

ACD WALLBOARD SYSTEM INSTALLATION
MANUAL #1.6
(Replaces 1.5)

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TYPE A-RS-232 SERIAL CABLE PINOUTS

P/N: C4-C909A

This cable is used to connect the Converter Box (P/N: M2-CV101) to the RS-232 Serial Port on a PC, PLC, Originate Modem or other serial devices. This cable is approximately 4' long with a DB9 pin female at the serial port end and a DB9 pin male at the converter box end.

Controlling Computer/PLC RS-232 Serial Port		Converter Box M2-CV101	
PIN	DESCRIPTION	PIN	
SHIELD	GND	SHIELD	
3	TXD	3	
2	RXD	2	
7	RTS	7	
8	CTS	8	
6	DSR	6	
1	DCD	1	
4	DTR	4	
5	Signal Ground	5	
9	RJ	9	
Female End		Male End	

Note: The C4-C909A Type A-RS-232 Cable is also used with a 9 pin to 25 pin adapter (P/N: C7-9MN25FS) to connect to a 25 pin DB style connector

P/N: C4-C9MS25MN

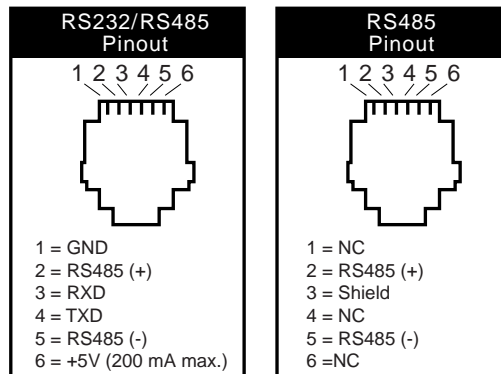
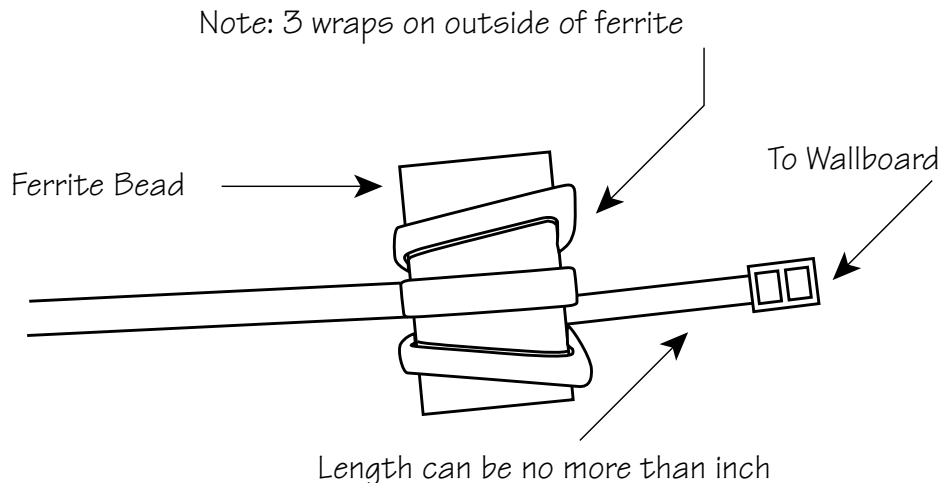
Comport	DESCRIPTION	Converter Box
8	DCD	1
3	RXD	2
2	TXD	3
20	DTR	4
7	Signal Ground	5
6	DSR	6
4	RTS	7
5	CTS	8
22	RJ	9

SERIAL CABLE INSTALLATION

The communication data cable (P/N: C1-CC2S) for the wallboards, should be a single pair cable (Shielded if in a noisy environment) category 5 cable. This cable is not supplied and is usually sourced locally. Refer to the section on Network Installation for connecting cables from the converter box to the wallboard. This Wallboard requires the installation of ferrite beads (included) on the serial communication cables in order to comply with FCC Class A Regulations.

If the ferrite bead is already installed ignore these instructions.

1. Wrap communication cable through ferrite bead so that 3 turns of the cable are on the outside of the ferrite. Less than 3 turns may result in non-compliance.
2. Cable stub toward Wallboard must not exceed 1 inch in length.
More than 1 inch may result in non-compliance.
3. Tie wrap cable in place.



RS-232 TO RS-485 CONVERTER BOX

(P/N: M2-CV101)

The RS-232 to RS-485 Converter Box III enables communications between a PC and Wallboards. The Converter Box converts standard RS-232 signals from the PC's serial port into RS-485 signals for use in Spectrum networks.

The Converter Box features:

1. A power LED indicator: Indicates that the converter box is receiving power. The converter box comes with an AC adapter for connecting the converter box to an electrical outlet.
2. An RS-232 RXD LED indicator: Indicates that the converter box is receiving data on the RS-232 port and transmitting data on the RS-485 port.
3. An RS-232 TXD LED indicator: Indicates that the converter box is transmitting data on the RS-232 port and receiving data on the RS-485 port.
4. Terminated/Unterminated switch to allow the converter box to be used "on the end" or "in the middle" of the cable run.

The converter box also comes with two EOL (end of line) terminators. The EOL terminators are attached directly to the Wallboards and help maintain stable communication across a network. Either one or two will be used depending on the position of the converter box. More information on EOL terminators can be found on the next page.

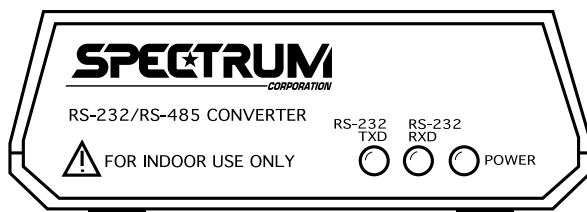


Figure 1.
Converter Box – Front View

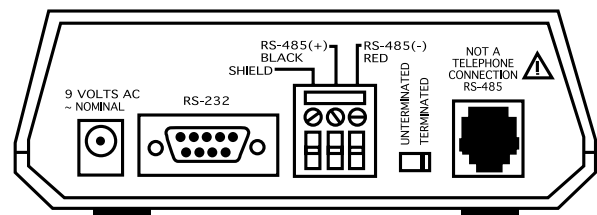


Figure 2.
Converter Box – Rear View

CONVERTER BOX INSTRUCTIONS

Required Equipment:

- Type A9 RS-232 Cable
- RS-485 Cable (P/N: C1-CC2S)
- Some Computers may require a DB 25 to DB 9 adapter (Consult Spectrum)

