Motor Coach & Minibus Signs
SYSTEMS - SERIES 35

USER MANUAL

Axion Ref. No.3041750
(Revision --)

Passenger Information System for Mass Transit Applications
Système d'information aux passagers pour le transport en commun

Motor Coach & Minibus Signs Systems - Series 35

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2012

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List of revisions

REVISION	DATE	DESCRIPTION OF CHANGES
--	11 June 2012	Original

FOR THOSE WHO PLAY WITH LIVE WIRES...

REASONABLE PRECAUTION HAS BEEN OBSERVED IN DESIGN
TO SAFEGUARD OPERATING PERSONNEL

POWER MUST BE SWITCHED OFF
PRIOR TO SERVICING EQUIPMENT

AND

GREAT CARE MUST BE TAKEN
WHEN MAKING ADJUSTMENTS...

SWITCH OFF... PLAY SAFE !!!

Caution!

Skilled and authorized personnel only must perform maintenance and repairs. The nature of these repairs shall not exceed that which is described within this manual. The manufacturer must perform any repair not identified in this manual. Failure to respect these rules automatically voids the warranty.

CAUTION
ELECTROSTATIC
SENSITIVE
DEVICES
DO NOT OPEN OR HANDLE
WITHOUT WEARING
STATIC PROTECTION DEVICES

Caution!
(Static Electricity)

Your Destination Signs contain CMOS electronic components that are highly sensitive to static electricity. To avoid damage, follow these simple rules:

1. Do not hold system components by their connector units.
2. Wear wrists-trap grounded to the vehicle frame.
3. Do not work near plastic, vinyl or non-conducting Styrofoam®. These materials tend to create static electricity.

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SECTION 1

1. INTRODUCTION

1.1. GENERAL

AXION TECHNOLOGIES LTD., has developed a new generation of custom sizes signs based on high intensity light emitting diodes (LED) for the urban bus (motor coach) and minibuses. This sign system is designed to increase satisfaction of the public transit users and meet the particular needs and requirements of the Transit Sector such as the ADA regulations.

1.2. FEATURES

This section describes each component of the sign system.

1.2.1. CONTROL CONSOLE

The Control Console is the control unit (master) of the sign network. It is the interface between the user and the sign system. It lets the operator select the route number and other messages to display. It also ensures the integrity of the communication link between all components of the system. An error indicator appears on the LCD in the event of a communication or component failure. The control console menus are used to configure the system and display some diagnostics.

1.2.2. DESTINATION SIGN

The design concept of the destination signs series 35 gives you the opportunity for various configurations. They are generally used to display messages such as the route number and destination as well as public interest, "yield", and emergency messages in a fixed or multiline mode. You also have the possibility to add special effects to your display such as:

- Horizontal and vertical scrolling
- Freezing a part of the screen
- Flashing
- Reverse video
- Pictograms.

1.3. DATABASE TRANSFER

The database is programmed with a computer (IBM PC or compatible) using the "Data Transit" software developed and sold by AXION TECHNOLOGIES LTD. Each message is assigned a code the operator enters on the Control Console for the related information to be displayed.

1.3.1. DATA TRANSIT SOFTWARE

DataTransit is the software interface for the sign systems. It is used to prepare various messages to be displayed and manage the message database.

1.3.2. TRANSFER UNIT (TU)

The transfer of the database from the computer to the Control Console is performed using one of the following transfer methods:

Method	Means
Portable Transfer Unit (PTU) and serial port	RS-232 communication port
2.0 USB Port	USB key
802.11 b/g WI-FI module	802.11 b/g WI-FI router

Table 1: Database Transfer Methods & Means

1.4. DISTRESS SIGNAL

The distress signal option is a valuable safety feature. The distress signal is activated using a switch usually installed near the bus driver and out of sight of the passengers. It is connected directly to the Control Console by a single-wire cable.

The operator simply has to activate the switch and all the Destination Signs of the system display the programmed distress message, for example, "HELP CALL 911". This prompts passers-by to call for help on behalf of the operator and allows emergency services to easily identify the vehicle needing assistance.

It is possible to connect the input signal of the distress switch to positive or ground of the bus.

1.5. "YIELD" SIGNAL

The YIELD option is a signal the operator can activate. This signal displays a message to the vehicles following the bus requesting to give way to the bus. The yield signal is activated using a switch usually located near the operator. It is connected directly to the Control Console by a single-wire cable.

The operator simply has to activate the switch to display the "YIELD" message on the Rear sign for a configurable minimum delay or as long as the signal is activated.

It is possible to connect the input signal of the YIELD switch to positive or ground of the bus.

SECTION 2

2. INSTALLATION

2.1. MECHANICAL INSTALLATION

This section explains how to install the components of the sign system. ***Failure to adhere to the proper installation procedures may translate into major repair costs due to breakage or failures and voids the warranty***. Only skilled technicians should install this system. All the precautions mentioned in this manual must be followed and all safety regulations of the vehicle OEM and/or your Transit Authority must be adhered to.

2.1.1. CONTROL CONSOLE INSTALLATION

2.1.1.1. EXTERNAL CONTROL CONSOLE INSTALLATION

Being the interface between the operator and the sign system, the Control Console must be positioned in a location easily accessible and readable without creating a nuisance for the operator. The Control Console has been designed for recessed installation. It is only necessary to cut a hole on a flat surface at the selected location (See Section 6.7**)**. Follow all precautionary measures mentioned in this manual and adhere to all safety regulations of the vehicle OEM and/or your Transit Authority.

2.1.1.2. INTEGRATED CONTROL CONSOLE INSTALLATION

Since this Control Console is integrated into the rear of the front display which is installed in the front of the bus located above the driver, the console is easily accessible and readable.

2.1.2. INTERIOR SIGNS INSTALLATION

The signs must be installed as per the following recommendations depending on their location:

- The Front Destination Sign is located in the compartment above the operator cab and facing outside.
- The Curb Side Sign is located inside the vehicle, on the first curb side window (right side of the vehicle), facing outside, and adjacent to the door.
- The Inside Rear Sign is installed on the back window, facing outside.

No matter the sign, it needs to be positioned as close as possible to the compartment window (between 6 mm (¼") and 50 mm (2") for optimum performance. It may be vertically positioned or inclined by 10° maximum towards the ground. It must remain accessible from inside of the vehicle for maintenance. When installing, ensure:

- That display messages are fully visible from outside of the vehicle.
- To use mounting brackets matching those recommended for installation in a specific type of vehicle.
- To follow all precautionary measures mentioned in this manual and to adhere to all safety regulations of the vehicle OEM and/or your Transit Authority.

2.1.3. OUTSIDE REAR SIGN INSTALLATION

The Outside Rear Sign is mounted on the back panel of the vehicle. The sign must be recessed into the back panel (See Section 6.8). Simply cut a hole on a flat surface of the back panel to install it. When installing, ensure:

- To use mounting brackets matching those recommended for installation in a specific type of vehicle.

- To follow all precautionary measures mentioned in this manual and to adhere to all safety regulations of the vehicle OEM and/or your Transit Authority.

2.1.4. DISTRESS SIGNAL SWITCH INSTALLATION

The momentary switch used to activate the Distress Signal has to be installed near the bus driver and out of sight of the passengers. The type of switch and its final location are left to the manufacturer and/or the Transit Authority's preference.

2.1.5. YIELD SWITCH INSTALLATION

The momentary switch used to activate the YIELD signal has to be installed near the bus driver. The type of switch and its final location are left to the manufacturer and/or the Transit Authority's preference.

2.2. ELECTRICAL INTERCONNECTION

This section describes the procedure to interconnect all components of the sign system. *Failure to adhere to this procedure may translate into major repair costs due to breakage or failures and voids the warranty*. Follow all the precautions mentioned in this manual and adhere to all safety regulations of the vehicle OEM and/or your Transit Authority.

NOTE
Ensure to *TURN OFF* the bus power supply to the system
prior to connecting or disconnecting components.

The system operates within a power range of 9 Vdc to 36 Vdc.

Figure 1 is a simplified diagram showing how the system components are interconnected. . It offers a bird's-eye view of their respective locations on the vehicle.
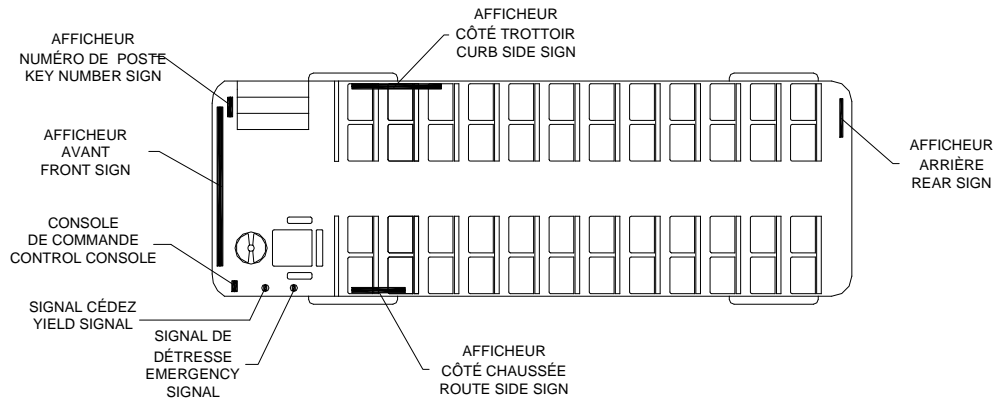
Figure 1: System Components Interconnection and Location

Figure 28: Electrical Interconnection in Section 6.1 shows a detailed view of the system components interconnection. It shows the types of connectors and cables used including a definition for each of the signals of these different cables.

