



Introduction

The ME-RVC is a powerful and cost effective interface provided to RV OEM's that allows Magnum inverters and accessories to communicate with RV-C-compliant devices. Magnum inverters and accessories communicate using proprietary MagNet serial data. The ME-RVC was designed to convert the MagNet data to RV-C communications protocol giving RV OEM customers the ability to multiplex with Magnum products.

The ME-RVC provides two RJ11 MagNet connections and one RV-C connection. This allows up to two Magnum inverter/chargers to connect to a single RV-C connection. The ME-RVC emulates the ME-RC remote control, to allow RV-C control of the features and settings in the inverter and in the ME-AGS and ME-BMK accessories.

General Specifications	
Input Voltage*	8 VDC - 17 VDC
Input Amperage*	40 mA typical, 60 mA Max @ 12V
Operating Temperature Range	-20 to 60 Deg C
Environmental Limitations	Not sealed for exterior mounting
EEPROM	None
External Dimensions	5 3/8" (L) x 3 1/4" (W) x 1 1/4"
Source Address	66
SAE J1939	593

* Powered only from the RV-C connector

For OEM's requiring information on the ME-RVC communication protocol definitions, refer to the ME-RVC Application Document.

Installation

Before installing the ME-RVC, read this entire section so you can thoroughly plan the details to ensure the overall system requirements are accomplished. To assist in the planning and designing of your installation, review the basic system diagrams (see Figures 5, 6, 7 and 8).



WARNING: Installations should be performed by qualified personnel, such as a licensed or certified electrician. It is the installer's responsibility to determine which safety codes apply and to ensure that all applicable installation requirements are followed. Applicable installation codes vary depending on the specific location and application of the installation.

ME-RVC Instruction Sheet

Mount the ME-RVC in a location that is clean, dry, and protected from extreme temperatures. Allow ample room to access the reset switch and all connectors, and to view the LEDs—which help to determine operational status and assist with troubleshooting.



CAUTION: Do not mount the ME-RVC device in a closed battery compartment, or in an area where water or any other liquid can enter the device and cause shorting or corrosion. Failure due to improper mounting is not covered by the warranty.



CAUTION: Before beginning the installation, ensure all AC and DC power is disconnected from the inverter. There should be no flashing or lit LED's on the Magnum inverter or on any accessories.



CAUTION: When connecting battery power to the inverter, all battery negative connections must be connected prior to the battery positive connections. When removing battery power from the inverter, the battery positive should be removed before any battery negative connections are disconnected. This is done to prevent any communication chips/lines from becoming the DC return path to the battery – causing permanent damage to all connected accessories on the network. Summation: Always ensure all battery negative circuits are connected before connecting or disconnecting battery positive.