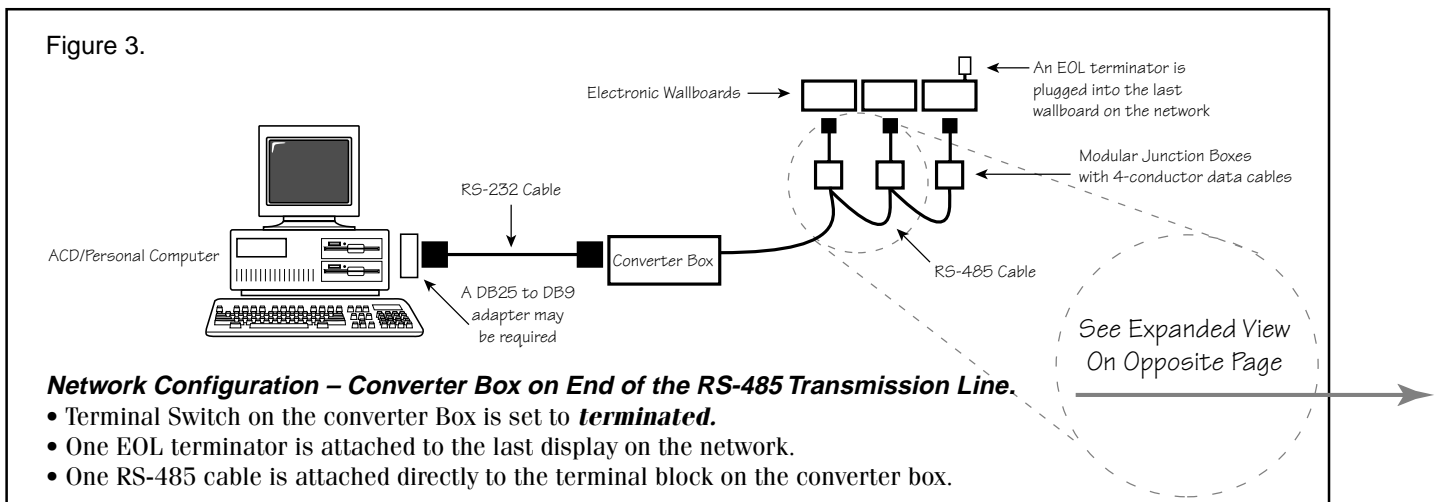
1. Use a C4-C909A cable to connect the converter box to the serial port of the PC. On some PC's it may be necessary to use a DB 25 to DB 9 adapter to allow the RS-232 cable to plug into the serial port.
2. Use C1-CC2S cable (or suitable substitute) to connect the converter box to the first wallboard on the network. As described in the Network Installation instructions following this section. Connect one end of the RS-485 cable to the terminal block on the converter box (or the RJ11 jack). Connect the other end of the RS-485 cable to the Modular Junction Box. (See Modular Junction Box installation instructions)

NETWORK INSTALLATION DIAGRAM

EOL terminators are plugged into the Wallboards on the ends of an RS-485 transmission line. The EOL terminators are inserted into the RJ11 ports (labeled RS-232 In or TTL) on the Wallboards. The RS-232 to RS-485 converter box has a termination switch with two options: *terminated* and *unterminated*.

If the converter box is on one end of an RS-485 transmission line (as in most network configurations), the termination switch should be set to terminated and one EOL terminator used on the other end of the RS-485 transmission line. See figure 3.

If the converter box is not on the end of an RS-485 transmission line, the termination switch should be set to unterminated and one EOL terminator should be placed on each end of the transmission line. See figure 4.



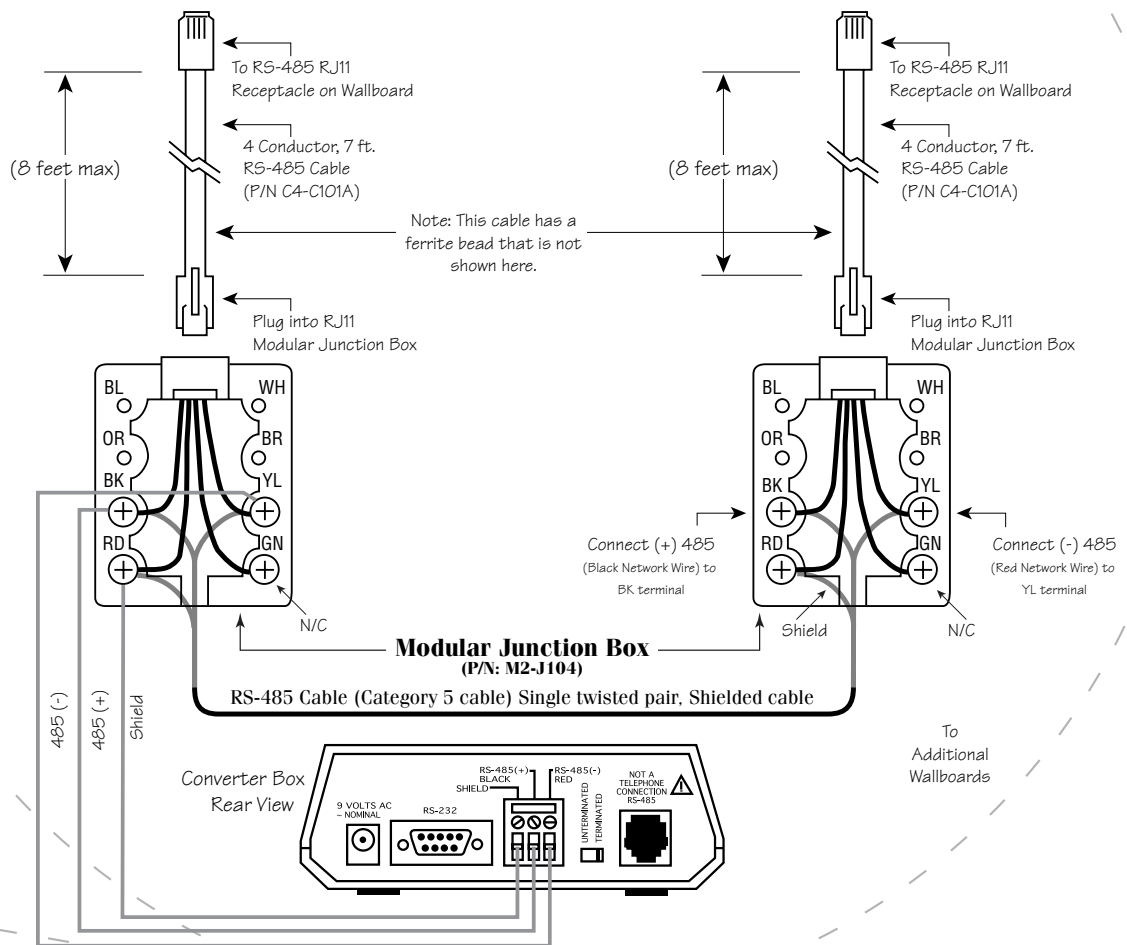
While the RS-232 to RS-485 converter box can be used with all Spectrum Wallboards, EOL terminators cannot be inserted into the following wallboards: 210B, 221B, 710, 715, 430A, 440A, 460A, 480A and 790I. The Mini-Alert, Mini-Matrix, all incandescent and outdoor LED boards, must be terminated at the next modular junction box. See page 8 for instructions.

For the most stable transmission, use “daisy-chain-drop” connections when connecting multiple wallboards to the converter box. Make sure each wallboard is connected to its own modular junction box. Do not use a star connection or connect more than two RS-485 cables directly to the terminal block or to a modular junction box.