The following paragraphs describe in detail each of the different cables used to interconnect system components.

2.2.1. MAIN POWER CABLE

The main power cable is made up of three (3) wires:

- BATT+
- GND
- IGN
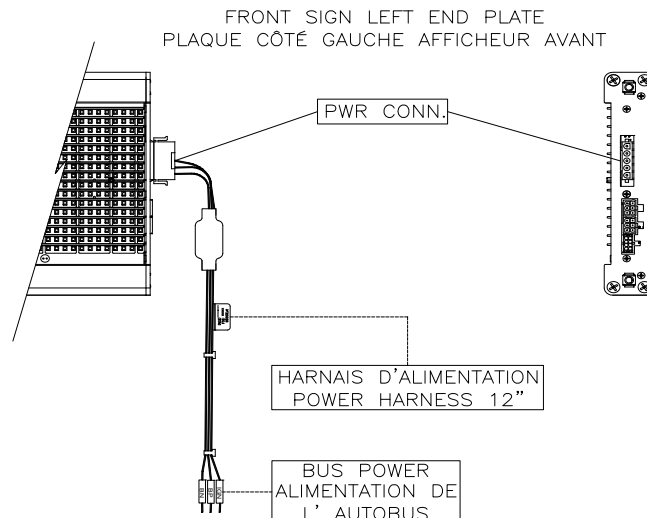
Figure 2: Main Power Cable Connection

NOTE
Main power cable is supplied by the bus manufacturer. However, the power cable must meet the specifications in the following paragraphs.

2.2.1.1. BATT+ Wire

The BATT+ wire is typically connected to the battery through a circuit breaker or fuse capable of withstanding the power requirements of your system configuration (see Table 5: Fuse Value According to Sign Model, Section 7.2) This power source is always live on the system. The BATT+ wire is connected to the power connector located on the side of the Front Destination Sign. The minimum rating of this wire is 16 AWG.

2.2.1.2. GND Wire

The GND wire must be connected to the vehicle mass. The GND wire is connected to the the power connector located on the side of the Front Destination Sign. The minimum rating of this wire is 16 AWG.

2.2.1.3. IGN Wire

The IGN wire must be connected to a 9-36 Vdc power source that is activated when the Master Coach Run Switch of the vehicle is turned on. The power signal is supplied by the Master Coach Run Switch in all of its positions except for "OFF" and commands the Control Console to turn the Electronic Destination Sign System on. The IGN wire is connected to the power connector located on the side of the Front Destination Sign. The minimum rating of this wire is 18 AWG.

2.2.2. CONTROL CONSOLE POWER CABLE (EXTERNAL CONSOLE ONLY)

The Control Console power cable connects the Console to the sign junction and other bus communication networks, if required. Also, this cable can connect Distress Signal switch to the Control Console.

The Control Console power cable connects as follows:

- Connect one end of the Control Console power cable (8-pin connector) to the **CONSOLE** connector (8-pin connector) located on the side plate of the Front Destination Sign. (See Figure 3)

- Connect the other end of the Control Console power cable (12-pin connector) to the corresponding connector located on the Control Console. (See Figure 3).

FRONT SIGN LEFT END PLATE
PLAQUE CÔTÉ GAUCHE AFFICHEUR AVANT
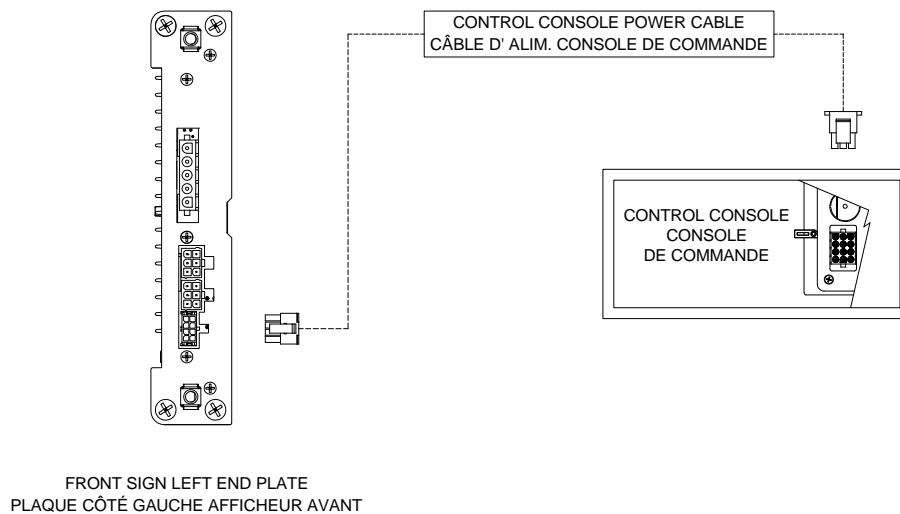
Figure 3: Control Console Cable Connection

- Connect the distress signal switch wire to the bus distress switch. (See Figure 4).
  - If the Control Console power cable used is the one shown in Section 6.3, the power signal supplied by the distress switch must be a GND signal.
  - If the Control Console power cable used has an inverter, the power signal supplied by the distress switch must be a 9-36 Vdc signal.
  - The distress switch is supplied and installed by the bus manufacturer.
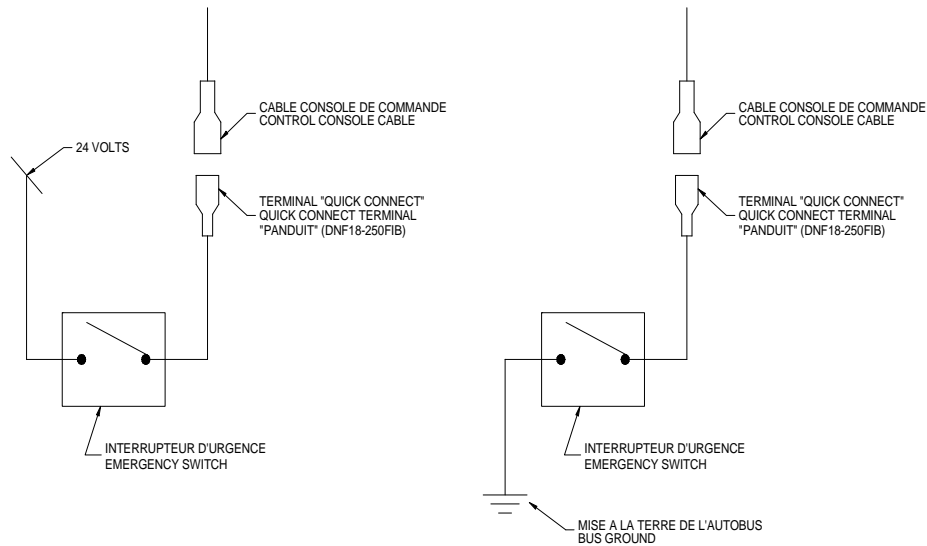
Figure 4: Distress Switch Connection

- Connect the yield signal switch wire to the bus distress switch. (See Figure 5).
  - If the Control Console power cable used is the one shown in Section 6.3, the power signal supplied by the yield switch must be a GND signal.
  - If the Control Console power cable used has an inverter, the power signal supplied by the yield switch must be a 9-36 Vdc signal.
  - The yield switch is supplied and installed by the bus manufacturer.
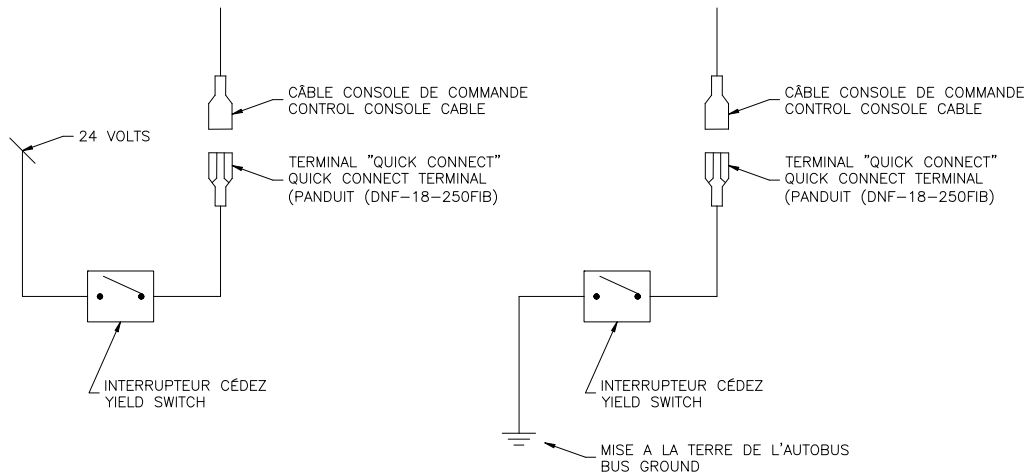
Figure 5: Yield Switch Connection

- If the cable used includes J1708-type connectors and/or RS-232-type connectors, contact Axion Technologies Ltd., Customer Service to get more information on how to connect these two connectors.

