Nevco

Message Center

Installation Manual

Retain this manual in your permanent file.

Table of Contents

Installation Instructions

Installation consists of four steps, Unpacking the Equipment, Message Center mounting, Connections, and Software setup. Be sure to read and understand all of the instructions before installing the equipment. Consult the "installer's trouble shooting guide" following this section for verifications each step has been installed and is working correctly.

1. Unpacking the Equipment

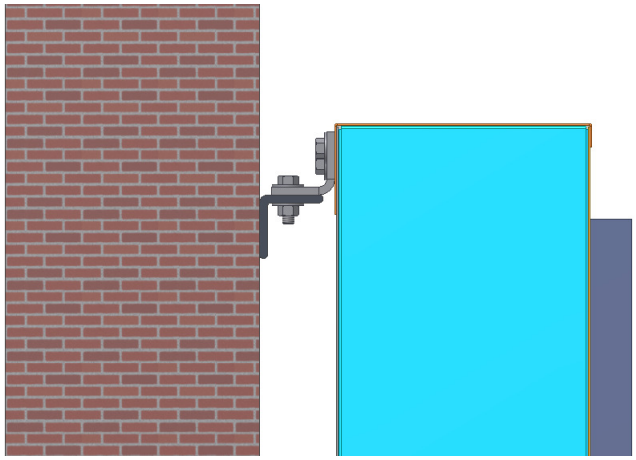
- ❑ Inspect the shipping container for damage. If any damage can be seen, contact the carrier immediately.
- ❑ Carefully remove all equipment from its packing carton. **Do not** pry against the message center in any way.

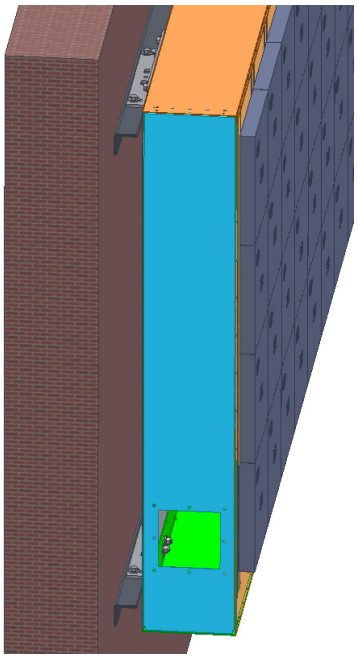
2. Message Center Mounting

- ❑ Nevco strongly encourages you to check local codes before beginning the installation. You may wish to contact a local architect, contractor, or sign installer for assistance. Your Nevco Sales Representative may be able to assist you in finding professional installers who are familiar with this type of equipment.
- ❑ Always use good mechanical practices when mounting the message center.
- ❑ Use plated fastening devices to prevent rust or corrosion.
- ❑ Mount the optional temperature sensor / photocell out of direct sunlight to avoid an elevated reading.
- ❑ Mount the two wireless devices (if present) in clear line of sight with each other.
- ❑ For indoor installations, install angle iron on wall or other structure prior to attaching the message center. Angle iron and attachments (bolts, washers, etc.) are not included. See installation drawings for approximate distance between angle iron supports.
- ❑ For outdoor installations, install tubing laterals on columns prior to installing the message center. Laterals should be welded or bolted to steel columns. Laterals and attachments (bolts, washers, nuts, etc.) are not included. See installation drawings for approximate distance between lateral supports. Brackets on message centers can be welded or bolted to the laterals.
- ❑ Each message center comes with 2 lifting points on the top of the unit. When using the lifting points, make sure cables are vertical and not putting an undue horizontal force on the lifting points. Use of a spreader bar is recommended when using the lifting points.
- ❑ For multi-section message centers, make sure the cabinets and supports line up vertically and horizontally. Cabinets should be installed as tight as possible to each other. Where the sections join together, a bracket shall be installed at the top and bottom. Half of the bracket should support each section.

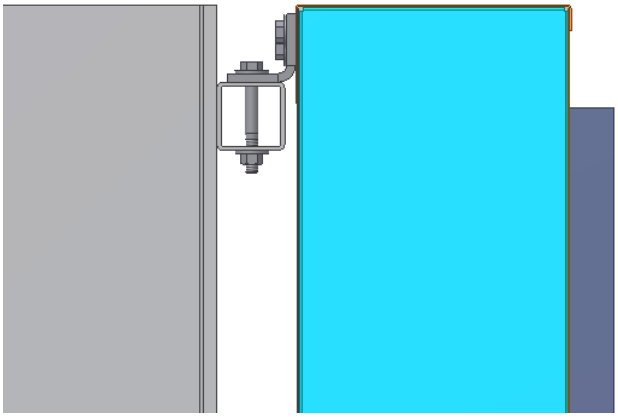
Your Message Center was designed so that it can be mounted in a variety of ways. Please examine the installation drawings to determine the best mounting method for your location. Access to all internal components is through the front, accessibility to the rear of the cabinet is NOT necessary. The standard mounting brackets are shipped on the Message Center in a "retracted" position and must be unbolted and rotated 180°, then reattached with the same bolts before starting the installation.

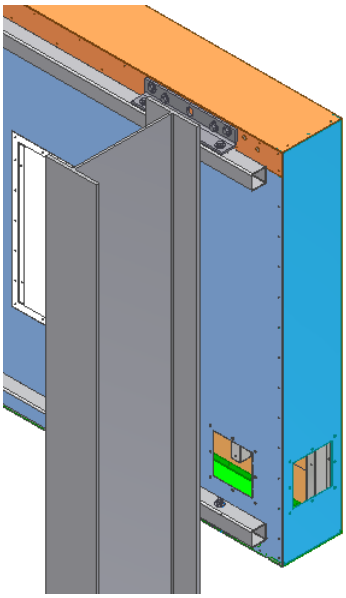
Additional Suggested Mounting Methods





Indoor Mount



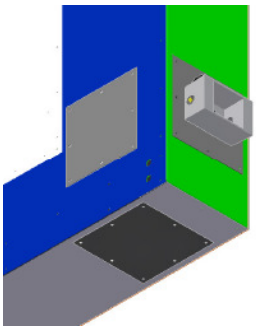


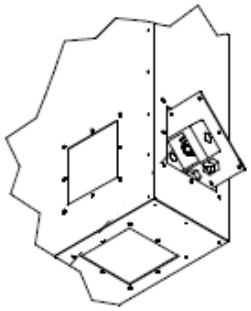
Outdoor Mount on Laterals

Note: Please see installation drawings for more details and options.