ME-RVC Dimensions

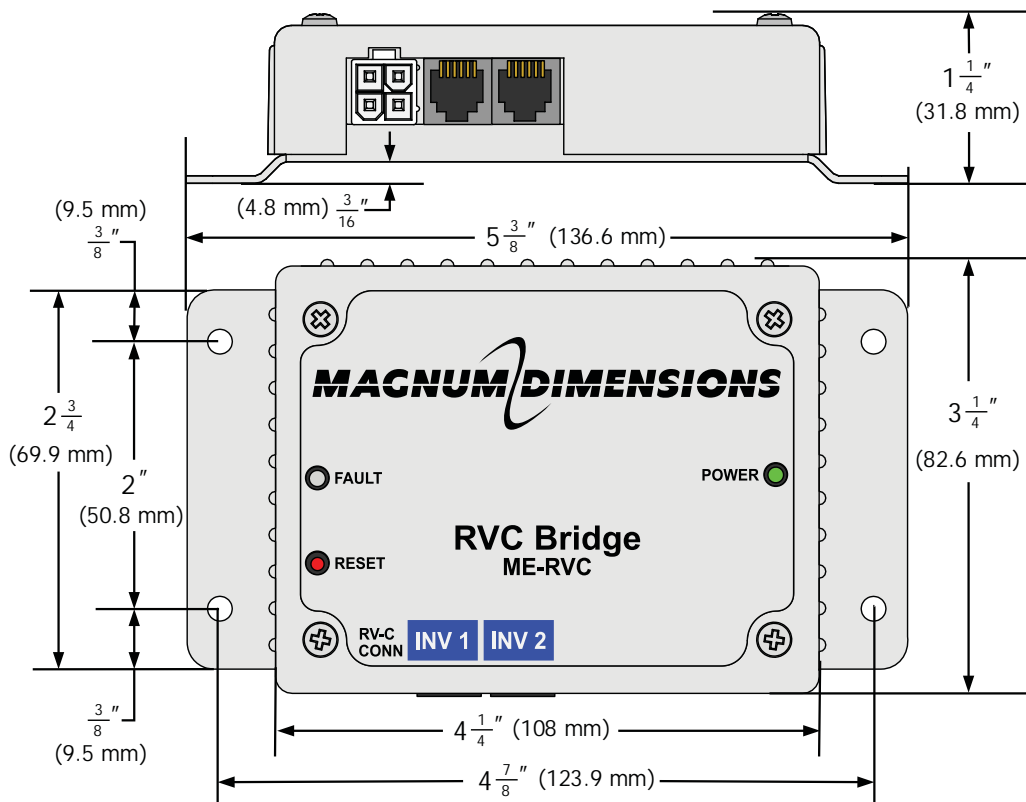


Figure 1, ME-RVC Dimensions

Communication Connection Ports

The ME-RVC comes with one RV-C and two MagNet communication connector ports. The RV-C connector connects to the network bus/backbone in the RV. The MagNet ports connect to the Magnum inverter(s).

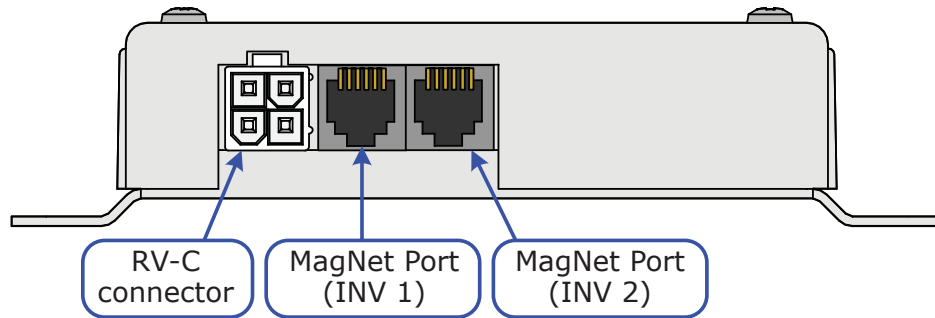


Figure 2, ME-RVC Connection Ports

RV-C Connector - The 4-pin RV-C connector on the ME-RVC is used to provide power to the ME-RVC and to communicate with the network bus/backbone in the RV. Use the information in Figure 3 to connect a plug and cable from the RV-C connector to the RV-C network.



Info: Power is supplied to the ME-RVC device only thru the RV-C connector.

Information on the RV-C plug/connectors:

- Plug (4-pin) - PN: 39-01-2040 (Molex 5557 Series)
- Crimp-on connectors (female) - PN: 39-00-0039 (Molex 5556 Series)

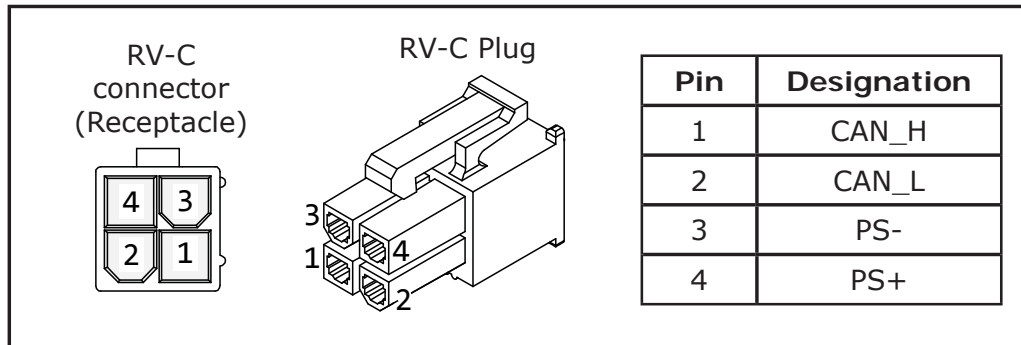


Figure 3, ME-RVC Connector/Plug Designation

MagNet Ports - The MagNet port is used to communicate with the inverter and accessories (if connected). Connect a remote cable from the MagNet (INV 1) port to the Remote port on the Magnum inverter. If installing two inverters, use another remote cable and connect the other MagNet (INV 2) port to the Remote port on the second inverter.



Info: Either MagNet port can be used to connect an inverter to the network bus; however, each port communicates its specific name (INV 1 or INV 2) to the network. To help with identifying the inverters on the network bus, coordinate the inverter name/location (first inverter and second inverter) with the MagNet port name (INV 1 and INV 2).

