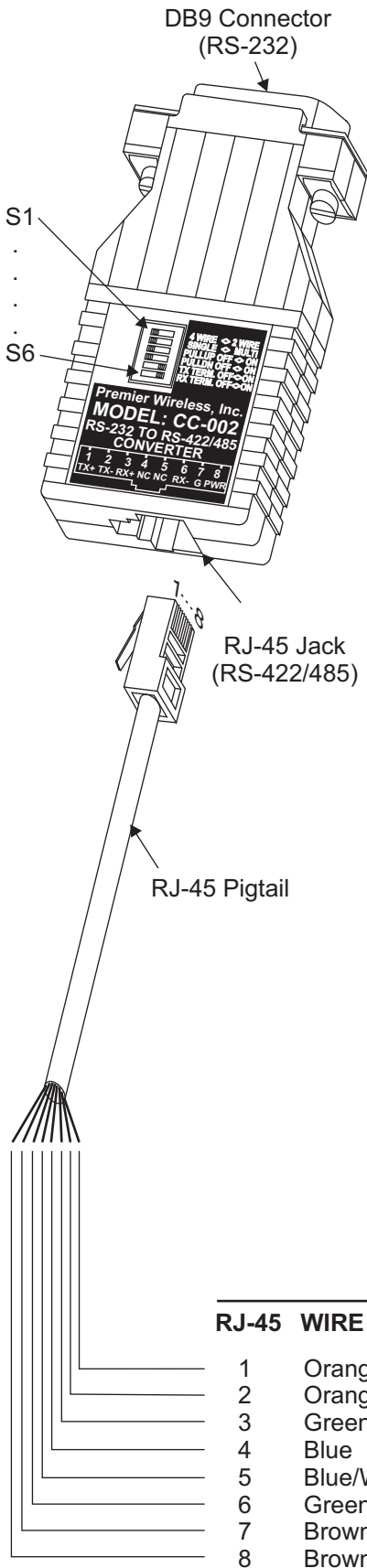


CC-002

RS-232 to RS-422/485 CONVERTER



QUICK SETUP

The default switch settings (S1 to S4 set to OFF, S5 & S6 set to ON) will work with most of the CCTV camera systems. It is applicable to 4-wire full duplex or half duplex (bi-directional signals traveling in two separate pairs of wires) and 2-wire simplex (signal traveling one way). For 2-wire half duplex (bi-directional signals traveling in one pair of wires), please see Switch Settings - Switch S1 for 2 Wire Mode below. Plug the converter into the DB9 port on the modem. Connect the **RX+** and **RX-** on the converter to the **TX+** and **TX-** signals from the DVR/switcher/keyboard controller, or **RX+** to **OUT-B** and **RX-** to **OUT-A** terminals for some systems. Connect the other pair of signals in a similar way if using 4 wires. At the camera end, connect **TX+** and **TX-** on the converter to the **RX+** and **RX-** (or **IN-B** and **IN-A**) of the camera receiver. In some camera systems, e.g. Pelco, the polarity of the wiring is reversed, i.e. + terminal connected to the - terminal at the other end for all interface signals. Supply DC power to the converter through pins 7 & 8 of the RJ-45 jack. (CL-1000H modems supply power to the converter through pin 6 of the DB9 connector)

RS-422/485 SWITCH SETTINGS

SWITCH	OFF	ON
S1	4 Wire Mode (Full Duplex)	2 Wire Mode (Half Duplex)*
S2	Single (Point to Point)	Multi-drop (Daisy chained outputs)**
S3	Pull-up Resistor Off (TX-)	Pull-up Resistor On (TX-)**
S4	Pull-down Resistor Off (TX+)	Pull-down Resistor On (TX+)**
S5	TX Termination Off	TX Termination On (Output Termination)****
S6	RX Termination Off	RX Termination On (Input Termination)****

Notes: **RX+** & **RX-** signals are differential **inputs**, and **TX+** & **TX-** signals are differential **outputs**. **TX's** are inputs also under 2-wire mode.

* Use the TX+ & TX- pair only when the 2 Wire mode is selected. Use this mode only when **bi-directional** signal is carried in the same pair of wires.

** Multi-drop mode refers to the condition where several outputs (not concerned with the inputs here) are connected in parallel (or daisy-chained together). Under this mode the TX+ & TX- signals go into high impedance state (inactive) when no data is being sent out.

*** Under 2 Wire Mode or 4 Wire Multi-drop mode, turning the Pull-up and Pull-down Resistors to ON will guarantee an idle state on the TX+ & TX- signals when all outputs on the line are inactive. These resistors should be switched together.

**** Line terminations. In daisy chain operation, turn on only the termination of the input and/or output of the last and/or first device in the chain.

Depending on the camera systems, the interface signal polarity may be reversed, i.e. "+" to "-" instead of "+" to "+" & "-" to "-".

