

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

## Technical Bulletin

### 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.

#### 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 Emerson Retail Solutions Technical Support at 770-425-2724.*

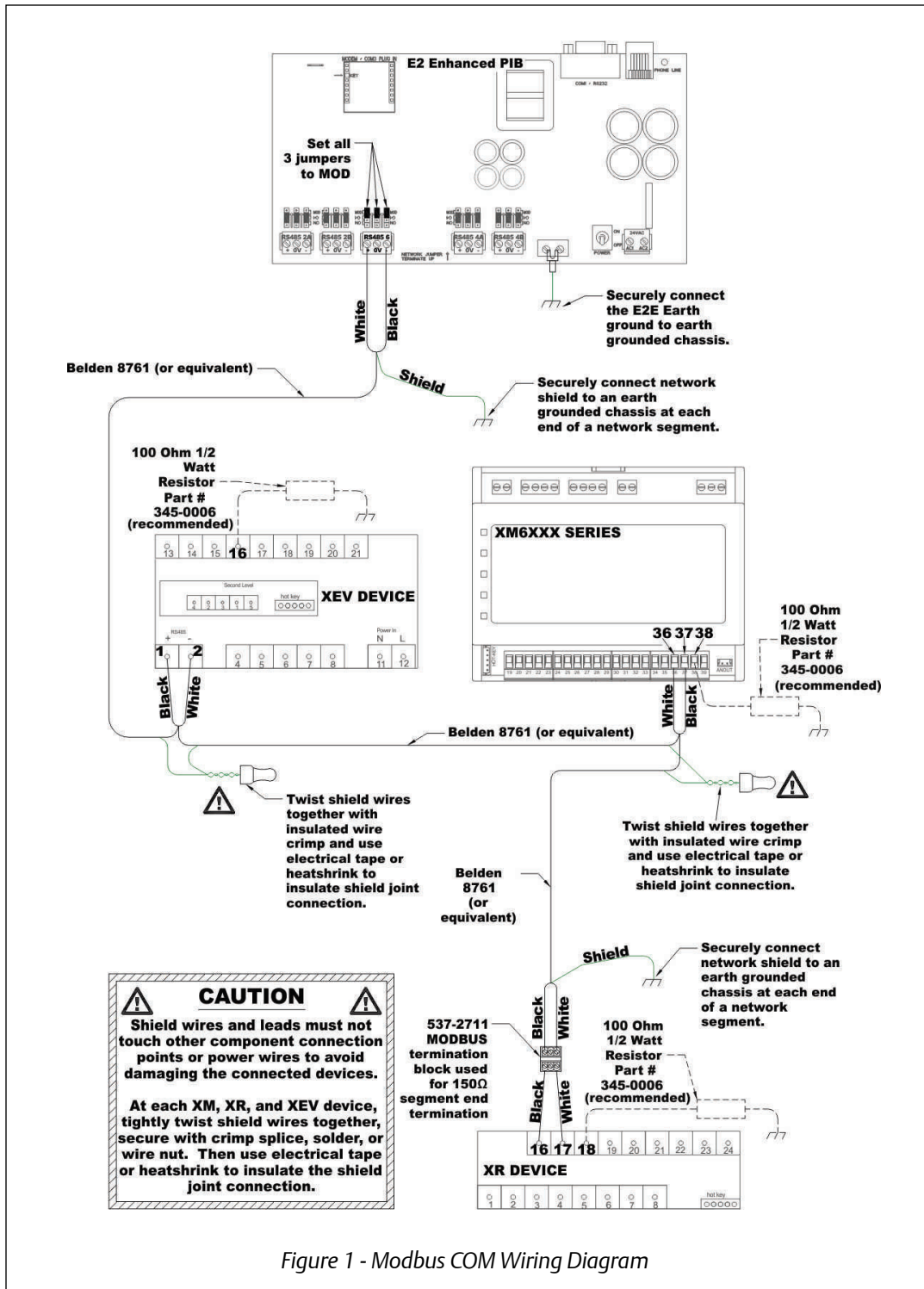


Figure 1 - Modbus COM Wiring Diagram

This document may be photocopied for personal use.  
 Visit our website at <http://www.emersonclimate.com/> for the latest technical documentation and updates.  
 Join Emerson Retail Solutions Technical Support on Facebook. <http://on.fb.me/WUQRnt>

The contents of this publication are presented for informational purposes only and they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. Emerson Climate Technologies Retail Solutions, Inc. and/or its affiliates (collectively "Emerson"), reserves the right to modify the designs or specifications of such products at any time without notice. Emerson does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end-user.

026-4148 22-SEP-2014 Emerson is a trademark of Emerson Electric Co. ©2014 Emerson Climate Technologies Retail Solutions, Inc. All rights reserved.