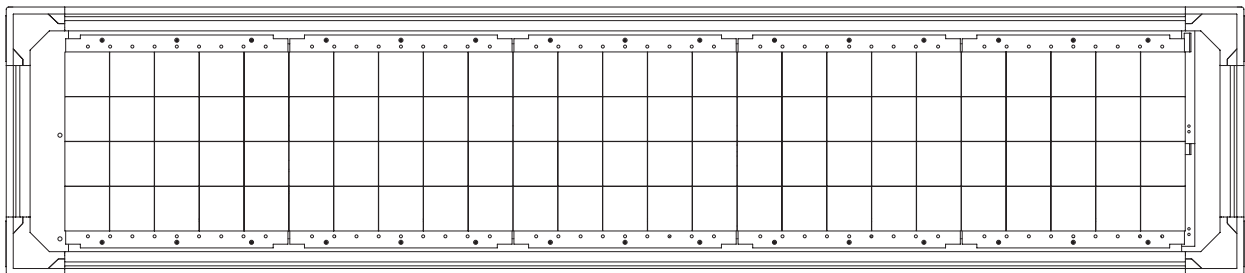


Rise Ticker™ Display

Installation Manual

For the most recent update, go to <http://www.adaptivedisplays.com/support/risevision>.



NOTE: Due to continuing product innovation, specifications in this manual are subject to change without notice.

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Introduction

Product description

The Rise Ticker™ signs can show real-time market data, proprietary information, news headlines, and messaging. They are designed in either a single case or a modular format. All modules are full-matrix. Multiple sign modules can be connected together side-by-side, creating a single sign unit. All models are designed to be front-serviceable.

The Rise Ticker™ signs are either standard or custom configuration and installation.

Standard Rise Ticker™ signs:

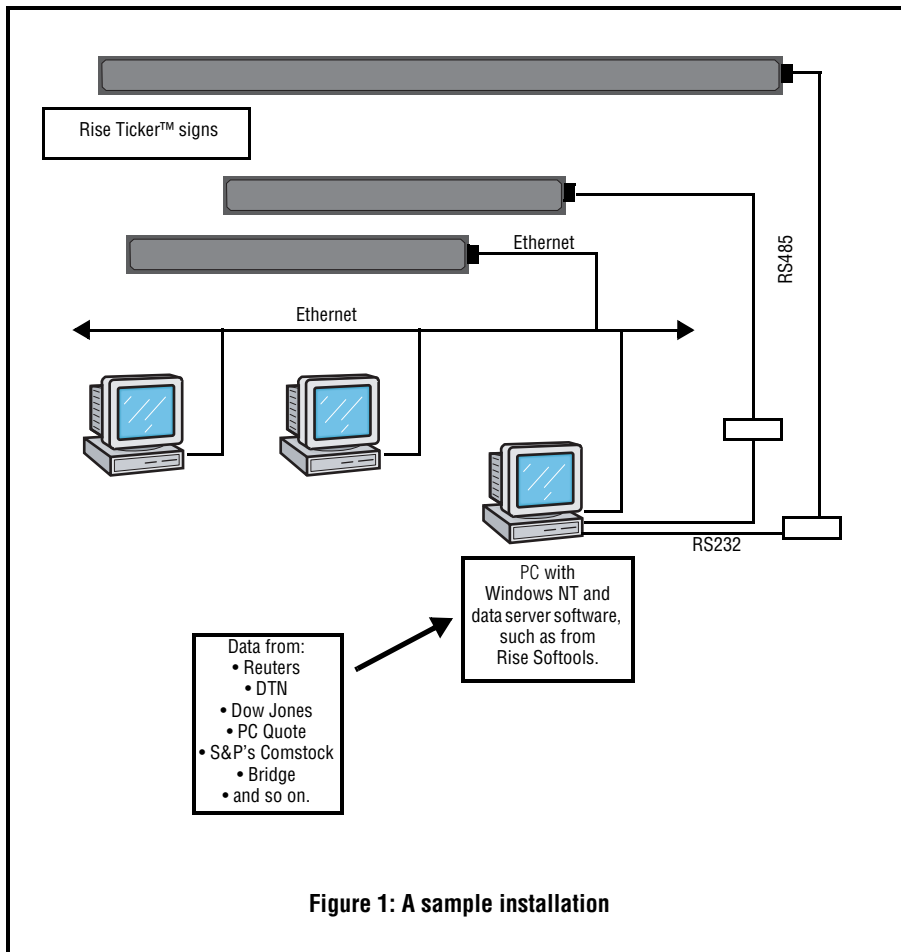
- have electrical connections which plug into an outlet.
- are straight and mount on a flat surface.
- are available in lengths of 5, 6, 7, 8, 9, and 10 feet.
- use connectors on the outside of the unit for either serial connections using Modular Network Adapters or Ethernet connections.
- are considered “factory installed” in that the only electrical need is to plug it into the outlet.

Custom Rise Ticker™ signs:

- have electrical connections using either plugs or direct-connect wires through conduit.
- might not be straight. For example, they might be rectangular or curved.
- can be made in customized lengths.
- can have either external or internal networking (serial or Ethernet) connections and do not need Modular Network Adapters.
- are considered “field installed” in that there are several electrical options and capabilities.

Typical installed network

An installed network might look like the high-level picture below. (For a detailed network example, see page 23.)

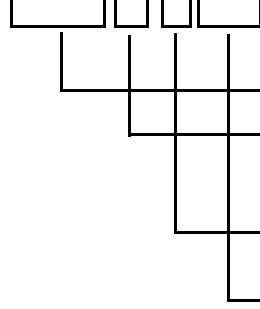


Description

Model numbers

See each module's label on the back of the sign for its exact model number.

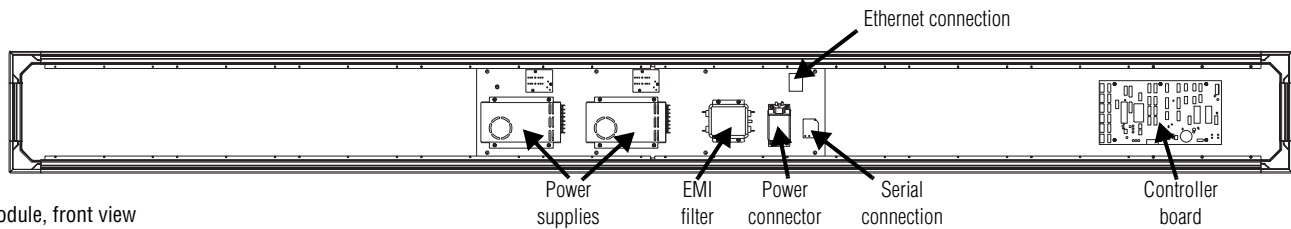
AVSTnn-n-zzz



Section	Meaning	Possible values
AVST	Rise Ticker™	AVST
nn	Number of rows high (in pixels)	16 24 32
n	Nominal length of module	From 5 to 10, in increments of 1 (for example: 5, 6, 7, 8, 9, 10)
zzz	LED color	TRI (tri-color: red, green, amber) SBR (super-bright red)

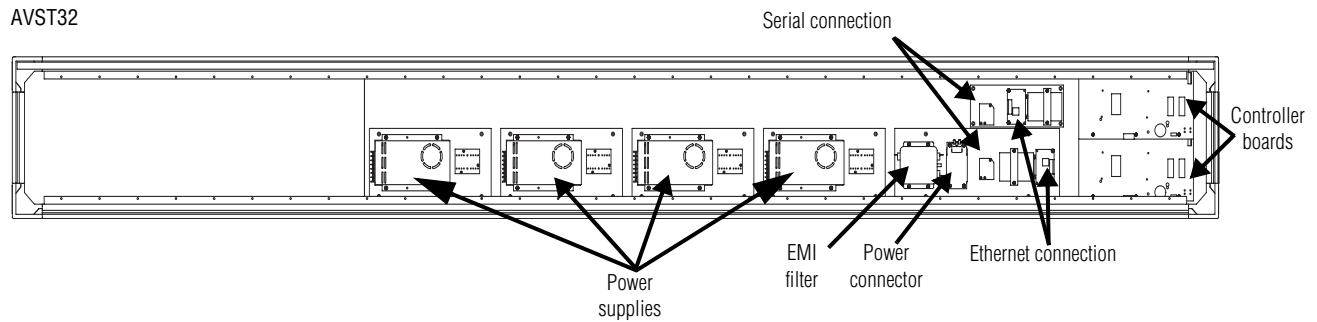
Internal components

AVST16 and AVST 24



Module, front view

AVST32

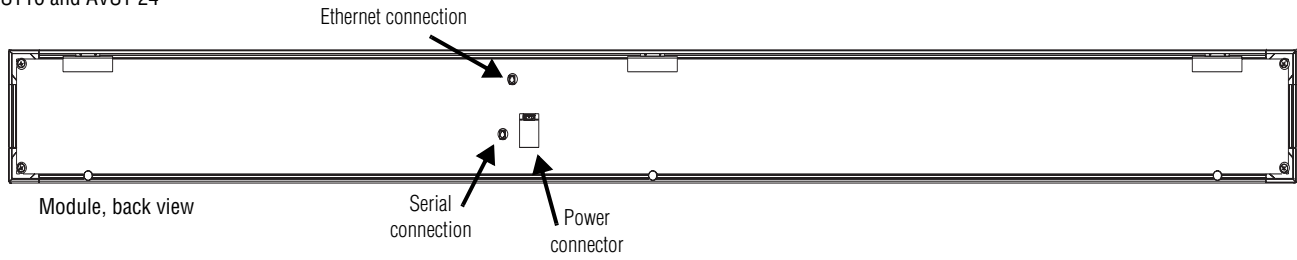


Module, front view

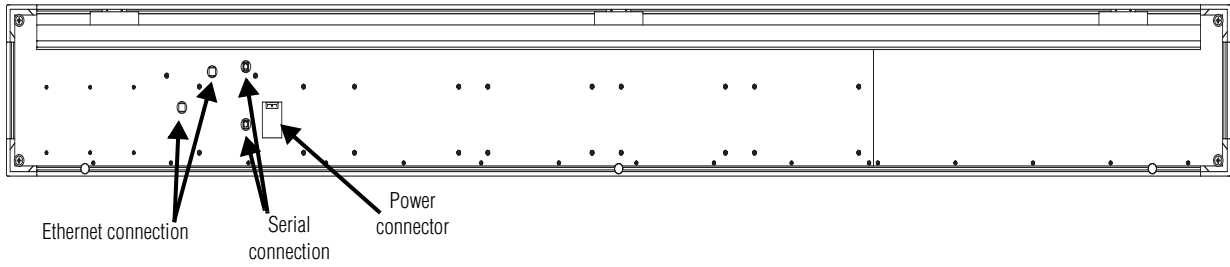
NOTE: On AVST32 signs, there will be two connections, *either serial or Ethernet*. In other words, the sign will have either two serial *or* two Ethernet connections. This drawing shows you the location of all connections. Additionally, the number of power supplies depends on the length of the sign.

External components

AVST16 and AVST 24



AVST32



Module, back view

NOTE: On AVST32 signs, there will be two connections, *either serial or Ethernet*. In other words, the sign will have either two serial *or* two Ethernet connections. This drawing shows you the location of all connections.

Installation

The Rise Ticker™ signs are designed in a modular format so they can be connected side-by-side to create a single unit. The modules must be interconnected and wired (power and serial) *as they are being mounted on the wall or ceiling*. For each module, follow the directions in the “Mounting instructions,” “Module connection,” and “Electrical installation” sections of this manual, connecting each module to one already installed.

Environmental requirements

Care must be taken to observe these considerations when selecting a location for the Rise Ticker™ signs.

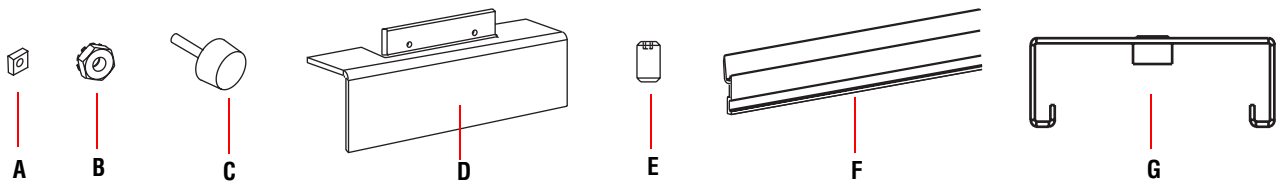
- These signs are for *indoor use only* and should not be continuously exposed to direct sunlight.
- These signs should only be used in an environment where the temperature is between 0° and 40° Celsius (32° to 104° Fahrenheit).
- These signs should only be used in an environment where the humidity (non-condensing) does not exceed 95%.
- For installation, there must be at least 1” (2.5 cm) clearance on each end of the case and at least 2” (5.1 cm) clearance above the case.

Mounting instructions

Tools needed

- Adjustable open-end wrench
- 1/16” hex key

Mounting hardware

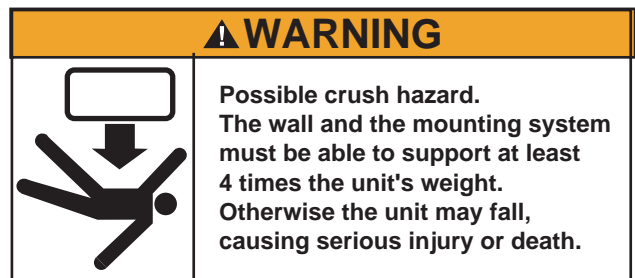
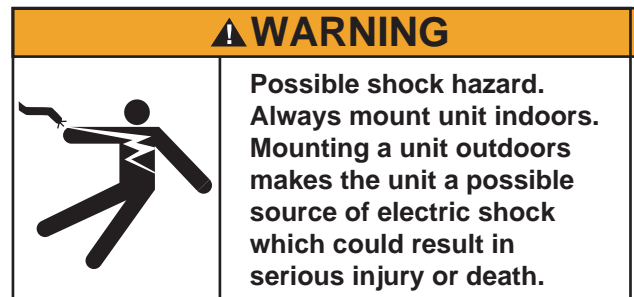
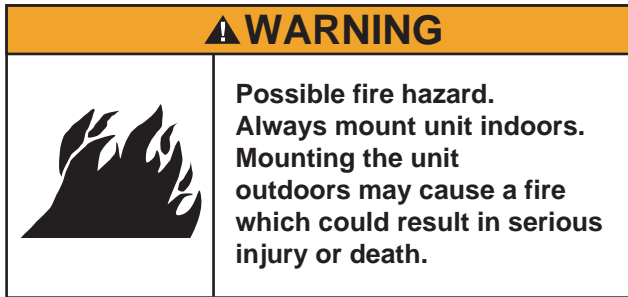


Part	Quantity per module length		Part description
	5', 6'	7', 8', 9', 10'	
A	2	3	Square nut
B	2	3	Keps nut
C	2	3	Foot bumper
D	2	3	Wall-mounting bracket
E	4	6	Socket set screw
F	1	1	Wall-mounting bar
G	2	3	Ceiling-mounting bracket

Do not use the wrong parts or substitute any other parts for those supplied by the factory. Also, do not use fewer parts than the specified quantity. Doing so may cause damage to the sign and invalidate the warranty.

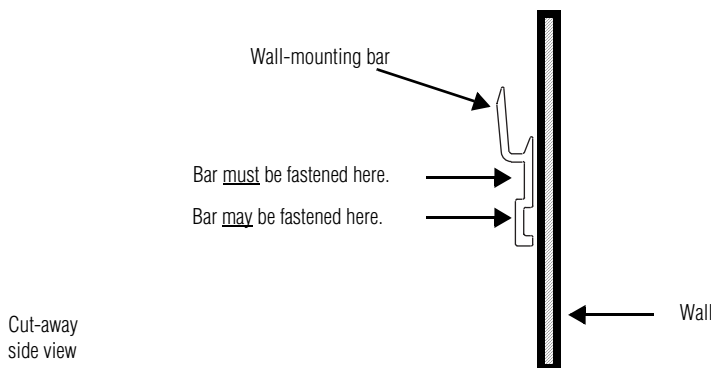
NOTE: The mounting hardware *does not include* fasteners for attaching to a wall or ceiling, or a ceiling mounting rod. The exact type of fastener or mounting rod used will vary depending on the type of wall or ceiling (for example, concrete, brick, drywall, and so on) to which the sign is mounted.