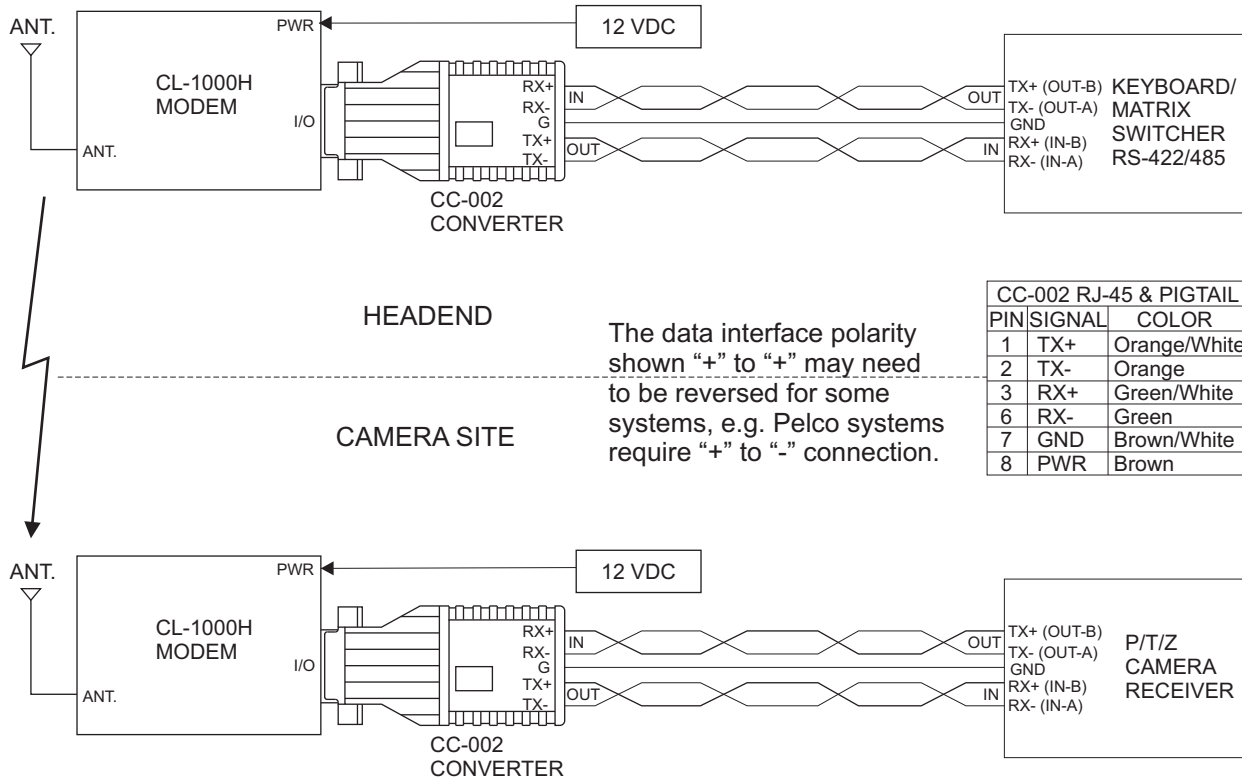
The CC-002 converter can replace the CC-001A converter although there is a phase reversal in the signal. It is therefore important to interchange the + & - wires on one side when both are mixed in the same system.

RS-422/485			
RJ-45	WIRE COLOR	SIGNAL (4-wire)	(2-wire)
1	Orange/White	TX+	(Output) (In/Out)
2	Orange	TX-	(Output) (In/Out)
3	Green/White	RX+	(Input) (not used)
4	Blue	NC	
5	Blue/White	NC	
6	Green	RX-	(Input) (not used)
7	Brown/White	GND	
8	Brown	POWER INPUT, 7-20 VDC	

RS-232	
PIN	SIGNAL
1, 4, 7, 8, 9	NC
2	DATA IN
3	DATA OUT
5	GND
6	POWER INPUT (7-20 VDC)

DB9 CONNECTOR (MALE)	
PIN	SIGNAL
1	
2	
3	
4	
5	
6	
7	
8	
9	

HOOKUP DIAGRAM - CL-1000H MODEM & CC-002 CONVERTER



NOTES:

- (1) The 4-wire connection shown is applicable to 4-wire half duplex and 2-wire simplex (omit the TX pair at the headend and the RX pair at the camera site). The connection is also applicable to 4-wire full duplex operation when full duplex modems such as the CL-2000 are used.
- (2) The pair of signals labeled "TX+ & TX-" is output while the other pair labeled "RX+ & RX-" is input.
- (3) When the CC-002 is set at the 2 Wire Mode (half duplex), use the TX+ & TX- pair for In/Out signals at both ends.
- (4) Use the RJ-45 Pigtail that is supplied with the converter to hookup to the signal source. Observe the color code on the wires to identify the correct one to use.