Alternate MODBUS COM Wiring Method for E2, XR, XM, and XEV Devices

Overview

To simplify MODBUS communication wiring with E2, (both Standard and Enhanced versions) XR, XM, and XEV series devices, the alternate method outlined below may be used.

Wire Type

Use Belden 8761 or equivalent cable.

Shield

DO NOT connect the shield to the device. Keep the shield continuous throughout a network segment. The shield must be twisted together and insulated with electrical tape or heatshrink at each device within a network segment.

Securely connect the shield to an earth grounded chassis at each end of a network segment.

Termination

Each network segment must be biased and terminated at the E2 controller's end (all three jumpers in the MOD position for E2 Enhanced, or all three jumpers in the UP position for E2 Standard) and terminated with a 150 ohm resistor at the other end of the network segment (150 ohms between the two communication wires).

Recommended

For reliable communication on some installations, it may be necessary to connect a 100 ohm resistor between the XR, XM, or XEV device's previously identified ground terminal and earth ground.

Some E2 MODBUS COM Ports Can Support Two Network Segments

For E2 Enhanced 4.x Controller Hardware

COM2 supports two network segments: one on connector RS485-COM2A, and the second on connector RS485-COM2B.

COM4 supports two network segments: one on connector RS485-COM4A, and the second on connector RS485-COM4B.

COM6 only supports one network segment on connector RS485-COM6.

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For E2 Standard 3.x Controller Hardware

COM2 supports two network segments: one on connector RS485-1A, and the second on connector RS485-1B.

For information on the maximum recommended number of XR, XM, and XEV devices for each network segment (load and bandwidth calculations), contact Copeland Technical Support at 833-409-7505.
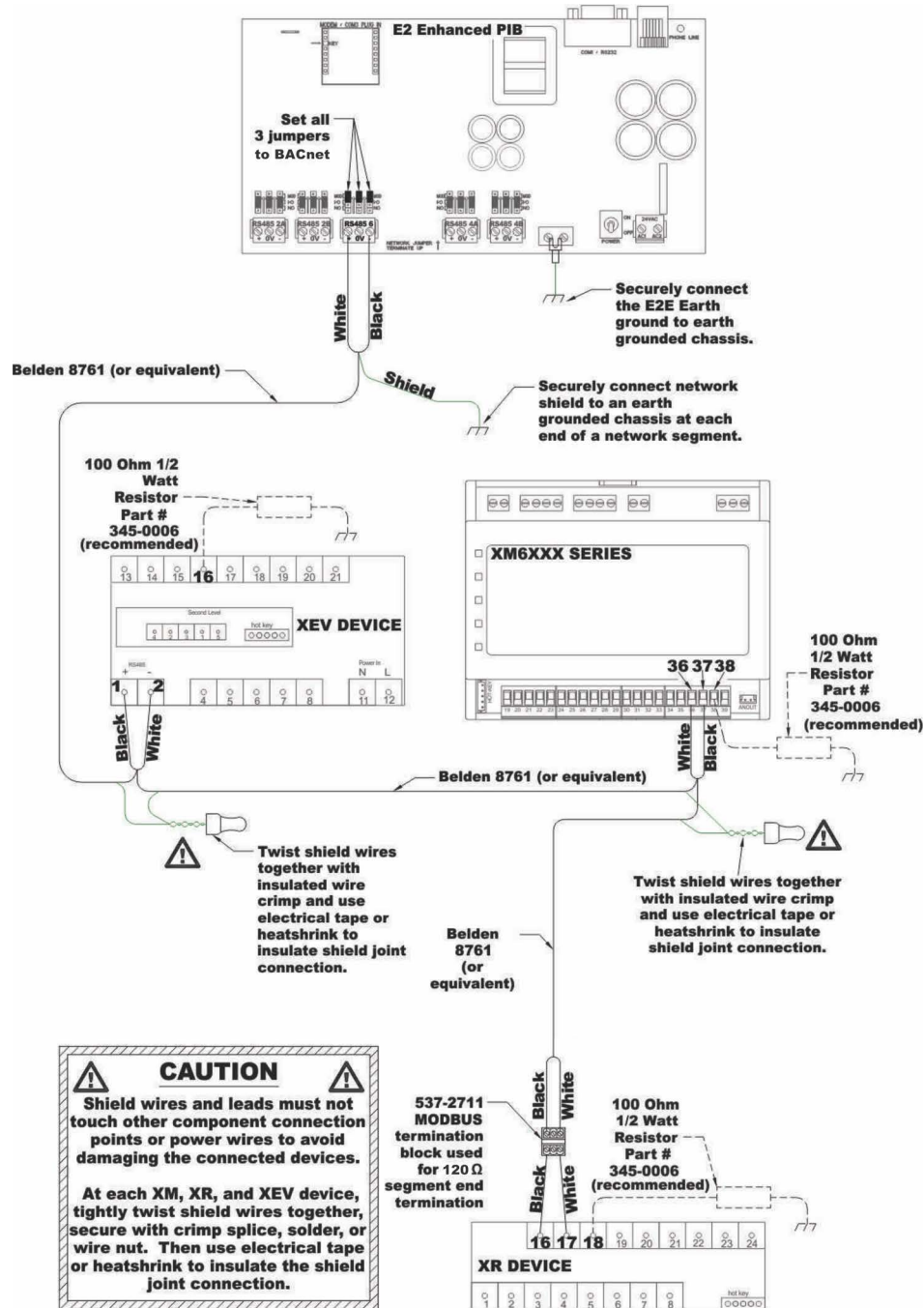

Figure 1 - Modbus COM Wiring Diagram

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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