- Fasteners must be appropriate for the type of wall or ceiling to which the sign is mounted.
- Each of the fasteners must be capable of supporting four (4) times the weight of the sign.
- A sign must be attached to a wall or ceiling capable of supporting four (4) times the weight of the sign.
- See sign weight(s) listed in “Physical specifications” on page 42.



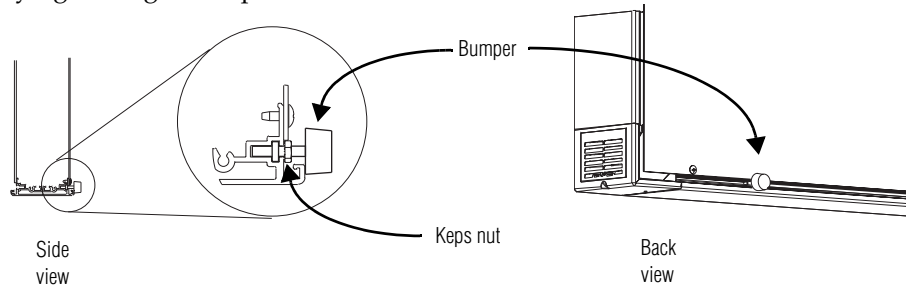
Wall-mounting instructions

1. Disconnect power from the sign. Power must be removed from the sign at the power source to prevent electrical injury or damage.
2. Mount the wall-mounting bar on the wall using the appropriate fasteners.



3. (Optional) Bumpers and nuts have been installed in the groove at the bottom of the back of the sign’s case. If they are not properly positioned, you can loosen the Keps nuts slightly and slide them to the appropriate locations in the groove. Do not loosen the bumpers any more than necessary to slide them or

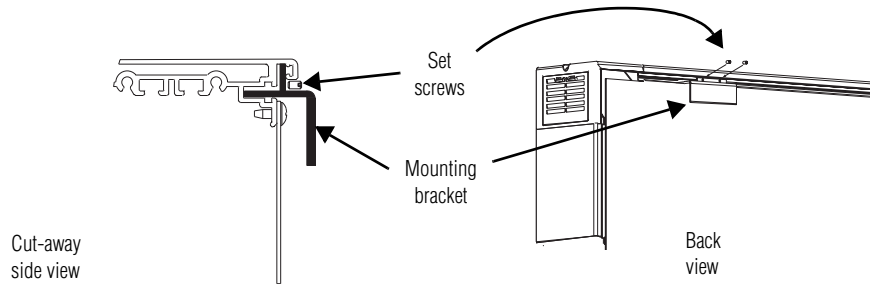
they will unscrew from the internal nuts that hold them in place. After repositioning them, secure the bumpers by tightening the Keps nuts.



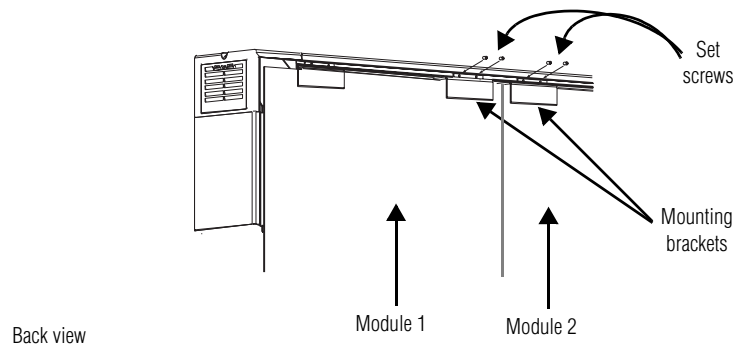
4. (Optional) Mounting brackets have been installed in the groove at the top of the back of the sign case. If they are not properly positioned for the specific installation, you can slightly loosen the two (2) set screws in the holes of any bracket and slide the bracket to the appropriate location in the groove. Be sure the mounting brackets are positioned evenly across the case, keeping one bracket on the left end and one

NOTE: On AVST32 signs, there will be two connections, *either serial or Ethernet*. In other words, the sign will have either two serial *or* two Ethernet connections. This drawing shows you the locations of all connections.

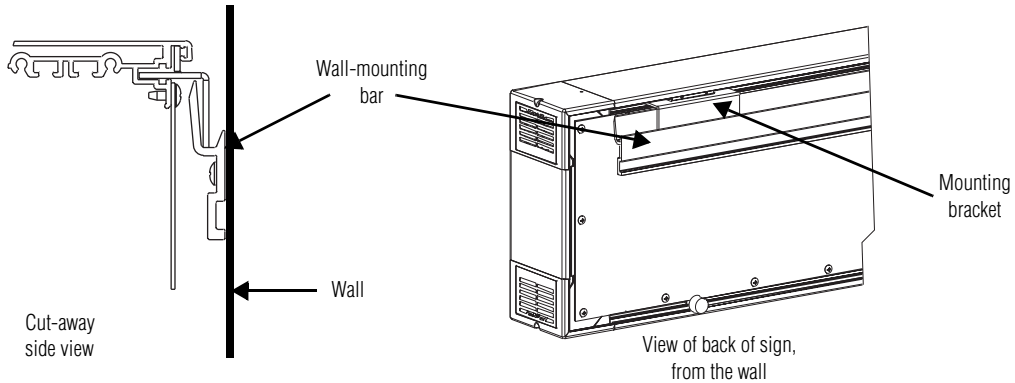
bracket on the right end of each sign. Tighten all the set screws in each bracket. Torque to 10–15 lb-in.



NOTE: Since the Rise Ticker™ sign is modular, mounting brackets must be positioned at the ends of each interconnecting module. Be sure the mounting brackets are positioned as in Step 4 above.



- Lift the sign onto the wall-mounting bar and let the sign slide all the way down into the groove.

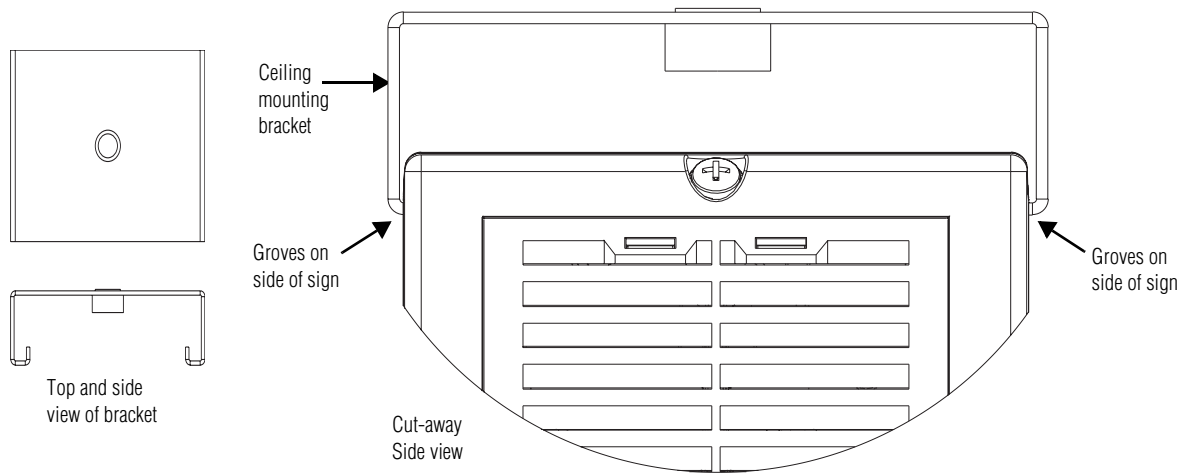


NOTE: For standard installation, plug the electrical power cord into outlet. For custom installation, see “Electrical installation” on page 17.

Ceiling-mounting instructions

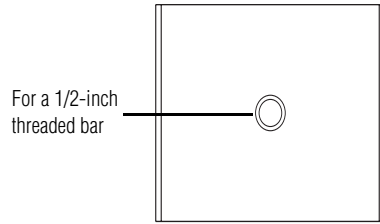
- Disconnect power from the sign. Power must be removed from the sign at the power source to prevent electrical injury or damage.
- Slide ceiling mounting brackets over the top of the sign, making sure to fit the sides of the brackets into the grooves along the sides of the sign.

NOTE: Two brackets are required for 5-, 6-, and 7-foot signs. Three brackets are required for 8, 9, and 10-foot signs.

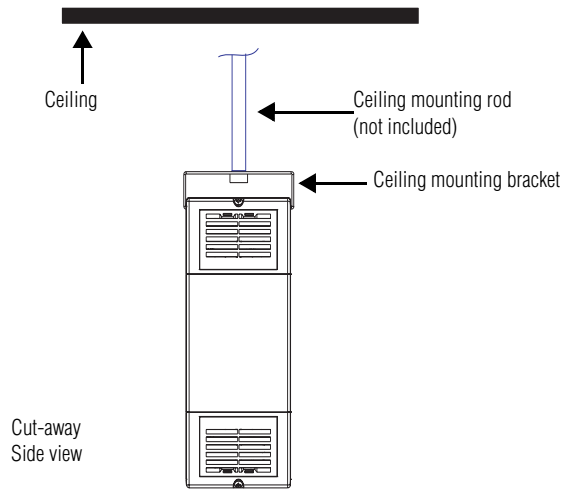


- Position the brackets appropriately by sliding them along the grooves. Be sure the mounting brackets are spaced evenly across the case, keeping them one (1) foot from each end of the sign. If using a third bracket, center the third bracket along the horizontal length of the case.

4. Screw a ceiling mounting rod (not included) into the hole on the top of each bracket and tighten.



5. Mount the sign to the ceiling using appropriate fasteners.

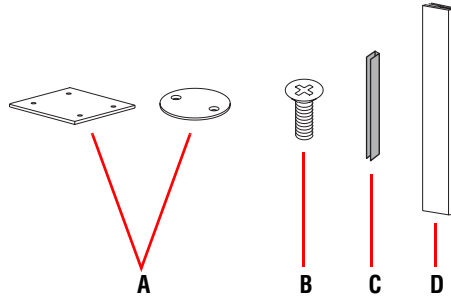


Module connection

Tools needed

- Medium Phillips screwdriver

Module interconnection hardware

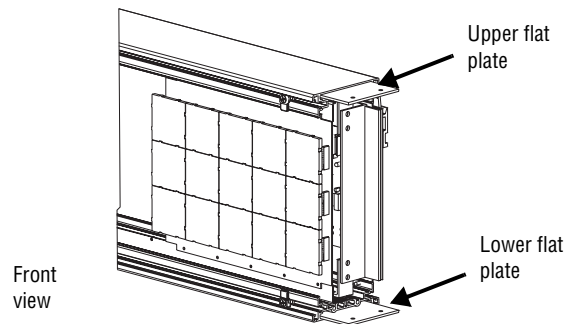


Part	Part description	Quantity
A	Flat plate	2 for each interconnection (Both square and round versions are shown; only one version is used per sign.)
B	Screws for Part A	4 for each flat plate
C	EMI gasket	4 for each interconnection
D	“H” support bracket	One for each interconnection

Module interconnection instructions

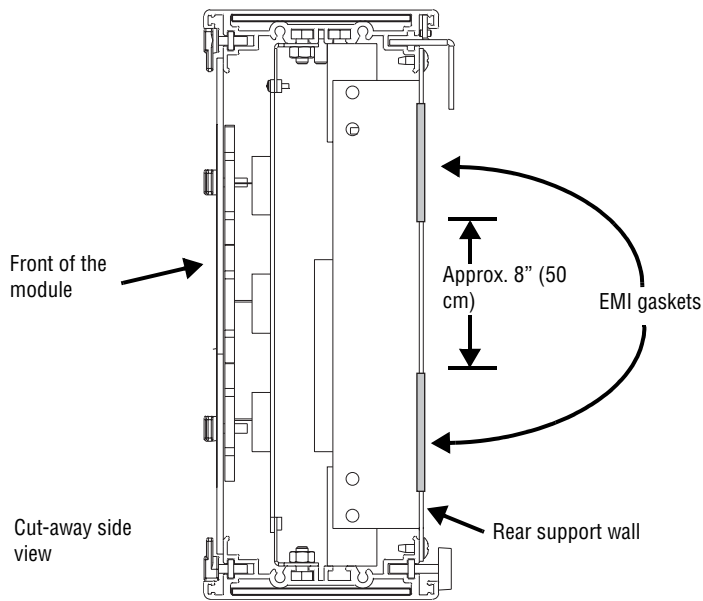


1. On the sign to be interconnected, slide one of the flat plates into the slot for the upper flat plate until the holes are aligned. Fasten with screws for Part A. Repeat for the lower flat plate.

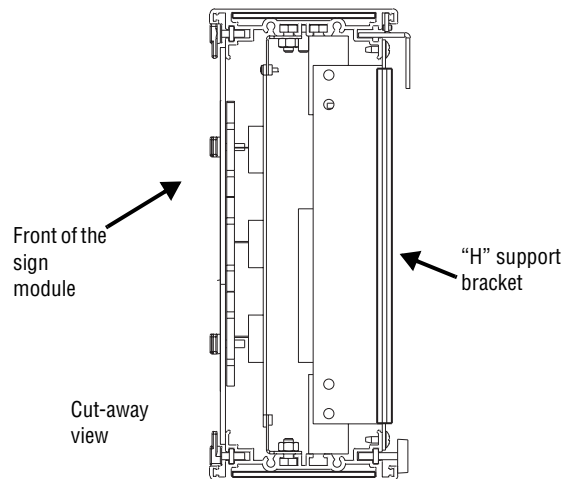


NOTE:
The plates for your sign may be the round version. They are installed in a similar manner.

- Slide EMI gaskets over the rear support wall of the case of the sign in Step 1, with approximately 8" (20 cm) between the gaskets.

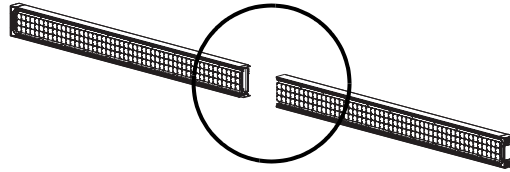


- Slide an "H" support bracket firmly over the EMI strips on the rear support wall.

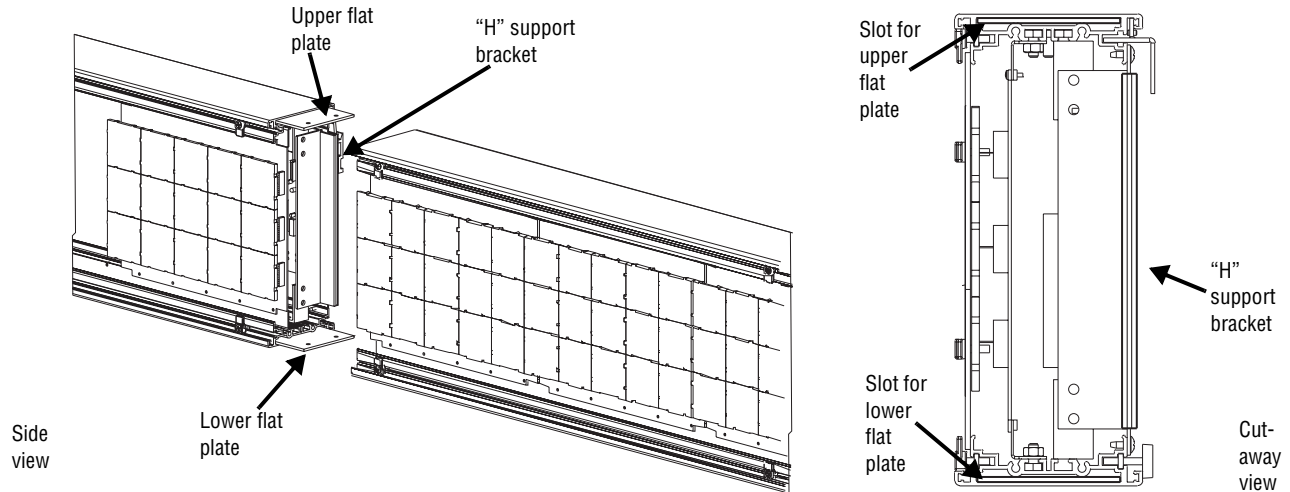


- Repeat Step 2 to install EMI gaskets on the second sign to be connected.