3. Message Center Connections

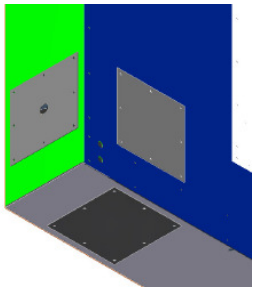
Each message center, whether it is made up of two cabinets end to end, or two cabinets back to back (double sided), or a single cabinet, requires that power and signal be supplied to each cabinet by the installer. All internal connections have been completed and tested at the factory.
Both power and data should enter each message center cabinet at its lower left corner as viewed from the front. An access panel is provided for these connections. The "signal in" conduit attaches to the panel and a junction box is mounted on the panel for power connections. Similar access panels are installed on the back and bottom of the cabinet. All three panels are interchangeable so that the one with the junction box can be located in the most favorable position. The panel with the junction box can be moved to either of the other locations without disconnecting any cables inside the message center.





Be sure to reattach all panels so as to maintain a weather tight seal.

The optional temperature and light sensors should be mounted near this location and need to be connected to a cable inside the message center behind the access panel.



At the lower right corner of the message center as viewed from the front is a similar arrangement for the "signal out" if needed. Used for side 2 of a two sided message center, and message centers made up of two cabinets mounted end to end.

Note: Please see installation drawings for more details.

Electrical Connections

- Refer to installation prints for illustration of electrical connections.

Power Service

- ***This sign is intended to be installed in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the sign.***
- Consult *table 1* for power requirements for your message center model. Provide for a 30% safety factor to guard against tripping of the circuit breaker under low line conditions.
- *Denoted values require 2 separate 20A breakers.
- Be sure to include any lighted signs, and account for double sided displays when sizing the supply wiring necessary to support the circuit load.
- A disconnect switch should be lockable or within sight of the sign per NEC article 600.

Ethernet Cables

- In a wired configuration, connect from the PC to the controller with a crossover connection.
- If rigid EMT is used, use ¾" rain-tight conduit fittings to avoid cutting the ends off included pre-made cables.
- WARNING! Take care not to reverse the connections on the POE adapter as this will damage the controller. Refer to installation print and color coding for details.

The diagrams below show Ethernet connections:

- Ethernet Straight through cable —
- Ethernet Crossover cable X

	Cabinet Dimensions	Current @ 120VAC	Current @ 240VAC
20mm Color	2x8	5.3	2.6
	3x8	8.8	4.4
	3x10	11.3	5.7
	3x12	13.8	6.9
	4x8	12.3	6.2
	4x10	15.8	7.9
	4x12 Left	8.8	4.4
	4x12 Right	10.5	5.3
	4x16 Left	12.3	6.2
	4x16 Right	14.0	7.0
16mm (Amber / Red)	1x6	0.9	0.4
	1x8	1.3	0.7
	2x6	1.8	0.9
	2x8	2.6	1.3
	2x10	3.2	1.6
	2x12	4.1	2.0
	3x6	2.6	1.3
	3x8	3.9	2.0
	3x10	4.8	2.4
	3x12	5.7	2.8
	3x16 Left	3.5	1.8
	3x16 Right	4.4	2.2
	4x8	5.3	2.6
	4x10	6.4	3.2
	4x12 Left	3.5	1.8
	4x12 Right	4.8	2.3
	4x16 Left	4.8	2.4
	4x16 Right	6.0	3.0
32mm (Amber / Red)	1x6	0.9	0.5
	1x8	1.4	0.7
	2x6	1.8	0.9
	2x8	2.7	1.4
	2x10	3.3	1.7
	2x12	4.2	2.1
	3x6	2.7	1.4
	3x8	4.1	2.0
	3x10	5.0	2.5
	3x12	6.3	3.2
	3x16 Left	3.6	1.8
	3x16 Right	4.5	2.3
	4x8	5.4	2.7
	4x10	6.6	3.3
	4x12 Left	3.6	1.8
	4x12 Right	4.8	2.4
	4x16 Left	5.8	2.9
	4x16 Right	7.2	3.6