ME-RVC Instruction Sheet

Connecting the Communication Cables

The ME-RVC comes with two Remote cables to allow communication between the Remote ports on the inverter and the two MagNet ports on the ME-RVC. These communication cables are 6' in length with 6P4C (6-position, 4-conductor) connectors on each end. When the 6P4C connectors are held side by side with both of the connector tabs facing the same way (as shown in Figure 4 below), the color of the conductors in each connector is the opposite from top to bottom.



Info: The 6' cable is long enough for most applications. If additional cable length is needed, the cable can be extended up to 50' using a standard phone cable and a female-to-female connector.

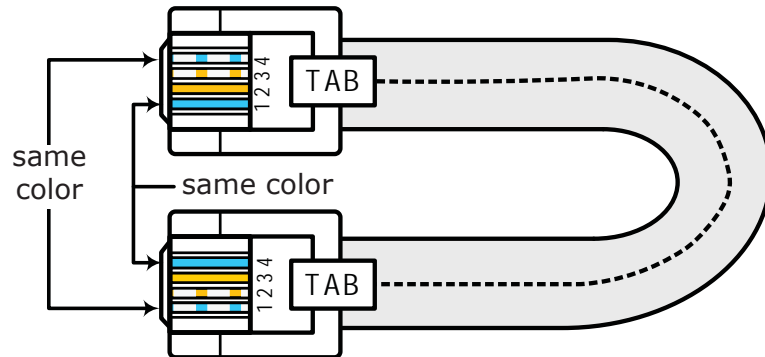


Figure 4, Communication Cable

Installation Diagrams (Inverter only)

The following diagrams provide different wiring configurations for installing and wiring the inverter(s) to the ME-RVC.

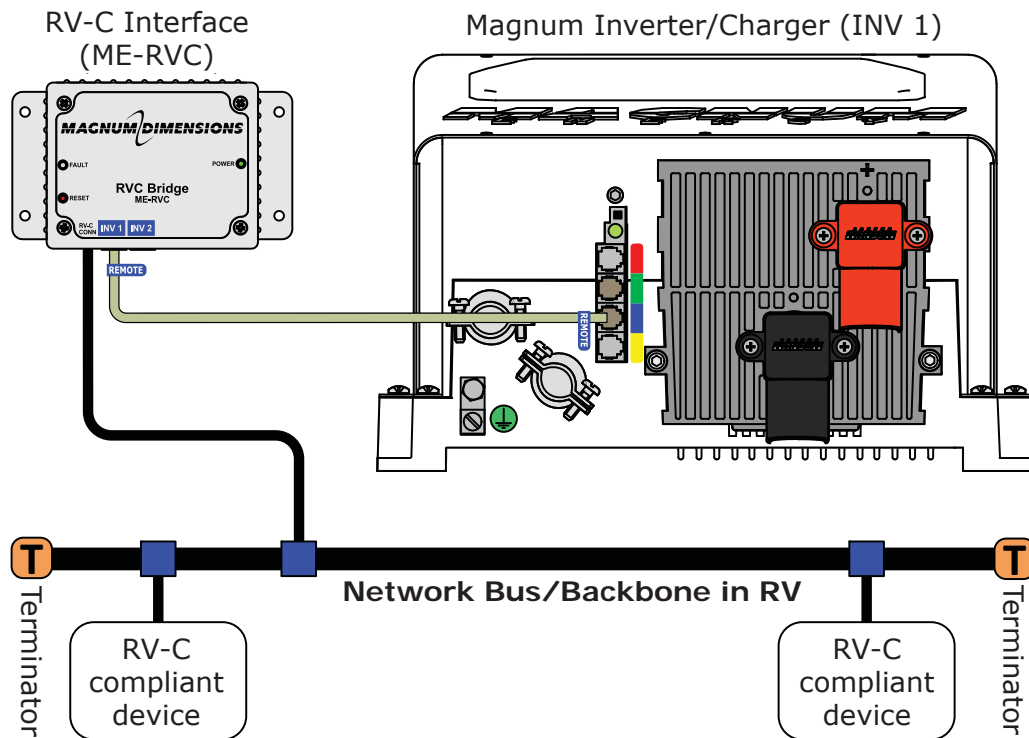


Figure 5, ME-RVC Installation (Inverter Only)