NETWORK INSTALLATION DETAIL OF DAISY-CHAIN-DROP WIRING

See
Page 6

See
Page 6



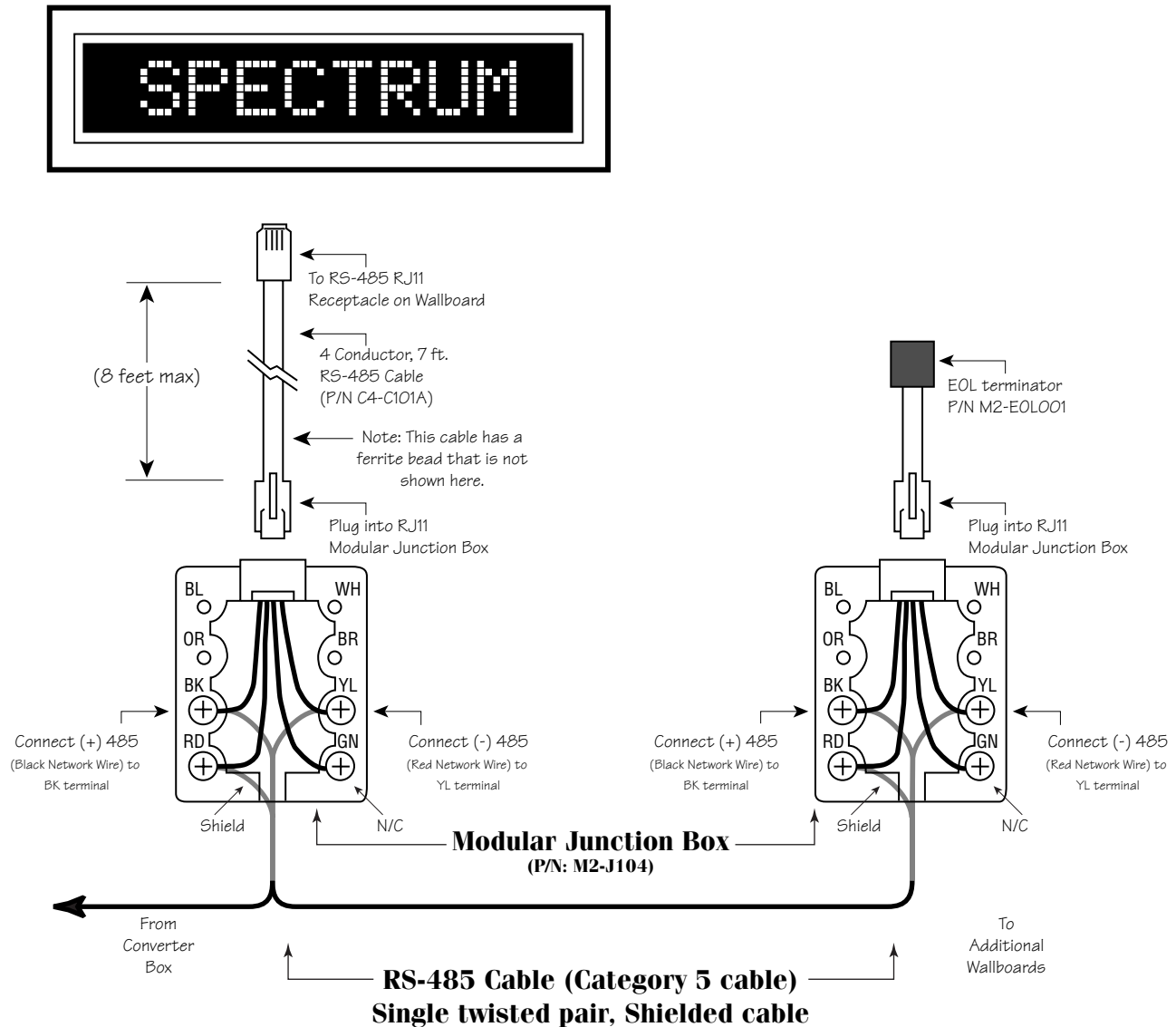
Expanded View from page 6

Telephone cable or cross connected cable should not be used!

TERMINATING SINGLE JACK WALLBOARDS

Mini-Alert, Mini-Matrix, all incandescent
and outdoor LED display boards.

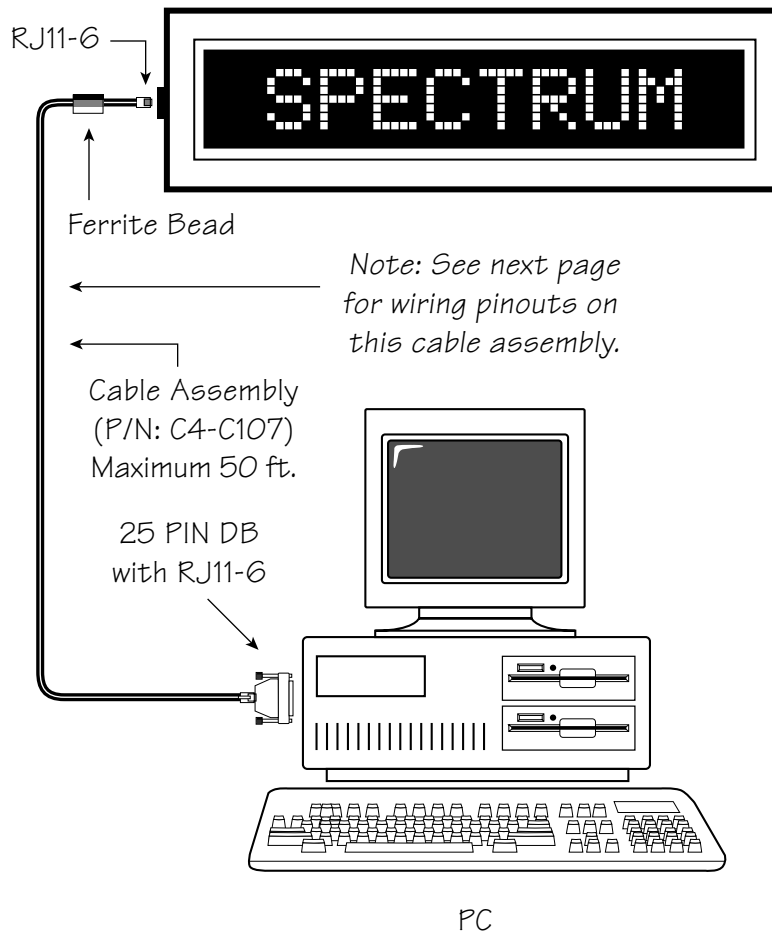
Most wallboards have 2-RJ11 jacks, one of which can be used for the EOL terminator on the last wallboard, at the end of the cable run. The models listed above do not have 2-RJ11 jacks, so the EOL terminator is installed as described below. Disregard this if your wallboard has 2-RJ11 jacks.



Please note: As a temporary solution, a 120 Ω – ½ watt resistor may be substituted in place of the EOL terminator. The resistor should go across the BK and YL terminals in the last modular junction box. The EOL terminator provided by Spectrum has additional circuitry in it and should be used as the permanent installation.

SINGLE/STANDALONE WALLBOARD CONNECTION

Single message display connected directly to a PC's RS-232 serial port
Maximum Distance 50'



PARTS KIT

The following items are included in the parts kit:

Cable Assembly (P/N: C4-C107). Consists of a 50' cable with a ferrite bead and a DB25 pin connector.

OPTIONS AVAILABLE

Keyboard (55-Key) - Wireless (P/N: M2-IK55)

Surge Protector Power Strip with switch (6 outlet) (P/N: C4-SP06)

Surge Protector Power Strip (1 outlet) (P/N: C4-SP1)

(Not using a surge protector will void the warranty.)

REQUIREMENTS

RS-232 Serial Port with 25 DB connector or 9 DB connector.

CABLE ASSEMBLY WIRING PINOUTS

This assembly can be ordered with a DB9 or DB25 and a 25' or a 50' cable.