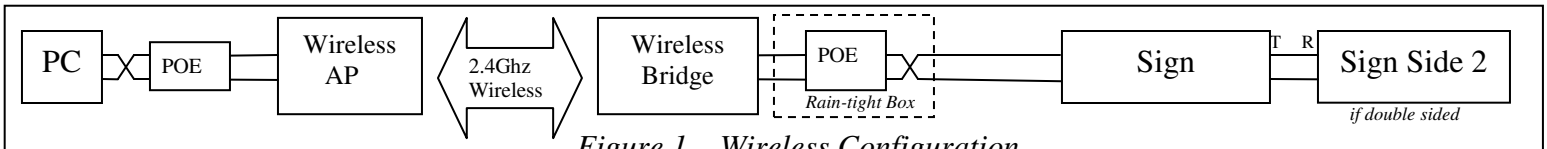


Figure 1 – Wireless Configuration

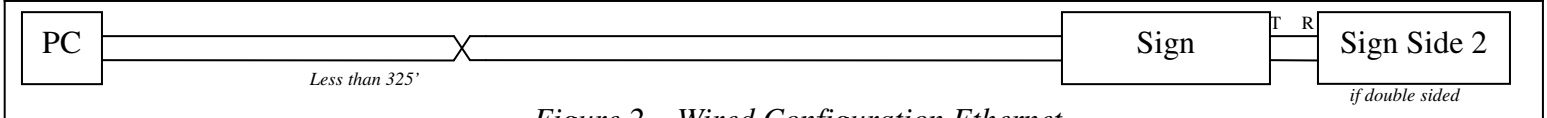


Figure 2 – Wired Configuration Ethernet

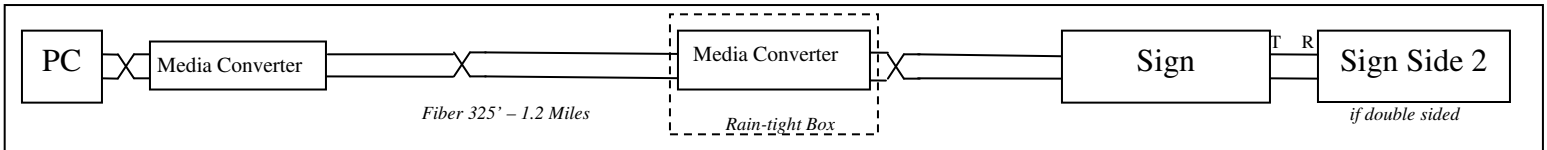


Figure 3 – Wired Configuration Fiber Optic

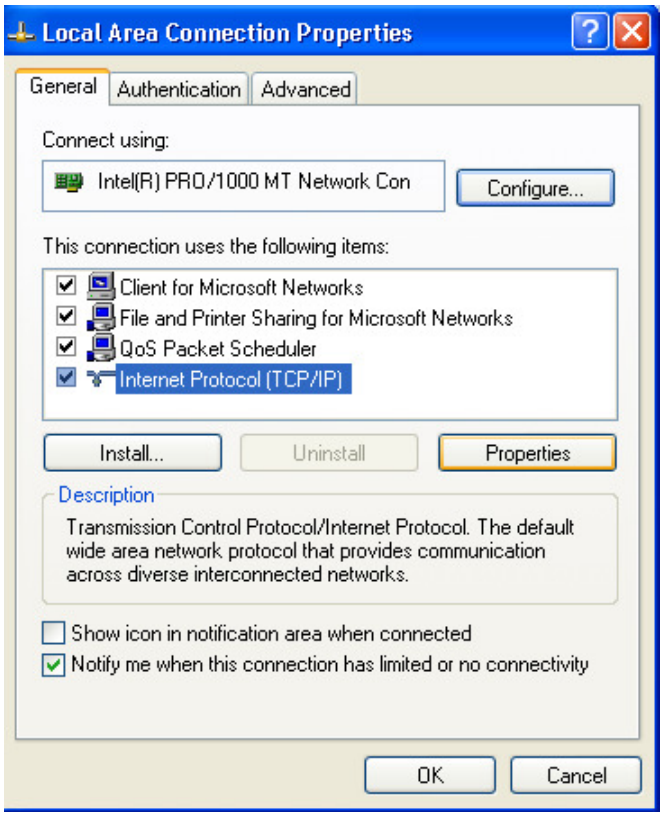
4. Software Setup

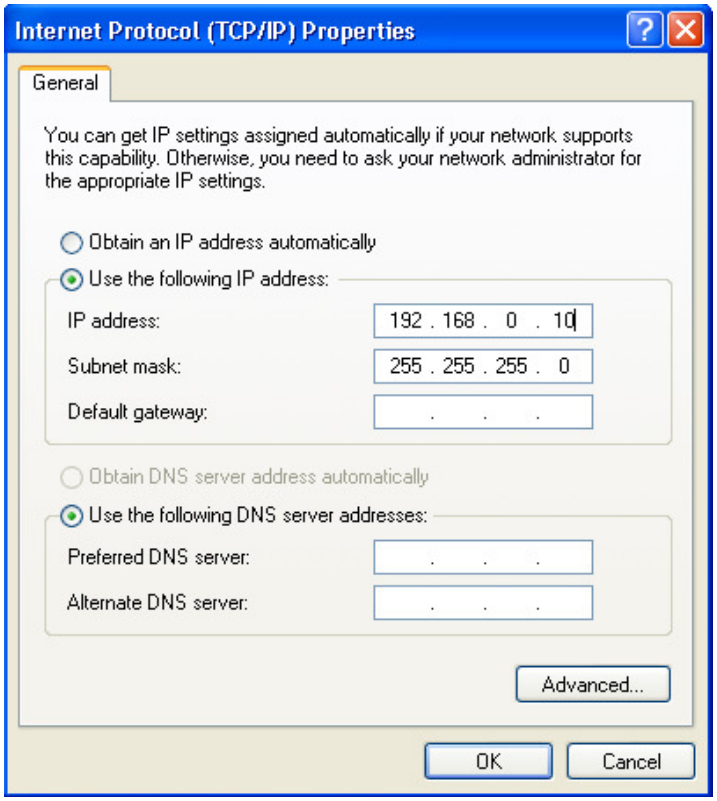
The message center can be connected to a dedicated computer for setting up new messages, or integrated as part of an existing computer network. The system is shipped in the first case as described in "Not connected to existing Network".

Computer is Not connected to existing Network

- The message center controller and wireless equipment (optional) are pre-configured to a default network configuration. The IP address of the controller is set to 192.168.0.210. Wireless Bridge and AP are 192.168.0.211 and 192.168.0.212 respectively.
- When the software is installed, the default projects are configured to talk to the default controller IP address. Follow these steps to set the controlling PC's IP address to one that can communicate with the message center.

1. Click the start button and select Control Panel. Double click Network Connections. Double click your network card or "Lan Connection". On Win XP select properties. You will see the window on the left. Select Internet Protocol (TCP/IP) and click Properties. You will see the window on the right.





2. Click the Radio Button "Use the following IP address" and enter 192.168.0.10 and the subnet mask 255.255.255.0 and click ok on each window. You may be prompted to insert your Win98/2000 CD.