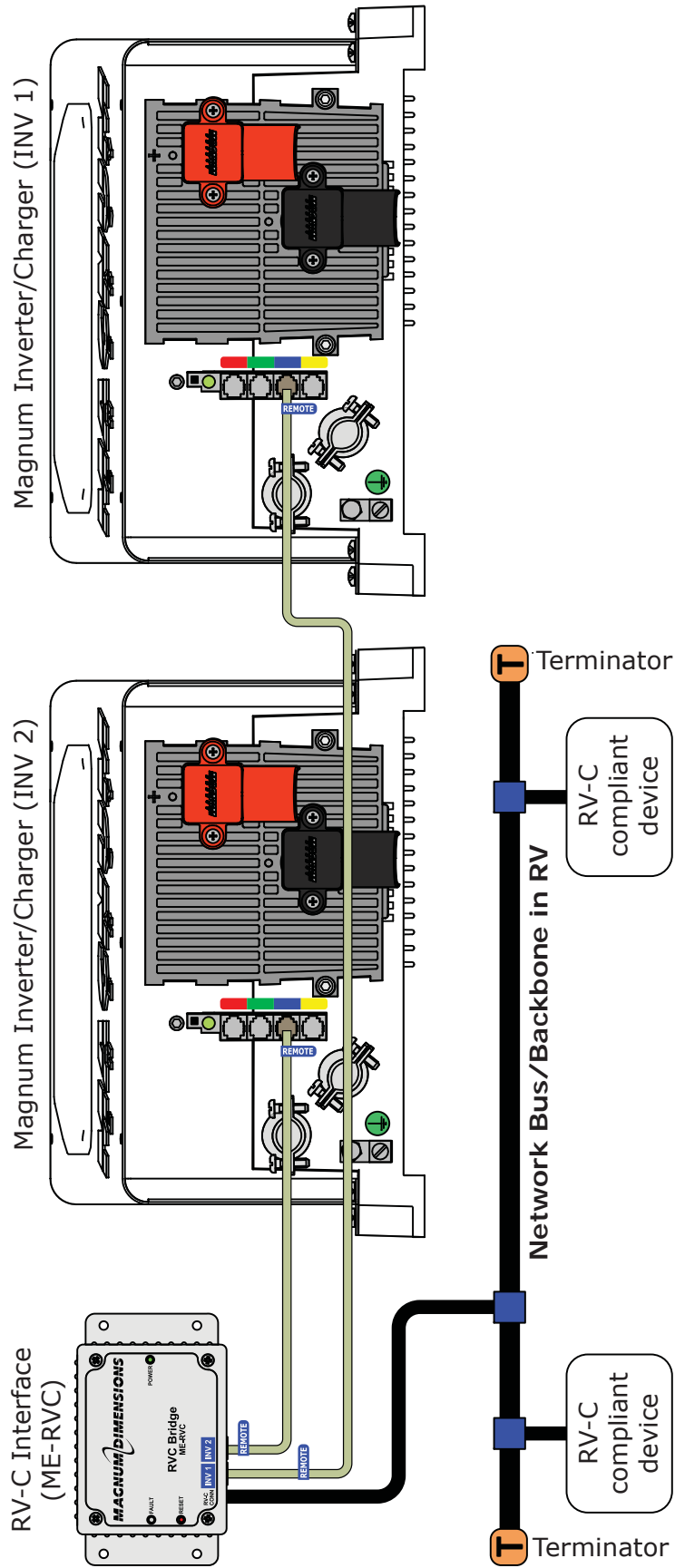


Figure 6, ME-RVC Installation (Two Inverters)

ME-RVC Instruction Sheet

Installation Diagrams (Inverter and Accessories)

The following diagrams provide different wiring configurations for installing and wiring accessories to the inverter(s) thru the ME-RVC.

The ME-BMK (Battery Monitor Kit) and ME-AGS-N (Auto Generator Start - Network Controller) are network accessories that can be connected when the ME-RVC is used. When there is only one inverter, both accessories can be connected—using a phone splitter, as shown in Figure 7. If there are two inverters installed, one accessory should be connected to each inverter, as shown in Figure 8.



Info: Only one ME-AGS and one ME-BMK can be installed when using the ME-RVC interface.



Info: The network cable provided with each accessory connects to the NETWORK port on the inverter. If you are connecting two accessories to a single inverter, a 4-conductor phone splitter is required. This 4-conductor phone splitter (also known as a 2-way duplex jack) is used to connect two phones to one wall phone jack.

