ADAPTIVE ®

AlphaVision™ FS Series Character Matrix Sign Installation Instructions

## Contents

Introduction

Product description

The AlphaVision™ FS series signs are designed so that they are "front-serviceable." The signs are available with 1.4"- and 2.1"-high characters. The 1.4" character signs have displays as small as 32 characters in a line and 6 rows of characters. The 2.1" character signs have displays as small as 24 characters in a line and 4 rows of characters. Both the 1.4"- and 2.1"-high character signs have displays as large as 48 characters in a line and 12 rows of characters.

NOTICE: This is a class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Model number table

These are the meanings of the sections of model numbers. See your sign's label for its exact model number.

TCMxxxyyyPnnzzz
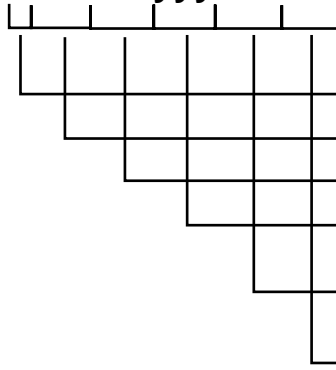
Section	Meaning	Possible values
T	(None)	T
CM	Character matrix	CM
xxx	Characters per line	24, 32, 40, 48
yyy	Number of rows of characters	4, 6, 8, 10, 12
Pnn	Pitch	P02 (1.4" characters) P03 (2.1" characters)
zzz	LED color	RED (red) SBR (super-bright red) TRI (tri-color)

Changing a serial address

Opening a sign

To access the inside of an AlphaVision™ FS Series character matrix sign, follow these steps.

1. Disconnect power to the sign.

> **⚠ WARNING**
>
> **Hazardous voltage.
> Contact with high voltage may
> cause death or serious injury.
> Always disconnect power
> to sign prior to servicing.**
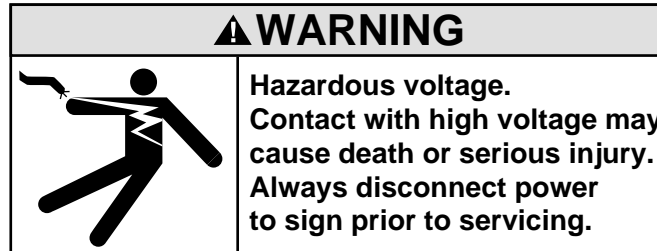
2. Support the Plexiglas window, wearing cotton or rubber gloves to minimize the need for cleaning. Using a #2-bit Phillips screwdriver, loosen the retaining clips around the perimeter of the Plexiglas window, and turn the clips counter-clockwise away from the window. Tighten them down again to hold them in place. Remove the Plexiglas window from the sign and carefully place it off to the side.
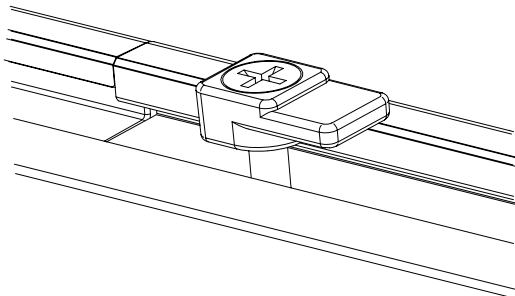
   NOTE: Two people may be needed for this process: one to hold the Plexiglas window, and one to loosen the retaining clips.
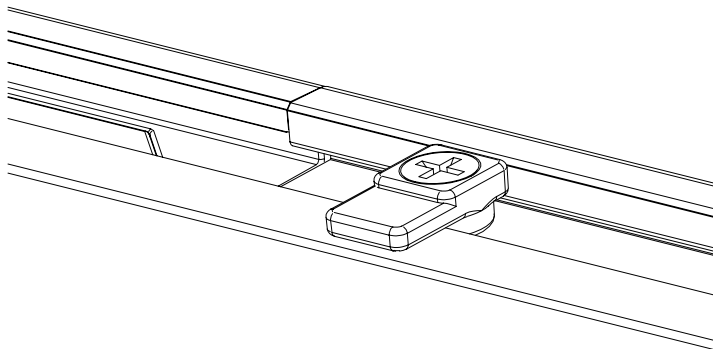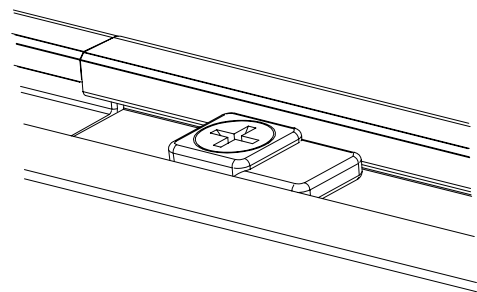
A Retaining clip in original position, holding Plexiglas window in place
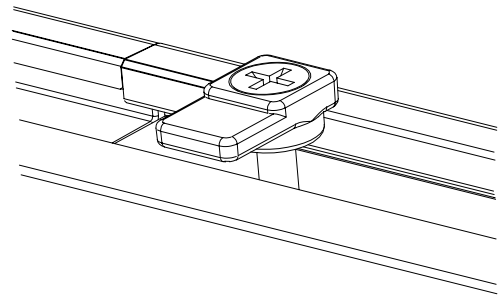
B Retaining clip, loosened

C Retaining clip, turned to the side

D Retaining clip, tightened to the side

Figure 1: Loosening the retaining clips

3. Unscrew the vertical rails at the bottom on the LED display board. (Save the screws for replacement later.) Open the LED display board out and up. Use the prop bar at the bottom of the display board to support the display board by putting the plastic-covered end into the hole in the case directly below the prop bar. (See "Figure 2: Sign, opened" below.)

   NOTE: Two people may be needed to lift the LED display board. Do not force the door open beyond its natural travel distance.

⚠ **WARNING**

Possible crush hazard. Engage prop bar while access door is opened. Otherwise, door may close unexpectedly, possibly causing serious injury.

Piano-style hinge

LED display

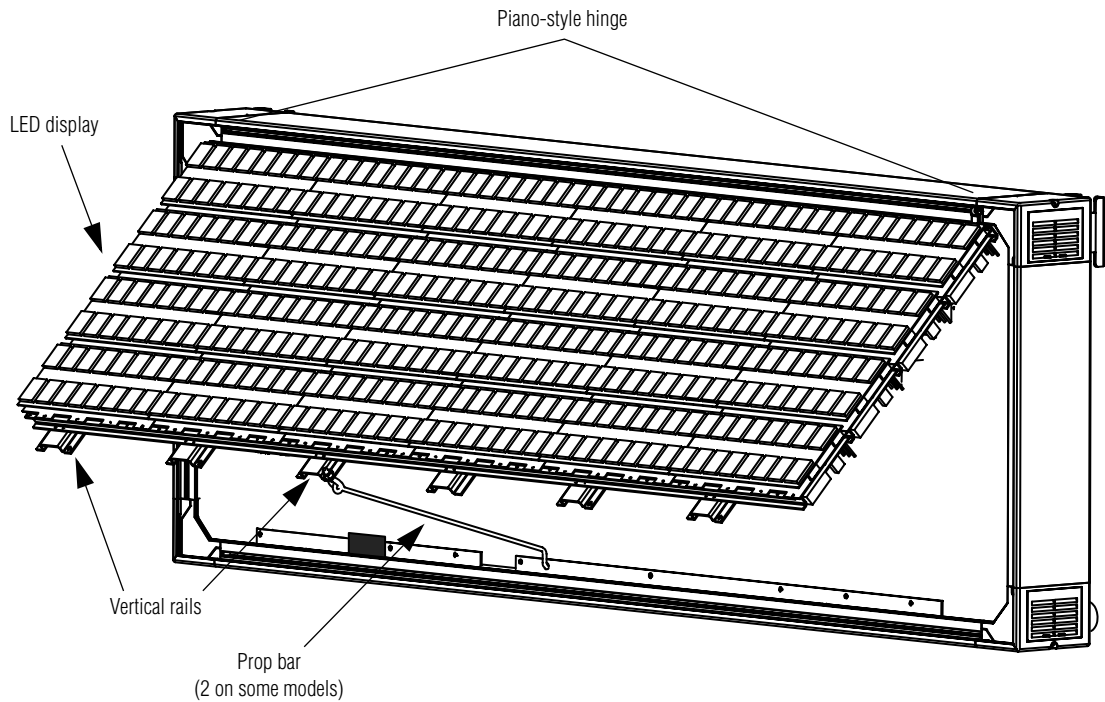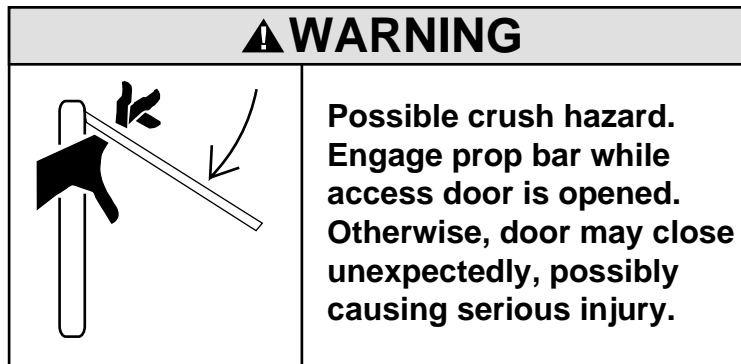Vertical rails