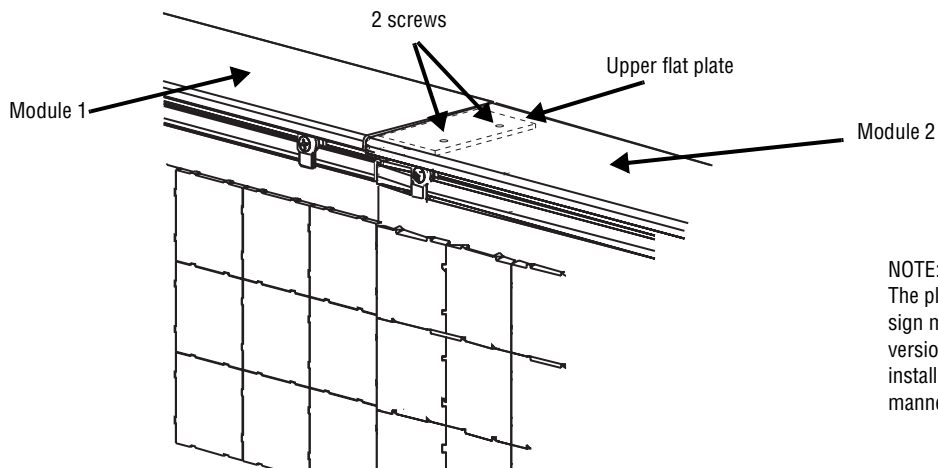
5. Match the right and left open ends of the two signs to be interconnected.



6. Slide the signs together so that:
 - the “H” support bracket fits firmly over the rear support wall of each sign’s case,
 - the upper and lower flat plates fit firmly in the top and bottom of the extrusion of both signs, and
 - the screw holes in the upper and lower flat plates match the screw holes in the sign case.

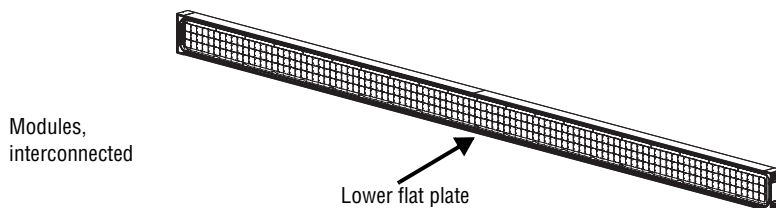


7. Using two (2) additional screws, screw the upper flat plate securely to the second sign. Torque to 70 lb-in, 90 lb-in maximum.



NOTE:
The plates for your sign may be the round version. They are installed in a similar manner.

8. Using two (2) more screws, screw the lower flat plate securely to the second sign. Torque to 70 lb-in, 90 lb-in maximum.



Electrical installation

Power configurations: Overview

There are several basic ways that multiple-module signs can be powered:

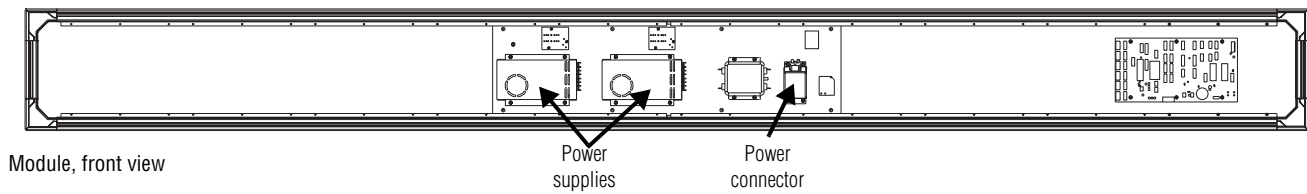
- variations of non-permanent connection with power cords
- permanent connection with conduit and/or hard-wiring

In a standard configuration, single or multiple modules all have their own power cords. In a custom configuration, multiple modules can share a common power source (either power cord or conduit). A custom configuration must be wired and installed by the factory and/or authorized personnel only.

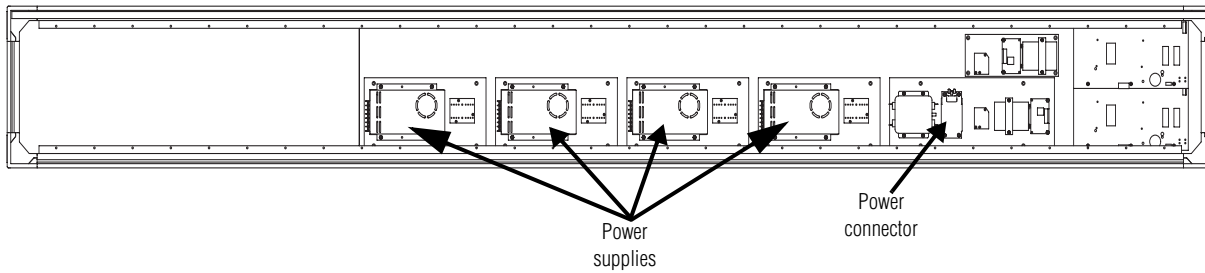
Power components

The power components are located near the center of any sign. Note that every power connection must be disconnected when opening a sign. See “Opening and closing a sign” on page 29 for more information.

AVST16 and AVST24



AVST32



NOTE: The number of power supplies depends on the length of the sign.

Power safety considerations

Please note the following when planning and installing the signs:

- *When signs share a common power source (either one power cord or one conduit connection) the signs may be connected in any combination to achieve the desired length as long as the combination complies with the specifications in Table 5, "Maximum number of power supplies per 20 amp circuit," on page 41.*
- *Each and every input power source should be protected by a circuit breaker rated at no more than 20 amperes. Refer to the specifications in Table 5, "Maximum number of power supplies per 20 amp circuit," on page 41.*
- *After all signs are mounted but before power is applied, the installer must verify ground continuity 1) between all joined signs and 2) between the metal case and any ground terminal block where the building's power connection is made.*
- *Electrical protection devices for signs with permanent connection using conduit and/or hard-wiring must include the following:*

English

A readily-accessible disconnect device must be installed in the fixed wiring supplying power to this equipment. The disconnect device should have a contact separation of at least 3 mm.

This equipment relies on protective devices in the building installation for protection for short circuit and/or overcurrent protection. Install this equipment only where these protective devices are present. The size and type of the protective devices should be appropriate for the voltage and current ratings on this equipment.

Français

Un dispositif de déconnexion placé à un endroit pratique doit être installé sur le fil fixe qui alimente ce matériel. La distance des contacts de ce dispositif de déconnexion doit être de 3 mm minimum.

Ce matériel s'appuie sur des dispositifs de protection dans l'installation du bâtiment pour se protéger des courts-circuits et/ou des surintensités. Installez ce matériel seulement là où de telles protections sont présentes. Le calibre et le type des protections doivent être adaptés à la tension et à l'intensité nominales du matériel.

Deutsch

In der Festverdrahtung muß eine leicht zugängliche Trennvorrichtung installiert werden, die dieses Gerät mit Strom versorgt. Die Trennvorrichtung muß eine Kontakttrennung von mindestens 3 mm aufweisen.

Kurzschlußschutz und/oder Überstromschutz wird in diesem Gerät durch entsprechende Schutzvorrichtungen in der Gebäudeinstallation gewährleistet. Dieses Gerät nur dort installieren, wo diese Schutzvorrichtungen vorhanden sind. Größe und Art der Schutzvorrichtungen müssen den Spannungs- und Stromnennstärken dieses Geräts entsprechen.

Italiano

Un dispositivo di sconnessione prontamente accessibile dovrà essere installato nel cablaggio fissato che fornisce corrente alla presente apparecchiatura. Il dispositivo di sconnessione dovrà avere una separazione di contatto di almeno 3 mm.

La presente apparecchiatura si affida a dispositivi di protezione nell'installazione da edificio per protezione da corto circuito e/o protezione da sovracorrente. Installare l'apparecchiatura solamente in punti dove sono presenti questi dispositivi di protezione. Le dimensioni e il tipo di dispositivo di protezione dovranno essere appropriati alla tensione e ai valori di corrente della presente apparecchiatura.

Español

Se debe instalar en el cableado fijo que alimenta este equipo un dispositivo de desconexión fácilmente accesible. Dicho dispositivo tendrá una separación entre contactos de por lo menos 3 mm.

Este equipo depende del uso de dispositivos protectores en la instalación del edificio para protección en caso de cortocircuito y/o protección contra sobreintensidad. Instale este equipo únicamente en caso de disponer de dispositivos protectores. El tipo y tamaño de los dispositivos protectores deberán ser adecuados para los valores nominales de tensión y corriente de este equipo.

- *Electrical protection devices for signs using non-permanent connection with power cords and plugs must include the following:*

English

The plug on the power supply cord serves as the disconnect device for this display. During mounting and installation of the display, make sure that the electrical power socket/outlet is easily accessible and that it is located close by the display.

Français

La fiche du cordon d'alimentation sert de dispositif de débranchement pour cet affichage. Lors du montage et de l'installation de l'affichage, assurez-vous que la prise d'alimentation électrique est facilement accessible et qu'elle se situe près de l'affichage.

Deutsch

Der Stecker am Netzteilkabel fungiert als Trennvorrichtung für dieses Anzeigeschild. Während der Montage und Installation des Schildes ist sicherzustellen, dass die Netzsteckdose leicht zugänglich ist und sich nahe am Schild befindet.

Italiano

La spina del cavo di alimentazione serve anche come dispositivo di scollegamento di questo display. Durante il fissaggio e l'installazione del display, accertarsi che la presa di corrente sia facilmente raggiungibile e sia situata vicino al display.

Español

La clavija del cable de alimentación sirve como dispositivo de desconexión para este anuncio. Durante el montaje y la instalación del anuncio, asegúrese de que el receptáculo/tomacorriente eléctrico quede fácilmente accesible y que esté ubicado cerca del anuncio.

REDUCING ELECTRICAL NOISE

These procedures are recommended to decrease electrical emissions and noise:

- A sign should be connected to its own branch circuit.
- Incoming power to a sign should be routed on a path separate from a sign's serial communication wires. Do NOT run the power and serial communication wires in the same conduit.
- Where power and serial communications wires must cross, the intersection should be perpendicular.
- All serial communication wires should be shielded per the networking information in "Network setup" on page 23. The shield should only be connected to ground at the converter box.

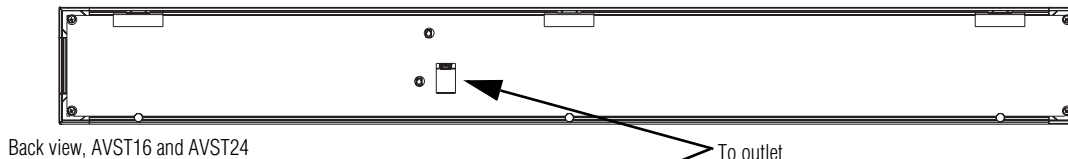
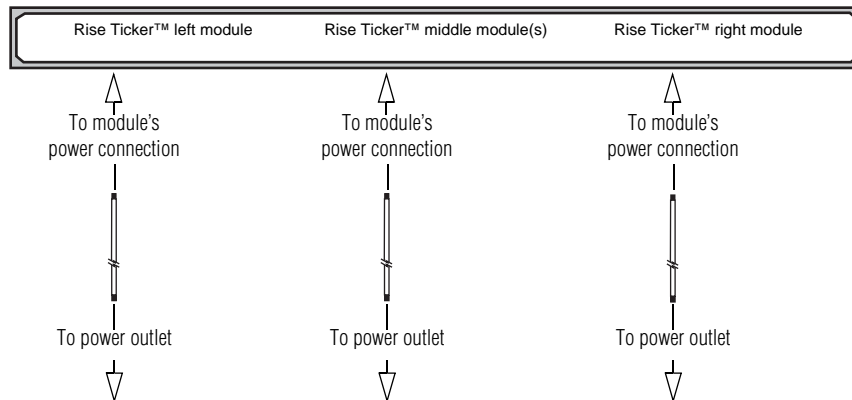


Power configurations: Detailed installation

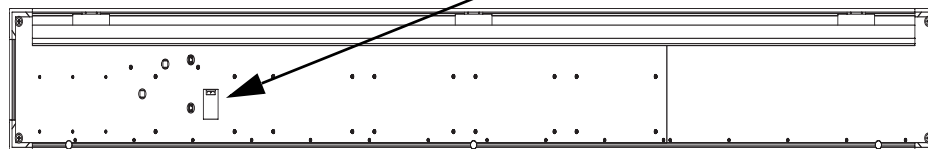
1. One power cord to each sign:

Each sign has an individual power cord that plugs into an outlet. This is the standard configuration and installation.

Front view, all modules



Back view, AVST16 and AVST24



Back view, AVST32

NOTE: On AVST32 signs, there will be two connections, *either serial or Ethernet*. In other words, the sign will have either two serial *or* two Ethernet connections. This drawing shows you the location of all connections.

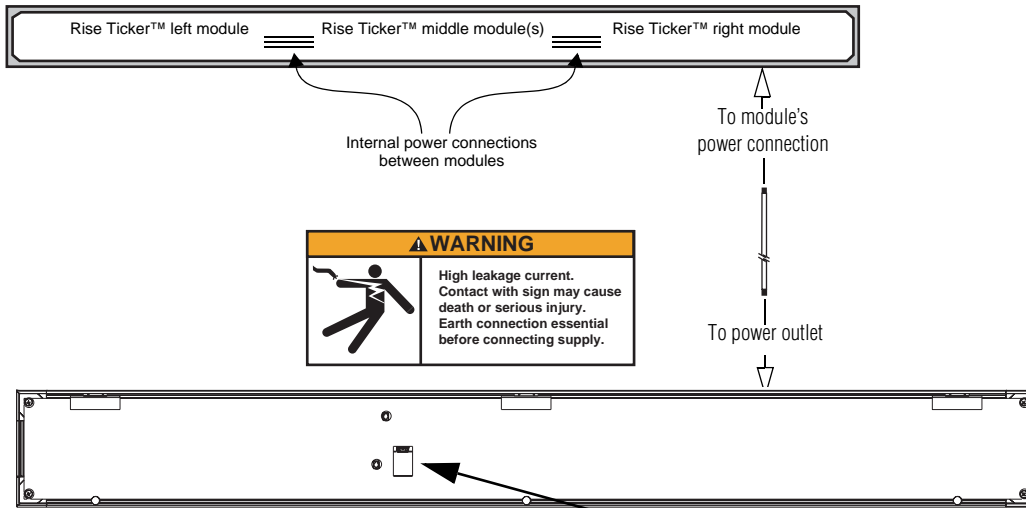
2. One power cord to the first sign only:

On the right end of the first sign is a power cord that plugs into an outlet. Subsequent signs draw power through the first sign using 3-wire cabling between terminal blocks at both ends of each sign. This is a custom configuration which must be wired and installed by authorized personnel.

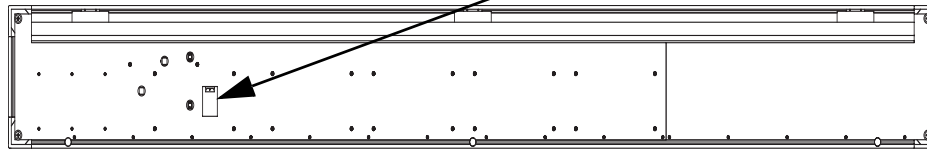
NOTE: Refer to Table 5, "Maximum number of power supplies per 20 amp circuit," on page 41 to

determine the maximum number of signs per power cord.