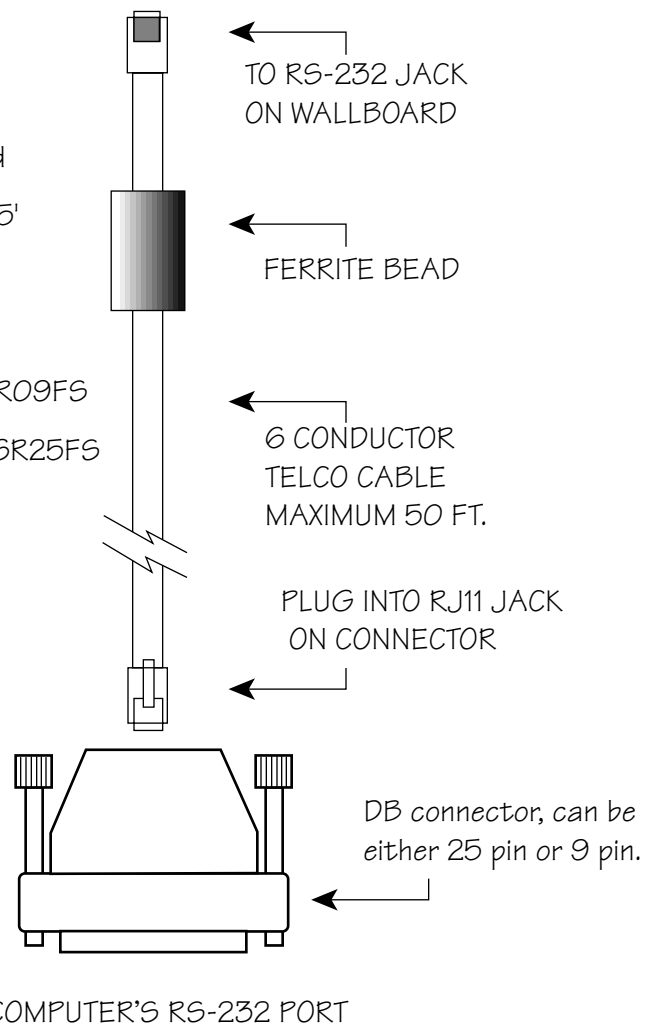
The part numbers are:

DB9 to RJ11 Adapter - C7-6R09FS

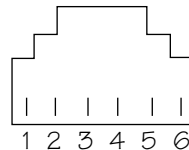
DB25 to RJ11 Adapter - C7-6R25FS

25' RS232 Cable - C4-C103

50' RS232 Cable - C4-C105



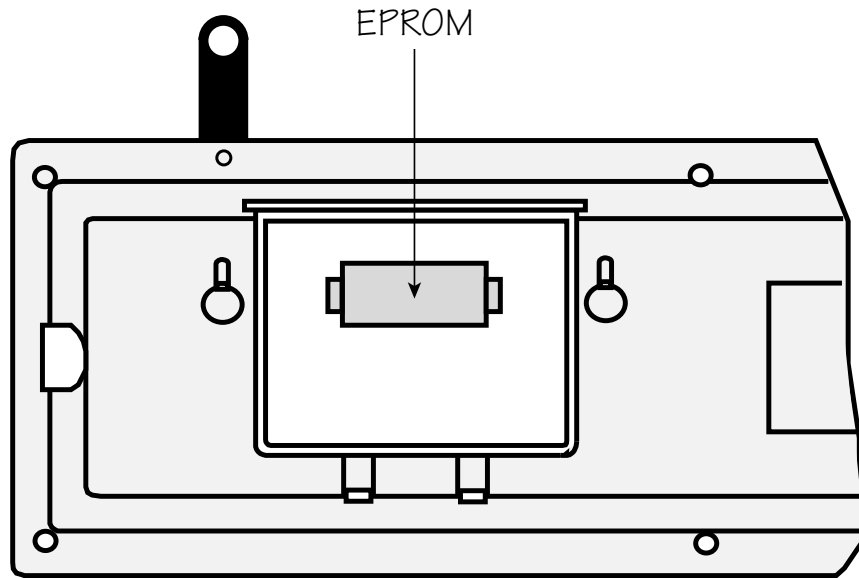
RJ11-6 JACK OUTER VIEW



PINOUT FOR 25 PIN	FUNCTION	RJ11-6
7 -	GRD(SIGNAL)	6
2 -	TX DATA	4
3 -	RX DATA	3
4 } JUMPED	RQ TO SEND	
5 } TOGETHER	CLR TO SEND	
6 } JUMPED	DSR	
8 } TOGETHER	DCD	
20 }	DTR	

PINOUT FOR 9 PIN	FUNCTION	RJ11-6
5 -	GRD(SIGNAL)	6
3 -	TX DATA	4
2 -	RX DATA	3
7 } JUMPED	RQ TO SEND	
8 } TOGETHER	CLR TO SEND	
6 } JUMPED	DSR	
1 } TOGETHER	DCD	
4 }	DTR	

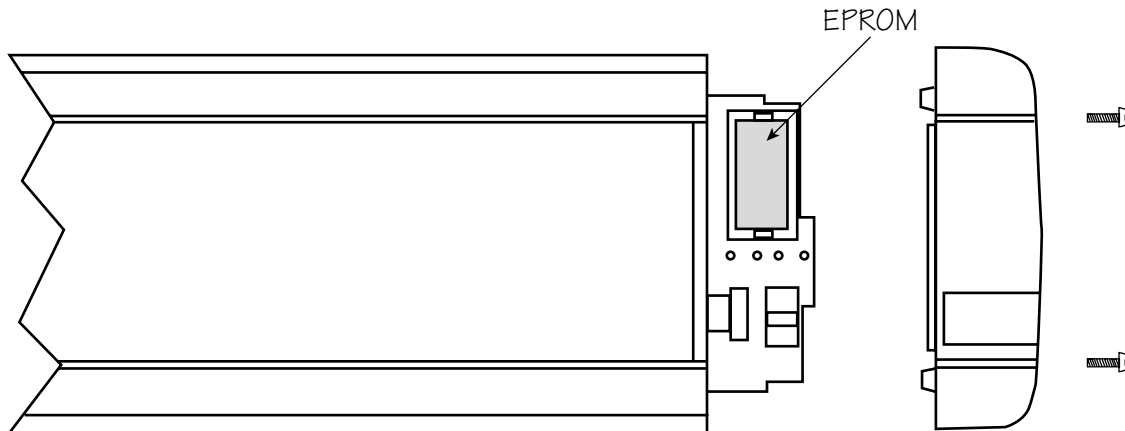
215 SERIES EPROM CHANGE



EPROM CHANGE

1. Unplug the sign from the electrical wall outlet and data cables.
Note which jack the cable is connected to.
2. Remove the access cover on the back of the wallboard.
3. Before removing the EPROM from the sign, touch a grounded surface. This dissipates potentially damaging static electricity. Note: Remember to repeat this if you get interrupted before you remove the EPROM.
4. Remove the EPROM from its socket.
 - A. Find the EPROM located near the front of the exposed circuit board.
 - B. Place your thumb under the EPROM's top tab and your index finger under the EPROM's bottom tab.
 - C. Lift the EPROM out of the socket by pulling up with your thumb.
5. Install the new EPROM into the socket.
 - A. Insert the EPROM so that the tabs on the EPROM are aligned with the notches in the socket. (The top edge of the socket has one notch and the bottom edge has two notches; the top edge of the EPROM has one tab and the bottom edge has two tabs.)
 - B. Place your thumb on the EPROM, place your index finger on the back of the circuit board, and gently push down on the EPROM until it snaps into place.
6. Replace the access cover on the back of the wallboard.
7. Connect power and data cables.