3. When you open Nevco Composer™, the button in the lower right hand corner of the screen should say "Update Message Center" showing that you are connected. (Be sure the license key is in the USB port and the LED is on)

4. Consult the Nevco Composer™ user's manual for troubleshooting.

- If you are using a laptop, make sure to turn off the wireless LAN in the laptop (if present). This can be done on most laptops by pressing a button in the area above the keyboard that looks like an antenna.

Computer is Connected to an existing Network

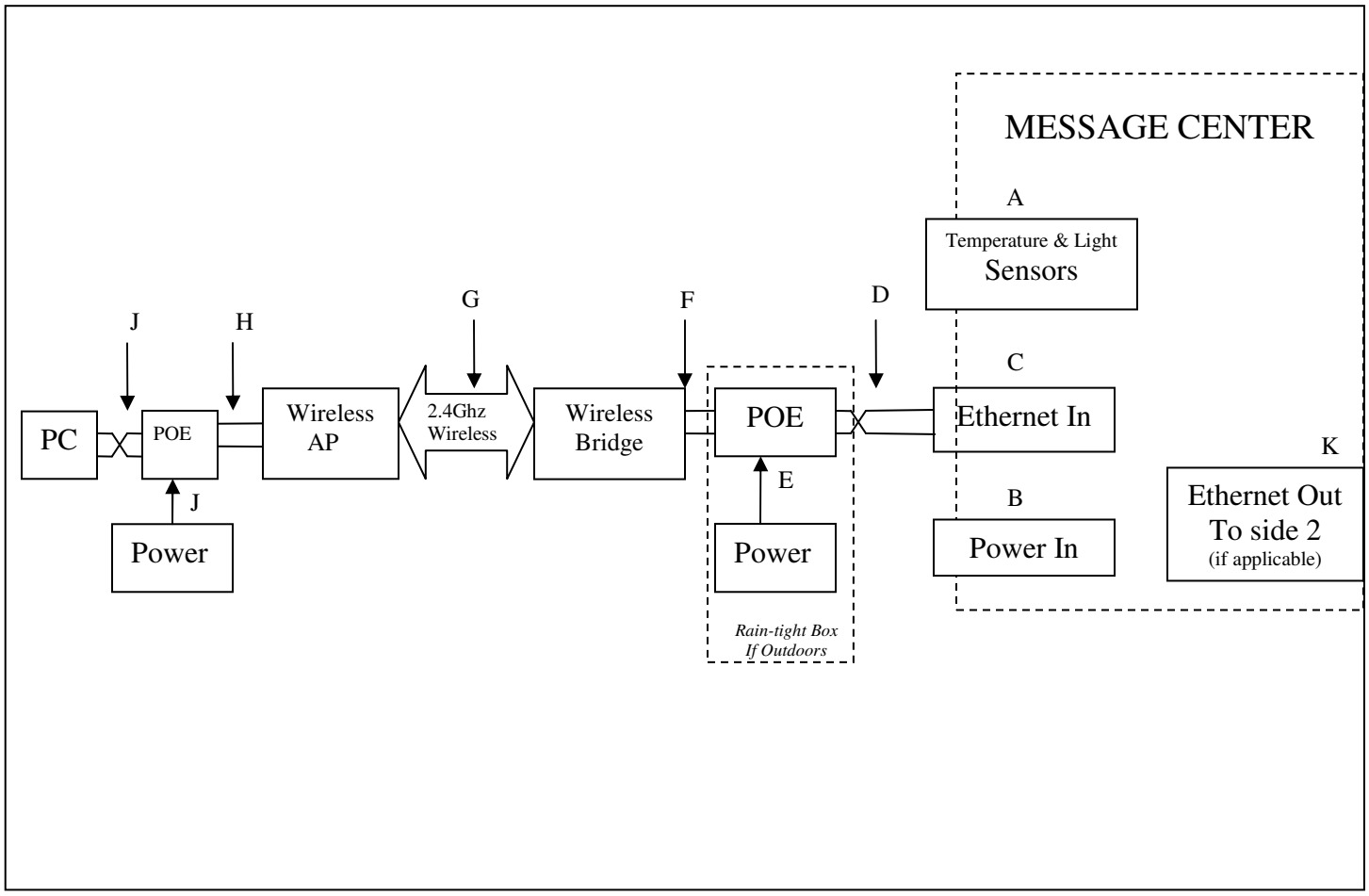
- The message center controller and wireless equipment (optional) are pre-configured to a default network configuration. The IP address of the controller is set to 192.168.0.210. Wireless Bridge and AP are 192.168.0.211 and 192.168.0.212 respectively.
- The steps to change the IP address on each of the devices are explained in detail in the user's manuals for each device. Consult these manuals for more information. The wireless devices support DHCP, but the message center's IP address must be static. To integrate the equipment into your existing network, in this order you must change the IP address on a computer, use that computer to change the message center IP address, change the outdoor bridge IP address, and then change the Access Point IP address. Follow these steps:
  1. Connect the access point to the LAN with a straight through Ethernet cable. The unit is shipped with a crossover cable for connecting directly to a PC.
  2. Change a PC on the network's IP address as instructed in *"Not connected to an existing Network"* above.
  3. Change the Message Center's IP address by following these steps.
     a. Install Nevco Composer™ on the Computer. Be sure to plug the license key into the USB port.
     b. Enter "Password" as instructed in the manual. As long as the password remains "Password" you will be prompted to change it each time the program is loaded.
     c. Go to Message Center=>Configure Password and Message Center
     d. Enter your current password and click connect on the right hand side of the window.
     e. Enter the new IP address and subnet mask and click Update.
  4. Change the Outdoor wireless client's IP address by following these steps.
     a. Open internet explorer and in the Address Bar type 192.168.0.211
     b. Refer to the sticker in your user's manual for the username and password.
     c. A web page called Wireless Client Bridge will come up. Click on "TCP/IP Settings" and select "LAN Interface".
     d. Change the network settings as necessary to fit your network topology and click "Apply Changes".
     e. You may also want to change the wireless settings to suit your own security needs. Be sure to change the Access Point to match in the next section.
  5. Change the Access Point's IP address by following these steps.
     a. Open internet explorer and in the Address Bar type 192.168.0.212
     b. Refer to the sticker in your user's manual for the username and password.
     c. A web page called Wireless LAN Access Point will come up.
     d. Follow the same steps as 4, steps c - e. Make sure any security settings changed on the Client Bridge match settings on the Access point.
  6. You may now change your PC's IP address back to its original configuration. Test the new configuration by opening Nevco Composer™, going to Project=>Configure, enter the new IP address of the message center and click "OK". The status at the bottom of the screen should now be "Display Connection = Ethernet".