Front view,
all modules

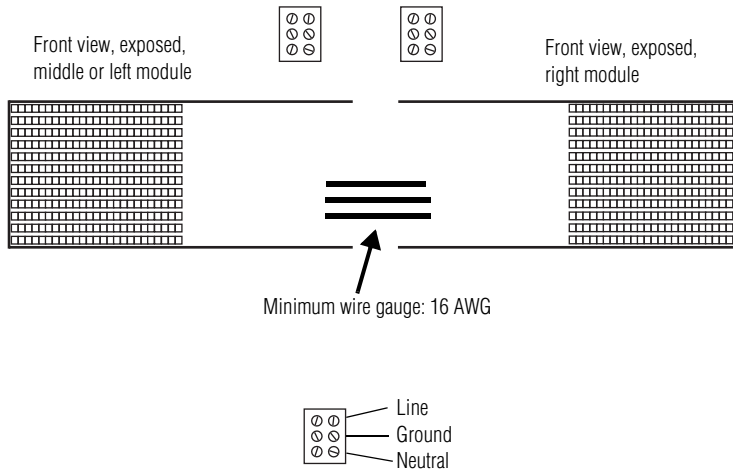


Back view, first module, AVST16 and AVST24



Back view, AVST32

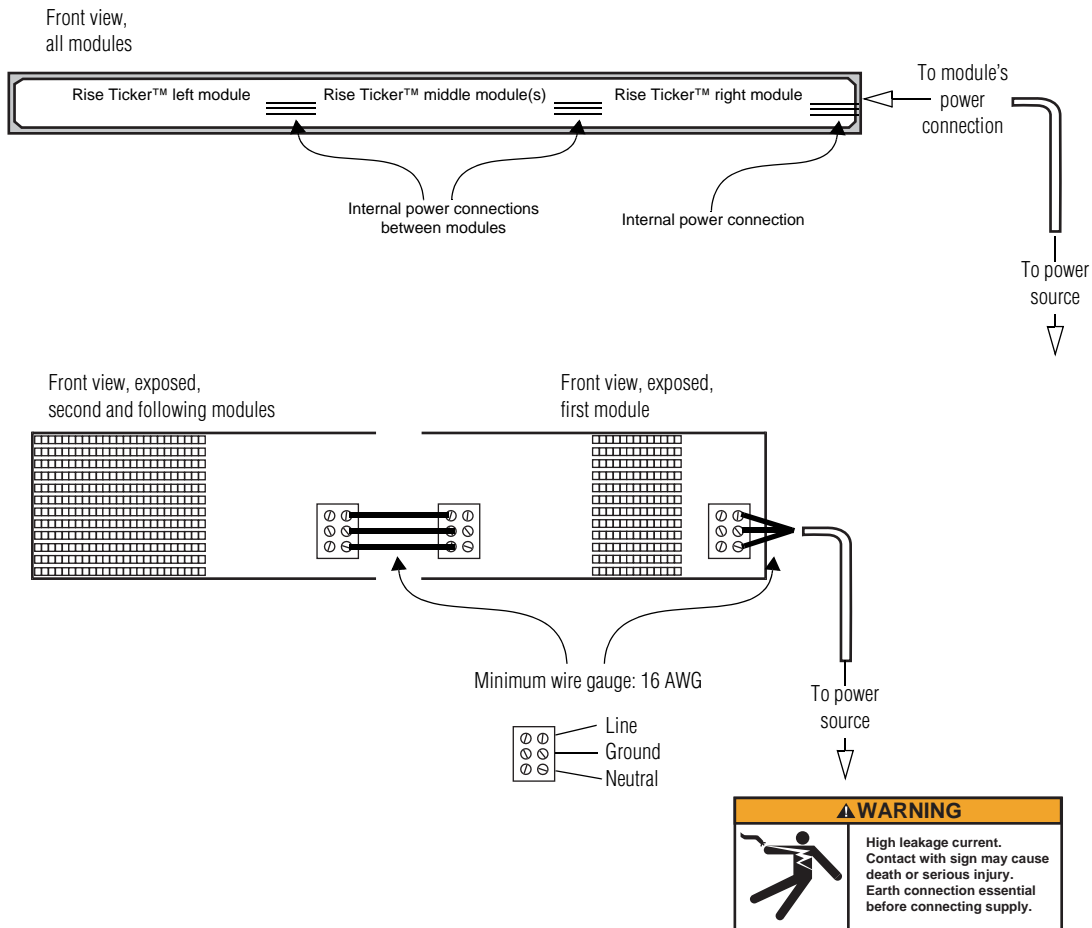
NOTE: On AVST32 signs, there will be two connections, *either serial or Ethernet*. In other words, the sign will have either two serial *or* two Ethernet connections. This drawing shows you the location of all connections.



3. Direct wire connection via conduit to the first sign only:

On the right end of the first sign is a direct connection to power through conduit. Subsequent signs draw power through the first sign using 3-wire cabling between terminal blocks at both ends of each sign. This is a custom configuration which must be wired and installed by authorized personnel.

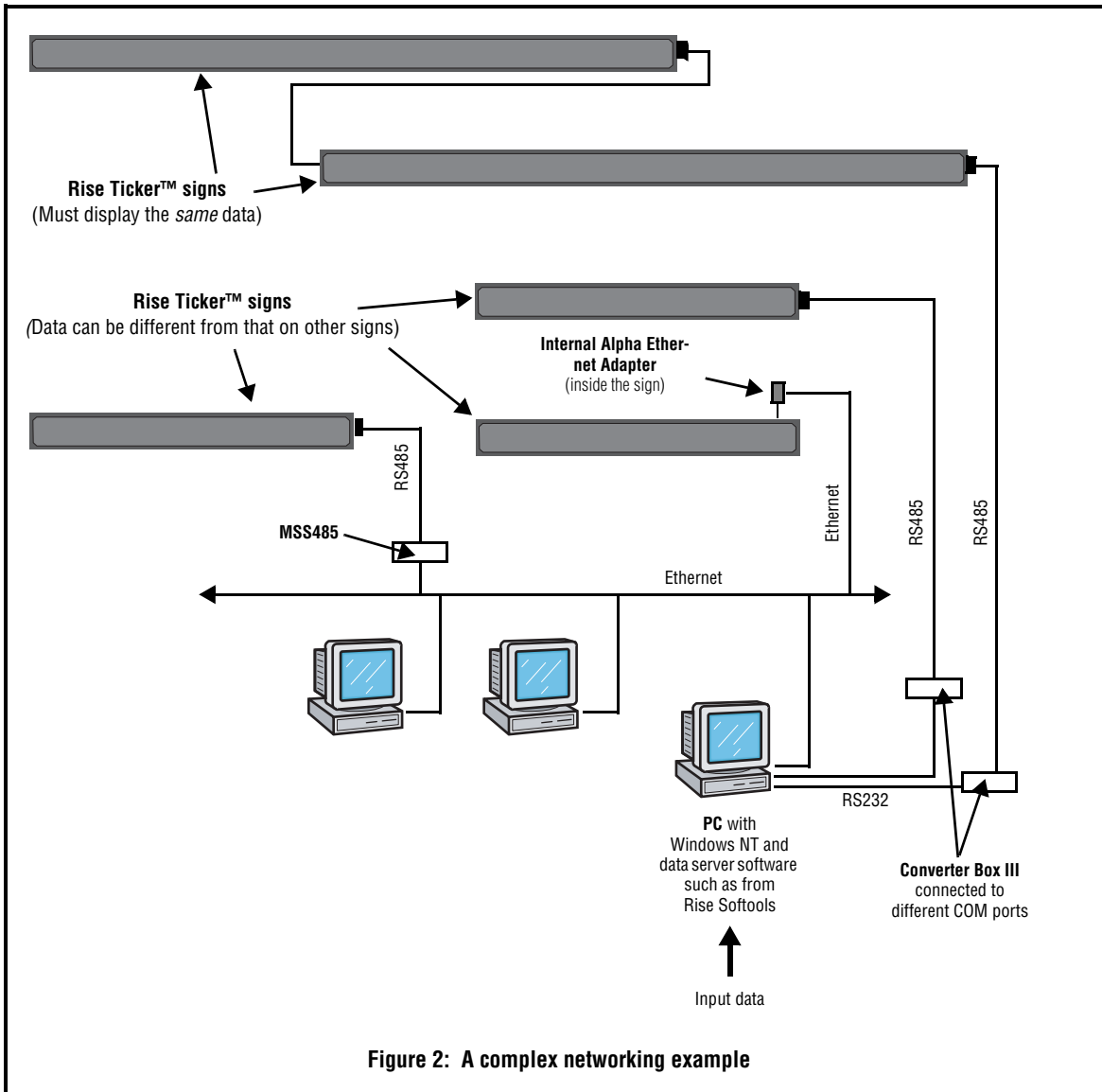
NOTE: Refer to Table 5, "Maximum number of power supplies per 20 amp circuit," on page 41 to determine the maximum number of signs per conduit input.



Network setup

A complex network example

Below is an example of a possible network setup. This is more complex than most would be, however it demonstrates many of the situations that might occur in a network.



To network a sign to a computer, choose from these methods:

- RS485 (See page 24.)
- Ethernet (See page 26.)

To network signs together, choose from these methods:

- Standard connection of individual signs (4-wire cabling) (See page 27.)
- Multiple connection of one sign to another (2-wire cabling) (See page 28.)

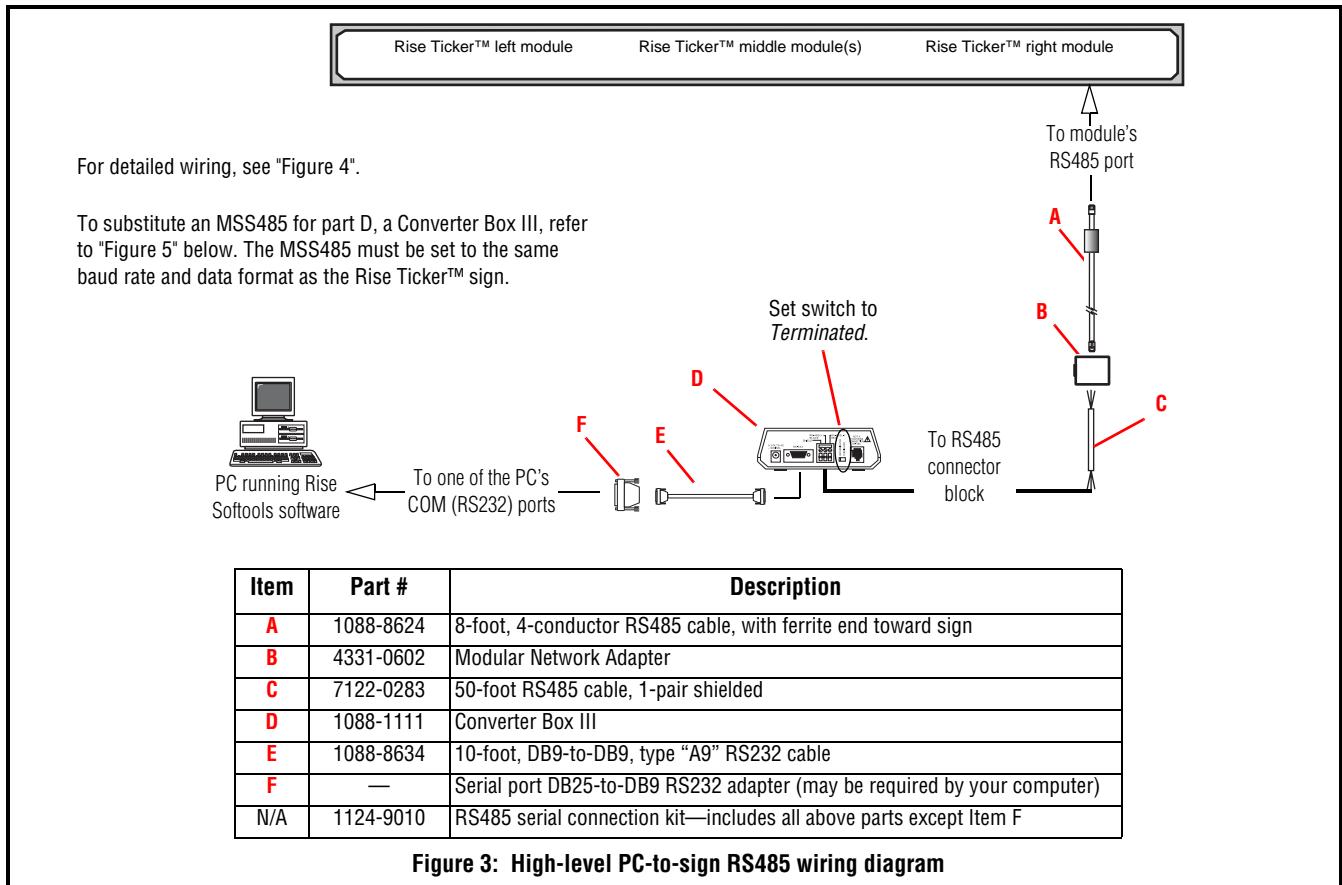
Networking signs to a computer

In order to display messages on the sign, a computer using data server software, such as that from Rise Softtools, must be connected to it. The software, then, is used to create and send the messages to the sign.

NOTE: Use these same instructions when networking AVST32 signs. However, since AVST32 signs are essentially two signs in one, there will be two data lines (either two Ethernet or two RS485 lines). Perform the same set of actions to the second line.

The following examples show how to connect a single computer to one sign. Signs can be connected using either RS485 or Ethernet cabling. Be aware that the Ethernet option can interfere with RS485 communication.