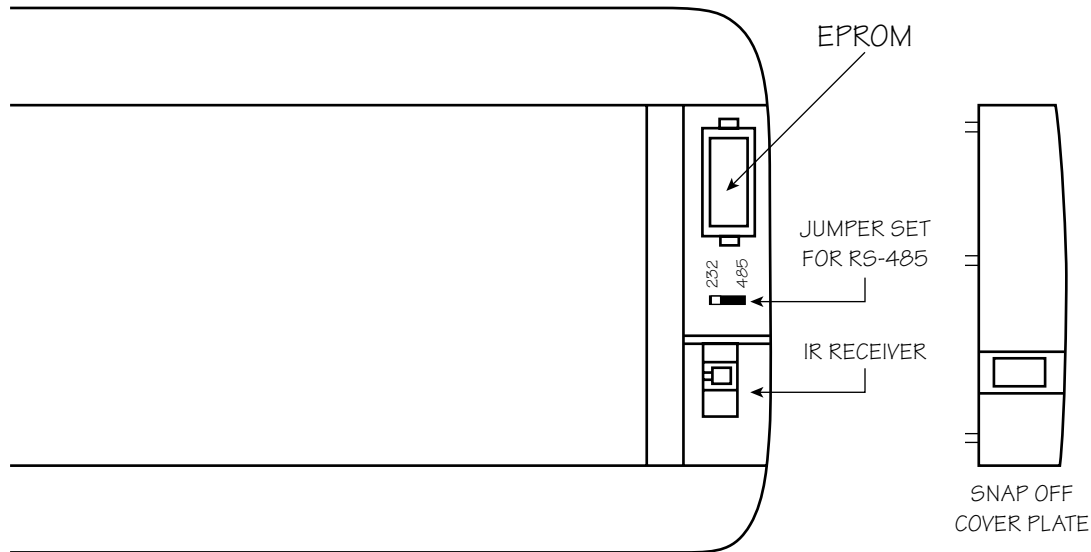
300 SERIES EPROM CHANGE



EPROM CHANGE

1. Unplug the sign from the electrical wall outlet and data cables.
Note which jack the cable is connected to.
2. Remove the end cap located on the right side. Use a #2 Phillips screw driver to remove the two screws that hold the end cap in place.
3. Before removing the EPROM from the sign, touch a grounded surface. This dissipates potentially damaging static electricity. Note: Remember to repeat this if you get interrupted before you remove the EPROM.
4. Remove the EPROM from its socket.
 - A. Find the EPROM located near the front of the exposed circuit board.
 - B. Place your thumb under the EPROM's top tab and your index finger under the EPROM's bottom tab.
 - C. Lift the EPROM out of the socket by pulling up with your thumb.
5. Install the new EPROM into the socket.
 - A. Insert the EPROM so that the tabs on the EPROM are aligned with the notches in the socket. (The top edge of the socket has one notch and the bottom edge has two notches; the top edge of the EPROM has one tab and the bottom edge has two tabs.)
 - B. Place your thumb on the EPROM, place your index finger on the back of the circuit board, and gently push down on the EPROM until it snaps into place.
6. Replace the end cap. Be sure that the screws are tight and the end cap is secure against the case.
7. Connect power and data cables.

4000 SERIES RS-232 TO RS-485 JUMPER & EPROM CHANGE



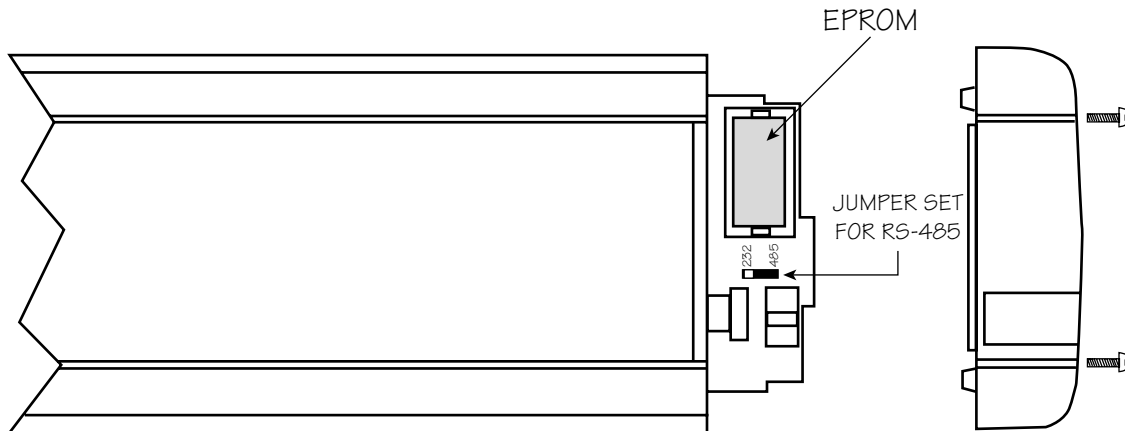
JUMPER CHANGE

1. Unplug the sign from the electrical wall outlet and data cable.
Note which jack the cable is connected to.
2. Remove the snap-off end cover.
3. Locate RS-232-485 Jumper below EPROM.
4. The block jumper should connect the center pin to the pin on the right for RS-485 operation and the pin on the left for RS-232 operation.
5. Connect power and data cables.

EPROM CHANGE

1. Unplug the sign from the electrical wall outlet and data cable.
Note which jack the cable is connected to.
2. Remove the snap-off end cover.
3. Before removing the EPROM from the sign, touch a grounded surface. This dissipates potentially damaging static electricity. Note: Remember to repeat this if you get interrupted before you remove the EPROM.
4. Remove the EPROM from its socket.
 - A. Find the EPROM located near the front of the exposed circuit board.
 - B. Place your thumb under the EPROM's top tab and your index finger under the EPROM's bottom tab.
 - C. Lift the EPROM out of the socket by pulling up with your thumb.
5. Install the new EPROM into the socket.
 - A. Insert the EPROM so that the tabs on the EPROM are aligned with the notches in the socket. (The top edge of the socket has one notch and the bottom edge has two notches; the top edge of the EPROM has one tab and the bottom edge has two tabs.)
 - B. Place your thumb on the EPROM, place your index finger on the back of the circuit board, and gently push down on the EPROM until it snaps into place.
6. Replace cover plate.
7. Connect power and data cables.

7000 SERIES RS-232 TO RS-485 JUMPER & EPROM CHANGE



JUMPER CHANGE

1. Unplug the sign from the electrical wall outlet and data cable.
Note which jack the cable is connected to.
2. Remove the end cap located on the right side. Use a #2 Phillips screw driver to remove the two screws that hold the end cap in place.
3. Locate RS-232-485 Jumper below EPROM.
4. The block jumper should connect the center pin to the pin on the right for RS-485 operation and the pin on the left for RS-232 operation.
5. Connect power and data cables.

EPROM CHANGE

1. Unplug the sign from the electrical wall outlet and data cable.
Note which jack the cable is connected to.
2. Remove the end cap located on the right side. Use a #2 Phillips screw driver to remove the two screws that hold the end cap in place.
3. Before removing the EPROM from the sign, touch a grounded surface. This dissipates potentially damaging static electricity. Note: Remember to repeat this if you get interrupted before you remove the EPROM.
4. Remove the EPROM from its socket.
 - A. Find the EPROM located near the front of the exposed circuit board.
 - B. Place your thumb under the EPROM's top tab and your index finger under the EPROM's bottom tab.
 - C. Lift the EPROM out of the socket by pulling up with your thumb.
5. Install the new EPROM into the socket.
 - A. Insert the EPROM so that the tabs on the EPROM are aligned with the notches in the socket. (The top edge of the socket has one notch and the bottom edge has two notches; the top edge of the EPROM has one tab and the bottom edge has two tabs.)
 - B. Place your thumb on the EPROM, place your index finger on the back of the circuit board, and gently push down on the EPROM until it snaps into place.
6. Replace the end cap. Be sure that the screws are tight and the end cap is secure against the case.
7. Connect power and data cables.