Prop bar
(2 on some models)

Figure 2: Sign, opened

Setting a new serial address

The address of an AlphaVision™ FS Series character matrix sign is set by changing a DIP switch that is accessed through the front of the sign.

1. Open the front of the sign. (Refer to "Opening a sign" on page 2.)

2. Locate the DIP switches inside the sign behind the LED display. The set of switches represents the sign's address in an 8-bit binary number format. This means a sign's address can have a value from 00 to FF (hexadecimal) or 0 to 255 (decimal). The most significant bit is 8 and the least significant is 1.
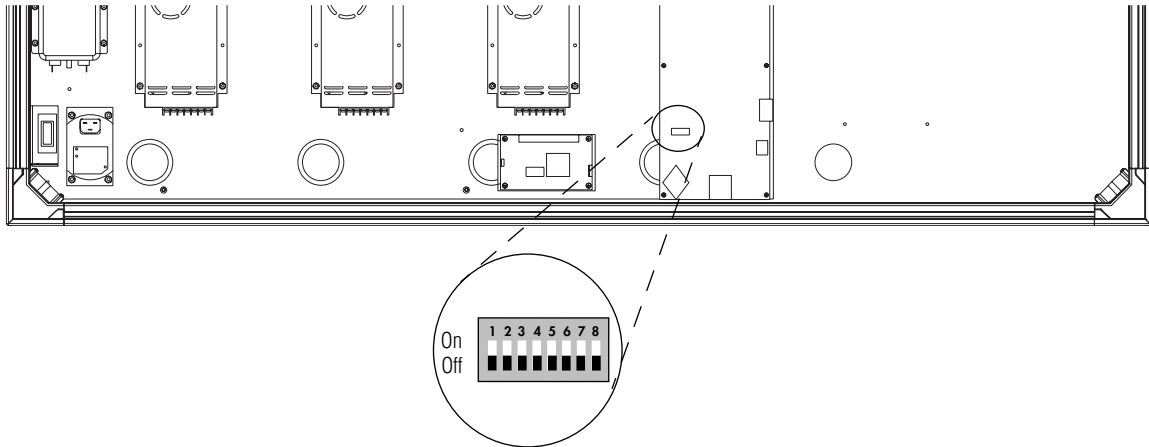
Figure 3: Location of DIP switches

3. Set the DIP switches for the sign's address. To determine a specific DIP switch setting for a sign's address, see Table 1: "DIP switch settings" below. The default serial address is "0". Using the tip of a pen or similar object, depress each switch as needed to set the correct address.

   NOTE: Do not change switches 7 and 8. They do not provide user functions. Changing them may result in the sign cycling through a test process.

Table 1: DIP switch settings
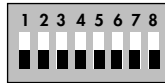
Address in Hex (Decimal in parentheses)	DIP switch settings (1 = ON, 0 = OFF)								Address in Hex (Decimal in parentheses)	DIP switch settings (1 = ON, 0 = OFF)							
	8	7	6	5	4	3	2	1		8	7	6	5	4	3	2	1
00 (00)	0	0	0	0	0	0	0	0	20 (32)	0	0	1	0	0	0	0	0
01 (01)	0	0	0	0	0	0	0	1	21 (33)	0	0	1	0	0	0	0	1
02 (02)	0	0	0	0	0	0	1	0	22 (34)	0	0	1	0	0	0	1	0
03 (03)	0	0	0	0	0	0	1	1	23 (35)	0	0	1	0	0	0	1	1
04 (04)	0	0	0	0	0	1	0	0	24 (36)	0	0	1	0	0	1	0	0
05 (05)	0	0	0	0	0	1	0	1	25 (37)	0	0	1	0	0	1	0	1
06 (06)	0	0	0	0	0	1	1	0	26 (38)	0	0	1	0	0	1	1	0
07 (07)	0	0	0	0	0	1	1	1	27 (39)	0	0	1	0	0	1	1	1
08 (08)	0	0	0	0	1	0	0	0	28 (40)	0	0	1	0	1	0	0	0
09 (09)	0	0	0	0	1	0	0	1	29 (41)	0	0	1	0	1	0	0	1
0A (10)	0	0	0	0	1	0	1	0	2A (42)	0	0	1	0	1	0	1	0
0B (11)	0	0	0	0	1	0	1	1	2B (43)	0	0	1	0	1	0	1	1
0C (12)	0	0	0	0	1	1	0	0	2C (44)	0	0	1	0	1	1	0	0
0D (13)	0	0	0	0	1	1	0	1	2D (45)	0	0	1	0	1	1	0	1
0E (14)	0	0	0	0	1	1	1	0	2E (46)	0	0	1	0	1	1	1	0
0F (15)	0	0	0	0	1	1	1	1	2F (47)	0	0	1	0	1	1	1	1
10 (16)	0	0	0	1	0	0	0	0	30 (48)	0	0	1	1	0	0	0	0
11 (17)	0	0	0	1	0	0	0	1	31 (49)	0	0	1	1	0	0	0	1
12 (18)	0	0	0	1	0	0	1	0	32 (50)	0	0	1	1	0	0	1	0
13 (19)	0	0	0	1	0	0	1	1	33 (51)	0	0	1	1	0	0	1	1
14 (20)	0	0	0	1	0	1	0	0	34 (52)	0	0	1	1	0	1	0	0
15 (21)	0	0	0	1	0	1	0	1	35 (53)	0	0	1	1	0	1	0	1
16 (22)	0	0	0	1	0	1	1	0	36 (54)	0	0	1	1	0	1	1	0
17 (23)	0	0	0	1	0	1	1	1	37 (55)	0	0	1	1	0	1	1	1
18 (24)	0	0	0	1	1	0	0	0	38 (56)	0	0	1	1	1	0	0	0
19 (25)	0	0	0	1	1	0	0	1	39 (57)	0	0	1	1	1	0	0	1
1A (26)	0	0	0	1	1	0	1	0	3A (58)	0	0	1	1	1	0	1	0
1B (27)	0	0	0	1	1	0	1	1	3B (59)	0	0	1	1	1	0	1	1
1C (28)	0	0	0	1	1	1	0	0	3C (60)	0	0	1	1	1	1	0	0
1D (29)	0	0	0	1	1	1	0	1	3D (61)	0	0	1	1	1	1	0	1
1E (30)	0	0	0	1	1	1	1	0	3E (62)	0	0	1	1	1	1	1	0
1F (31)	0	0	0	1	1	1	1	1	3F (63)	0	0	1	1	1	1	1	1

Closing a sign

1. Remove the prop bar from the support hole in the case. (See "Figure 2: Sign, opened" on page 3.) Replace the prop bar in its holding clip, located at the bottom edge of the inside of the LED display board.

