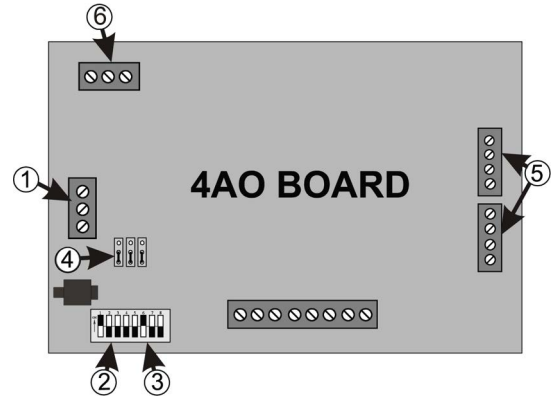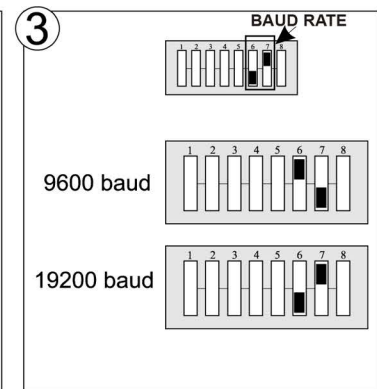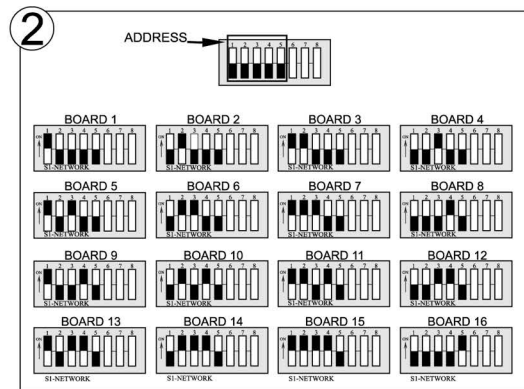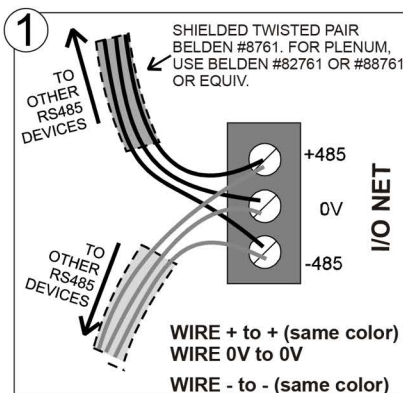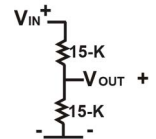# 4AO (Analog Output) Board