INSTALLER'S TROUBLESHOOTING GUIDE

The figure below labels the connections made by the installer from A – K. The chart below lists the problem that can be identified should each connection be faulty. Should a problem arise on any one component, consult the trouble shooting guide specific to that device.

.**Note:** All connections inside the Message Center have been made at the NEVCO Factory. Each Message Center requires Signal from the controlling PC. Each Message Center also requires Power (see Table 1).

Note: For double sided and/or double cabinet message centers. The input signal for subsequent cabinets comes from the output of the previous cabinet. A separate power circuit is required for each cabinet.



Situation	Symptom	Connection	Solution
The message Center is not displaying a message	The fans on ALL power supplies are running	C,D	Replace crossover cable
			In Composer, check the scheduling for the Project, then click the button to send the project to message center
	The fans on ALL power supplies are not running	B	Check Power Switch on disconnect box inside message center
			Check connections in disconnect box (power hookup)
			Check branch circuit; was there a photocell on an existing sign install?
	On a double sided Message Center, One side is displaying the message, the other is not	K,c	Ensure an Ethernet straight through cable has been used, is making a good connection at both ends.
	"DSP" LED on controller IS blinking, but the CASCAN card has no LED's blinking rapidly (like DSP on the controller).	D	Ensure an Ethernet crossover cable has been used, is making a good connection at both ends.
I cannot communicate with the message center	No Red Power LED lit on Wireless Bridge POE.	E	Check branch circuit and power at the receptacle. Adapter has LED indicator
	No Red Power LED lit on Wireless Access Point POE.	J	Check branch circuit and power at the receptacle. Adapter has LED indicator
	LAN LED on Controller not ON solid	D	Ensure an Ethernet crossover cable has been used and is making a good connection at both ends
		F	Ensure an Ethernet straight through cable has been used and is making a good connection at both ends.
	LAN LED on PC Ethernet port not ON, or PC says "network unplugged", "not connected".	H	Ensure an Ethernet straight through cable has been used and is making a good connection at both ends.
		I	Ensure an Ethernet crossover cable has been used and is making a good connection at both ends. Check to see that the network interface is enabled and follow the procedure in "*Not connected to existing Network* above.
	User's manual on CD with wireless equipment explains how to measure the wireless signal strength	G	Reorient the wireless device's antennas to eliminate obstructions between them
Part of message center appears "dead"	Only part of message center will light		In Composer, check the zone section to make sure the project is set to use the whole message center
Temperature Sensor does NOT work	Not installed	A	Install sensor in message center
	Not enabled		Make sure the temperature sensor is enabled in Composer
Light Sensor does NOT work	Not installed	A	Install sensor in message center
	Not enabled		Make sure the light sensor is set to auto in Composer

If the problem persists please contact the Nevco Service Department.

800-851-4040

GLOSSARY

ACCESS POINT (WIRELESS AP)

A hardware device that allows wireless communication devices to connect to a network.

Can also be configured as a

WIRELESS BRIDGE

A hardware device used to connect two or more network segments.

CASCAN card

Distributes the data inside the Message Center.

CASCAN card

DISPLAY Panel

A group of pixels. Several Display Panels are combined to form the message center.

DSP

Digital Signal Processing.

PIXEL

A group of one or more LEDs.

POE

Power Over Ethernet.
Used to inject power for use by
A device connected to the
Ethernet cable.

POWER SUPPLY

Converts the line voltage to 12 volts or 5 volts.

POWER SWITCH

Disconnects power to a portion of the message center components. Cabinet may contain more than one.

RIBBON CABLE

Flat 16 conductor cable used to carry the data from the CASCAN card to the display panels and from display panel to display panel.

WIRELESS BRIDGE

A hardware device used to connect two or more network segments. (See **Access Point**)

X-6 (CONTROLLER)

Stores, processes, and distributes the message center data to the CASCAN card(s).

X-6 CONTROLLER

Nevco

Outdoor LED Scoreboard

Installation Manual

MAXIMIZE YOUR IMPACT™

Retain this manual in your permanent file.

Installation Instructions

Installation consists of three steps, Unpacking the Equipment, Scoreboard mounting, and Electrical Connections. Be sure to read and understand all of the instructions before installing the equipment. Consult the "installer's troubleshooting guide" following this section for verifications each step has been installed and is working correctly.

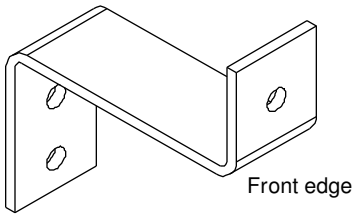
1. Unpacking the Equipment

- Inspect the shipping container for damage. If any damage can be seen, contact the carrier immediately.
- Carefully remove all equipment from its packing carton. **Do not** pry against the scoreboard in any way.

2. Scoreboard Mounting

Note: For scoreboards that are shipped in more than one section, doors on the back of the scoreboard provide access to cables that must be connected and routed between sections during installation.

- Refer to installation prints for mounting method, mounting centers, power service location, and cable routings.
- A wide flanged steel support system recommended by Nevco on the installation print, can tolerate a nominal 90-mph wind loading. This may not be adequate for some locales. Nevco strongly encourages you to check local codes before beginning the installation. You may wish to contact a local engineer, architect, or sign installer for assistance. Your Nevco Sales Representative may be able to assist you in finding professional installers who are familiar with this type of equipment.