   NOTE: Two people may be needed to hold the LED display board.

2. Carefully lower the LED display board until it rests on the case.

3. Using the screws saved when opening the sign, screw down the vertical rails at the bottom of the LED display board.

4. Wearing cotton or rubber gloves, replace the Plexiglas window and align it in the center of the sign.

5. Turn the retaining clips clockwise toward the window. Using a Phillips screwdriver, tighten the clips down to hold them in place.

   NOTE: Two people may be needed for this process: one to hold the Plexiglas window, and one to tighten the retaining clips.

6. Re-connect power to the sign.

Installation

Environmental requirements

Care must be taken to observe these considerations when selecting a location for the AlphaVision™ FS Series character matrix 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 50 degrees Celsius (32° to 122° Fahrenheit.)
- These signs should only be used in an environment where the humidity (non-condensing) does not exceed 95%.
- These signs must be installed so that there is at least 1″ (2.5 cm) clearance on all sides of the case.

Electrical input

The AlphaVision™ FS sign can operate with either:

- 100 – 132 VAC @ 50-60 Hz

    or

- 200 – 252 VAC @ 50/60 Hz

Reducing electrical noise

These procedures are recommended to decrease the amount of electrical noise surrounding AlphaVision™ FS Series character matrix signs:

- A sign should be connected to its own branch circuit.
- The input power source should be protected by a circuit breaker rated at no more than 20 amperes per sign.
- Incoming power to a sign should be routed on a path separate from a sign's communication wires. Do NOT run the power and communication wires in the same conduit.
- Where power and communications wires must cross, the intersection should be perpendicular.
- All communication wires should be shielded. The shield should only be connected to ground at the transmitting device.

Temperature controls

The AlphaVision™ FS sign includes automatic temperature controls to determine when the internal temperature of the sign is too hot to continue normal operation.

- If the internal temperature goes above 120° F (49° C), the cooling fans are turned on.
- If the internal temperature goes above 130° F (54° C), the sign is forced into a 50% dimming state. *
- If the internal temperature goes above 160° F (71° C), the sign is forced to display a message that the unit is overheated. This message, 50% dimmed, is: "OVERHEATED". *
- When the internal temperature returns below 130° F (55° C), the overheated message ceases and any other messages are again displayed.
- When the internal temperature returns below 120° F (50° C), the 50% forced dimming state ceases.
- When the internal temperature returns below 90° F (30° C), the fans are turned off.
- Dimming also occurs when 46% of all possible LEDs (*not* characters) are turned on, if all amber LEDs are used. *

* NOTE: These conditions are not expected under normal operating conditions.

Installation instructions

The AlphaVision™ FS series signs are designed so that they can be mounted on a vertical wall or on an angled wall *no more than 45° off of vertical.* (See below.) They can also be suspended from a ceiling or other overhead support. (See "Overhead suspension mounting" on page 11.)

| ⚠ **WARNING**	⚠ **WARNING**
Possible fire hazard. Always mount unit indoors. Mounting the unit outdoors may cause a fire which could result in serious injury or death.	**Possible shock hazard. Always mount unit indoors. Mounting a unit outdoors makes the unit a possible source of electric shock which could result in serious injury or death.**

Tools needed

- #3-bit Phillips screwdriver
- 3/16" Hex wrench
- 3/8" open-end wrench (or adjustable wrench)

Wall mounting

Wall-mounting hardware

Mounting hardware is included for mounting the sign on a wall:
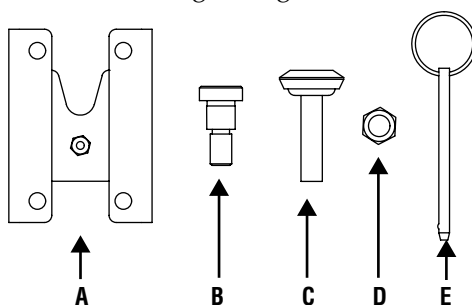
Part	Quantity		Part description
	Vertical mounting	**Angled mounting**	
A	2	4	Wall-mounting bracket
B	2	4	Shoulder bolt
C	2	–	Foot bumper
D	2	–	3/8" Hex nut
E	2	2	Clevis pin

NOTE: Do not use the wrong parts or substitute any other parts for those supplied by the factory! Doing so may cause damage to the sign and invalidate the warranty.
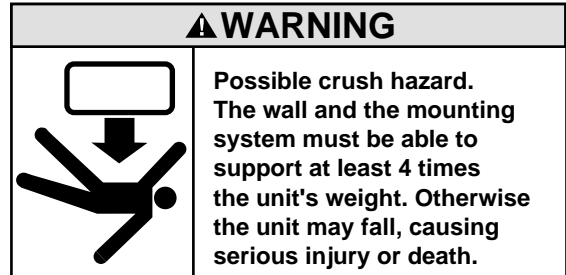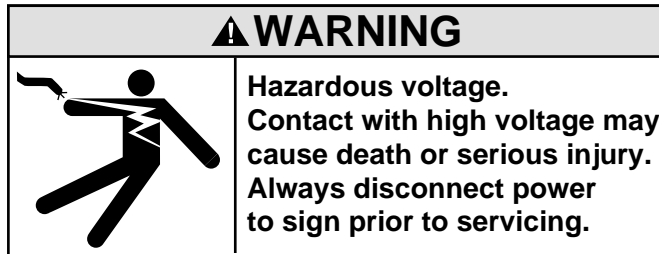
NOTE: Wall-mounting hardware *does not include* fasteners for attaching the wall-mounting brackets to a wall. The exact type of fastener used will vary depending on the type of wall (e.g., concrete, brick, drywall, etc.) to which the sign is mounted.

- Fasteners for wall-mounting brackets must be appropriate for the type of wall to which the sign will be mounted.
- Each of the fasteners (4 per bracket) must be capable of supporting four (4) times the weight of the sign.
- The fasteners must be .250" (6 mm) diameter maximum.

NOTE: A sign must be attached to a wall capable of supporting four (4) times the weight of the sign.

7

Wall-mounting instructions

NOTE: These instructions are for wall-mounting a sign on a vertical wall or on an angled wall *no more than 45° off of vertical.* Caution must be exercised when mounting a sign on an angled wall, since doing so may be hazardous and cause serious personal injury when the sign is installed or serviced.

⚠ **WARNING**
Hazardous voltage. Contact with high voltage may cause death or serious injury. Always disconnect power to sign prior to servicing.

⚠ **WARNING**
Possible crush hazard. The wall and the mounting system must be able to support at least 4 times the unit's weight. Otherwise the unit may fall, causing serious injury or death.

1. Disconnect power from the sign.

2. Using Table 3, "Mounting specifications for AlphaVision™ FS 1.4" character signs," on page 16 or Table 4, "Mounting specifications for AlphaVision™ FS 2.1" character signs," on page 16 for measurements, attach the sign's wall-mounting brackets to a wall using appropriate fasteners. There are two (2) wall-mounting brackets for vertical wall-mounting and four (4) wall-mounting brackets for angled wall-mounting. See notes starting on page 7.
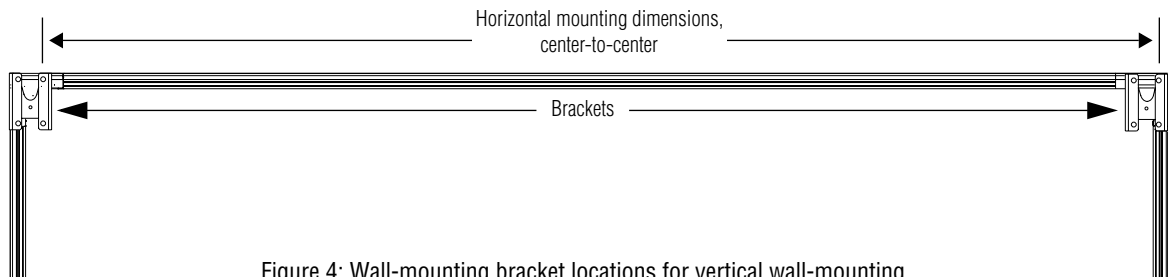