2.2.3. 802.11 b/g WI-FI MODULE ANTENNA CABLE FOR THE CONTROL CONSOLE

If the control console has a 802.11 b/g WI-FI module, secure the antenna cable to the SMA-type antenna connector (SMA female) located on the back plate of the console.
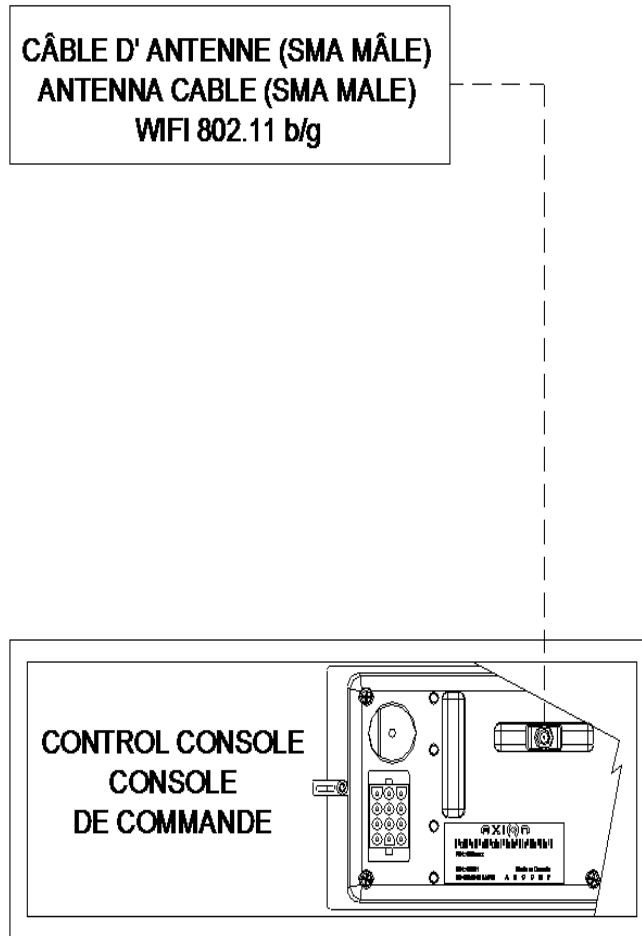
Figure 6: Wi-Fi Module Antenna Cable Connection

2.2.4.   CURB SIDE SIGN POWER CABLE

The Curb Side Sign power cable connects the sign to the Front Sign junction. The power cable connects as follows:

- Connect on end of the power cable (6-pin connector) to the **CURB SIDE SIGN** connector (6-pin connector) located on the side plate of the Front Destination Sign. (See Figure 7)

- Connect the other end of the power cable (6-pin connector) to the connector located on the side plate of the Curb Side Sign.
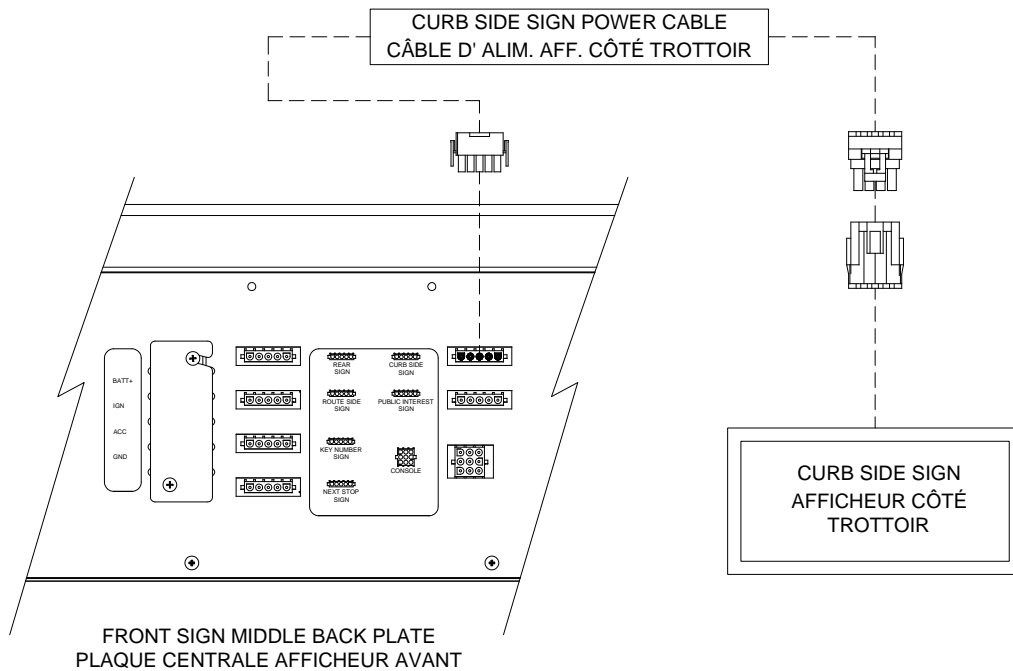
Figure 7: Curb Side Sign Cable Connection

2.2.5. REAR SIGN POWER CABLE

The Rear Sign power cable connects the sign to the Front Sign junction. The power cable connects as follows:

- Connect one end of the power cable (6-pin connector) to the **REAR SIGN** connector (6-pin connector) located on side plate of the Front Destination Sign (See Figure 8).

- Connect the other end of the power cable (6-pin connector) to the corresponding connector of the Rear Sign.
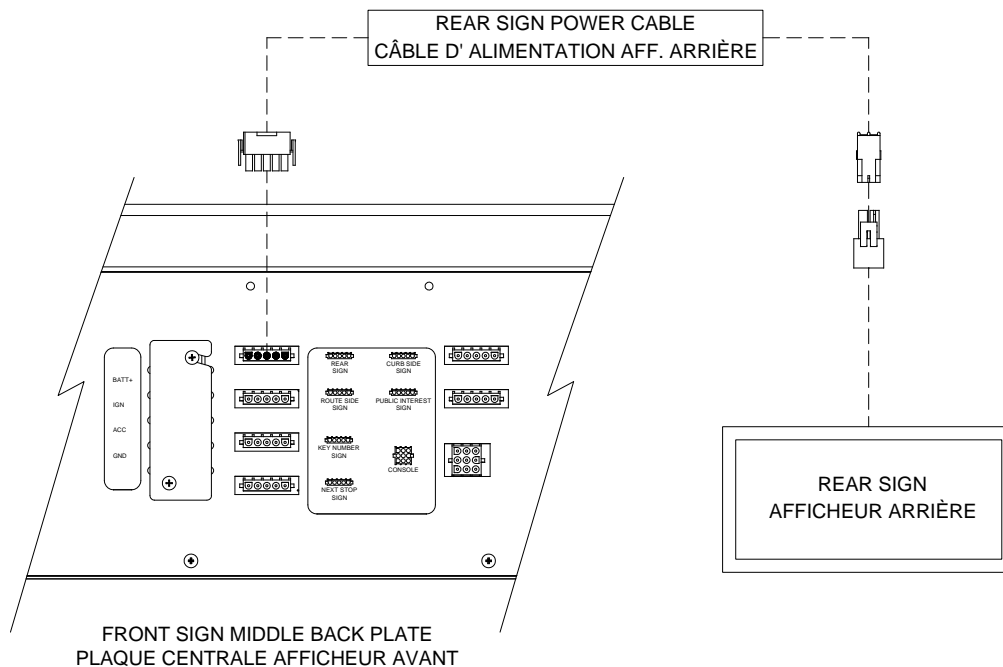
Figure 8: Rear Sign Cable Connection

2.3. INSTALLATION FINAL CHECKS

Ensure that all components of the sign system are properly attached mechanically and well secured to the bus structure. They should not interfere with the other systems of the vehicle nor should they be damaged by them. Close all access panels when finished.

2.4. POST-INSTALLATION FUNCTIONALITY TEST

This section presents the information required to start up the sign system and check the functionality of each of its components.