RS485

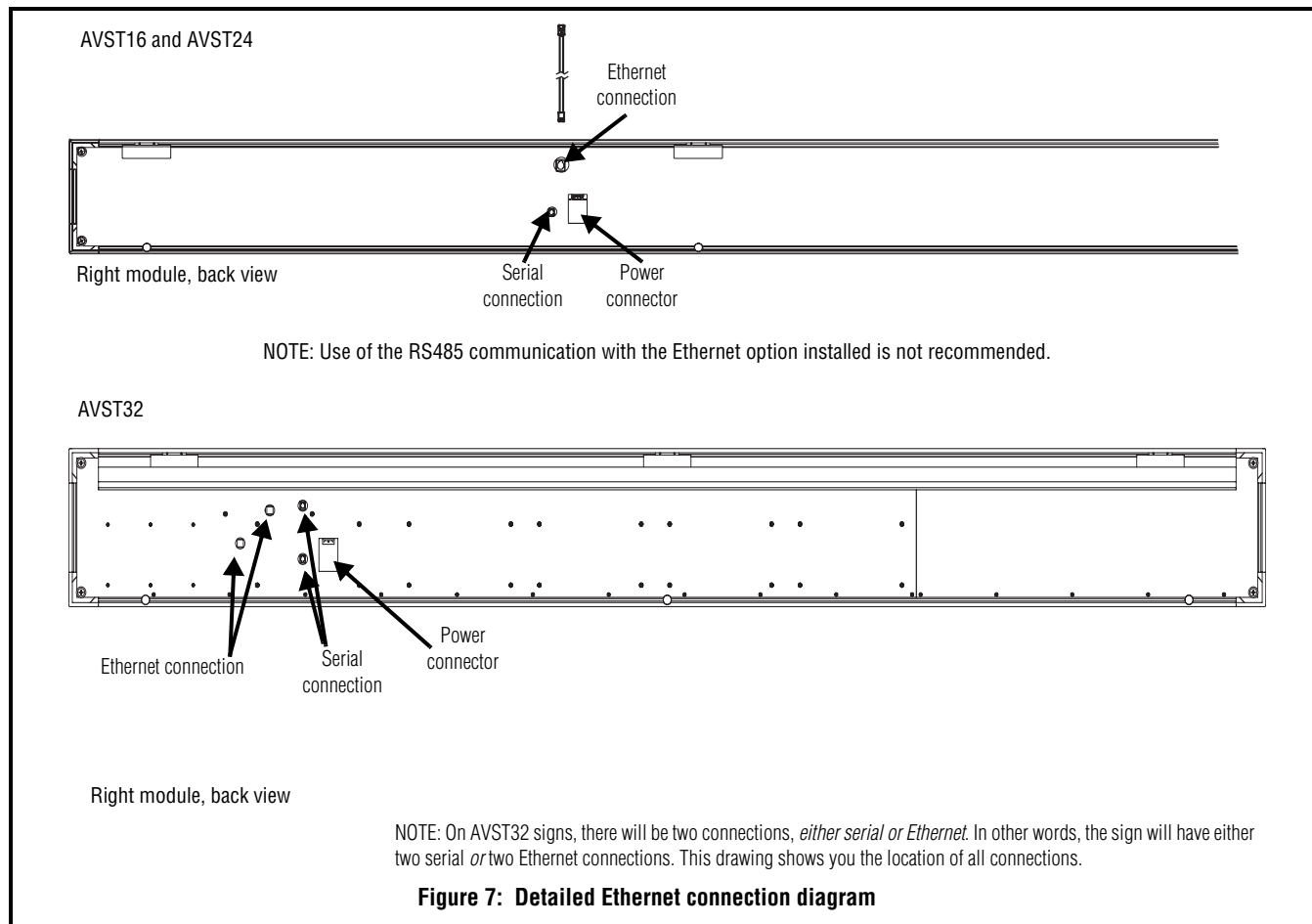
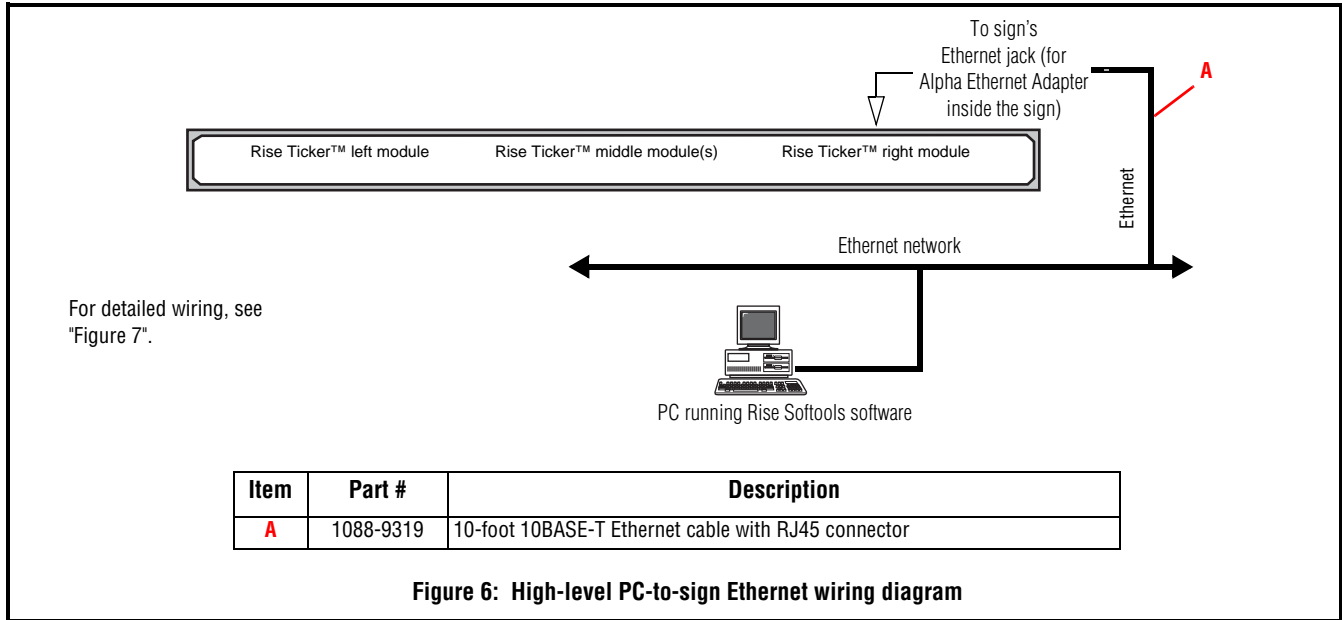


Ethernet

NOTE: A network administrator should be involved in connecting the sign to the Ethernet.

The Ethernet configuration for the Rise Ticker™ sign includes an internal 10BASE-T Ethernet card with an external RJ45 jack. Ethernet cabling (not supplied) can be any length.

After installation, the sign must be configured for addressing by Ethernet.

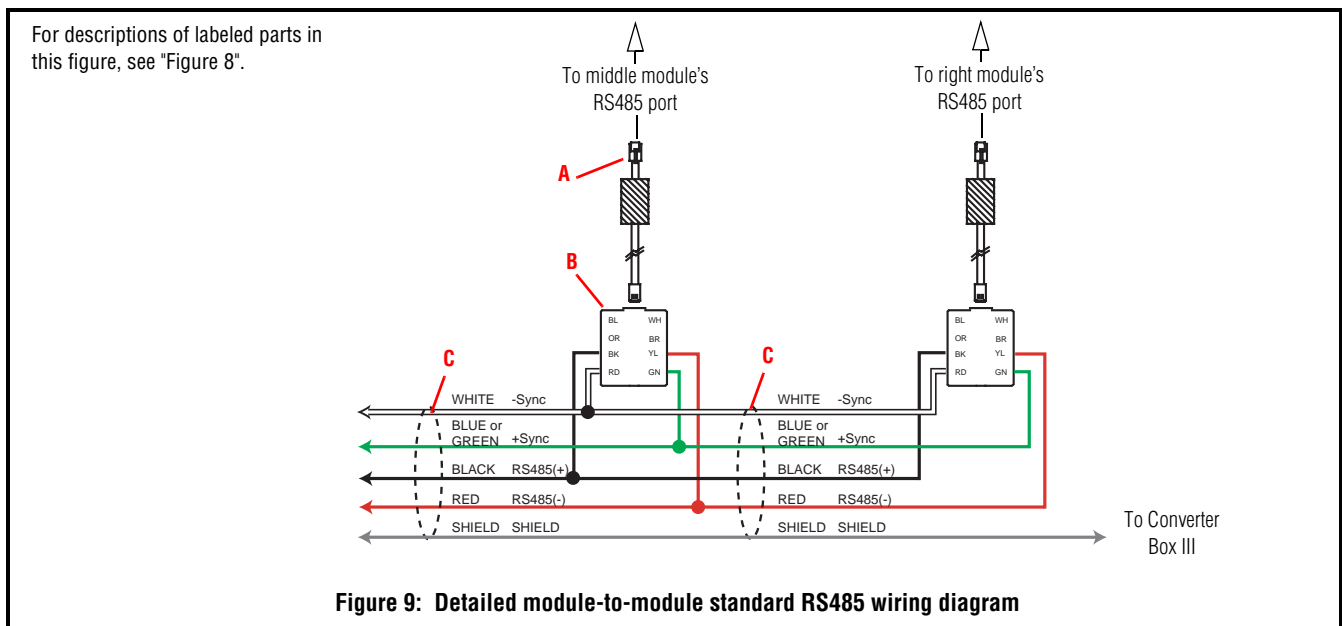
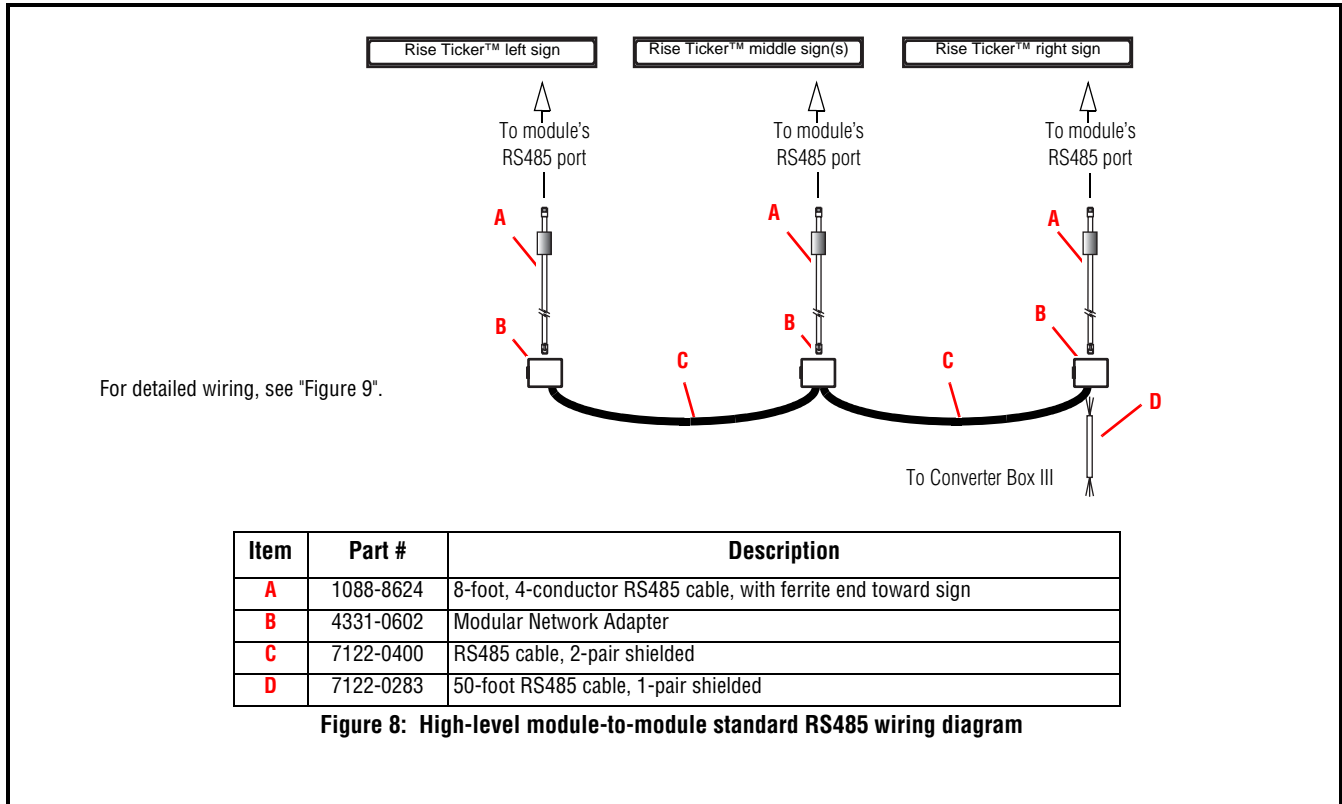


Networking signs together

Individual signs: standard connection

Individual Rise Ticker™ signs that are connected together (so they will display the same stream of data) must be connected using 2-wire RS485 cabling, labeled Part C below.

It is recommended that the total length of cabling (parts C and D in the diagrams below) be kept to a minimum.



Multiple-module signs: custom connection

Rise Ticker™ signs composed of more than one module may be connected internally between terminal blocks on the micro controller boards. This uses 4-wire RS485 cabling, labeled Part C below.

It is recommended that the total length of cabling (parts C and D in the diagrams below) be kept to a minimum.

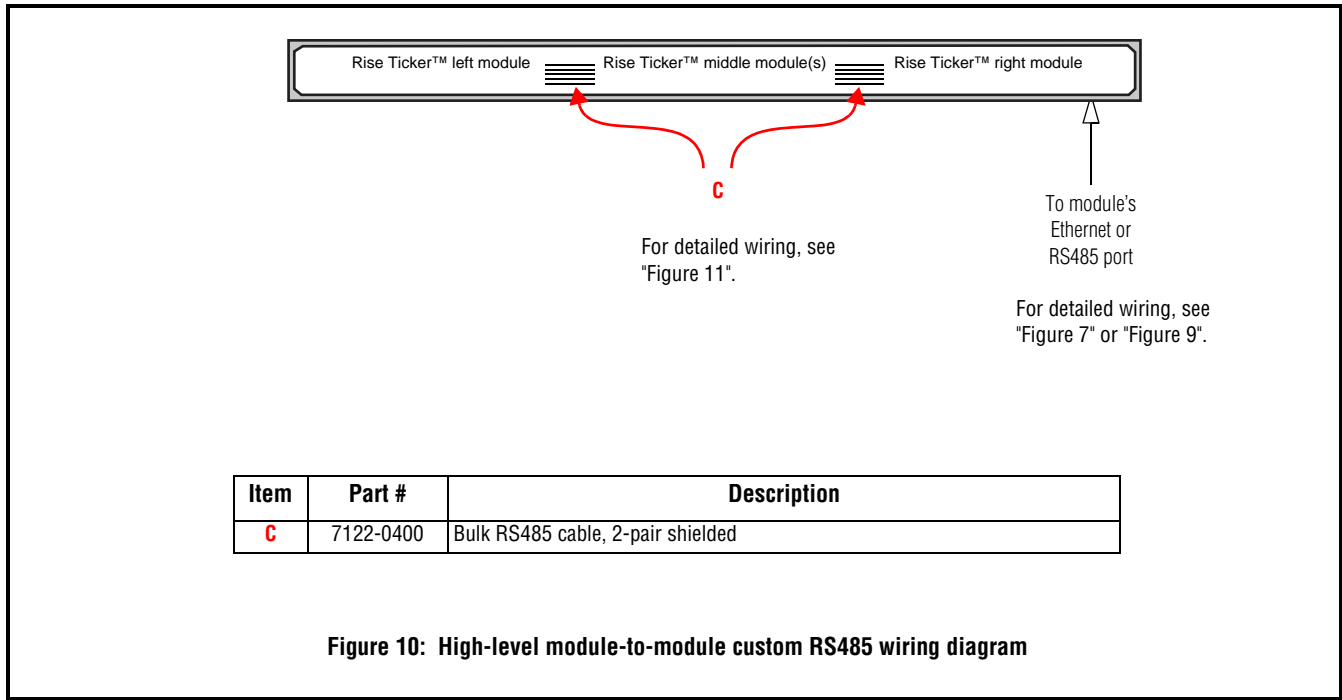


Figure 10: High-level module-to-module custom RS485 wiring diagram

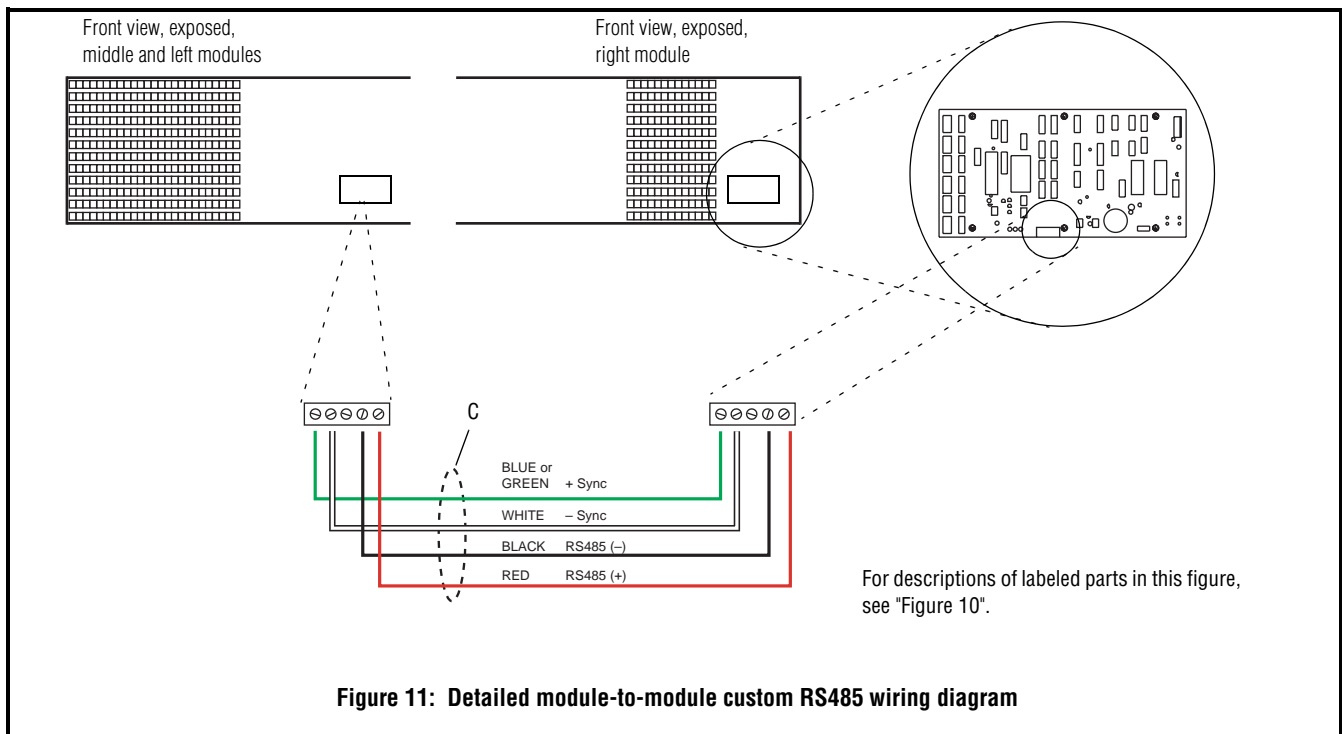


Figure 11: Detailed module-to-module custom RS485 wiring diagram

Service and maintenance

Routine cleaning

When cleaning the case is necessary, use a soft lint-free cotton cloth with mild soap and water. Two drops of soap per quart of water is adequate. Alcohol and cleaners with alcohol are not recommended.