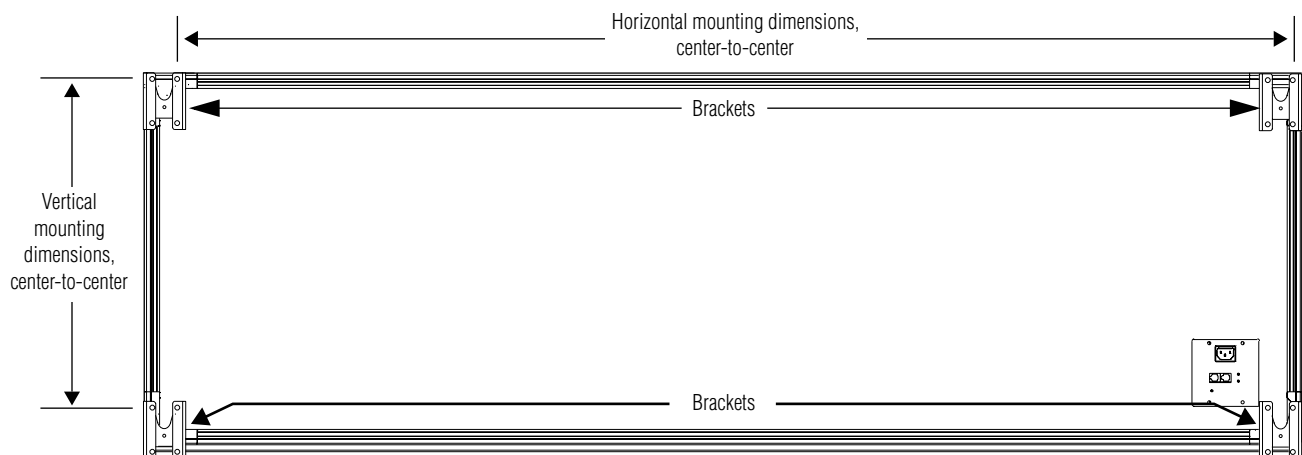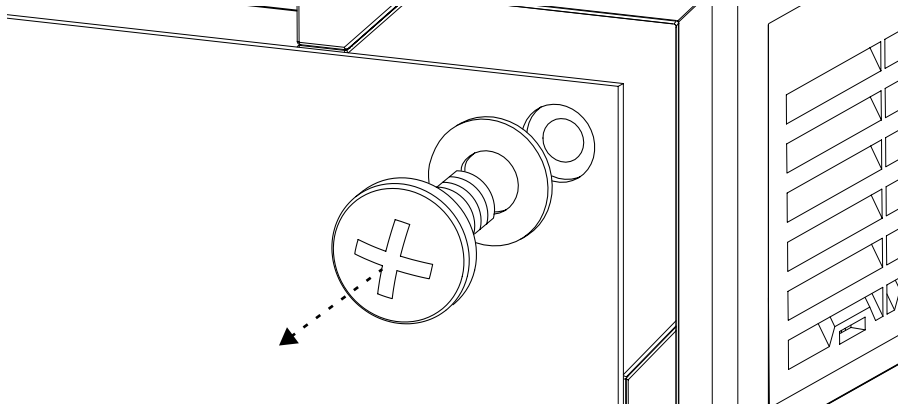Figure 4: Wall-mounting bracket locations for vertical wall-mounting


Figure 5: Wall-mounting bracket locations for angled wall-mounting

3. Using a #3-bit Phillips screwdriver, remove the four factory-installed pan head screws and the washers from the four corners of the back of the sign. Save the washers for use in the next two steps.


4. Using a 3/16" Hex wrench, screw 1 washer (from Step 3) and 1 shoulder bolt (included) into each of the top corners of the back of the sign with 275 lb-in of torque.

   If mounting the sign on an angled wall, repeat this step to install shoulder bolts into each of the bottom corners of the back of the sign also.
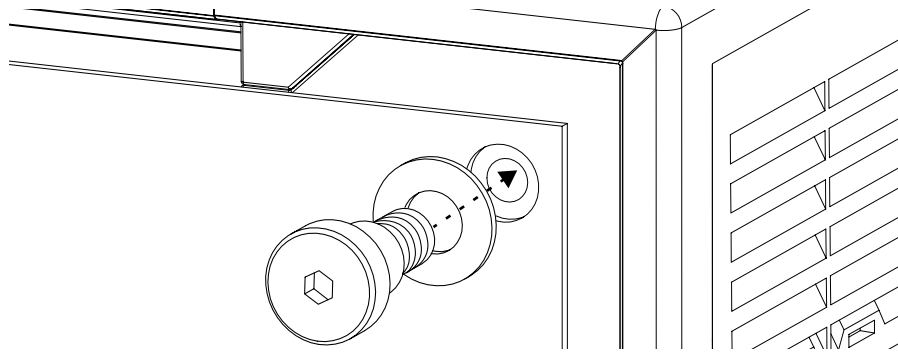
5. [NOTE: Do NOT perform this step if mounting the sign on an angled wall.]

   Using a 3/8" (or adjustable) open-end wrench, screw 1 nut (included) all the way onto one of the foot bumpers. Slide 1 washer saved in Step 3 onto the foot spacer. Screw the foot bumper with the nut and washer into the bottom corner of the back of the sign as far as it can go without forcing. Tighten the nut flush against the sign's case.
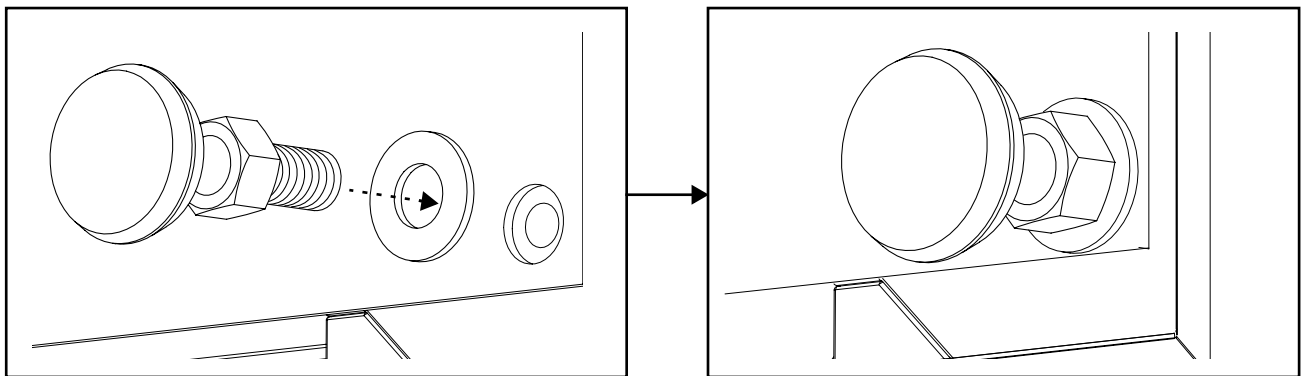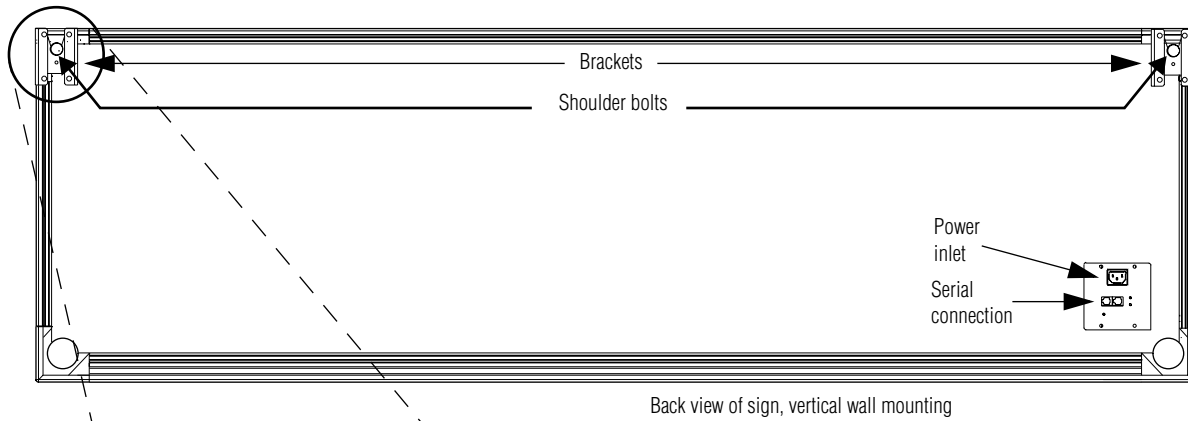