RS-485 SERIAL CABLE SPECIFICATIONS

(P/N: C1-CC2S)

The network cable used to communicate with Spectrum Wallboards is a quality, UL listed communications cable. Category 5 cable is a suitable substitute.

Description:

- 22 AWG, single twisted pair with shield and drain wire
- Conductor: Stranded tinned copper
- Insulation: Color coded Polyethylene (red/black)
- Shield: Aluminum/Polyester tape, foil facing outward, 100% coverage
- Drain Wire: Stranded tinned copper
- Jacket: Gray PVC

Characteristics:

- Temperature Range: -20° C to +80° C
- Voltage: 300 volts
- Flammability: Passes UL~VW-1 flame test

It should be noted that this communications cable is intended FOR INDOOR USE ONLY.

Recommended Substitutes: Alpha #2402
Belden #8761

Note: RS-485 cable (C1-CC2S) is not included with the wallboards and may be ordered separately or sourced locally.

REMOTE KEYBOARD INSTRUCTIONS

The IR Keyboard (P/N: M2-IK055) is used for testing and diagnostics and will only be used when the Wallboards are being installed. Store the IR Keyboard in a safe place so that it can be utilized to trouble shoot the system should problems develop or to change the address at a later date.

To Clear Memory:

Press the Program Key - Program text file “A” appears

Press the Back Key until “Clear Memory” appears

Press the Advance Key - “Clear memory Y/N”

Press The Y Key to clear all memory

Disconnect electrical power from the board for 30 seconds.

Reconnect power to board.

*Note: On some Wallboards this function also resets the address.
If addressing is being used, reset the address as described below.*

If the character or function above the main key is desired, press and hold down the shift key.



To Run A Test Message

Press the Program Key.....Prog Txt File A appears

Press the Hold Key.....[HLD] appears

Type in TEST.....[HLD] TEST appears

Press the Run Key.....Run Y/N appears

Press The Y Key.....TEST will appear

A complete keyboard manual is not supplied because the keyboard is not to be used to create messages in an ACD application. The software in the ACD system controls the messages that appear on the wallboard during normal operation.

To Set the Address on a Wallboard

Press the Program Key.....Prog Txt File A appears

Press the Back Key until Set Address appears.....Set Address appears

Press the Advance KeySerial Address = 00 appears

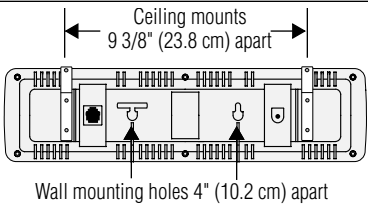
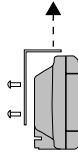
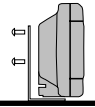
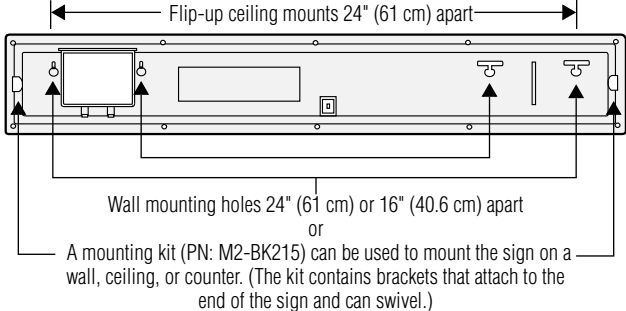
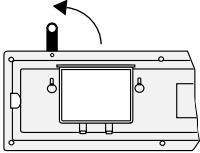
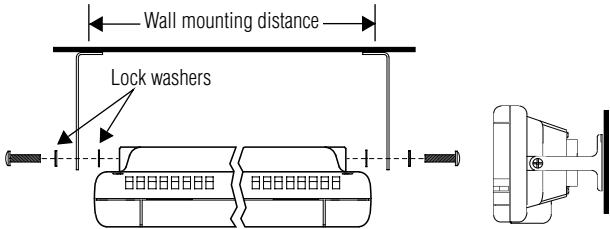

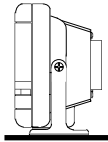
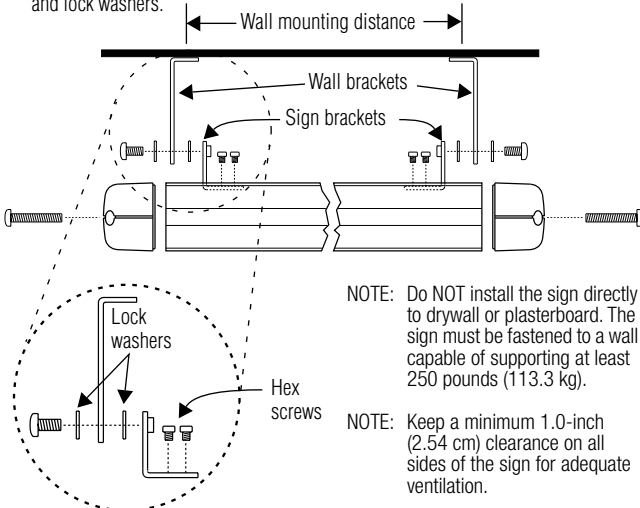
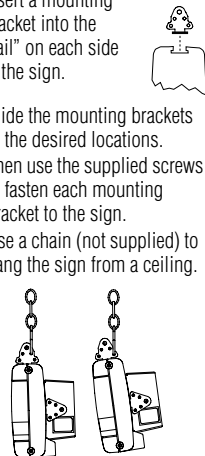
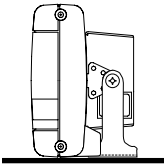
Set the Numerical Address* from 00 to 9900 to 99 appears

Press the Program Key to reset to the run modeProg Txt File A appears

Start/Restart ACD software or return to ACD reboot system, or disengage and re-engage serial port.

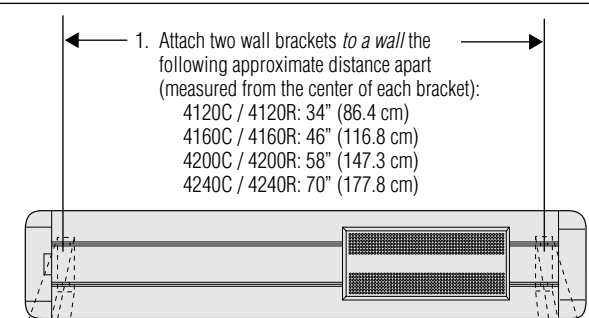
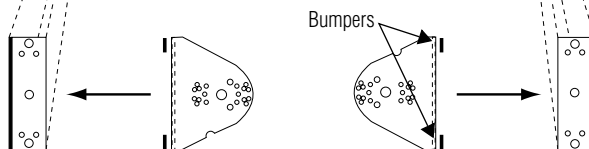
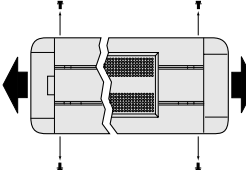
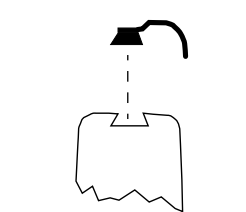
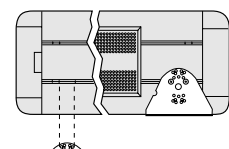
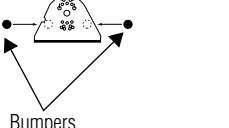
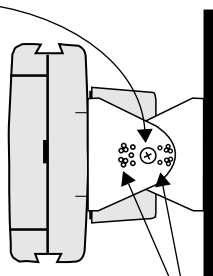
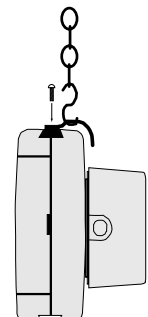
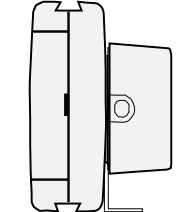
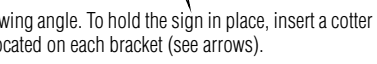
*An address identifies a specific location(s) which displays a particular message.