S Bracket

- Before mounting the supplied **S** brackets to the beams, measure the slot locations on the scoreboard. Manufacturing tolerances, temperatures and other variables may affect the actual slot location.
- Mount an **S** bracket to each beam where the bottom edge of the scoreboard will rest with two 5/8" bolts.
- After the bottom **S** brackets are secured, position the scoreboard by aligning the holes in the front edge of the **S** brackets with the 1-1/2-in. x 11/16-in. slots on the face of the scoreboard.
- Install the top **S** brackets securely against the top of the scoreboard, aligning the **S** bracket holes with the scoreboard slots.
- When all **S** brackets are in place, insert a 5/8-in. bolt through the front of the **S** brackets, scoreboard, and wide flange beam. Secure the bolt with a flat washer and locking nut.

  Note: A self-locking nut must be used to prevent loosening. Do not over-tighten this bolt.

Always use good mechanical practices when mounting the scoreboard:

- The distance between the mounting posts must be maintained within a tolerance of ±0.5 in. so that the mounting devices can be properly secured.
- Use only plated fastening devices to prevent rust or corrosion.

Assembling Sectional Scoreboard

For scoreboards with multiple bottom sections, slide the pieces together aligning the pre-drilled holes. Fasten sections with the sheet metal screws provided.

Note: The screws are shipped in the accessory package with the **S** brackets.

Use silicon caulk and join vertical seams with screws provided. Position the top section(s) in place above the bottom section(s). Fasten sections with the sheet metal screws provided.

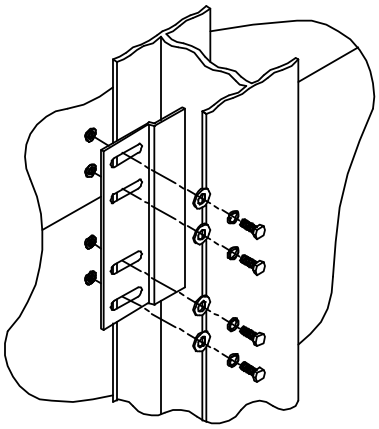
Locate and remove the access doors on the back of the scoreboard. Make sure all cables are connected as necessary at cabinet joints.

Check all electronic devices for loose connectors. See Installation Print for detail.

J-TYPE MOUNTING BRACKET

Use the included **J-**type mounting brackets to secure the scoreboard to the posts at the section joints.

Note: These mounting brackets should be used on the section joints, even if you do not use the posts that Nevco specifies.



Number of Columns	Scoreboard Models
1 Post	PSD-A, DGT-5A, 9505-A, PCD, 9520
2 Post	1500, 1510, 1520, 1525, 1540, 1550, 3502, 3550, 3555, 9560, 1508, 1515, 1530, 1535, 3500, 3514, 3525, 3534, 5525, 7504, 7524, 9550
3 Post	1506, 3515, 3520, 7520, 7530, 7505, 7525
4 Post	3504, 1503, 3516, 7516

Rain Tight Enclosure Box

For scoreboards that will be operated wirelessly, a rain tight enclosure box must be mounted on one of the posts holding the scoreboard. This rain tight box houses the wireless receiver and must be mounted on the same side of the post as the scoreboard (Clear line-of-sight, facing the operator's control) and must have power supplied to it (See drawing).

3. Electrical Connections

- Refer to installation prints for illustration of electrical connections.

Power Service

- ***This sign is intended to be installed in accordance with the requirements of Article 600 of the National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of the sign.***
- Consult *table 1* for Full Load power requirements for your scoreboard model. Provide for a 30% safety factor when sizing wire and selecting breakers to guard against tripping of the circuit breaker under low line conditions.
- Be sure to include any lighted signs, and message centers when sizing the supply wiring necessary to support the circuit load.
- A disconnect switch should be lockable or within sight of the sign per NEC article 600.
- Two holes in the back of the scoreboard provide an entrance point for the power and the coax signal cable. These holes are plugged at the factory and you may make your own entry points if desired; take care not to drill into or damage any of the internal components of the scoreboard. A removable panel on the front of the scoreboard opposite the holes in the back allows access to an Electrical Enclosure box. Remove the front of the Electrical Enclosure box to gain access to the power splice box where the scoreboard power connections are made. The coax signal cable terminates on a BNC connector on the bottom of the Electrical Enclosure box.
- The rain tight enclosure box, mounted on one of the scoreboard posts, houses the receiver in a wireless scoreboard system and will need power to it. The rain tight receiver box must be facing the field, providing clear line-of-sight from the wireless control. See drawings for more details.
- Electronic Team Names, on the large 3516 and 7516 require separate power to be run to them. Power must be run to Home and Guest. Power entrance labels on the back of the scoreboard identify the default locations.