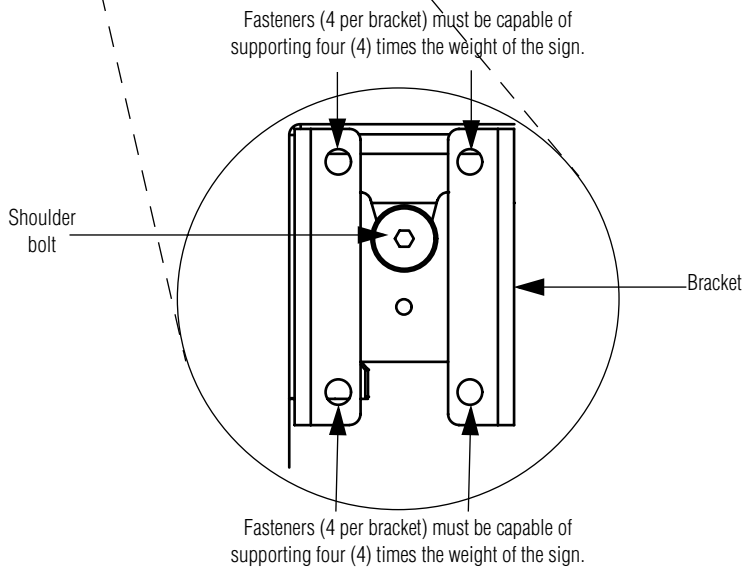6. [NOTE: Do NOT perform this step if mounting the sign on an angled wall.]

   Repeat Step 5 with the second nut, washer, and foot bumper for the other bottom corner of the sign.

7. Plug the female end of the power cable into the power inlet on the back of the sign. See "Figure 6: Mounting a sign on a wall (vertical wall mounting)" below.

8. Connect the serial cable to the sign, as discussed in "Connecting a sign to a computer" on page 13.

9. Mount the sign to the wall by lifting the sign so that the shoulder bolts rest on the wall brackets.

Brackets

Shoulder bolts

Power inlet

Serial connection

Back view of sign, vertical wall mounting

Fasteners (4 per bracket) must be capable of supporting four (4) times the weight of the sign.

NOTE: Fasteners for the wall-mounting bracket are not included in the wall-mounting kit. The type of fasteners to be used depends on your wall type. See notes on page 7.

Shoulder bolt

Bracket

Figure 6: Mounting a sign on a wall (vertical wall mounting)

Fasteners (4 per bracket) must be capable of supporting four (4) times the weight of the sign.

10. Insert a retaining Clevis pin through each of the two top wall-mounting brackets using the two holes above the shoulder bolts until the locking ball clicks out. Turn each ring back to the sign.

WARNING: Failure to install the Clevis pins may result in the sign falling off the wall-mounting brackets, possibly causing serious personal injury or death.

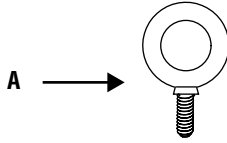NOTE: **This step is required if mounting the sign on an angled wall.**

Locking ball
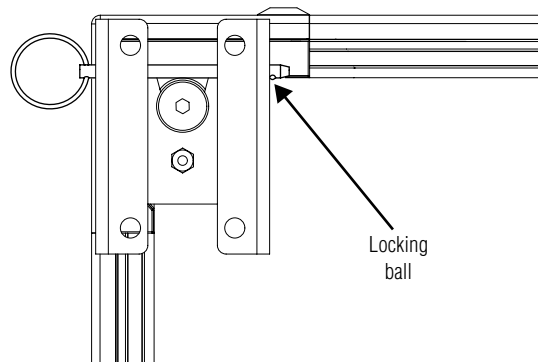
11. Plug the male end of the power cord into a power source.

Overhead suspension mounting

Suspension mounting hardware

Mounting hardware is included for suspending the sign from a ceiling or other overhead support:

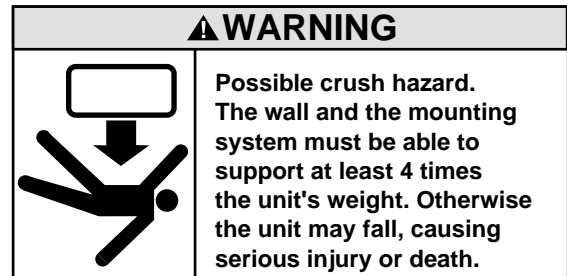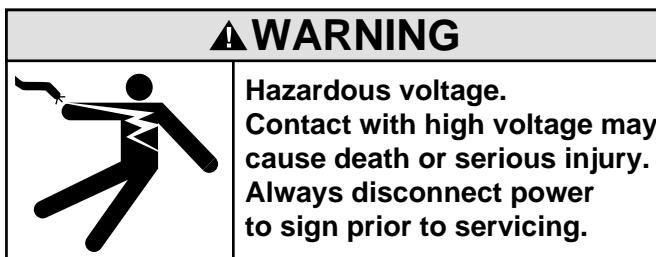| Part	Quantity	Part description
A	2	Shoulder eyebolt

NOTE: Do not use the wrong parts or substitute any other parts for those supplied by the factory! Doing so may cause damage to the sign and invalidate the warranty.

NOTE: Overhead suspension-mounting hardware *does not include* the following items which you must supply:

Quantity	Item
2	Chains, each capable of supporting four (4) times the weight of the sign.
2	0.25" (6.4 mm) diameter locking quick links, each having a working load limit of no less than four (4) times the weight of the sign.

Suspension mounting instructions

NOTE: These instructions are for suspending a sign in a *vertical* position. The sign is not designed to be suspended on an angle. Suspending a sign on an angle may be hazardous and cause serious personal injury when the sign is installed or serviced.

⚠ **WARNING**

Hazardous voltage.
Contact with high voltage may cause death or serious injury.
Always disconnect power to sign prior to servicing.

⚠ **WARNING**

Possible crush hazard.
The wall and the mounting system must be able to support at least 4 times the unit's weight. Otherwise the unit may fall, causing serious injury or death.

1. Remove power from the sign.

2. Remove the plug cover, and thread the eyebolt into the opening as far as the bolt will go without applying excessive pressure.

Eyebolt
Plug cover
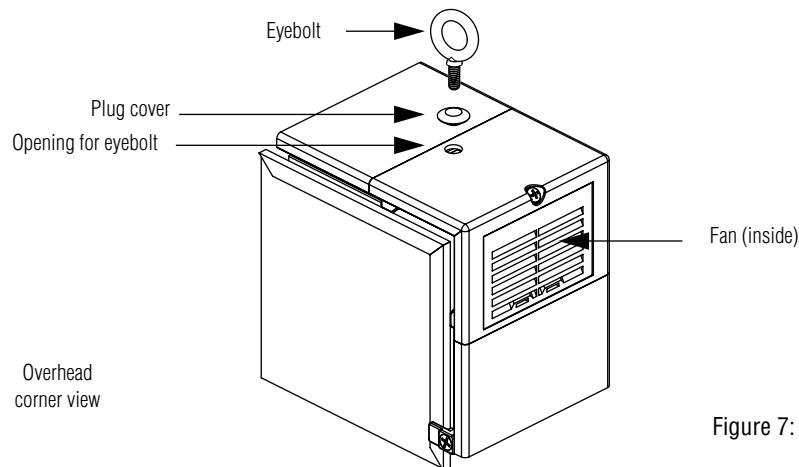Opening for eyebolt
Fan (inside)
Overhead corner view

Figure 7: Inserting the hanging eyebolt

NOTE: Use only the factory-supplied eyebolts for suspension mounting! Any other length of eyebolt may be too long and obstruct fan operation or may not supply proper support for the sign.