WALLBOARD MOUNTING INSTRUCTIONS

Model (weight)	Mounting instructions		
	Wall	Ceiling	Counter
Mini-Alert (1 lb 5 oz, 595.35 g)	 <p>Ceiling mounts 9 3/8" (23.8 cm) apart</p> <p>Wall mounting holes 4" (10.2 cm) apart</p>	 <p>The mounting bracket and screws are included.</p>	 <p>The mounting bracket and screws are included.</p>
215C (6.25 lb, 2.83 kg) 215R (6.25 lb, 2.83 kg)	 <p>Flip-up ceiling mounts 24" (61 cm) apart</p> <p>Wall mounting holes 24" (61 cm) or 16" (40.6 cm) apart or</p> <p>A mounting kit (PN: M2-BK215) can be used to mount the sign on a wall, ceiling, or counter. (The kit contains brackets that attach to the end of the sign and can swivel.)</p>	<p>The flip-up ceiling mounts will come out if the sign is turned over.</p> 	<p>The sign will stand up if placed on a counter. However, for greater stability use a mounting kit (PN: M2-BK215).</p>
714C (12.25 lbs, 5.6 kg)	<ol style="list-style-type: none"> Attach two wall brackets in the mounting kit (PN: M2-BK714C) to a wall 46 3/4" (118.7 cm) apart (measured from the center of each bracket). Attach the mounting brackets to the sign as shown.  <p>Wall mounting distance</p> <p>Lock washers</p>	<p>Using the mounting kit (PN: M2-BK714C) and a chain (not supplied in the kit), mount the sign from the ceiling as shown:</p> 	<p>The sign will stand up if placed on a counter. However, for greater stability use the mounting kit (PN: M2-BK714C):</p> 
320C (12.5 lbs, 5.7 kg) 330C (17 lbs, 7.7 kg)	<ol style="list-style-type: none"> Attach two wall brackets in the mounting kit (PN: M2-BK300) to a wall the following approximate distance apart (measured from the center of each bracket): 320C: 51 1/4" (130.2 cm) 330C: 78 3/4" (200 cm) Unscrew the two screws that secure each end cap to the sign. Remove the end caps. Slide the bracket into the channel on the back of the wallboard. Fasten the two sign brackets to the sign using the supplied hex screws. Connect the sign brackets to the wall brackets using the two supplied, large bolts and lock washers.  <p>Wall mounting distance</p> <p>Wall brackets</p> <p>Sign brackets</p> <p>Lock washers</p> <p>Hex screws</p> <p>NOTE: Do NOT install the sign directly to drywall or plasterboard. The sign must be fastened to a wall capable of supporting at least 250 pounds (113.3 kg).</p> <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p>	<ol style="list-style-type: none"> Remove the end cap from each side of the sign by unscrewing the two screws that hold each end cap to the sign. Insert a mounting bracket into the "rail" on each side of the sign. Slide the mounting brackets to the desired locations. Then use the supplied screws to fasten each mounting bracket to the sign. Use a chain (not supplied) to hang the sign from a ceiling.  <p>NOTE: Choose a chain and mounting system capable of supporting a minimum of 250 pounds (113.3 kg).</p> <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p>	<ol style="list-style-type: none"> Attach the two mounting brackets to the sign as described in the wall mounting instructions. Either rest the sign on the mounting brackets or fasten the brackets to the counter.  <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p>

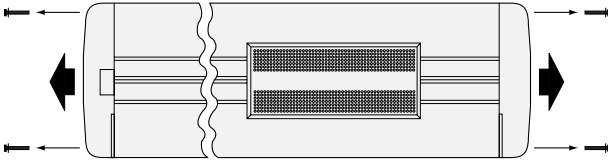
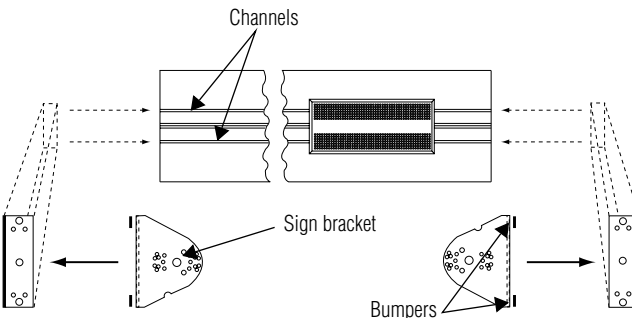
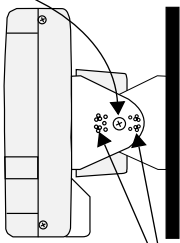
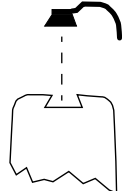
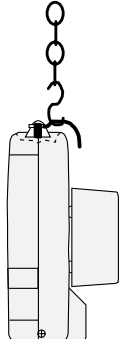
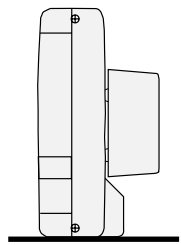
Note: Double sided, 3 and 4 sided brackets are available.

WALLBOARD MOUNTING INSTRUCTIONS

Model (weight)	Mounting instructions		
	Wall	Ceiling	Counter
4120C 4120R (18.5 lbs, 8.4 kg)	<p>1. Attach two wall brackets to a wall the following approximate distance apart (measured from the center of each bracket):</p> <p>4120C / 4120R: 34" (86.4 cm) 4160C / 4160R: 46" (116.8 cm) 4200C / 4200R: 58" (147.3 cm) 4240C / 4240R: 70" (177.8 cm)</p>  <p>2. Stick two rubber "bumpers" to the bottom of each sign bracket. The bumpers should end up <i>between</i> the sign bracket and the sign. Then use four screws to attach each sign bracket to the sign.</p> 	<p>1. Remove the end cap from each side of the sign by unscrewing the two screws that hold each end cap to the sign:</p>  <p>2. Insert a mounting bracket (shown below) into the "rail" on each side of the sign.</p> 	<p>1. Stick two rubber "bumpers" on each mounting bracket. The bumpers should end up <i>between</i> the bracket and the sign.</p>  <p>2. Attach each mounting bracket to the sign using two screws (supplied) per bracket:</p> 
4160C 4160R (24.5 lbs, 11.2 kg)	<p>3. Connect the sign brackets to the wall brackets using the two, large bolts supplied.</p> 	<p>3. Slide the mounting brackets to the desired locations. Then use the supplied screws to fasten each mounting bracket to the sign. Use a chain (not supplied) to hang the sign from a ceiling.</p> 	<p>3. Either rest the sign on the mounting brackets or fasten the brackets to the counter.</p> 
4200C 4200R (31 lbs, 14.1 kg)	<p>4. Tilt the sign to select a viewing angle. To hold the sign in place, insert a cotter pin into the small holes located on each bracket (see arrows).</p> 		
4240C 4240R (37.5 lbs, 17 kg)	<p>NOTE: Do NOT install the sign directly to drywall or plasterboard. The sign must be fastened to a wall capable of supporting at least 250 pounds (113.3 kg).</p> <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p> <p>Mounting Bracket (P/N: M2-BK4000)</p>	<p>NOTE: Choose a chain and mounting system capable of supporting a minimum of 250 pounds (113.3 kg).</p> <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p>	<p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p>

Note: Double sided, 3 and 4 sided brackets are available.