Model #	Current @ 120V	Current @ 240V	With ETN @ 120V	With ETN @ 240V
1500	0.7 A	0.4 A	1.1 A	0.6 A
1503	5.1 A	2.6 A	5.7 A	2.8 A
1506	3.1 A	1.6 A	3.7 A	1.8 A
1508	2.0 A	1.0 A	2.4 A	1.2 A
1510	0.7 A	0.4 A	N/A	N/A
1515	1.3 A	0.6 A	1.7 A	0.9 A
1520	0.9 A	0.4 A	N/A	N/A
1525	1.0 A	0.5 A	N/A	N/A
1530	2.2 A	1.1 A	2.8 A	1.4 A
1535	1.2 A	0.6 A	1.6 A	0.8 A
1540	1.5 A	0.8 A	2.1 A	1.0 A
1550	0.4 A	0.2 A	N/A	N/A
3500	2.5 A	1.2 A	3.1 A	1.5 A
3502	1.3 A	0.7 A	1.7 A	0.9 A
3504	3.3 A	1.6 A	3.9 A	1.9 A
3514	2.8 A	1.4 A	3.4 A	1.7 A
3515	2.8 A	1.4 A	3.4 A	1.7 A
3516	4.7 A	2.3 A	6.6 A	3.3 A
3520	3.3 A	1.6 A	3.9 A	1.9 A
3525	2.7 A	1.4 A	3.3 A	1.6 A
3534	3.0 A	1.5 A	3.6 A	1.8 A
3550	0.8 A	0.4 A	N/A	N/A
3555	1.8 A	0.9 A	2.2 A	1.1 A
5525	2.8 A	1.4 A	N/A	N/A
7504	3.4 A	1.7 A	4.0 A	2.0 A
7505	4.3 A	2.2 A	4.9 A	2.4 A
7516	5.0 A	2.5 A	6.9 A	3.5 A
7520	3.4 A	1.7 A	4.0 A	2.0 A
7524	3.0 A	1.5 A	3.6 A	1.8 A
7525	4.0 A	2.0 A	4.6 A	2.3 A
7530	3.3 A	1.6 A	3.9 A	1.9 A
9505-A	0.4 A	0.2 A	N/A	N/A
9550	2.9 A	1.5 A	N/A	N/A
9560	1.6 A	0.8 A	N/A	N/A
DGT-5A	0.6 A	0.3 A	N/A	N/A
PSD-A	0.6 A	0.3 A	N/A	N/A
PCD	0.3 A	0.2 A	N/A	N/A
9520	0.4 A	1.2A	N/A	N/A

Table 1

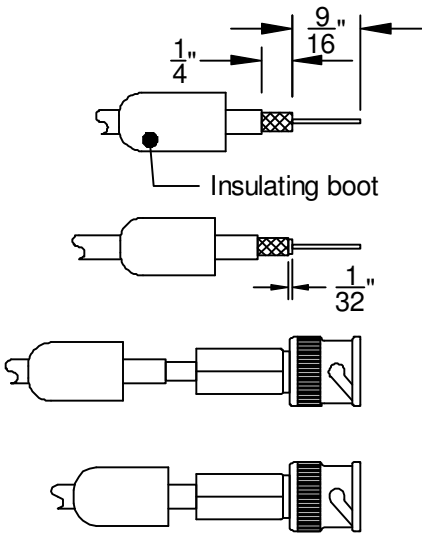
2-Wire Coax Cable (RG58/U)

All 2-WIRE cable ordered from Nevco is direct burial type. It has a minimum dielectric strength of 300V, and conforms to UL standard 1365.

If the wiring is buried above the freeze line, bury the cable with sand to provide drainage and prevent damage from shifting soil.

Installing Cable Connectors

The 2-WIRE cable that comes with your scoreboard does not have connectors attached.

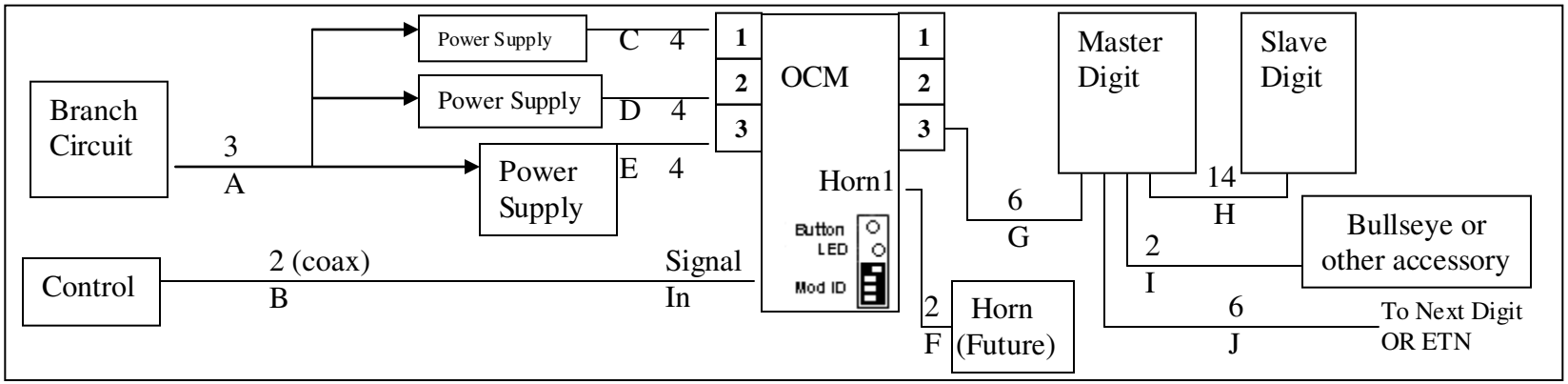


To install connectors on each end of the cable:

- Slide the insulating boot onto the cable and trim the cable as shown.
- Twist the outer braid in a **clockwise** direction so that at least 1/32 in. of the inner dielectric is bared and the braid is left flat. Be sure no strands of the outer braid are touching the center conductor.
- Insert the center conductor into the back of the connector, feeding it into the guide hole.
- Push the cable as far as possible into the connector.
- Screw the connector onto the cable in a clockwise direction until the connector stops turning.
- Slip the insulating boot over the back of the connector.