3. Using Table 3, "Mounting specifications for AlphaVision™ FS 1.4" character signs," on page 16 or Table 4, "Mounting specifications for AlphaVision™ FS 2.1" character signs," on page 16 for measurements, suspend the sign from the two eyebolts using two appropriate chains or cables and ceiling fasteners (not included) as shown below.
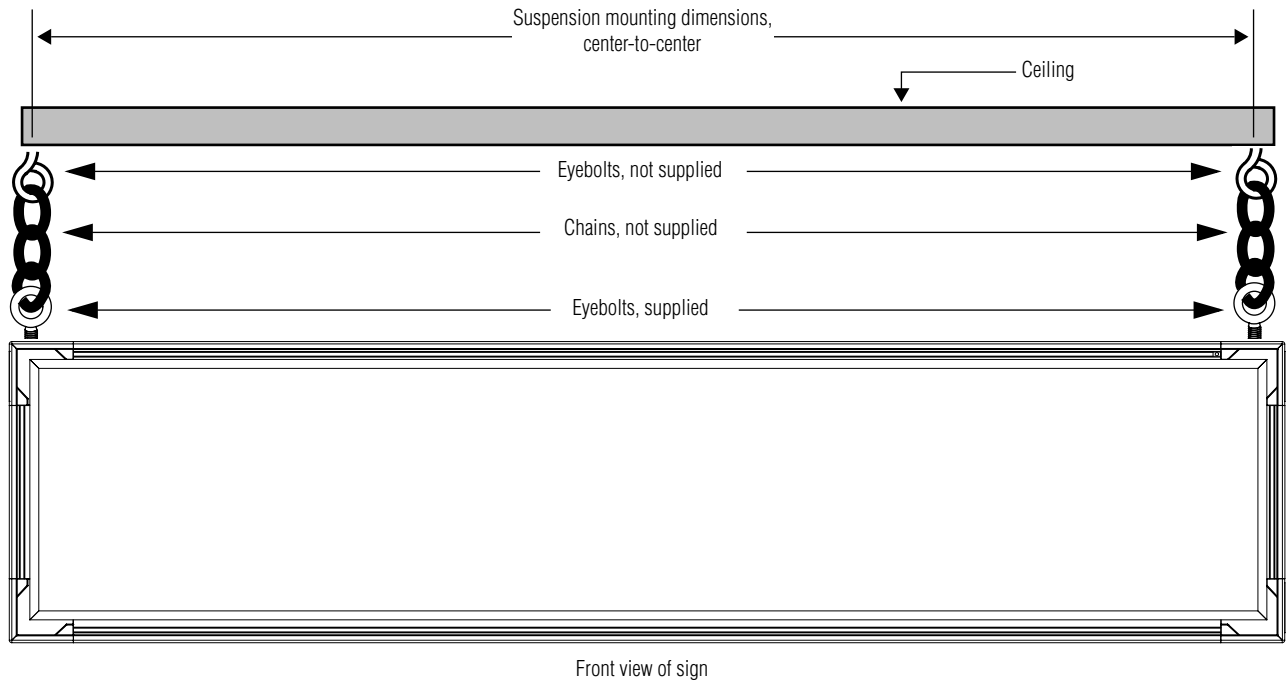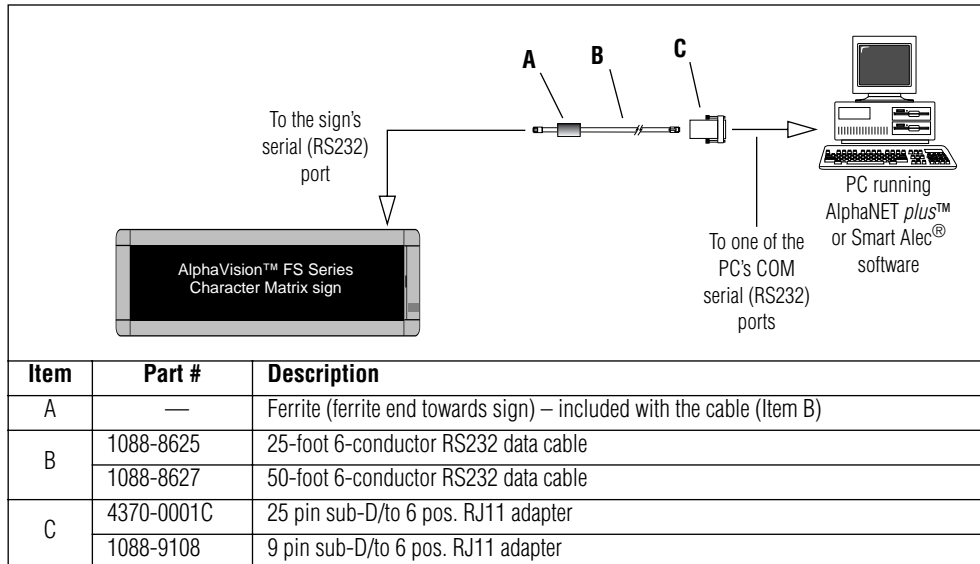

Figure 8: Suspending the sign

4. Plug the female end of the power cable into the power inlet on the back of the sign.

5. Connect the serial cable to the sign, as discussed in "Connecting a sign to a computer" on page 13.

6. Plug the male end of the power cord into a power source.

Connecting a sign to a computer

In order to display messages on the sign, a computer using AlphaNET *plus*™ or Smart Alec® software must be connected to the sign. The software is used to create and to send the messages to the sign.

The following example shows how to connect a single computer to a single sign. However, there are many other ways to connect signs such as networking multiple signs together. For further information on networking signs, refer to the **Network Configurations** manual (p/n 9708-8046).

Table 2: Connecting a single sign to a PC

| Item	Part #	Description
A	—	Ferrite (ferrite end towards sign) – included with the cable (Item B)
B	1088-8625	25-foot 6-conductor RS232 data cable
B	1088-8627	50-foot 6-conductor RS232 data cable
C	4370-0001C	25 pin sub-D/to 6 pos. RJ11 adapter
C	1088-9108	9 pin sub-D/to 6 pos. RJ11 adapter

Routine maintenance

Cleaning the exterior

When cleaning the Plexiglas window is necessary, use a soft lint-free cotton cloth (such as a pre-washed cotton diaper) with mild soap and water. Two drops of soap per quart of water is adequate. Never use either alcohol or cleaners with alcohol on the Plexiglas.

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

Cleaning the internal fans

1. Remove the external covers to the upper fans:
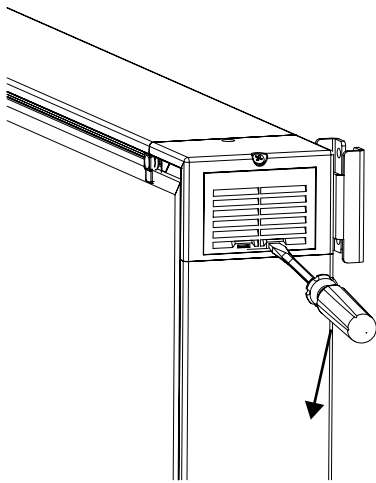
Insert a #1 or #2 flat-bladed screwdriver into one of the openings in the cover and gently press downward to release the latch.
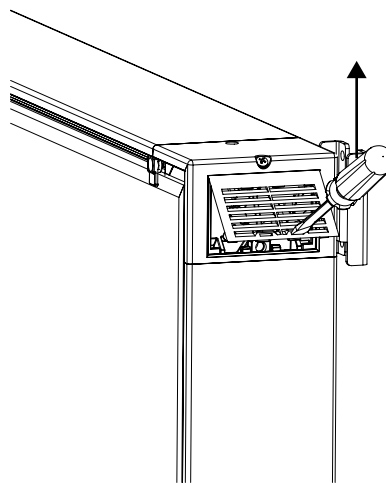
While maintaining downward pressure on cover, carefully tilt the screwdriver up, prying the internal latches loose.
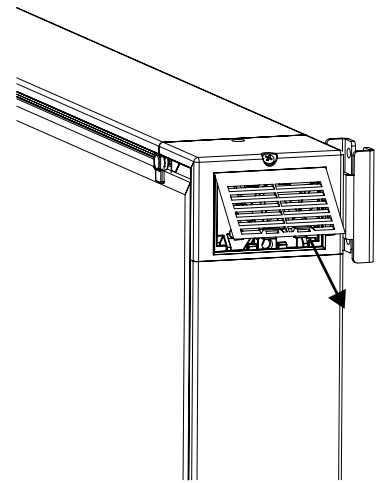
Remove the cover by tipping it out and pulling down.