WALLBOARD MOUNTING INSTRUCTIONS

Model (weight)	Mounting instructions		
	Wall	Ceiling	Counter
7120C (20 lbs, 9 kg) 7160C (26 lbs, 11.8 kg) 7200C (32 lbs, 14.5 kg)	<p>1. Remove the end cap from each side of the sign by unscrewing the two screws that hold each end cap to the sign:</p>  <p>2. Stick two rubber "bumpers" to the bottom of each sign bracket. The bumpers should end up between the sign bracket and the sign.</p> <p>Place four screws through the <i>bottom</i> of each bracket. Then screw a nut onto each.</p> <p>Slide the screw heads on each bracket into the two "channels" on the sign.</p> <p>Position the brackets where you want them. Then tighten the screws using a 9/32" (7 mm) socket wrench.</p>  <p>3. Attach two brackets to a wall. The distance between these brackets will depend on how far apart you spaced the sign brackets.</p> <p>4. Connect the sign brackets to the wall brackets using the two, large bolts supplied.</p>  <p>5. Tilt the sign to select a viewing angle. To hold the sign in place, insert a cotter pin into the small holes located on each bracket (see arrows).</p> <p>NOTE: Do NOT install the sign directly to drywall or plasterboard. The sign must be fastened to a wall capable of supporting at least 250 pounds (113.3 kg).</p> <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p> <p>Mounting Bracket (PN: M2-BK7000)</p>	<p>1. Remove the end cap from each side of the sign by unscrewing the two screws that hold each end cap to the sign (see the wall mounting instructions).</p> <p>2. Insert a mounting bracket (shown below) into the "rail" on each side of the sign.</p>  <p>3. Slide the mounting brackets to the desired locations. Then use the supplied screws to fasten each mounting bracket to the sign. Use a chain (not supplied) to hang the sign from a ceiling.</p>  <p>NOTE: Choose a chain and mounting system capable of supporting a minimum of 250 pounds (113.3 kg).</p> <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p>	<p>The sign will stand up if placed on a counter, as a temporary installation.</p>  <p>NOTE: Keep a minimum 1.0-inch (2.54 cm) clearance on all sides of the sign for adequate ventilation.</p> <p>A permanent counter mount bracket is not included in the M2-BK 7000 kit. If the sign is to be permanently mounted to a counter, source an "L" bracket locally and attach from the wallboard to the counter.</p>

Note: Double sided, 3 and 4 sided brackets are available.

FIELD TECH TROUBLE SHOOTING TIPS

1. Verify that you have power connected to the wallboard. In the U.S., the wallboards require a standard 120VAC wall outlet. Most of the wallboards do not use over 1 amp of power.
2. Verify that the address on the wallboard has been set with the corresponding address in the ACD software. You may need to contact your ACD software manufacturer for instructions on sending to a particular address. We have found that some systems do a "broadcast all", so setting the address on the wallboard is not necessary. However, it is best to have the address on the wallboard set to a number other than 00. The infra-red hand held remote control (M2-IK055) will be necessary for setting the address. Instructions for setting the address are found on the back of the remote and are located in this workbook.

IMPORTANT INFO

Please do not attempt to use the infra-red remote while data cables or end of line terminator is plugged into the RJ11 connection on the back of the wallboard. Only power should be turned on and nothing connected to the RJ11 connections on the wallboards. Using the remote while data cables or the end of line terminator is plugged in may result in the wallboard seizing or the wallboard not responding to the remote at all. If the wallboard seizes, unplug from power, wait 15 seconds and then power back up.

3. Verify that the RJ11 cable is a 4 conductor straight through (not flipped telephone cable). Spectrum provides a 7' RJ11 cord with each wallboard that has been tested and inspected. The wallboards are designed to use the two outside pins, 1 and 4 using 4 conductor RJ11. Using a 6 conductor RJ11 is not recommended. Pinouts for the straight through RJ11 are shown on the bottom side of the converter box (M2-CV101) and are located in this workbook.
4. Verify that the Modular Junction Box (M2-J104) is wired correctly. Using the green screw down terminals on the back of the converter box (M2-CV101), it is recommended to use Category 5 cable or at minimum a 22 gauge 3 conductor. RS485 (-) **Red** is connected to the **yellow** wire in the Modular Junction Box. RS485 (+) **Black** is connected to the **black** wire in the Modular Junction Box. If you decide to use the **shield**, it is connected to the **red** wire in the Modular Junction Box. You can use the RJ11 connection on the back of the converter box and run the cable to the Modular Junction box. The pinout for the RJ11 is located on the bottom of the converter box and is located in this workbook.
5. Verify that the RXD light on the converter box is flickering on data transmission. No RXD light flickering is a sign that nothing is being sent out of the comport or that the RS232 data cable has not been wired correctly. Attached in the back of this workbook are the DB9 to DB9 (C4-C909A) and the DB9 to DB25 (C4-C9MS24MN) pinouts.
6. Verify that the TXD light on the converter box is not illuminated. The TXD light illuminated is a sign of crossed or shorted RS485 cable. If you remove the RS485 cable from the converter box and the TXD light does not go away, then you may have a bad converter box and Spectrum message center service will need to be contacted.
7. Verify that the wallboards are cabled together in a daisy chain drop configuration. Home run or star configuration data cable runs are not supported by our system. The data cable should be run from the converter box, to the first modular junction box, and then to the next modular junction box, then to the next, and so on. When running the data cable, please make sure that the cable is not run near any lighting ballasts or electrical lines. These may cause electrical interference. The converter box is designed to handle up to 32 wallboards at a maximum length of 4000'. Adding a repeater box in line of the data cable can be used to extend the length of the data cable past its 4000' maximum recommended length.
8. **After the wallboards are properly cabled in a daisy chain drop network, the address is set properly for each wallboard, and power to the wallboards is verified, then reboot the software that interfaces with the wallboards. Rebooting the software sends out the memory configuration to the wallboards that allows them to display the information.**

If after all these steps have been verified and your problem still persists, call Spectrum at 1-800-392-5050 and ask for message center service. Please have the model and serial number of the wallboard ready. The version eeprom* in the wallboard and type of ACD system are also necessary.

**Eeprom version is written on the eeprom itself and instructions for locating the eeprom are shown on pages 11-14.*



10048 Easthaven Blvd. • Houston, TX 77075 • 713-944-6200 • Fax 713-944-1290 • 800-392-5050
E-mail: info@specorp.com • Website: <http://www.specorp.com>

P/N: M2-SIM001.6