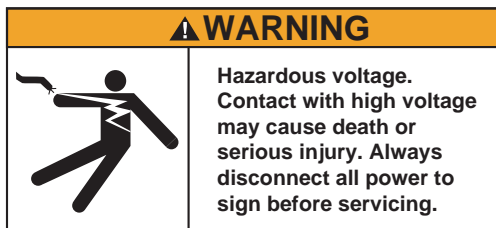
If the front lens becomes dusty, use a vacuum cleaner that has a soft brush on an extension wand.

If additional cleaning is necessary, remove the lens as in “Opening a sign” below. Then rinse with warm water, taking care to not damage or bend the lens. Dry with a lint-free cloth. Re-install the lens as in “Closing a sign” on page 31.

Opening and closing a sign

If it is necessary to access an Rise Ticker™ sign’s internal components, such as a power supply, LED display board, or controller board, follow these instructions.

Opening a sign

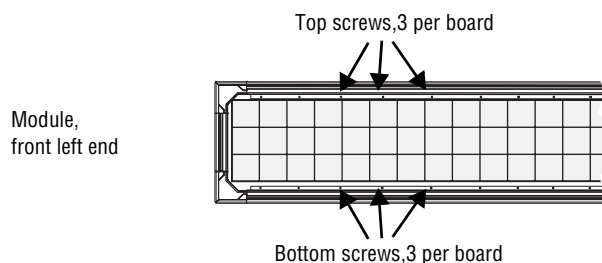


1. Disconnect all power to the sign. If the sign is modular, disconnect all power to each module. Disconnecting power to one module does not assure that power has been disconnected from adjacent modules.
2. Support the front lens, which is secured using a hook-and-loop fastening like Velcro. Gently pull the top of the lens away from the sign’s case and then lift the lens up and out.

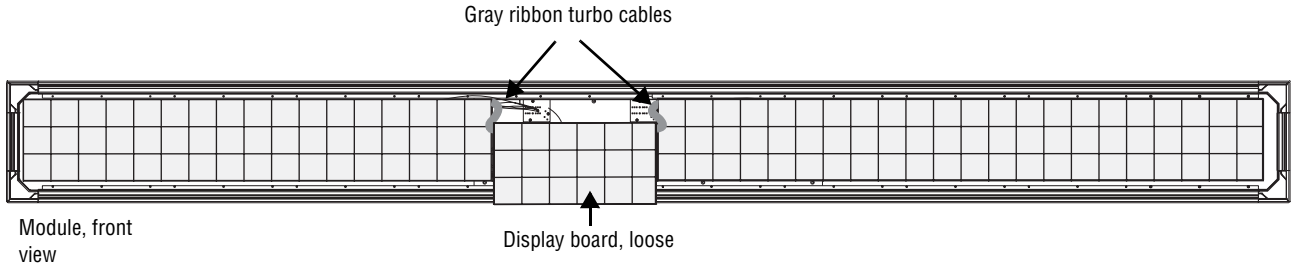
NOTE: Two people may be needed to perform this process: one to loosen the lens while the other holds it.

Accessing internal components

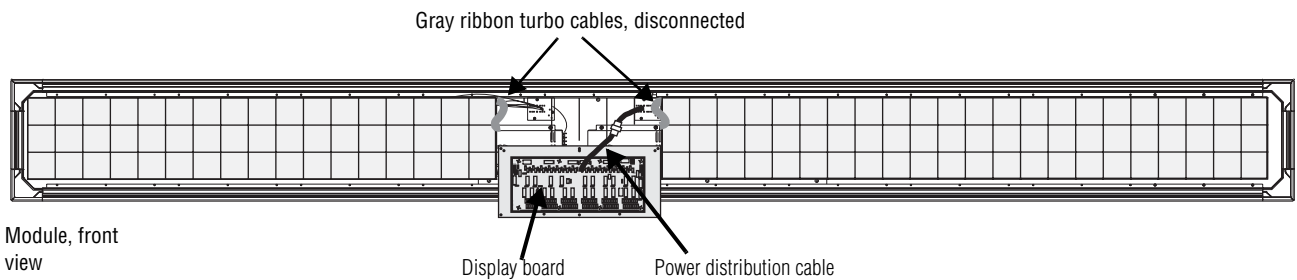
3. Using a small Phillips screwdriver, unscrew the three screws at the top and three screws at the bottom of the LED display board holding it to the horizontal top and bottom rails. (Save the screws for reconnection later.)



4. Disconnect the gray ribbon turbo cables at the top left and top right of the LED display board.

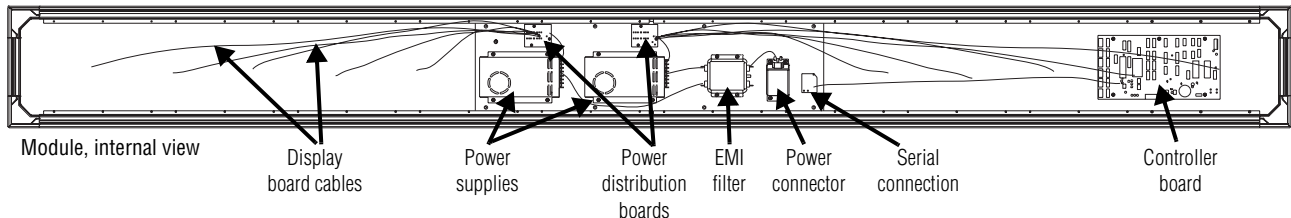


5. Carefully tip the board forward and down and rest it on a flat surface, such as a table, or else tip the board up and rest it on the top of the sign's case.
6. Disconnect the power distribution cable from the LED display board and remove the LED display board from the case. If you are removing more than one LED board, note which display board cable goes to which LED display board location.

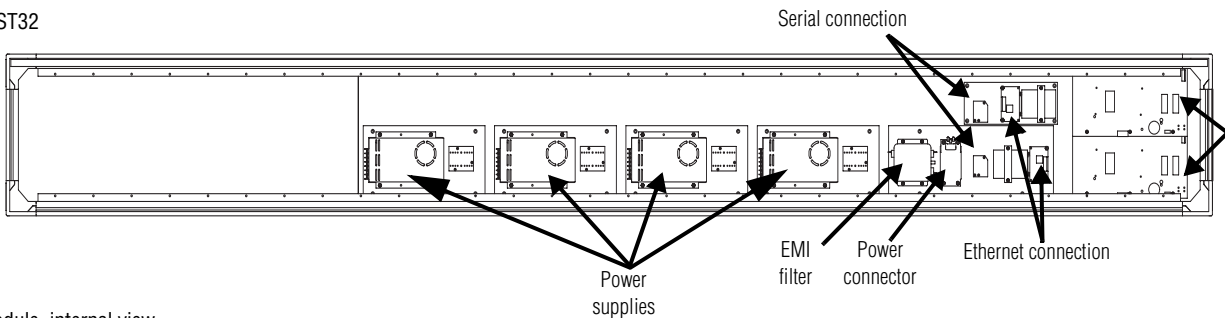


The power components are located near the center of any module. Note that every power connection must be disconnected when opening a sign. The controller board is located on the right end of the front of the module.

AVST16 and AVST24



AVST32



NOTE: The number of power supplies depends on the length of the sign.

Closing a sign

1. Connect the LED display board to the power distribution board.
2. Connect the gray ribbon turbo cables to the top left and top right of the LED display board. Be sure no wires are caught between components.
3. Using the screws saved when opening the sign, screw the three screws at the top and three screws at the bottom of the LED display board holding it to the horizontal top and bottom rails.
4. Place the front lens into the bottom of the sign, align it in the center, and press the top edge to the sign. Press all edges tightly together.

NOTE: Two people may be needed to perform this process.

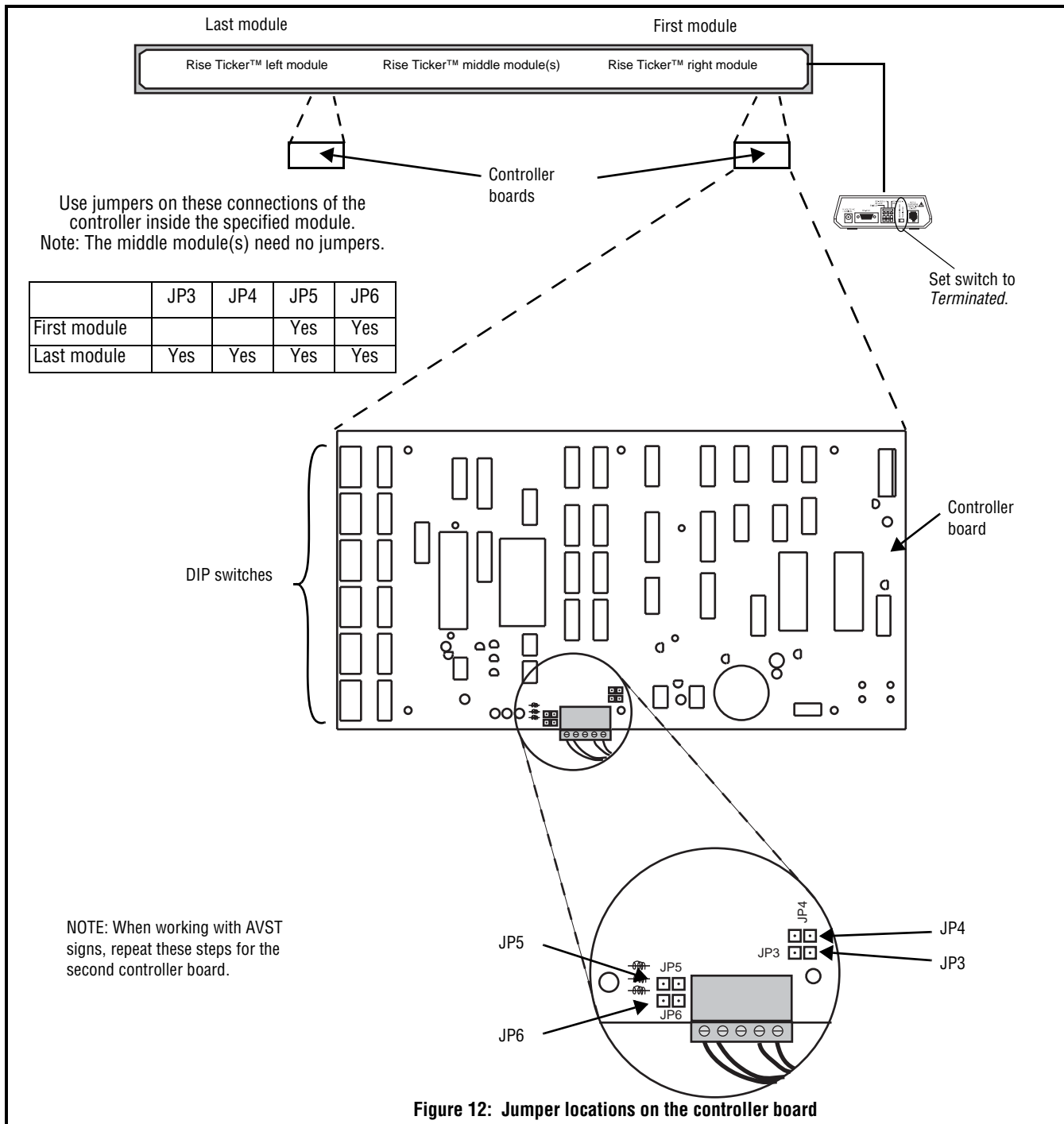
5. Re-connect power to the sign.

Appendices

Configuring a controller board

Replacing jumpers

If a controller board needs replacing, shorting jumpers may need to be installed onto the jumper posts, as indicated on labels near the jumpers (also shown below).



Using DIP switches to set up a sign

If a controller board needs replacing, DIP switches may need to be reset. These settings are pre-configured on a new sign by the manufacturer according to label(s) near the DIP switches, but if you wish to change the settings, follow the instructions in this section.

The Rise Ticker™ sign can be described in terms of the physical configurations. Understanding these configurations is important to properly set the DIP switches.

Physically, an Rise Ticker™ sign can be enclosed as a single cased sign. It can also be a modular sign, composed of a left end, a right end, and possibly one or more centers, all having a portion of the case.