2. Remove the covers to the lower fans in the same way as in Step 1.

3. Open the front of the sign as described in "Opening a sign" on page 2.

4. From the outside, use a vacuum and/or a small brush to clear the upper and lower fans of any dust and debris.
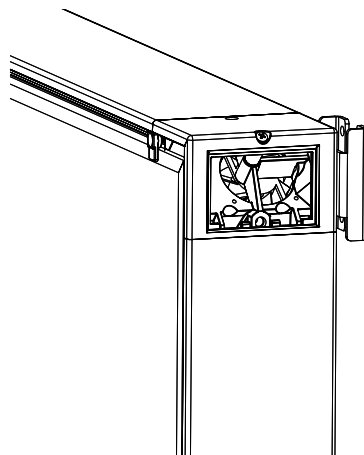
Gently clean the upper and lower fans from the outside.

5. From the inside, use a vacuum and/or a small brush to clear the upper and lower fans of any dust and debris.

Upper right fan,
internal view

Lower left fan,
internal view
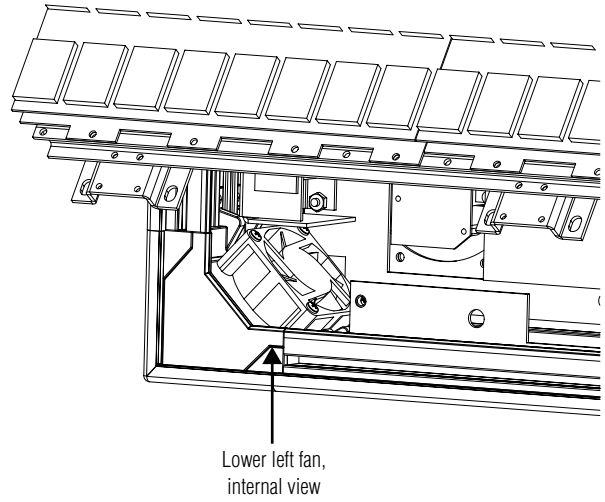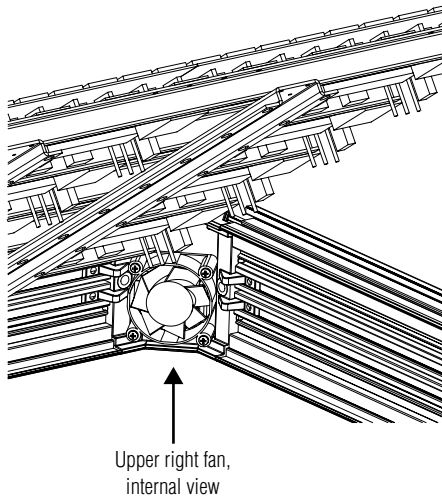
6. Close the front of the sign as described in "Closing a sign" on page 5.

7. Replace the top and bottom fan covers:

Insert the cover with the louvers
angled down and out.

Gently snap the cover into place.
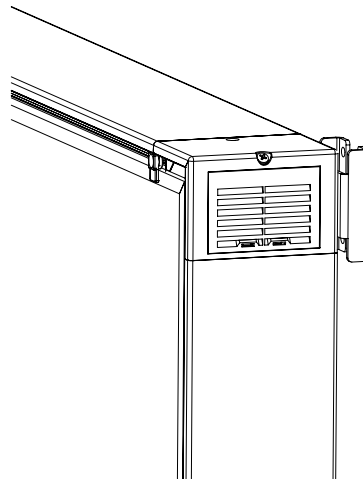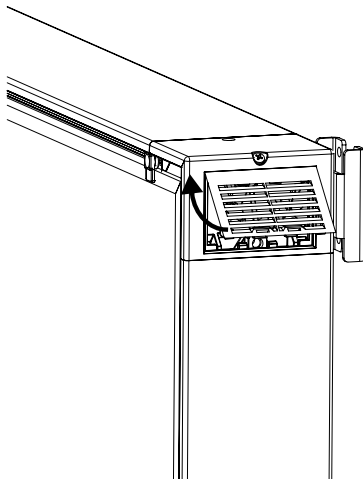
Mounting specifications

Table 3: Mounting specifications for AlphaVision™ FS 1.4" character signs

Model number	Height	Width	Weight (approximate)	Distance between mounting shoulder bolts, center-to-center		Distance between suspension eyebolts, center-to-center
				Horizontal	Vertical	
TCM032006P02zzz	17.65 in. 44.8 cm.	43.20 in. 109.7 cm.	60 lbs. 27 kg.	40.58 in. 103.1 cm.	15.03 in. 38.2 cm.	37.58 in. 95.5 cm.
TCM032008P02zzz	22.05 in. 56.0 cm.	43.20 in. 109.7 cm.	71 lbs. 32 kg.	40.58 in. 103.1 cm.	19.43 in. 49.4 cm.	37.58 in. 95.5 cm.
TCM032010P02zzz	26.46 in. 67.2 cm.	43.20 in. 109.7 cm.	82 lbs. 37 kg.	40.58 in. 103.1 cm.	23.84 in. 60.5 cm.	37.58 in. 95.5 cm.
TCM032012P02zzz	30.83 in. 78.3 cm.	43.20 in. 109.7 cm.	93 lbs. 42 kg.	40.58 in. 103.1 cm.	28.21 in. 71.5 cm.	37.58 in. 95.5 cm.
TCM040006P02zzz	17.65 in. 44.8 cm.	52.83 in. 134.2 cm.	71 lbs. 32 kg.	50.21 in. 127.5 cm.	15.03 in. 38.2 cm.	47.21 in. 119.9 cm.
TCM040008P02zzz	22.05 in. 56.0 cm.	52.83 in. 134.2 cm.	82 lbs. 37 kg.	50.21 in. 127.5 cm.	19.43 in. 49.4 cm.	47.21 in. 119.9 cm.
TCM040010P02zzz	26.46 in. 67.2 cm.	52.83 in. 134.2 cm.	93 lbs. 42 kg.	50.21 in. 127.5 cm.	23.84 in. 60.6 cm.	47.21 in. 119.9 cm.
TCM040012P02zzz	30.83 in. 78.3 cm.	52.83 in. 134.2 cm.	104 lbs. 47 kg.	50.21 in. 127.5 cm.	28.21 in. 71.6 cm.	47.21 in. 119.9 cm.
TCM048006P02zzz	17.65 in. 44.8 cm.	62.40 in. 158.5 cm.	82 lbs. 37 kg.	59.78 in. 151.8 cm.	15.03 in. 38.2 cm.	56.78 in. 144.2 cm.
TCM048008P02zzz	22.05 in. 56.0 cm.	62.40 in. 158.5 cm.	93 lbs. 42 kg.	59.78 in. 151.8 cm.	19.43 in. 49.4 cm.	56.78 in. 144.2 cm.
TCM048010P02zzz	26.46 in. 67.2 cm.	62.40 in. 158.5 cm.	104 lbs. 47 kg.	59.78 in. 151.8 cm.	23.84 in. 60.6 cm.	56.78 in. 144.2 cm.
TCM048012P02zzz	30.83 in. 78.3 cm.	62.40 in. 158.5 cm.	116 lbs. 53 kg.	59.78 in. 151.8 cm.	28.21 in. 71.6 cm.	56.78 in. 144.2 cm.