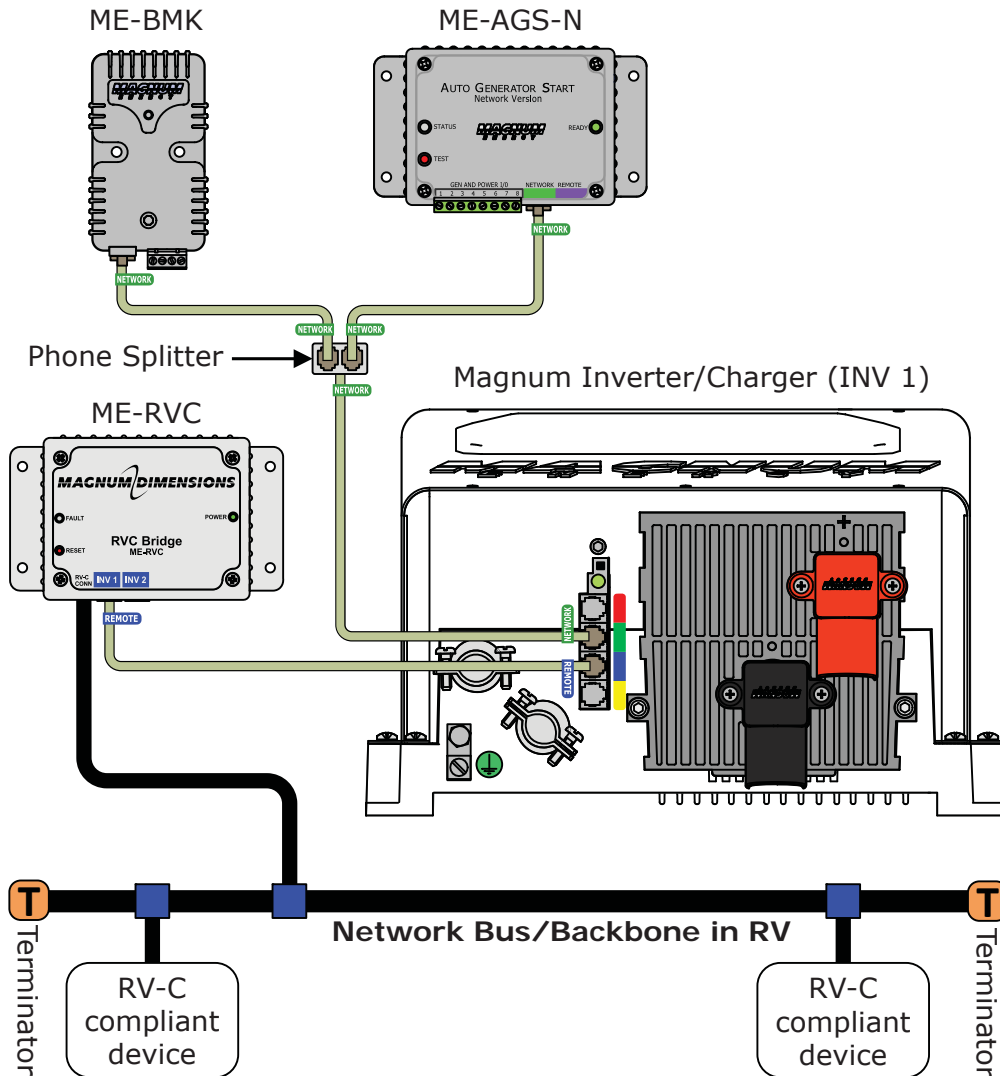


Figure 7, ME-RVC Installation (One Inverter w/Accessories)