WIRED INSTALLER'S TROUBLESHOOTING GUIDE

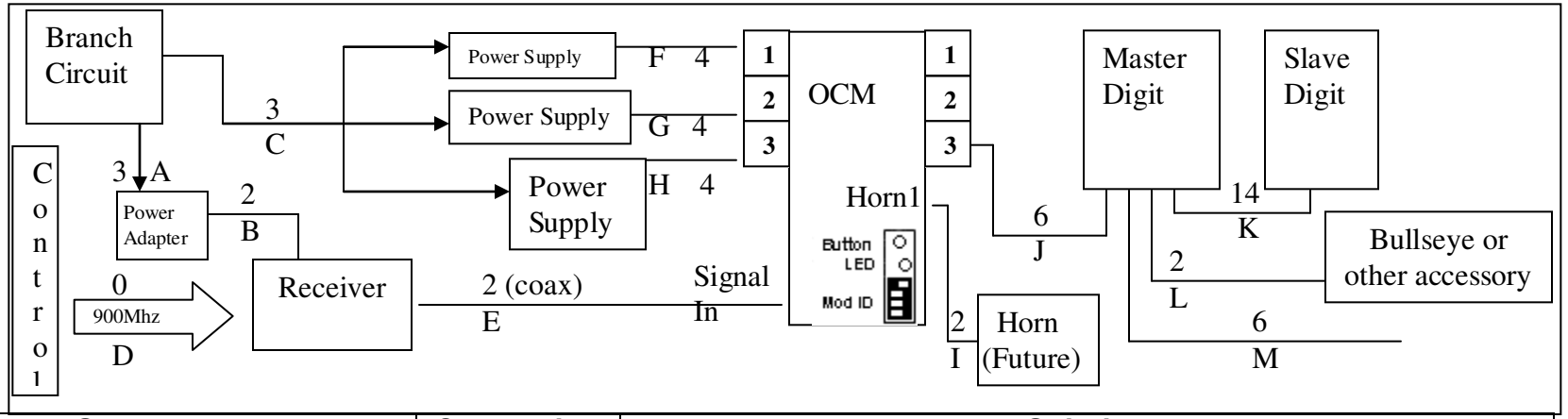
The figure to the right labels the connections made by the installer from A &B as well as other useful internal connections C - J. The chart below lists the problem that can be identified should each connection be faulty. Check the control and service manual for more detailed information.



Situation	Symptom	Connection	Solution
The Scoreboard has no digits illuminated	The fans on ALL the power supplies are not running	A	Check branch circuit breaker, connections, and disconnect switch external to scoreboard
			Check connections in disconnect box (power hookup)
			Check Power Switch on disconnect box inside scoreboard
			Replace Power supply
	OCM LED ON solid	B	Check Coax connections. Plug control directly into OCM to eliminate buried coax cable. If that works, the cable run or terminations are bad. Try the 301 Model code, see control users manual on testing.
			Holding the Button on the OCM down for 4 seconds will display a test pattern on the scoreboard digits further confirming that the signal connection is bad
	OCM LED is flashing rapidly	C or D	The power cable plugged into port 3 powers the OCM, but connections to power supplies on plug 1 & 2 power the digits/ETN's powered by 1 & 2 outputs
		G	Check connections on OCM outputs 1, 2, & 3 as well as first master digits
	OCM LED is completely OFF	E	OCM board has no power. Check connection E, power supply feeding E, and connections to the power supply E.
Some digits not illuminated, or non-working accessory	Only one digit	H	Check 14-pin connection on Driver card and 2-pin on segments
	Horn, colon, decimal, possession indicator, etc.	I	Check 2-pin connection on Driver card and on accessory
	More than one Digit, starts at one point in cabling	J	Check 6-pin connection from working driver card to next digit driver card

Wireless Troubleshooting Guide

The figure to the right labels the connections potentially made by the installer (A – E) and other internal connections (F – M) useful to troubleshooting. The chart below lists the problem that can be identified should each connection be faulty. Check the control and service manual for more detailed information.



Situation	Symptom	Connection	Solution
The Scoreboard has no digits illuminated	The fans on the ALL power supplies are not running	C	Check branch circuit breaker, connections, and disconnect switch external to scoreboard
			Check connections in disconnect box (power hookup)
			Check Power Switch on disconnect box inside scoreboard
			Replace Power supply
	Receiver has No LEDs illuminated during first 5 seconds after power up	A	Check branch circuit breaker, connections, duplex receptacle, and disconnect switch external to scoreboard
			If the duplex receptacle has power, but the adapter LED is OFF, replace adapter
		B	Ensure DC plug is fully seated in receiver DC jack and making good connection
			Replace Receiver
	Receiver LED Not ON solid		Follow control troubleshooting procedures, wrong wireless group, etc.
		D	Receiver should be in clear line of sight from control.
	OCM LED ON solid	E	Check Coax connections. Plug control directly into OCM to eliminate buried coax cable. If that works, the cable run or terminations are bad. Try the 301 Model code, see control users manual on testing.
			Holding the Button on the OCM down for 4 seconds will display a test pattern on the scoreboard digits further confirming that the signal connection is bad
	OCM LED is flashing rapidly	F or G	The power cable plugged into port 3 powers the OCM, but connections to power supplies on plug 1 & 2 power the digits/ETN's powered by 1 & 2 outputs
		G	Check connections on OCM outputs 1, 2, & 3 as well as first master digits
	OCM LED is completely OFF	H	OCM board has no power. Check connection E, power supply feeding E, and connections to the power supply E.
Some digits not illuminated, or non-working accessory	Only one digit	K	Check 14-pin connection on Driver card and 2-pin on segments
	Horn, colon, decimal, possession indicator, etc.	L	Check 2-pin connection on Driver card and on accessory
	More than one Digit, starts at one point in cabling	M	Check 6-pin connection from working driver card to next digit driver card

MAXIMIZE YOUR IMPACT™

NEVCO GUARANTEE

To view or receive the most recent copy of the Guarantee, please visit our website, www.nevco.com or call 1-618-664-0360

— IN USA —	— IN CANADA —
NEVCO, Inc. **301 East Harris Avenue** **Greenville, IL 62246-2151 USA** Telephone: 618-664-0360 Fax: 618-664-0398 TOLL-FREE 800-851-4040 (From all 50 states and Puerto Rico)	**NEVCO, ULC** **107 Forestview Rd.** **Orillia, ON L3V 7C1 Canada** Telephone: 703-325-4005 Fax: 705-325-8891 TOLL-FREE 800-461-8550
Website: www.nevco.com Email: info@nevco.com	

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This class A digital apparatus meets all requirements of the Canadian Interference- Causing Equipment Regulations.

Cet appareil numerique de la classe A repecte toutes les exigences du Reglement sure le materiel brouller du Canada.