2.4.1. CONTROL CONSOLE CONFIGURATION

The configuration of the Control Console must correspond to that of the installed sign system. Turn on the Control Console and verify that the LCD configuration corresponds to that of the system installed on the vehicle. Refer to Section 4.1.2 to find the configuration code interpretation. Enter Menu 09 of the Control Console (Section 4.1.8) also displays the

configuration. If the configuration does not match, you must reconfigure the network to be functional (Section 4.1.8, Menu 1).

2.4.2.   TEST MESSAGE DISPLAY

Enter Menu 12 of the Control Console (Section 4.1.8) and select test pattern number 2 (Vertical lines) to activate LED test mode. Each sign displays vertical lines.

2.4.3.   PHOTOSENSOR LIGHT INTENSITY CONTROL

Enter Menu 15 of the Control Console (Section 4.1.8). Each sign displays a number corresponding to its current intensity level. Check each sign to see if it is operational by blocking or allowing light to the sensor. The Destination Sign decreases/increases light intensity accordingly. Otherwise, refer to Section 5.1.3 to find the cause.

2.4.4.   OFF DELAY FUNCTIONALITY TEST

Check OFF delay efficiency. The factory programmed value is one (1) minute. Follow the following steps:

- Turn off the Master Run Switch of the bus.
- Wait for one (1) minute to confirm that the sign system turns off.

2.4.5.   EMERGENCY SWITCH TEST (IF INSTALLED)

Check Emergency Switch efficiency (If installed). Turn on Emergency Switch and check that signs display the distress signal. Deactivate emergency mode by entering "00" on the Control Console keypad.

If you have forgotten the password allowing to deactivate the emergency mode, you can enter the hardcoded value "95" any time.

2.4.6.   YIELD SWITCH TEST (IF INSTALLED)

Check Yield Switch efficiency (If installed). Turn on momentarily Yield Switch and check that Rear sign displays the YIELD message for at least 12 seconds.

SECTION 3

3. MAINTENANCE

This section provides the information required for the proper maintenance of your sign system. We strongly recommend that you keep written records of every fault and repair. Note, on each occasion, the serial number of the defective assembly (ID plate on back of each assembly).

Your written records will become a good fault finding tool for future troubleshooting.

3.1. TEST EQUIPMENT

With the exception of the database transfers to a PTU or USB key requiring a PC, no special test equipment is needed to perform maintenance on the system other than the tools usually found at a technician's bench.

3.2. CLEANING

3.2.1. SIGN CLEANING

> ⚠️
> ## CAUTION!
> Do not use highly concentrated solvents to clean the signs !

The different components of the sign system can be cleaned with a moist towel. We recommend the use of a mild soap for the casing and a domestic glass cleaner for the acrylic window of the outside Rear Sign. Do not use highly concentrated solvents that would damage the acrylic window.

3.2.2. FUSE REPLACEMENT

- Turn off sign power supply.
- Open back panel of the Front Destination Sign.
- Locate the faulty fuse and replace it with a new one of the same specifications. See Figure 9.
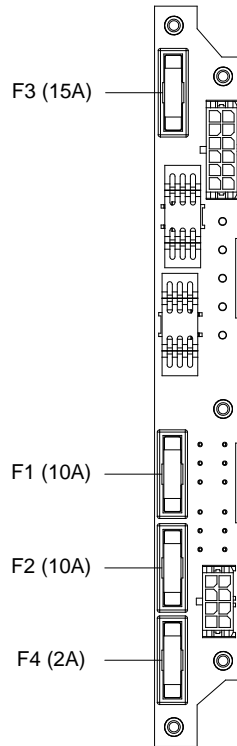
FUSES ON JUNCTION BOARD
FRONT SIGN LEFT END PLATE
FUSIBLES SUR CARTE JONCTION
PLAQUE CÔTÉ GAUCHE AFFICHEUR AVANT
Figure 9: Fuse Definitions

NOTE
Refer to Table 5 to find the required fuse for each type of sign.

⚠️

CAUTION!

Replacing a fuse with an inadequate or higher-rating
unit automatically voids the warranty

SECTION 4

4. SIGN SYSTEM OPERATION

The use of the sign systems is very simple. This section presents the various available functions of the sign system.

4.1. USE OF THE CONTROL CONSOLE

4.1.1. INTRODUCTION TO THE USER INTERFACE

Management of sign system is performed through the Control Console user interface. The following figure and table show the Control Console user interface and the definitions of its keypad.
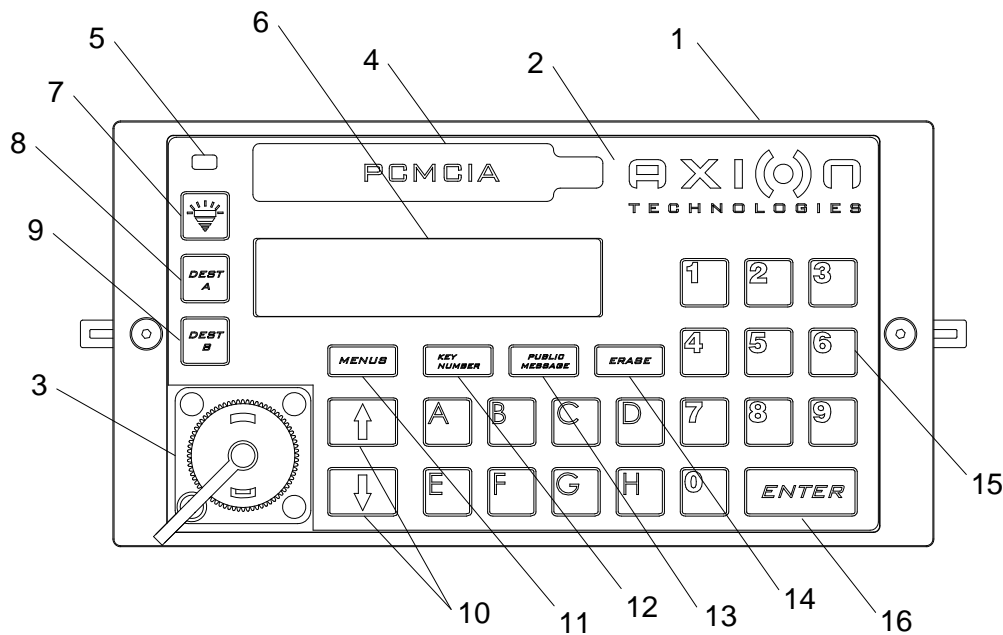
Figure 10: Keypad Definition

No.	Description	No.	Description
1	Control Console	9	DEST "B" programming key
2	Keyboard	10	Cursor up /Cursor down keys
3	PTU programming connector (not included in the integrated console)	11	Menu key
4	2.0 USB connector	12	Key Number Sign key
5	Status LED indicator	13	Public Interest Message key
6	LCD display	14	Last entry delete key
7	"Backlight" key	15	Numeric and alphanumeric keys (0-9, A-H)
8	DEST "A" programming key	16	"Enter" key

Table 2: User Interface Definition

4.1.2. STARTUP OF THE CONTROL CONSOLE

At startup, the Control Console displays different messages allowing the user to check the Control Console configuration. The first message to be displayed is the company name followed by the number of the chosen option at the time you bought your Control Console. This number must match the number at the back of the Control Console and/or the number of the option chosen at the time of purchase. Otherwise, contact AXION TECHNOLOGIES LTD., Customer Service.

The second message to be displayed is the sign network configuration programmed in the Control Console.

The Control Console must be configured properly to have an operational sign system. The Control Console is delivered pre-configured. To verify that the configuration corresponds to that of your system, look carefully at the LCD on your Control Console to see if the configuration displayed at power-up corresponds to that installed on the vehicle.

The following figure shows an example of configuration displayed on the LCD.
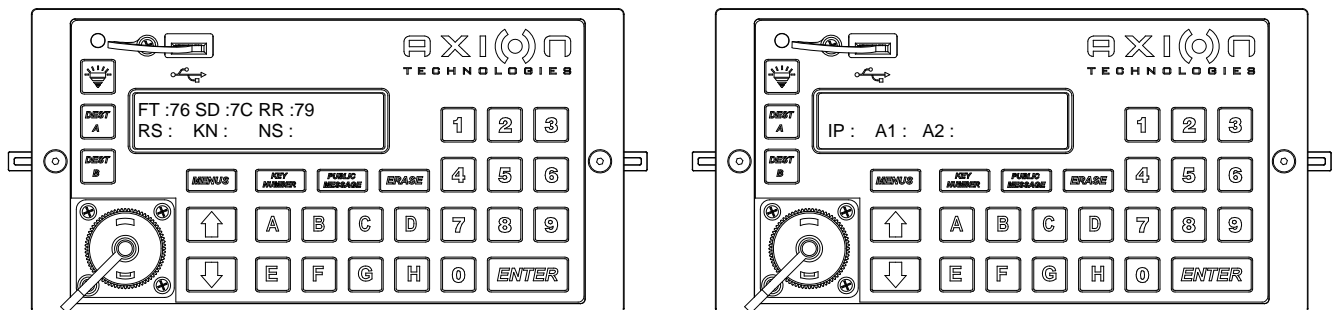
Figure 11: Example of Network Configuration

The above example corresponds to the following configuration:

- FT :76   -->   Front Sign (FT) 16x160, 1-LED
- SD :7C   -->   Curb Side Sign (SD) 8x96, 1-LED
- RR :79   -->   Rear Sign (RR) 16x48, 1-LED

If there are no IP or A1 or A2 signs, the second figure does not display at startup.