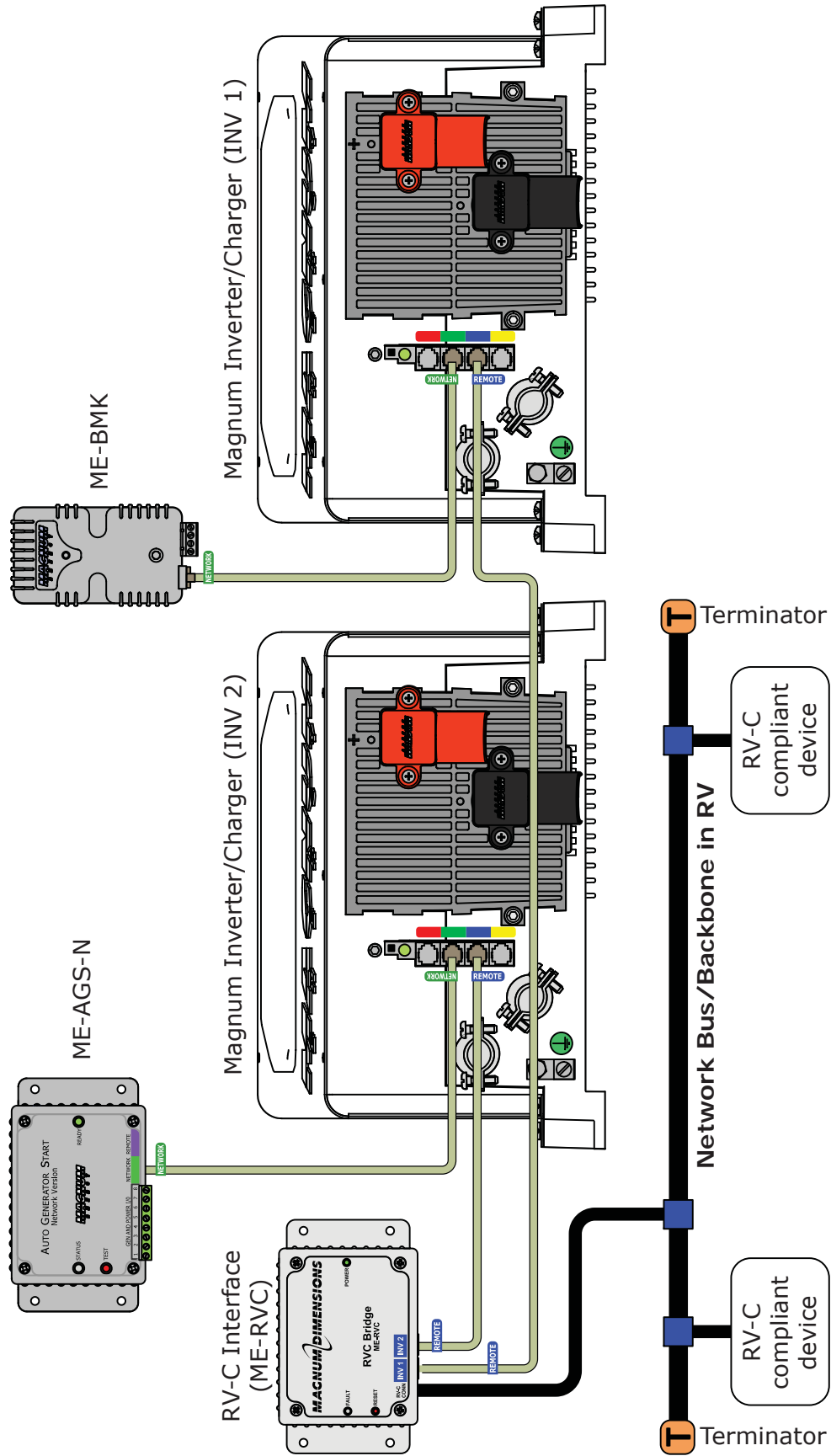


Figure 8, ME-RVC Installation (Two Inverters w/Accessories)

ME-RVC Instruction Sheet

ME-RVC used as Termination

The network backbone/bus must be terminated at each end. If the ME-RVC is the last RV-C compliant device at one end of the network backbone/bus, it can be configured to also be used as the termination for that end.

Configuring the ME-RVC as a Terminator

A jumper located inside the ME-RVC's circuit board—when enabled—inserts a terminator resistor in the circuit to allow the ME-RVC to be used as the terminator at one end of the network backbone/bus.

To enable the ME-RVC to be used as a terminator, remove the plastic top cover by unscrewing the four top screws. On the left side of the ME-RVC's circuit board, locate the internal jumper (see Figure 9). Once the jumper has been located, place the jumper over the top two pins labeled ENABLE to configure the ME-RVC as a termination. If the ME-RVC is not used as a terminator, ensure the jumper is connected across the bottom two pins labeled DISABLED.



Info: A jumper is a small, rectangular plastic plug that contains a internal conductor between two square openings. When the two square openings of the jumper are placed over two specific pins, the internal conductor electrically connects the two pins, activating or enabling a feature or circuit. When the jumper is not connected across the two specific pins, the feature or circuit is no longer active or enabled.



Info: The jumper inside the ME-RVC is shipped from the factory in the disabled position, meaning the ME-RVC is not configured to be used as a terminator.



Info: There should only be one terminator at each end of the network. The jumper in the ME-RVC should remain in the disabled position (e.g., connected across the bottom two pins) if there is an external terminator already connected at each end of the network bus.