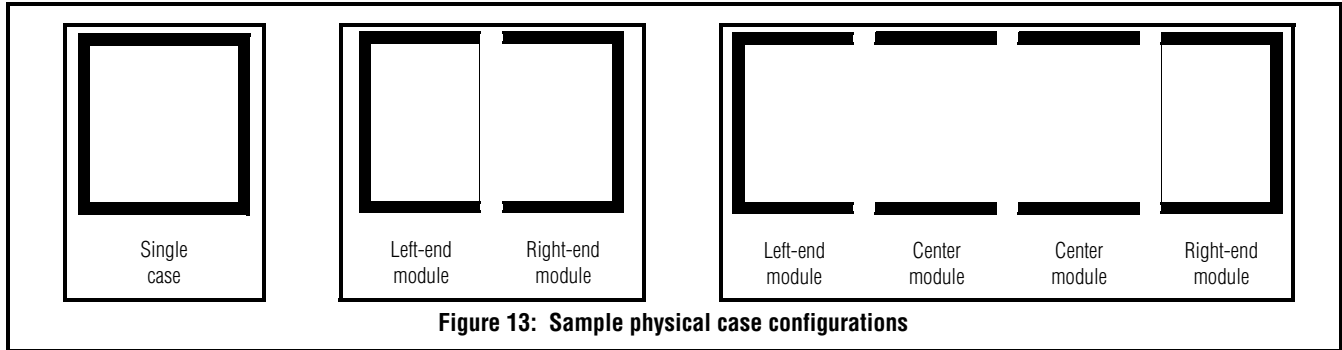


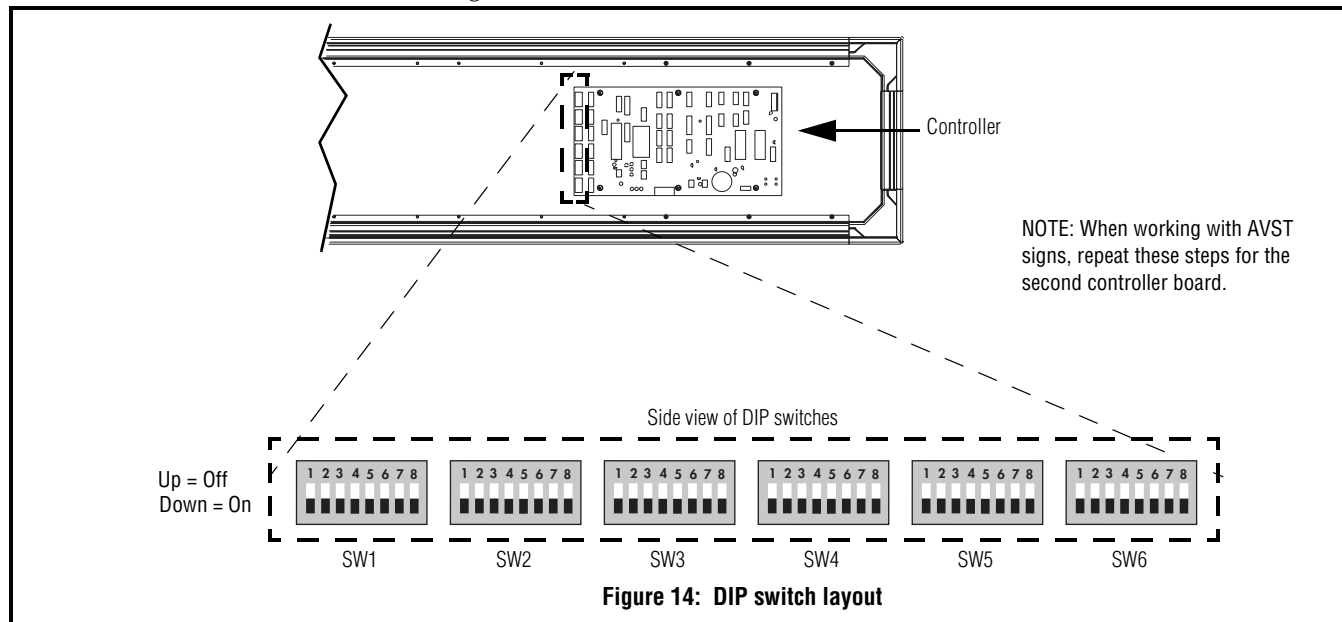
Figure 13: Sample physical case configurations

DIP switches

The Rise Ticker™ sign uses a bank of DIP switches to allow configuration information to be set via the module’s hardware. These DIP switches are read and used to set the configuration when a sign first powers up or when it is reset by the message protocol data. The DIP switches are set initially by the factory, but may be changed manually. They are accessed through the front of the sign.

Setting the DIP switches

1. Open the front of the sign. (Refer to “Opening a sign” on page 29.)
2. Locate the DIP switches inside the sign behind the LED display. Each controller board has a set of six banks of 8 DIP switches, for a total of 48 DIP switches, along the right edge. These are labeled on the controller boards as SW1 through SW6.



NOTE: When working with AVST signs, repeat these steps for the second controller board.

Figure 14: DIP switch layout

Information about DIP switches:

- Each switch represents a 1-bit binary number. This means a switch can have a value of 0 (off) or 1 (on). The default setting is zero for all DIP switches.
 - Groups of DIP switches can be combined logically to create multi-number settings.
 - The DIP switches must be set to represent various meanings. Some settings span two banks of DIP switches.
3. Using the tip of a pen or similar object, press the toggle on each switch as needed to set it. To determine a specific DIP switch setting that corresponds to a desired decimal number, see Table 2, “DIP switch settings,” on page 36.

Table 1: DIP switches and values

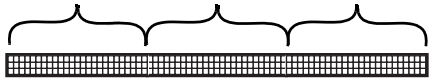
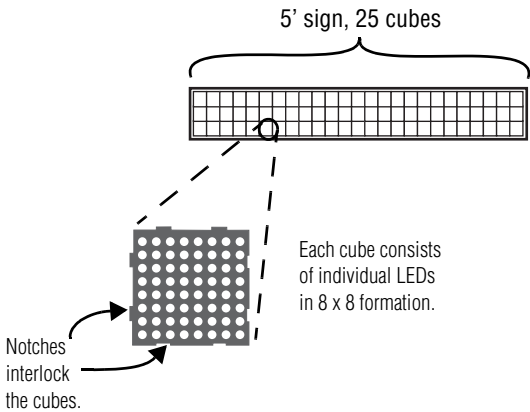
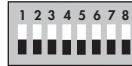
Starting bank and switch number	Ending bank and switch number	Term	Meaning												
SW1-1	SW2-8	Offset	<p>The distance, in number of cubes, the master is from a slave module.</p> <p>For a master module, the distance, in number of cubes, the last slave module is from the right end of the master.</p> <p>For a slave module, the distance, in number of cubes, the right-most end of the module is from the start of the display (the right-most end of the right-most module.) The start of the sign is on the right, therefore the modules are sequenced right to left.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;"> 5' = 25 cubes 6' = 30 cubes 7' = 35 cubes 8' = 40 cubes 9' = 45 cubes 10' = 50 cubes </td> <td style="width: 33%; vertical-align: top; text-align: center;"> Left 5' module (slave) Offset = 50 (25 in right + 25 in middle) </td> <td style="width: 33%; vertical-align: top; text-align: center;"> Middle 5' module (slave) Offset = 25 (25 in right) </td> <td style="width: 33%; vertical-align: top; text-align: center;"> Right 5' module (master) Offset = 50 (25 in right + 25 in middle) </td> </tr> </table> 	5' = 25 cubes 6' = 30 cubes 7' = 35 cubes 8' = 40 cubes 9' = 45 cubes 10' = 50 cubes	Left 5' module (slave) Offset = 50 (25 in right + 25 in middle)	Middle 5' module (slave) Offset = 25 (25 in right)	Right 5' module (master) Offset = 50 (25 in right + 25 in middle)								
5' = 25 cubes 6' = 30 cubes 7' = 35 cubes 8' = 40 cubes 9' = 45 cubes 10' = 50 cubes	Left 5' module (slave) Offset = 50 (25 in right + 25 in middle)	Middle 5' module (slave) Offset = 25 (25 in right)	Right 5' module (master) Offset = 50 (25 in right + 25 in middle)												
SW3-1	SW3-8	Width	<p>The width of the complete module, in number of cubes. For example, a 5' module is 25 cubes wide.</p> <p>Settings are:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">5'</td> <td>25 cubes</td> </tr> <tr> <td>6'</td> <td>30 cubes</td> </tr> <tr> <td>7'</td> <td>35 cubes</td> </tr> <tr> <td>8'</td> <td>40 cubes</td> </tr> <tr> <td>9'</td> <td>45 cubes</td> </tr> <tr> <td>10'</td> <td>50 cubes</td> </tr> </table> 	5'	25 cubes	6'	30 cubes	7'	35 cubes	8'	40 cubes	9'	45 cubes	10'	50 cubes
5'	25 cubes														
6'	30 cubes														
7'	35 cubes														
8'	40 cubes														
9'	45 cubes														
10'	50 cubes														
SW4-1	SW4-1	Colors	<p>Whether the module displays 1 color (red) or 3 colors (red, green, amber).</p> <p>Settings are:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">0</td> <td>1-color</td> </tr> <tr> <td>1</td> <td>3-color</td> </tr> </table>	0	1-color	1	3-color								
0	1-color														
1	3-color														

Table 1: DIP switches and values

Starting bank and switch number	Ending bank and switch number	Term	Meaning
SW4-2	SW4-2	Master	Whether the module is used as a master or as a slave. The master coordinates functions (such as scrolling) across all divisions. The right-most module must be set as a master. All others should be set to slave. Settings are: 0 Slave 1 Master
SW4-3	SW4-3	Slaves attached	On a master module, whether there are slave modules or not. On a slave module, set this to 0. Settings are: 0 No slaves are attached. 1 One or more slaves are attached.
SW4-4	SW4-4	Ack/Nak	On a master module, whether the sign sends acknowledgement of messages or not. (Usually set to 0.) On a slave module, set this to 0. Settings are: 0 Sends ack/nak acknowledgement. 1 Does not send ack/nak acknowledgement (is silent.)
SW4-5	SW4-5	Rotate	How rotation appears on the sign. Settings are: 0 Normal rotation of characters. (May appear as if the characters have a slight slant.) 1 Half-speed rotate with double-dot blending of characters. This means that the sign rotates the characters at half the speed, therefore they appear more clear. They also appear as if twice the number of LEDs are used for each stroke in a character, filling in-between the original LEDs.
SW4-6	SW4-6	Refresh rate	How fast the display is refreshed. Settings are: 0 Normal refresh rate. 1 Double-speed refresh rate. Only recommended in signs 6 feet or less, and only for the slowest 2 settings for scroll speed for the display.
SW4-7	SW4-8	Unused	Reserved—Required setting is: 0.
SW5-1	SW5-8	Unused	Reserved—Required setting is: 0.
SW6-1	SW6-1	Test/ no test	Whether a test pattern is displayed on the sign or not. Settings are: 0 Normal display 1 Test display
SW6-2	SW6-3	Test pattern	Determines the pattern displayed on the sign when SW6-1 is set to 1. Settings are: 00 Displays a pattern of forward slashes followed by squares. 10 Displays all red LEDs. 01 Displays all green LEDs. 11 Displays all amber LEDs.
SW6-4	SW6-8	Unused	Reserved Required setting is: 0.

NOTE: A baud rate of 19,200 and a data format of 8N1 (8 bits, no parity, 1 stop bit) is used.

Table 2: DIP switch settings

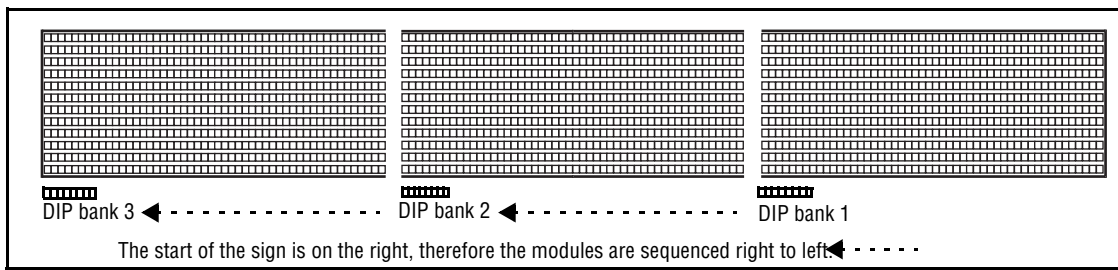


Setting in Decimal	DIP switch settings (1 = ON, 0 = OFF)								Setting in Decimal	DIP switch settings (1 = ON, 0 = OFF)									
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		
00	0	0	0	0	0	0	0	0	51	0	0	1	1	0	0	1	1		
01	0	0	0	0	0	0	0	0	1	52	0	0	1	1	0	1	0	0	
02	0	0	0	0	0	0	0	1	0	53	0	0	1	1	0	1	0	1	
03	0	0	0	0	0	0	0	1	1	54	0	0	1	1	0	1	1	0	
04	0	0	0	0	0	0	1	0	0	55	0	0	1	1	0	1	1	1	
05	0	0	0	0	0	0	1	0	1	56	0	0	1	1	1	0	0	0	
06	0	0	0	0	0	0	1	1	0	57	0	0	1	1	1	0	0	1	
07	0	0	0	0	0	0	1	1	1	58	0	0	1	1	1	0	1	0	
08	0	0	0	0	0	1	0	0	0	59	0	0	1	1	1	0	1	1	
09	0	0	0	0	0	1	0	0	1	60	0	0	1	1	1	1	0	0	
10	0	0	0	0	0	1	0	1	0	61	0	0	1	1	1	1	0	1	
11	0	0	0	0	0	1	0	1	1	62	0	0	1	1	1	1	1	0	
12	0	0	0	0	0	1	1	0	0	63	0	0	1	1	1	1	1	1	
13	0	0	0	0	0	1	1	0	1	64	0	1	0	0	0	0	0	0	
14	0	0	0	0	0	1	1	1	0	65	0	1	0	0	0	0	0	1	
15	0	0	0	0	0	1	1	1	1	66	0	1	0	0	0	0	1	0	
16	0	0	0	0	1	0	0	0	0	67	0	1	0	0	0	0	1	1	
17	0	0	0	0	1	0	0	0	1	68	0	1	0	0	0	0	1	0	0
18	0	0	0	0	1	0	0	1	0	69	0	1	0	0	0	0	1	0	1
19	0	0	0	0	1	0	0	1	1	70	0	1	0	0	0	0	1	1	0
20	0	0	0	0	1	0	1	0	0	71	0	1	0	0	0	0	1	1	1
21	0	0	0	0	1	0	1	0	1	72	0	1	0	0	0	1	0	0	0
22	0	0	0	0	1	0	1	1	0	73	0	1	0	0	0	1	0	0	1
23	0	0	0	0	1	0	1	1	1	74	0	1	0	0	0	1	0	1	0
24	0	0	0	0	1	1	0	0	0	75	0	1	0	0	0	1	0	1	1
25	0	0	0	0	1	1	0	0	1	76	0	1	0	0	0	1	1	0	0
26	0	0	0	0	1	1	0	1	0	77	0	1	0	0	0	1	1	0	1
27	0	0	0	0	1	1	0	1	1	78	0	1	0	0	0	1	1	1	0
28	0	0	0	0	1	1	1	0	0	79	0	1	0	0	0	1	1	1	1
29	0	0	0	0	1	1	1	0	1	80	0	1	0	0	0	1	0	0	0
30	0	0	0	0	1	1	1	1	0	81	0	1	0	0	1	0	0	0	1
31	0	0	0	0	1	1	1	1	1	82	0	1	0	0	1	0	0	1	0
32	0	0	0	1	0	0	0	0	0	83	0	1	0	0	1	0	0	1	1
33	0	0	0	1	0	0	0	0	1	84	0	1	0	0	1	0	1	0	0
34	0	0	0	1	0	0	0	1	0	85	0	1	0	0	1	0	1	0	1
35	0	0	0	1	0	0	0	1	1	86	0	1	0	0	1	0	1	1	0
36	0	0	0	1	0	0	1	0	0	87	0	1	0	0	1	0	1	1	1
37	0	0	0	1	0	0	1	0	1	88	0	1	0	0	1	1	0	0	0
38	0	0	0	1	0	0	1	1	0	89	0	1	0	0	1	1	0	0	1
39	0	0	0	1	0	0	1	1	1	90	0	1	0	0	1	1	0	1	0
40	0	0	0	1	0	1	0	0	0	91	0	1	0	0	1	1	0	1	1
41	0	0	0	1	0	1	0	0	1	92	0	1	0	0	1	1	1	0	0
42	0	0	0	1	0	1	0	1	0	93	0	1	0	0	1	1	1	0	1
43	0	0	0	1	0	1	0	1	1	94	0	1	0	0	1	1	1	1	0
44	0	0	0	1	0	1	1	0	0	95	0	1	0	0	1	1	1	1	1
45	0	0	0	1	0	1	1	0	1	96	0	1	0	0	0	0	0	0	0
46	0	0	0	1	0	1	1	1	0	97	0	1	0	0	0	0	0	0	1
47	0	0	0	1	0	1	1	1	1	98	0	1	0	0	0	0	0	1	0
48	0	0	0	1	1	0	0	0	0	99	0	1	0	0	0	0	1	1	1
49	0	0	0	1	1	0	0	0	1	100	0	1	0	0	0	1	0	0	0
50	0	0	0	1	1	0	0	1	0										

DIP switch setting examples

EXAMPLE 1

An example of a 3-color 30' sign made up of three 10' modules:



	SW1	SW2	SW3	SW4	SW5	SW6
Up = Off Down = On						
1 = On 0 = Off	00000000	00000000	00000000	00000000	00000000	00000000
Generic/ Terms	Offset		Width	Colors Master Slaves Ack/Nak Rotate Refresh rate Unused	Unused	Test/no test Test pattern
Values for DIP bank 1:	100		50	3-color Master Slaves exist Sends ack/ Nak Normal rotate Normal refresh Unused	Unused	No test No test pattern
Values for DIP bank 2:	50		50	3-color Slave This is slave Sends ack/ Nak Normal rotate Normal refresh Unused	Unused	No test No test pattern
Values for DIP bank 3:	100		50	3-color Slave This is slave Sends ack/ Nak Normal rotate Normal refresh Unused	Unused	No test No test pattern