Refer to Section 7.1 to find the sign identification code.

If the displayed configuration matches that installed on the bus, the sign system is ready to operate. Otherwise, you must reconfigure the Console. Refer to Section 4.1.8 for specific instructions.

4.1.3. ENTERING A ROUTE

- Consult your Transit Authority code list.
- Using the alphanumeric keyboard of the Control Console, select and enter the code for the route to be displayed.
- Press ENTER to validate your choice.
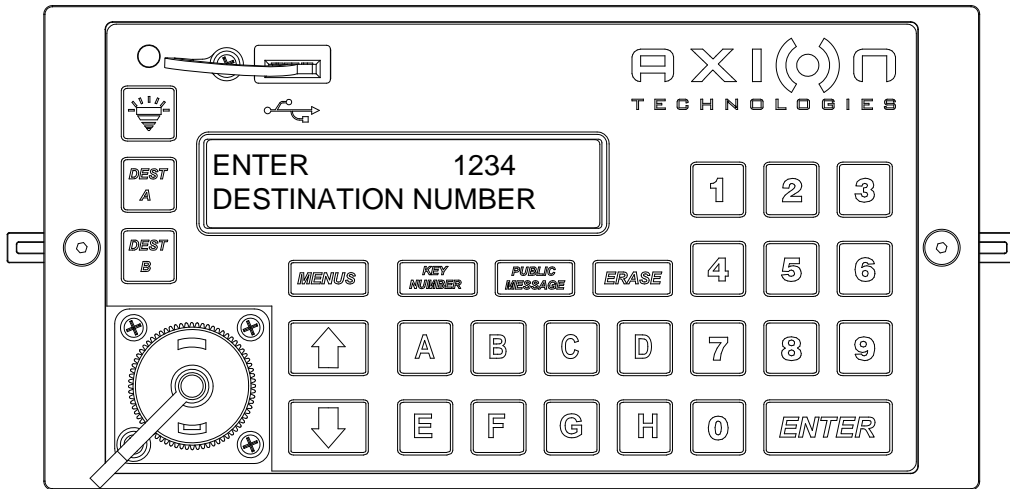
Figure 12: Entering a Route (Example)

When the route is entered, the Control Console LCD displays the following information:

● Route number is displayed in the upper left corner of the LCD.

● Route content (message) is displayed on the second line of the LCD. If this is a multiline route, the lines display alternately depending on the time interval set at database programming.
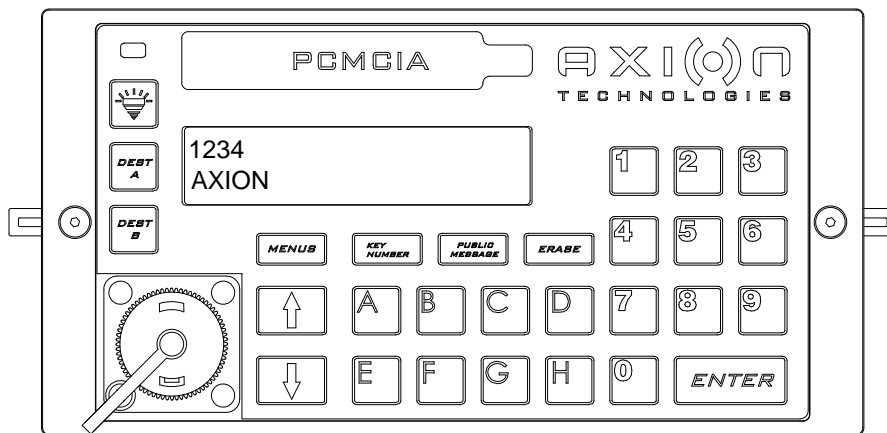
Figure 13: Route Display on the LCD (Example)

NOTE
Verify that all of the signs display the correct information.

4.1.4.   ENTERING A PUBLIC MESSAGE

- Consult your Transit Authority code list for the public service announcement to be displayed.

- Press the Public Message key button on the Control Console keypad.

- Using the Control Console alphanumeric keypad, select and enter the code for the public message to be added to the route displayed by your signs. Depending on the option chosen (See Section 4.1.8), the entering of a public message number may be protected by a password. When the console leaves the manufacture, this option is deactivated. On the other hand, if the password is required and you have forgotten it, you can enter the hardcoded value "9595".

- Press ENTER to confirm your choice.
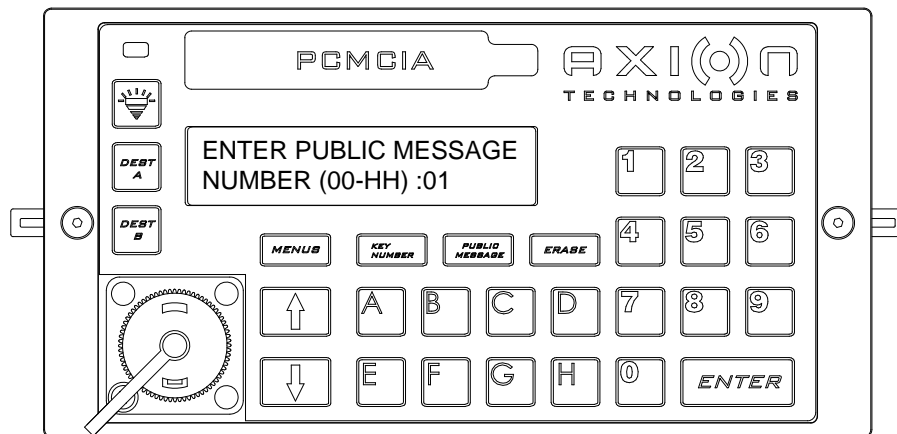
Figure 14: Entering a Public Message (Example)

When the message is entered, the Control Console LCD displays the following information:

- Route number and public service announcement number are displayed in the upper left corner of the LCD.

- Route content (message) and public service announcement display alternately on the second line. If this is a multiline route and/or public service announcement, the lines display alternately depending on the time interval set at database programming.
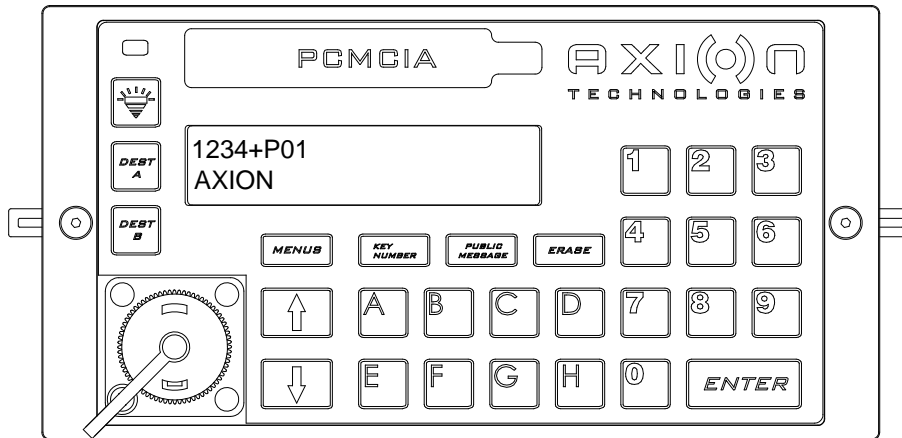
Figure 15: Displaying a Public Service Announcement on the LCD (Example)

NOTE
Verify that all of the signs display the correct information.

- To deactivate the display of the public service announcement, follow the above steps and enter "00" as public message number.

4.1.5.   PROGRAM AND RECALL ROUTE USING THE DEST A and DEST B KEYBUTTONS

"DEST A" and "DEST B" keys allow storage of two route numbers. When programmed, these routes may be recalled by pressing "DEST A" and DEST B" keys. To program, proceed as follows:

- Using the Control Console alphanumeric keypad, select and enter the code for the route to be associated with the DEST A or DEST B key buttons.

- Press the DEST A or DEST B key buttons to confirm your choice.

- To recall the route associated with DEST A or DEST B, simply press the DEST A or DEST B key buttons on the Control Console to bring up its associated route number.

NOTE
Some Control Consoles are preprogrammed to execute an automatic "ENTER"
when pressing a letter or following the entering of the 4th digit of the route
number. Therefore, to program the route number of these consoles
using the DEST A and DEST B key buttons, do not enter a four-digit route number
or a route number including a letter.