1. Connect the 4AO board to the RS485 I/O Network.
2. Set the network address on the first five rockers of dip switch S1.
3. Set the network baud rate using rockers 6 and 7 of dip switch S1.
4. Set RS485 termination jumpers UP (terminated) if at either end of a daisy chain. Otherwise, set jumpers DOWN (not terminated).
5. Optionally, connect the 4-20mA outputs in either a 2-wire or 4-wire hookup as illustrated in Step 5, or if a 4-20mA is not used, it may be left unconnected.
6. Connect board to the 24VAC secondary of the power transformer
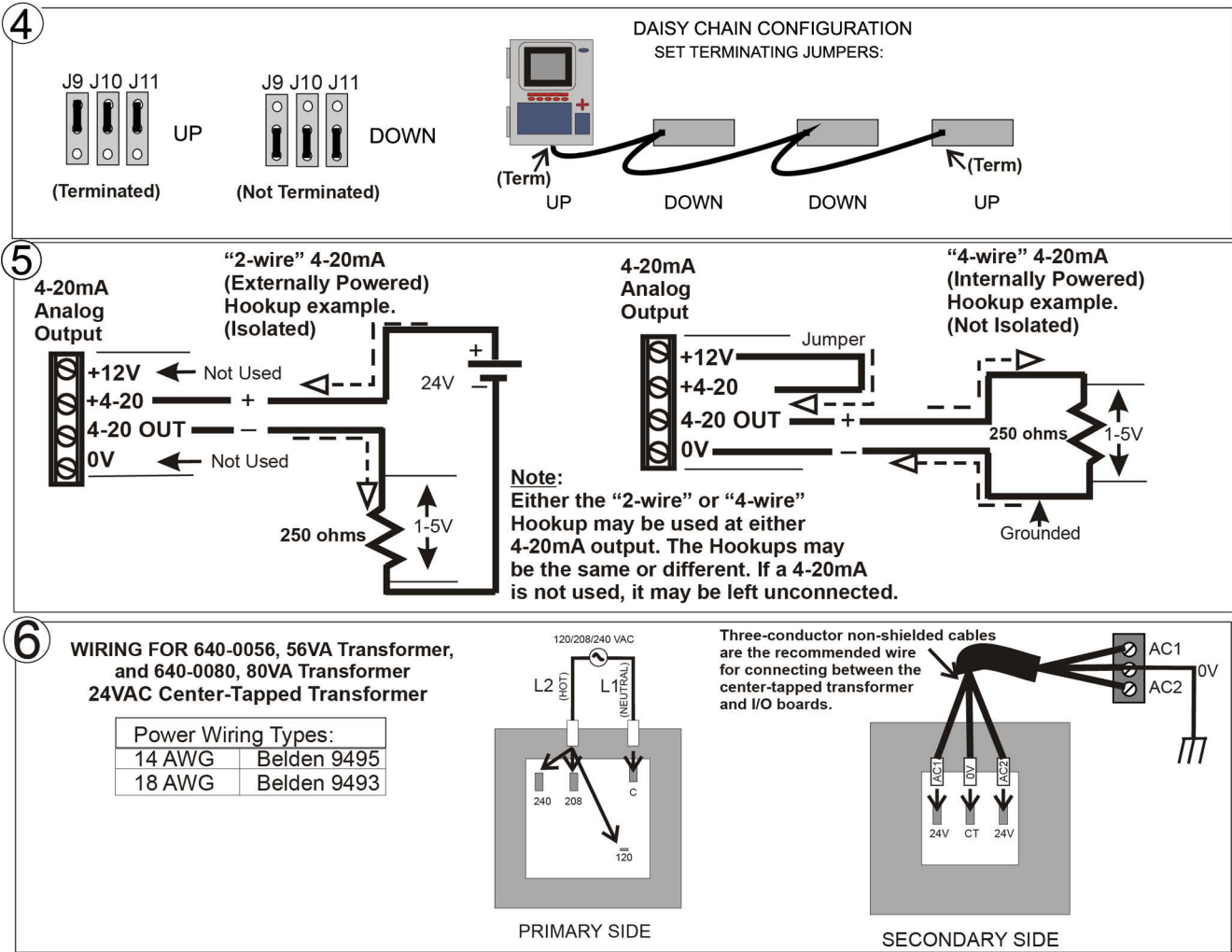

⚠ **CAUTION**   If you change any dip switch settings while the board is powered, disconnect the power and re-power the board to reset.

NOTE: The voltage divide function capability on the previous model (P/N 810-3030) 4AO board is no longer supported. This can now be accomplished by using two external 15-K resistors. If used with E2, scale output range

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④ **DAISY CHAIN CONFIGURATION**
SET TERMINATING JUMPERS:

J9 J10 J11 **UP** (Terminated)

J9 J10 J11 **DOWN** (Not Terminated)

(Term) **UP**   **DOWN**   **DOWN**   (Term) **UP**

⑤ **4-20mA Analog Output**

"2-wire" 4-20mA (Externally Powered) Hookup example. (Isolated)

+12V ← Not Used
+4-20 +
4-20 OUT −
0V ← Not Used

24V

250 ohms   1-5V

4-20mA Analog Output

"4-wire" 4-20mA (Internally Powered) Hookup example. (Not Isolated)

+12V   Jumper
+4-20
4-20 OUT +
0V

250 ohms   1-5V

Grounded

Note:
Either the "2-wire" or "4-wire" Hookup may be used at either 4-20mA output. The Hookups may be the same or different. If a 4-20mA is not used, it may be left unconnected.

⑥ **WIRING FOR 640-0056, 56VA Transformer, and 640-0080, 80VA Transformer 24VAC Center-Tapped Transformer**

Power Wiring Types:	
14 AWG	Belden 9495
18 AWG	Belden 9493

120/208/240 VAC

L2 (HOT)   L1 (NEUTRAL)

240   208   C

120

PRIMARY SIDE

Three-conductor non-shielded cables are the recommended wire for connecting between the center-tapped transformer and I/O boards.

AC1
0V
AC2

AC1   0V   AC2

24V   CT   24V

SECONDARY SIDE

*NOTE: This sheet is intended for use as a quick reference only. All installation technicians should read the **E2 Installation and Operation Manual (P/N 026-1610)** for complete control system information.*

Visit our website at **copeland.com/en-us/products/controls-monitoring-systems** for the latest technical documentation and updates.
For Technical Support call **833-409-7505** or email **ColdChain.TechnicalServices@Copeland.com**

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