Figure 15: DIP switch settings for a single sign

EXAMPLE 2

An example of two red 12' signs, each composed of two 6' modules, with both signs displaying the same messages:

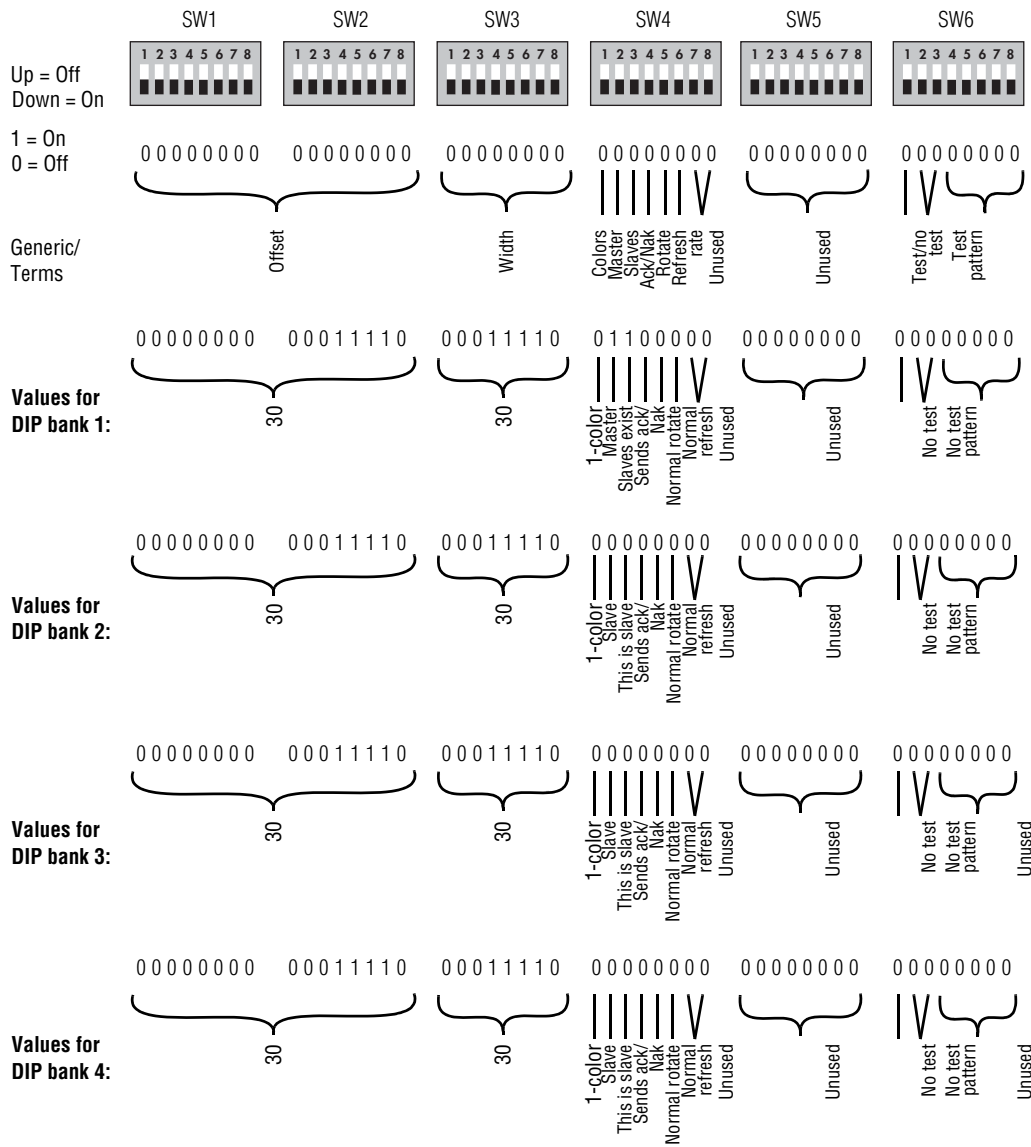
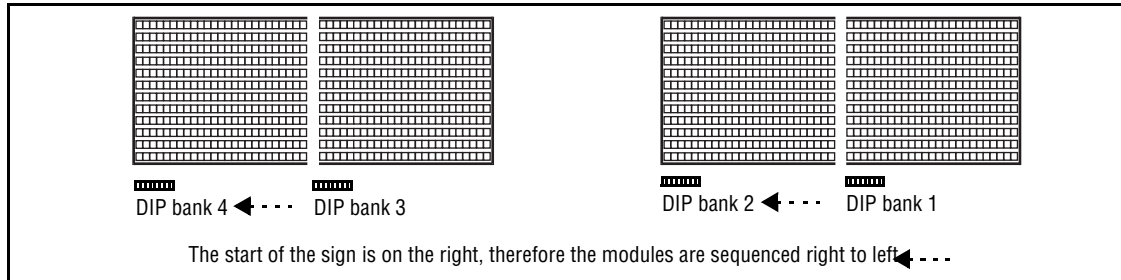


Figure 16: DIP switch settings for a pair of signs

Alpha® Ethernet Adapter internal installation

The optional Alpha® Ethernet Adapter is installed internally at the factory inside the sign as shown.

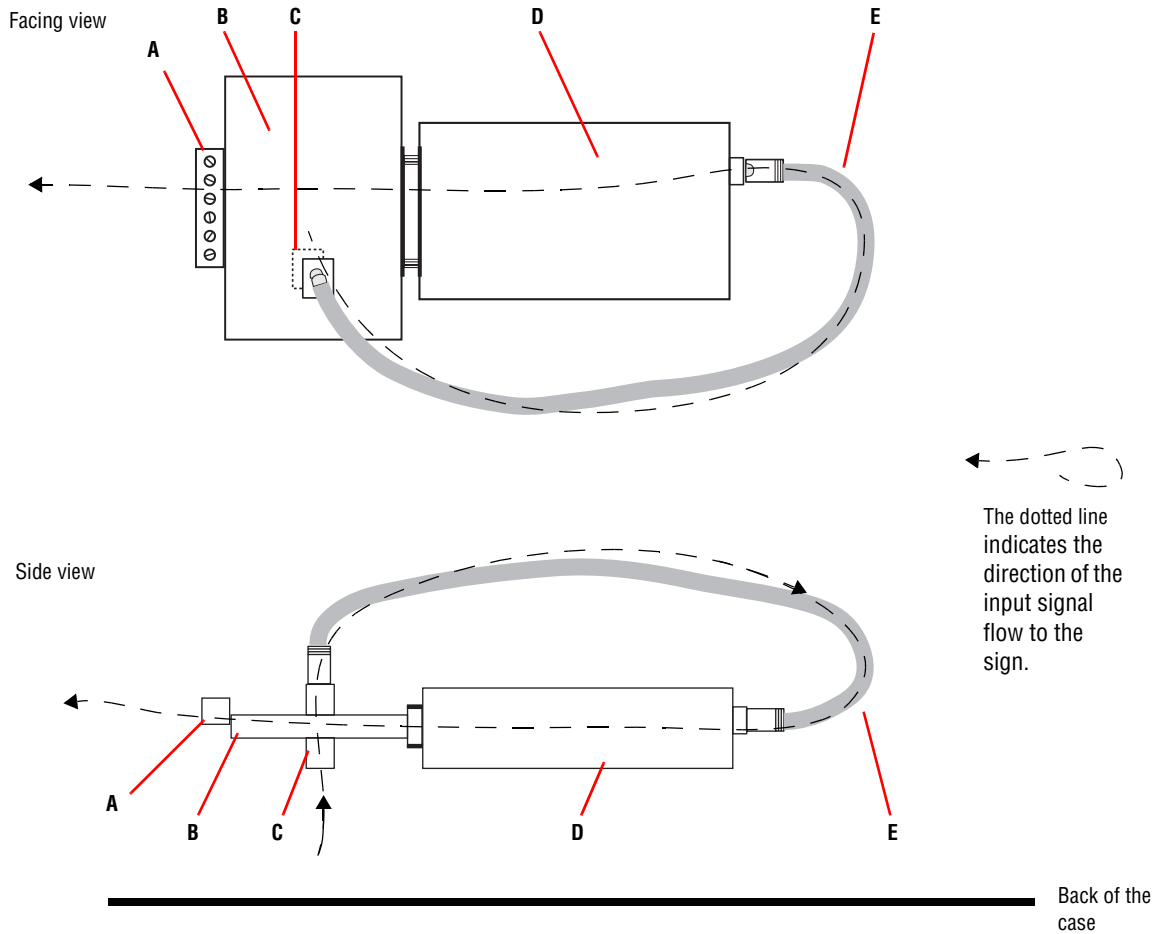
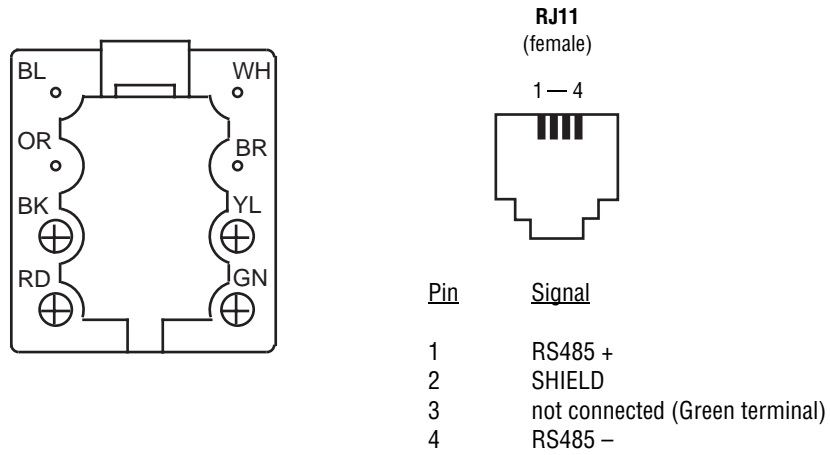


Table 3: Alpha® Ethernet Adapter installation components

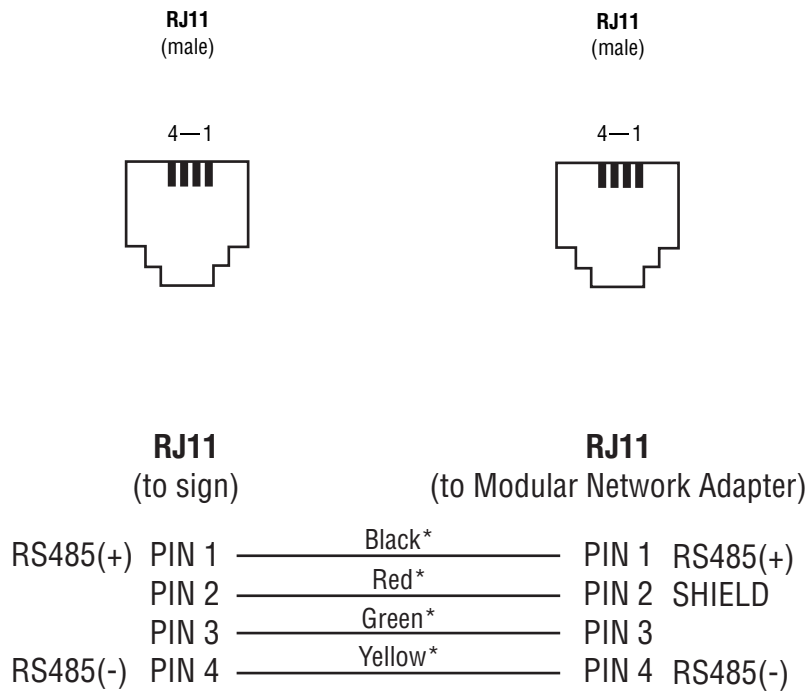
Part	Description	Notes
A	Terminal block	1. Connects to micro controller board. 2. Provides 5V power from the sign for the Alpha® Ethernet Adapter.
B	Serial board	1. Sends TCP/IP input from the Ethernet to the Alpha® Ethernet Adapter. 2. Converts RS232 input from the Alpha® Ethernet Adapter to RS485 output for the sign.
C	RJ45 Ethernet connector	Connects to the Ethernet at the back of the sign's case.
D	Alpha® Ethernet Adapter	Converts TCP/IP input to RS232 output. (Installed with its top facing the back of the sign.)
E	Category 5e patch cable	Transfers signals through the serial board to the Alpha® Ethernet Adapter to be converted for the serial board.

Modular Network Adapter detail

Modular Network Adapters can be used, with proper cabling, for connecting modules of an Rise Ticker™ sign. See “Networking signs together” on page 27.



Cable 1088-8624 pinout diagram



*These are also the wire colors in the Modular Network Adapter.

Electrical specifications

Electrical rating: 100 – 240 VAC +/- 10% @ 50-60 Hz

Power consumption: 50 watts per foot (typical)

Display load: The total number of pixels (dots) which can be lit on the sign at any given time is limited, not to exceed 57% of full display (total pixels). Refer to the Stock Ticker Protocol Document (available from Adaptive) for details.

Table 4: Rise Ticker™ electrical information

Model	Length, nominal (feet)	Number of power supplies (Mean Well SP200-5)	100 VAC input current (amps)	240 VAC input current (amps)
AVST16-5	5	1	1.53	0.87
AVST16-6	6	1	1.67	1.00
AVST16-7	7	1	1.87	1.13
AVST16-8	8	2	2.40	1.27
AVST16-9	9	2	2.40	1.27
AVST16-10	10	2	2.67	1.40
AVST24-5	5	1	2.30	1.30
AVST24-6	6	1	2.50	1.50
AVST24-7	7	1	2.80	1.70
AVST24-8	8	2	3.60	1.90
AVST24-9	9	2	3.60	1.90
AVST24-10	10	2	4.00	2.10
AVST32-5	5	2	4.60	2.30
AVST32-6	6	2	4.60	2.30
AVST32-7	7	3	6.90	3.45
AVST32-8	8	3	6.90	3.45
AVST32-9	9	3	6.90	3.45
AVST32-10	10	4	9.20	4.60

Table 5: Maximum number of power supplies per 20 amp circuit

Input (line) voltage	Conduit-connected	Cord-connected	
	Conduit-connected to building wiring (Minimum 16 AWG wire)	Factory-supplied North American line cord (Max. 12 amps: Plug must handle 125% of input current)	10A for Factory-supplied European line cord
100 VAC	6	3	N/A
120 VAC	7	4	N/A
240 VAC	15	N/A	7

Physical specifications

Table 6: Physical specifications for Rise Ticker™ signs

Model number *	Length, actual inches (mm)	Weight, approximate lbs. (kg)
AVST16-5-xxx	66.3 (1684)	50 (23)
AVST16-6-xxx	78.3 (1989)	60 (27)
AVST16-7-xxx	90.3 (2294)	70 (32)
AVST16-8-xxx	102.3 (2598)	80 (36)
AVST16-9-xxx	114.3 (2903)	90 (41)
AVST16-10-xxx	126.3 (3208)	100 (45)
AVST24-5-xxx	66.3 (1684)	55 (25)
AVST24-6-xxx	78.3 (1989)	66 (30)
AVST24-7-xxx	90.3 (2294)	77 (35)
AVST24-8-xxx	102.3 (2598)	88 (40)
AVST24-9-xxx	114.3 (2903)	99 (45)
AVST24-10-xxx	126.3 (3208)	110 (50)
AVST32-5-xxx	66.3 (1684)	60 (27)
AVST32-6-xxx	78.3 (1989)	72 (33)
AVST32-7-xxx	90.3 (2294)	84 (38)
AVST32-8-xxx	102.3 (2598)	96 (44)
AVST32-9-xxx	114.3 (2903)	108 (49)
AVST32-10-xxx	126.3 (3208)	120 (54)
* "xxx" denotes either TRI or SBR color.		