4.1.6.   USING THE BACKLIGHT KEYBUTTON

The Backlight key button sets the intensify level of the Control Console LCD. There are three intensity levels. To set the level, press successively the Backlight key button until the desired intensity level is obtained.

4.1.7. USING THE ERASE KEYBUTTON

The ERASE key button deletes or cancels the last entry on the Control Console.

For the duration of the start-up of the bus, the "ERASE" key can be pressed to bypass: the reading of the Yield switch, the reading of the emergency switch, and the automatic route function.

4.1.8. USING THE FUNCTIONS AVAILABLE THROUGH THE MENUS KEYBUTTON

The Control Console has several functions which can be set or selected using the MENUS key button. Use the "⇧" or "⇩" key buttons to scroll down and up the menus or enter the menu number on the numeric keypad. Activation of the menu function is protected by a password. This password is factory programmed "1234" as default value. It can be modified at any time.

If you have forgotten the password giving access to the menus of the Control Console, you can enter the hardcoded value "9595" any time.
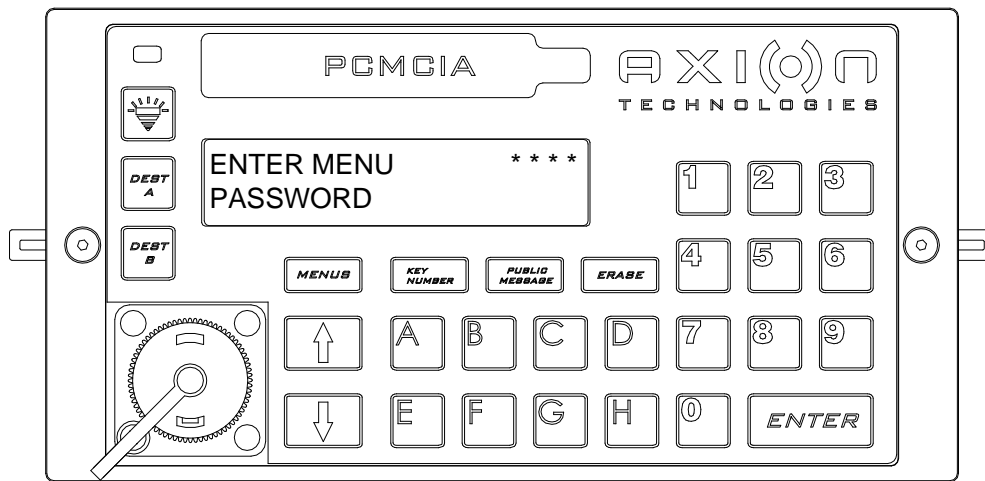
Figure 16: Entering the Menus Password

When the password is confirmed, you can access the menus. The following table shows the available menus.

Menu No.	Use	Action
1	Network Configuration	Automatically adds or subtracts a component to sign system or reinitializes network.
	1. Reinitialize	Reinitializes network.
	2. Reconfigure	Reconfigures network using signs detected by the Control Console.
2	Off Delay	Sign system remains "ON" for a programmed period of time when the vehicle is stopped and ignition has been turned "OFF". For no delay, set delay to "00" minutes.
	Step 1	Display "off" delay currently programmed for a few seconds.
	Step 2	Enter new "off" delay (00 to 99 minutes) (Always enter two digits).
3	Menu Password	Password programming giving access to menus on Control Console.
	Step 1	Enter existing 4-digit and/or 4-letter password (Factory programmed value: "1234"). The hardcoded "9595" replaces default/personal password at all times.
	Step 2	Enter new 4-digit and/or 4-letter password.
4	Distress Signal Password	Password programming allowing to deactivate distress message already displayed.
	Step 1	Enter existing 2-digit and/or 2-letter password (Factory programmed value: "00"). The hardcoded "95" replaces the personal or default "00" code at all times.
	Step 2	Enter new 2-digit and/or 2-letter password.
5	Public Message Password	Password programming giving access to programmed public message in system (Functions with menu 11).
	Step 1	Enter existing 4-digit and/or 4-letter password (Factory programmed value: "1234") or the hardcoded "9595".
	Step 2	Enter new 4-digit and/or 4-letter password.
6	Activate/Deactivate Automatic Route	Allows Control Console to automatically recall the last route number entered before the vehicle has been switched off or the screen turned blank.
	Step 1	Display current status for a few seconds (Factory programmed value: activate).
	Step 2	Modify current status.
	1. Activate	Activates automatic recall of last route entered before the vehicle has been switched off. At start-up, recalls last route entered.
	2. Deactivate	Deactivates automatic recall. At start-up, Control Console clears the signs.
7	Activate/Deactivate Distress Signal Switch	Control Console checks or does not check activation of Distress Signal Switch.
	Step 1	Display current status for a few seconds (Factory programmed value: "activate").
	Step 2	Modify current status.
	1. Activate	Activates Distress Signal verification.
	2. Deactivate	Deactivates Distress Signal verification.
8	Audio Feedback	Activates or deactivates audio feedback when pressing any keypad key button.
	Step 1	Display current status for a few seconds (Factory programmed value: activate).
	Step 2	Modify current status.
	1. Activate	Activates audio feedback.
	2. Deactivate	Deactivates audio feedback.
9	Display Network Configuration	Displays the network configuration for a few seconds.
10	Intensity Level Transfer	Sends a new level intensity table to the signs. (NOT available for the integrated console).

Menu No.	Use		Action
11	Activate/Deactivate Public Service Announcements		Grants limited access to public service announcements by requesting password programmed in Menu 5. In "Activate" mode, when pressing the "PUBLIC MESSAGE" key button, password is requested. Set to "Deactivate" to give full access to these messages.
	Step 1		Display current status for a few seconds (Factory programmed value: deactivate).
	Step 2		Modify current status.
		1. Activate	Grants limited access to public service announcements by requesting password.
		2. Deactivate	Deactivates limited access to public service announcements (No password required).
12	Activate Test Mode		Displays different patterns on signs to check functionality.
	1. Horizontal Lines Test		This test pattern displays horizontal lines on signs.
	2. Vertical Lines Test		This test pattern displays vertical lines on signs.
	3. Diagonal Lines Test		This test pattern displays diagonal lines on signs.
	4. Square Test		This test pattern displays alternately solid (Lit LEDs) and blank squares (Unlit LEDs).
	5. Full Sign Test		This test pattern illuminates all LEDs on signs.
13	Display Error Mode		Allows the user to check errors present on sign network. Refer to S ection 4.2 to find error code interpretation.

Menu No.	Use	Action
14	Manufacturer's Menu	To access this sub-menu a password is required. Enter password: BAHG.
	1. Version	Display the version of every module on the network. Use "⇑" or "⇓" arrows to navigate among modules of the network.
	2. Manual Config.	Change manually the current configuration of the network. Use "⇑" or "⇓" arrows to navigate among modules of the network and enter the identification code of every module. Refer to Table 4: Sign Identification Code.
	3. Console Option	Change the option number of the control console.
	4. Test Mode	Control activation of the test mode of the displays.
	Step 1	Display current status of the test mode for a few seconds (Factory programmed value: deactivate).
	Step 2	Modify current status of the test mode.
	1. Activate	Start the test mode of every display on the network. IMPORTANT: The activation of this test destroys the database of messages. Note: An update of the database cancels the test mode.
	2. Deactivate	Stop the test mode of the displays on the network. Note: An update of the database is required.
	5. Font Char Set	Control activation of the font set used by the displays on the network.
	Step 1	Display current font set for a few seconds (Factory programmed value: normal).
	Step2	Modify current font set used by the displays on the network.
	1. Normal	Normal font set
	2. Accentuated	Accentuated uppercase font set
	6. Display Operating Frequency	Modify operating frequency of the displays.
	Step 1	Display current status of the operating frequency of the displays.
	Step 2	Modify operating frequency of the displays
	1. 29.4912 MHz	Operating frequency of 29.4912 MHz.
	2. 22.1148 MHz	Operating frequency of 22.1148 MHz.
15	Activate Intensity Level Test	Checks photo-sensor functionality. Displays intensity level digit of each sign.
16(for Integrated console only)	Input Signal	Select the input signal of the Emergency and Yield switches.
	Step 1	Display current input signal for a few seconds (Factory programmed value: ground).
	Step 2	Modify current input signal.
	1. Positive Input	Select positive input signal.
	2. Ground Input	Select ground input signal.