Table 4: Mounting specifications for AlphaVision™ FS 2.1" character signs

Model number	Height	Width	Weight (approximate)	Distance between mounting shoulder bolts, center-to-center		Distance between suspension eyebolts, center-to-center
				Horizontal	Vertical	
TCM024004P03zzz	17.92 in. 45.5 cm.	48.77 in. 123.9 cm.	55 lbs. 25 kg.	46.15 in. 117.2 cm.	15.30 in. 38.86 cm.	43.15 in. 109.6 cm.
TCM024006P03zzz	24.52 in. 62.3 cm.	48.77 in. 123.9 cm.	74 lbs. 33.5 kg.	46.15 in. 117.2 cm.	21.90 in. 55.6 cm.	43.15 in. 109.6 cm.
TCM024008P03zzz	31.15 in. 79.1 cm.	48.77 in. 123.9 cm.	93 lbs. 42 kg.	46.15 in. 117.2 cm.	28.53 in. 72.5 cm.	43.15 in. 109.6 cm.
TCM024010P03zzz	37.71 in. 95.8 cm.	48.77 in. 123.9 cm.	112 lbs. 50.1 kg.	46.15 in. 117.2 cm.	35.09 in. 89.1 cm.	43.15 in. 109.6 cm.
TCM024012P03zzz	44.33 in. 112.6 cm.	48.77 in. 123.9 cm.	131 lbs. 59.4 kg.	46.15 in. 117.2 cm.	41.71 in. 105.9 cm.	43.15 in. 109.6 cm.

Table 4: Mounting specifications for AlphaVision™ FS 2.1" character signs

Model number	Height	Width	Weight (approximate)	Distance between mounting shoulder bolts, center-to-center		Distance between suspension eyebolts, center-to-center
				Horizontal	Vertical	
TCM032004P03zzz	17.92 in. 45.5 cm.	63.15 in. 160.4 cm.	74 lbs. 33.5 kg.	60.53 in. 153.7 cm.	15.30 in. 38.86 cm.	57.53 in. 146.0 cm.
TCM032006P03zzz	24.52 in. 62.3 cm.	63.15 in. 160.4 cm.	93 lbs. 42 kg.	60.53 in. 153.7 cm.	21.90 in. 55.6 cm.	57.53 in. 146.0 cm.
TCM032008P03zzz	31.15 in. 79.1 cm.	63.15 in. 160.4 cm.	112 lbs. 50.1 kg.	60.53 in. 153.7 cm.	28.53 in. 72.5 cm.	57.53 in. 146.0 cm.
TCM032010P03zzz	37.71 in. 95.8 cm.	63.15 in. 160.4 cm.	131 lbs. 59.4 kg.	60.53 in. 153.7 cm.	35.09 in. 89.1 cm.	57.53 in. 146.0 cm.
TCM032012P03zzz	44.33 in. 112.6 cm.	63.15 in. 160.4 cm.	150 lbs. 68 kg.	60.53 in. 153.7 cm.	41.71 in. 105.9 cm.	57.53 in. 146.0 cm.
TCM040004P03zzz	17.92 in. 45.5 cm.	77.55 in. 197 cm.	93 lbs. 42 kg.	74.93 in. 190.3 cm.	15.30 in. 38.86 cm.	71.93 in. 182.7 cm.
TCM040006P03zzz	24.52 in. 62.3 cm.	77.55 in. 197 cm.	112 lbs. 50.1 kg.	74.93 in. 190.3 cm.	21.90 in. 55.6 cm.	71.93 in. 182.7 cm.
TCM040008P03zzz	31.15 in. 79.1 cm.	77.55 in. 197 cm.	131 lbs. 59.4 kg.	74.93 in. 190.3 cm.	28.53 in. 72.5 cm.	71.93 in. 182.7 cm.
TCM040010P03zzz	37.71 in. 95.8 cm.	77.55 in. 197 cm.	150 lbs. 68 kg.	74.93 in. 190.3 cm.	35.09 in. 89.1 cm.	71.93 in. 182.7 cm.
TCM040012P03zzz	44.33 in. 112.6 cm.	77.55 in. 197 cm.	169 lbs. 76.7 kg.	74.93 in. 190.3 cm.	41.71 in. 105.9 cm.	71.93 in. 182.7 cm.
TCM048004P03zzz	17.92 in. 45.5 cm.	91.96 in. 233.6 cm.	112 lbs. 50.1 kg.	89.34 in. 226.9 cm.	15.30 in. 38.86 cm.	86.34 in. 219.3 cm.
TCM048006P03zzz	24.52 in. 62.3 cm.	91.96 in. 233.6 cm.	131 lbs. 59.4 kg.	89.34 in. 226.9 cm.	21.90 in. 55.6 cm.	86.34 in. 219.3 cm.
TCM048008P03zzz	31.15 in. 79.1 cm.	91.96 in. 233.6 cm.	150 lbs. 68 kg.	89.34 in. 226.9 cm.	28.53 in. 72.5 cm.	86.34 in. 219.3 cm.
TCM048010P03zzz	37.71 in. 95.8 cm.	91.96 in. 233.6 cm.	169 lbs. 76.7 kg.	89.34 in. 226.9 cm.	35.09 in. 89.1 cm.	86.34 in. 219.3 cm.
TCM048012P03zzz	44.33 in. 112.6 cm.	91.96 in. 233.6 cm.	188 lbs. 85.3 kg.	89.34 in. 226.9 cm.	41.71 in. 105.9 cm.	86.34 in. 219.3 cm.

Electrical information reference

1.4" character line

Model	Input Voltage	Maximum Input Current	Number of power supplies
TCM032006P02xxx	120 / 230	5.6/2.8	2
TCM040006P02xxx	120 / 230	5.6/2.8	2
TCM048006P02xxx	120 / 230	8.4/4.2	3
TCM032008P02xxx	120 / 230	5.6/2.8	2
TCM040008P02xxx	120 / 230	8.4/4.2	3
TCM048008P02xxx	120 / 230	8.4/4.2	3
TCM032010P02xxx	120 / 230	8.4/4.2	3
TCM040010P02xxx	120 / 230	11.2/5.6	4
TCM048010P02xxx	120 / 230	11.2/5.6	4
TCM032012P02xxx	120 / 230	8.4/4.2	3
TCM040012P02xxx	120 / 230	11.2/5.6	4
TCM048012P02xxx	120 / 230	13.0/6.5	5

2.1" character line

Model	Input Voltage	Max. Input Current	Number of power supplies and wattage
TCM024004P03xxx	120 / 230	2.8/1.4	1
TCM032004P03xxx	120 / 230	2.8/1.4	1
TCM040004P03xxx	120 / 230	5.6/2.8	2
TCM048004P03xxx	120 / 230	5.6/2.8	2
TCM024006P03xxx	120 / 230	5.6/2.8	2
TCM032006P03xxx	120 / 230	5.6/2.8	2
TCM040006P03xxx	120 / 230	5.6/2.8	2
TCM048006P03xxx	120 / 230	8.4/4.2	3
TCM024008P03xxx	120 / 230	5.6/2.8	2
TCM032008P03xxx	120 / 230	5.6/2.8	2
TCM040008P03xxx	120 / 230	8.4/4.2	3
TCM048008P03xxx	120 / 230	8.4/4.2	3
TCM024010P03xxx	120 / 230	5.6/2.8	2
TCM032010P03xxx	120 / 230	8.4/4.2	3
TCM040010P03xxx	120 / 230	11.2/5.6	4
TCM048010P03xxx	120 / 230	11.2/5.6	4
TCM024012P03xxx	120 / 230	8.4/4.2	3
TCM032012P03xxx	120 / 230	8.4/4.2	3
TCM040012P03xxx	120 / 230	11.2/5.6	4
TCM048012P03xxx	120 / 230	13.0/6.5	5