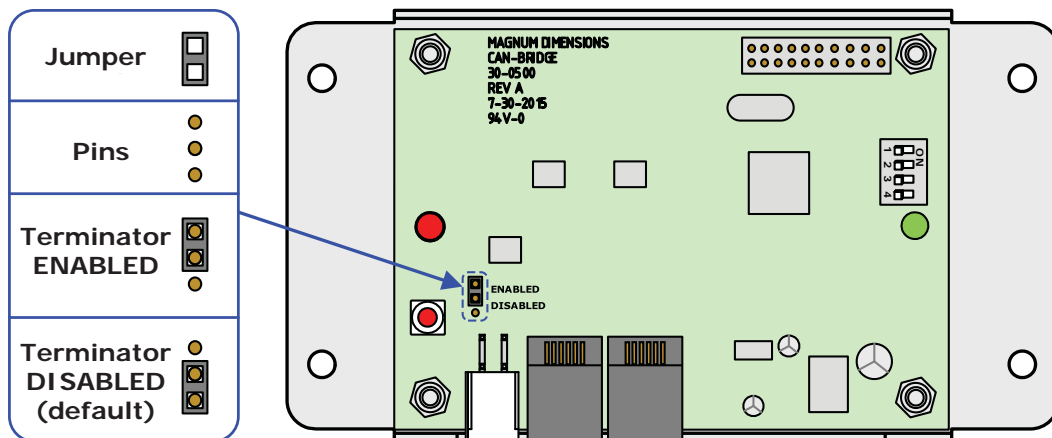


Figure 9, Configuring the Internal Jumper

Installation Diagram (ME-RVC used as Termination)

The network backbone/bus is terminated at each end. If the ME-RVC is the last RV-C compliant device at one end of the network backbone/bus, it can be configured to also be used as the termination for that end.

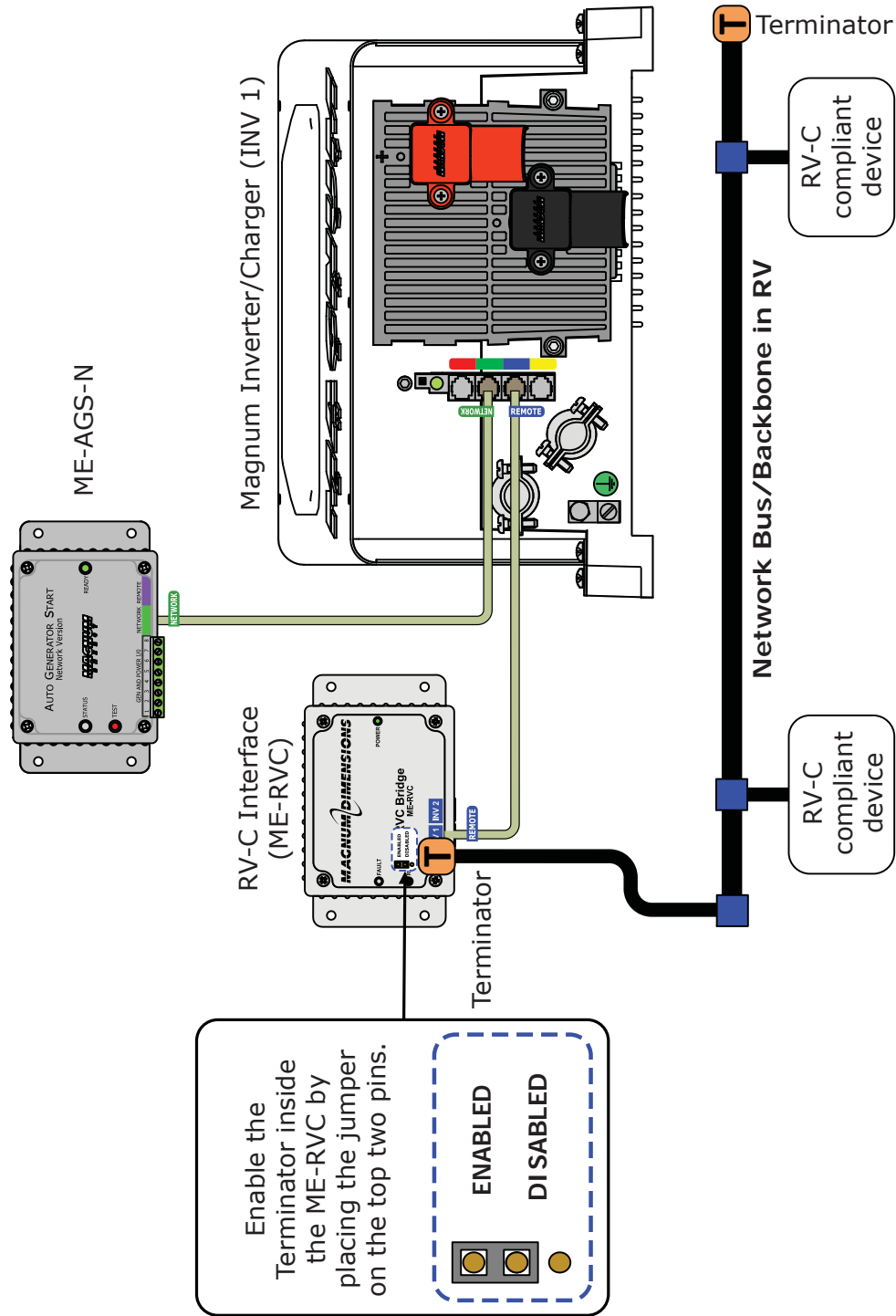


Figure 10, ME-RVC Installation (Used also as a Terminator)

ME-RVC Instruction Sheet

LED Indicator Operation

There are two LED indicators on the front to indicate the ME-RVC's status. When power is first connected to the ME-RVC, a power-up self-test occurs. During the self-test, the FAULT (red) and POWER (green) LED's both blink a couple of times, then the POWER LED stays on. Once the self-test is complete, use the table below and the LED indicator on your device to determine the ME-RVC's operating status.