Menu No.	Use	Action
16 (for external console only)	Wireless Menu	Wireless module sub-menu. **Note: Use this menu only if your EDSS is equipped with Axion Technologies' Data Transfer Module.**
	1 Bus Identification	Allows the user to input a unique vehicle ID. Maximum eight digits.
	2. Current Status	Present in a sub-menu the curretn status of the last transfer through the wireless link. Use "⇑" or "⇓" arrows to navigate between the three status windows. Window 1 — CO: IP address of the console / SE: IP address of the last FTP server Window 2 — SSID of the last WI-FI network Window 3 — Status of the last database wireless update.
	3. WIC list VER	Show in a sub-menu the configuration information related to the FTP servers and the WI-FI network. Use "⇑" or "⇓" arrows to navigate between the various entries. Use ENTER to switch between WI-FI information and IP address information. Use ERASE to return to previous information. Display the ID and IP address of the first FTP server — Display SSID window : Display the ID and IP address of the last FTP server. — Display SSID window
	4. Diag Wireless Link	Allows the user to check the wireless communication link between the console and the WIC file entries. Step 1: Diagnostic process in progress. Displayed message: 4 DIAG WIRELESS IN PROGRESS... Step 2: Display the following results of the wireless link: MODULE WI-FI CONSOLE FUNCTIONAL — No problem. MODULE WIFI CONSOLE NOT AVAILABLE — Failure to communicate with the WIFI device. WIC FILE NOT AVAILABLE — No configuration file for the dedicated FTP server within the console. WI-FI LINK NOT AVAILABLE — No access to a dedicated FTP server in the console. IP ADDRESS NOT AVAILABLE — Failure to obtain a DHCP address. FTP SERVER NOT AVAILABLE — The FTP server does not reply to the ping.
	5. Update DB	Allows the user to force a database wireless update without verifying the database ID. Display the result of the process.
17	Delay Yield Message	Rear sign displays YIELD message for a minimum programmed period of time upon activation of the Yield Switch. For no delay, set delay to "00" second.
	Step 1	Display delay currently programmed for a few seconds (Factory programmed value: 12 seconds).
	Step 2	Enter new delay (00 to 99 seconds) (Always enter two digits).

Table 3: Control Console Menu Definitions

4.2. ERROR CODE INTERPRETATION FOR MENU 13

4.2.1. COMMUNICATION ERROR ("E" SYMBOL)

The communication error shows that the Control Console fails to transfer information at least to one module of the sign systems. Location of the flashing "E" letter on the LCD shows which sign is faulty. The following figure shows an example of a communication error on the Rear Sign.
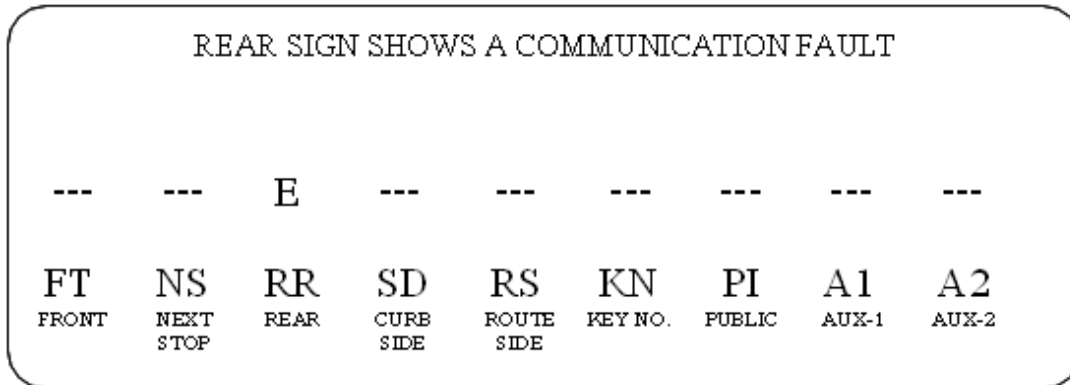
Figure 17: Link Error

4.2.2. LINE OF PRODUCTS ERROR ("G" SYMBOL)

This error notifies the user that the sign present on the network is not recognized by the Control Console. The fault is identified by a flashing "G" on the LCD. Location of the "G" letter shows which of the signs is not recognized. The following figure shows an example of the line of products error on the Rear Sign.
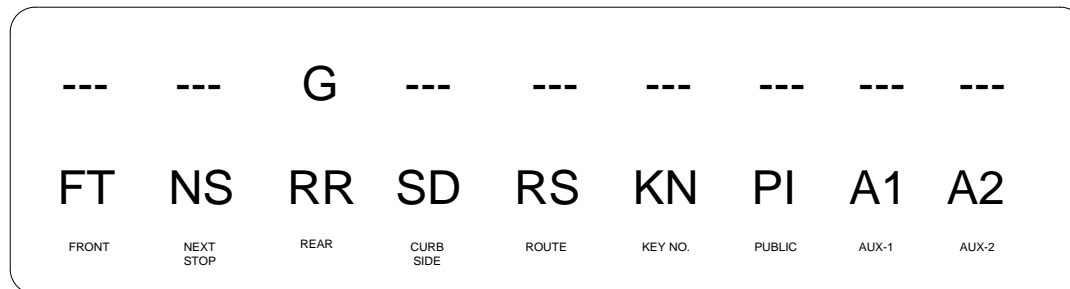
Figure 18: Line of Products Error

4.2.3. IDENTITY ERROR ("I" SYMBOL)

This error notifies the user that the identity of the sign present on the network does not match that of the sign configured in the Control Console. The fault is identified by a flashing "I" on the LCD. Location of the "I" letter shows which of the signs differs from the one configured. The following figure shows an example of identity error on the Rear Sign.

REAR SIGN SHOWS AN IDENTITY FAULT

---	---	I	---	---	---	---	---	---
FT	NS	RR	SD	RS	KN	PI	A1	A2
FRONT	NEXT STOP	REAR	CURB SIDE	ROUTE	KEY NO.	PUBLIC	AUX-1	AUX-2
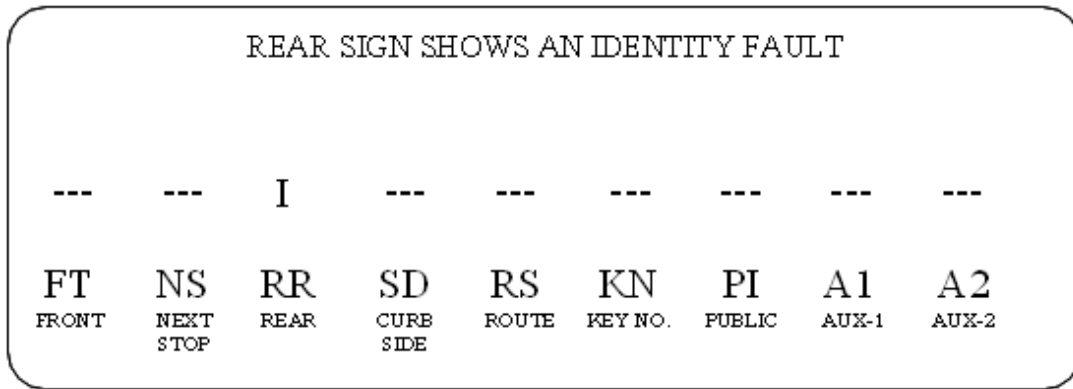
Figure 19: Identity Error

4.2.4. DATABASE INCOMPATIBILITY ERROR ("D" SYMBOL)

Database error notifies the user that the database configuration does not match that of the sign network preprogrammed in the Control Console. The fault is displayed at the Control Console start-up. The message on the LCD reads as follows:

"CONFIGURATION DIFFERS"

"FROM DATABASE"

Then, the Control Console operates normally. When activating Menu 13, the location of the "D" letter shows which of the signs have a database different from that configured in the Control Console. The following figure shows an example of database incompatibility error on the Rear Sign.

REAR SIGN SHOWS A DATABASE INCOMPATIBILITY FAULT

---	---	D	---	---	---	---	---	---
FT	NS	RR	SD	RS	KN	PI	A1	A2
FRONT	NEXT STOP	REAR	CURB SIDE	ROUTE	KEY NO.	PUBLIC	AUX-1	AUX-2
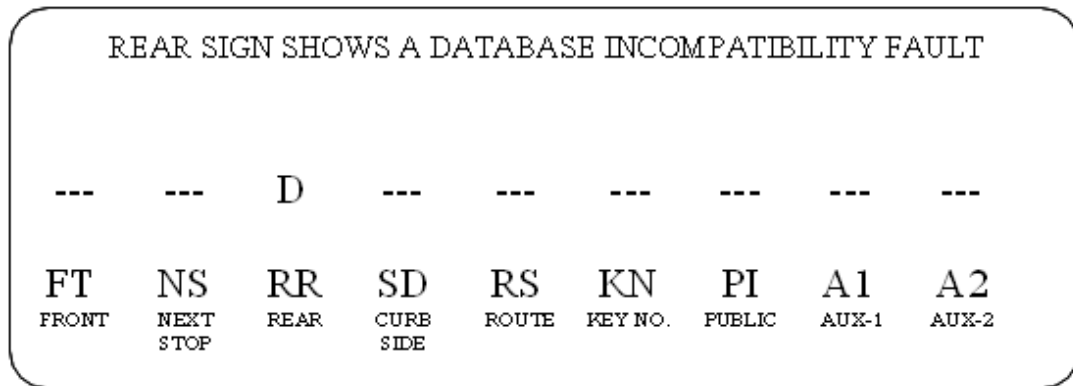
Figure 20: Database Incompatibility Error

4.2.5. PHOTOSENSOR ERROR ("P" SYMBOL)

Photosensor error shows that the photosensor of one or more signs is faulty. LED intensity cannot change according to ambient light conditions. Faulty sign(s) displays (display) on the Control Console LCD. Location of the flashing "P" letter shows which of the signs are faulty. The following figure shows an example of photosensor error on the Rear Sign.