Table 1, ME-RVC's LED Indicator Guide

LED Status		Meaning
Fault (red)	Power (green)	
OFF	OFF	No power to the ME-RVC. Ensure power is supplied correctly to pins 3 and 4 on the RV-C plug.
OFF	ON	Normal operation: the ME-RVC device has power and is correctly transmitting and receiving with RV-C compliant devices on the network.
Under normal operating conditions, the ME-RVC's fault indicator will be off. If there is a fault condition, the FAULT LED will blink differently for each specific fault. Monitor the FAULT LED and count the number of blinks that occur in sequence before a pause (e.g., LED is off for 1 second) occurs—to determine the particular reason for the fault.		
1 blink, then a pause	ON	Can't claim source address Address is used by another device. Ensure there are not duplicate ME-RVC devices on the network.
2 blinks, then a pause	ON	No MagNet Data The remote cable is not connected or making a good connection, an incorrect cable is connected, or the inverter is not able to communicate with the ME-RVC. Important: Ensure the RJ11 connectors on the remote cable are pushed into the MagNet port and into the Remote port on the inverter; you should feel/hear a "click" when the connection is made.
3 blinks, then a pause	ON	No RV-C Data There is no RV-C communication from the network or there may be a bad connection from pins 1 or 2 on the RV-C plug.
4 blinks, then a pause	ON	No RV-C Data and No MagNet Data No communication data is detected to the RV-C or MagNet connectors, or the information/data on the network is unrecognizable.

Note: blink = 0.2 seconds on and 0.2 seconds off, pause = 1 second off.

Note: FAULT LED goes off automatically once the fault condition is resolved.

RESET Button

The RESET button is a momentary pushbutton switch used to reset the ME-RVC if it becomes unresponsive. After the RESET button/switch is pressed for 2 seconds, the ME-RVC internally resets and initiates a power-up self-test.

Limited Warranty

Sensata Technologies warrants the ME-RVC to be free from defects in material and workmanship that results in product failure during normal usage, according to the following terms and conditions:

1. The limited warranty for the product extends for 12 months beginning from the product's original date of purchase.
2. The limited warranty extends to the original purchaser of the product and is **not** assignable or transferable to any subsequent purchaser.
3. During the limited warranty period, Sensata will repair or replace (with factory new or rebuilt replacement items) at Sensata's option any defective parts, or any parts that will not properly operate for their intended use—if such repair or replacement is needed because of product malfunction or failure during normal usage. The limited warranty does not cover defects in appearance (cosmetic or decorative), or any structural or non-operative parts. Sensata's limit of liability under the limited warranty shall be the actual cash value of the product at the time the original purchaser returns the product for repair, determined by the price paid by the original purchaser. Sensata shall not be liable for any other losses or damages.
4. Upon request from Sensata Technologies, the original purchaser must prove the product's original date of purchase by providing a dated bill of sale or itemized receipt.
5. This limited warranty is voided if:
 - the product has been modified without authorization
 - the product has been damaged through abuse, neglect, accident, high voltage, or corrosion
 - the product was not installed and operated per this guide

How to Receive Repair Service

If your product requires service or repair, contact Sensata Technologies at:

Telephone: 425-353-8833

Fax: 425-353-8390

Email: MagnumWarranty@Sensata.com

If returning your product directly to Sensata for repair, you must:

1. Return the unit in the original, or equivalent, shipping container.
2. Receive a Return Materials Authorization (RMA) number from the factory prior to the return of the product to Sensata for repair.
3. Place RMA numbers clearly on the shipping container or on the packing slip.

When sending your product for service, please ensure it is properly packaged.

Damage due to inadequate packaging is not covered under warranty.

We recommend sending the product by traceable or insured service.

**A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS
REQUIRED BEFORE RETURNING ANY PRODUCT**



Magnum-Dimensions Products

Manufactured by:

Sensata Technologies
2211 West Casino Rd.
Everett, WA 98204
Phone: 425-353-8833
Fax: 425-353-8390

Web: www.Magnum-Dimensions.com/