REAR SIGN SHOWS A PHOTOSENSOR FAULT

---	---	P	---	---	---	---	---	---
FT	NS	RR	SD	RS	KN	PI	A1	A2
FRONT	NEXT STOP	REAR	CURB SIDE	ROUTE SIDE	KEY NO.	PUBLIC	AUX-1	AUX-2
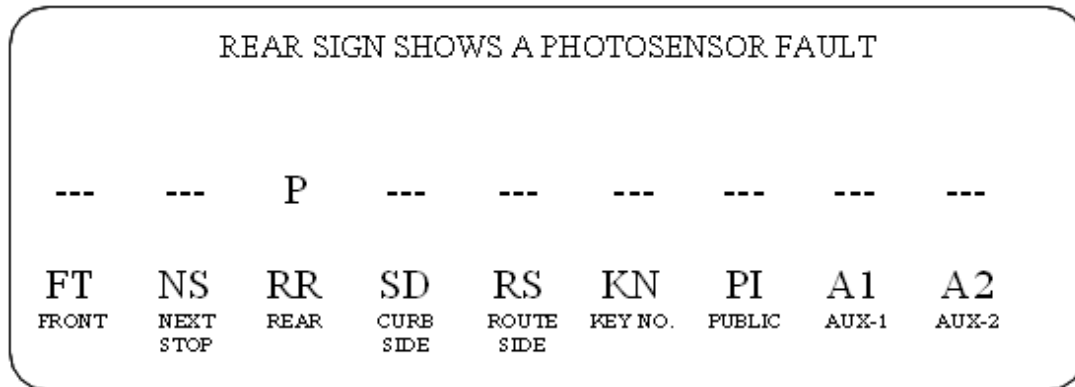
Figure 21: Photosensor Error

4.2.6. OPERATING FREQUENCY ERROR ("C" SYMBOL)

This error shows that the operating frequency of one or more signs differ from that of the Control Console. Faulty sign(s) displays (display) on the Control Console LCD.. Location of the flashing "C" letter shows which of the signs are faulty. The following figure shows an example of the operating frequency error on the Rear Sign.

---	---	C	---	---	---	---	---	---
FT	NS	RR	SD	RS	KN	PI	A1	A2
FRONT	NEXT STOP	REAR	CURB SIDE	ROUTE	KEY NO.	PUBLIC	AUX-1	AUX-2
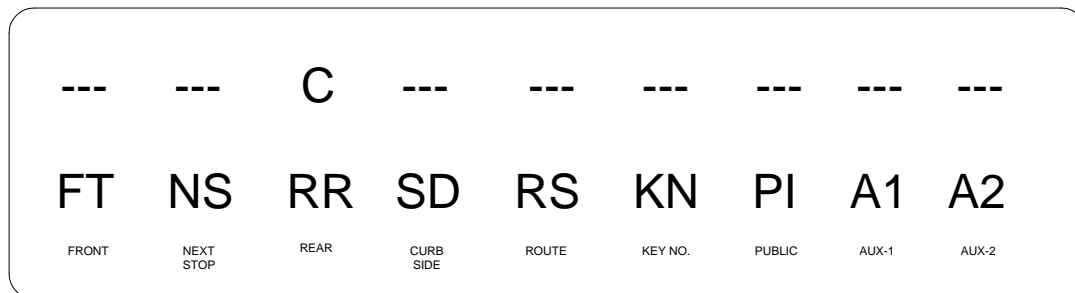
Figure 22: Operating Frequency Error

4.2.7. ERROR PRIORITY

The errors present on sign network have a display priority. If a sign has more than one error code, only one shows at a time. In the order, the display priority of error codes is as follows:

Priority	Error	Code
1	Communication error	E
2	Line of products error	G
3	Identity error	I
4	Database incompatibility error	D
5	Photosensor error	P
6	Operating frequency error	C

The error code is updated every 18 seconds maximum to reflect the current state of the sign network.

4.3. DATABASE TRANSFER

The database must be preprogrammed with a computer (IBM PC or compatible) running the "Data Transit" software. Each message is attributed a route code entered by the operator on the Control Console for related information to be displayed.

When your database is complete, transfer it from the computer to a PTU or a USB key. Download the database to the vehicle console using a PTU, a USB key or the WI-FI link using one of the methods described in the following sections.

4.3.1. TRANSFER USING THE PORTABLE TRANSFER UNIT (PTU)

Download database to vehicle using the PTU plugged into the circular connector located on the Control Console.

To download data to the Control Console, the PTU must be preprogrammed using the Data Transit Software. Refer to Data Transfer Software User Guide entitled "Route Management Software for Electronic Destination Sign Systems" for more information on the PTU programming procedure.
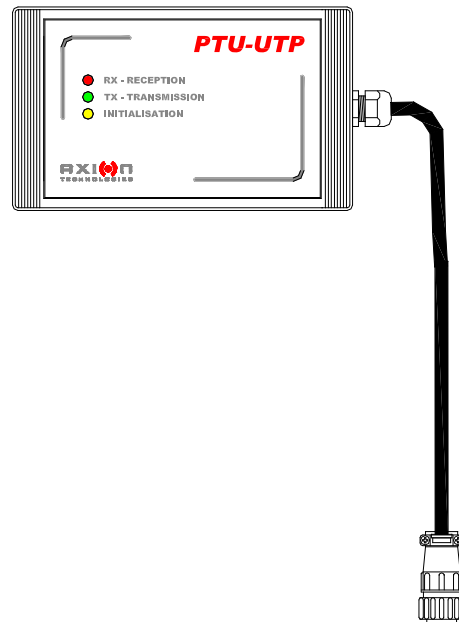
Figure 23: Portable Transfer Unit (PTU)

When programmed, the database may be downloaded to the Control Console. To do so, proceed as follows:

STANDARD PROCEDURE TO TRANSFER DATABASE TO THE CONTROL CONSOLE USING THE PTU

Plug the PTU into the circular connector located on the Control Console.
- The message: "DATABASE TRANSM." appears on the LCD to indicate that transfer is in progress.
- The message "REMOVE PTU" prompts you to disconnect the PTU once the transfer is over.

Figure 24: Programming using the PTU Procedure

4.3.2. TRANSFER USING THE UNIVERSAL SERIAL BUS (USB) KEY

Database downloading to the vehicle may be performed using a USB key inserted into the Control Console USB slot.

To download data to the Control Console, the USB key must be preprogrammed using the Data Transit Software. Refer to Data Transfer Software User Guide entitled "Route Management Software for Electronic Destination Sign Systems" for more information on the USB key programming procedure.

When programmed, database may be downloaded to the Control Console. To do so, proceed as follows:

STANDARD PROCEDURE TO TRANSFER DATABASE TO THE CONTROL CONSOLE USING A USB KEY

Insert USB key into the slot on the front of the Control Console.
- The message: "COPYING FROM USB DO NOT REMOVE!" appears on the LCD to indicate that transfer is in progress.
- The message: "UPDATE COMPLETE! YOU MAY REMOVE USB" prompts you to remove the USB key once the transfer is over.

Figure 25: Programming using the Universal Serial Bus (USB) Procedure

4.3.3.   TRANSFER USING THE WIRLESS FIDELITY (WIFI)

Database downloading to the vehicle is processed automatically without user intervention except for the downloading of the database on the WIFI router.

Also, database downloading to the vehicle may be forced using wireless fidelity regardless of the database ID.

Refer to the maintenance manual of the WIFI system.

STANDARD PROCEDURE TO FORCE A TRANSFER DATABASE TO THE CONTROL CONSOLE USING THE WIFI TECHNOLOGY

Enter Menu 16 of the Control Console (Section 4.1.8) and select item 5 update DB.
- The message: "UPDATE WIFI IN PROGRESS....." appears on the LCD to indicate that transfer is in progress.
- The message: "UPDATE WIFI SUCCESSFUL!" prompts you once the transfer is over.

Figure 26: Programming using the Wireless Fidelity Procedure

SECTION 5

5. TROUBLESHOOTING

Our systems are designed to require a minimum of maintenance. Practically no repair will be needed for the life cycle of the signs. Even if the system is very reliable, defects in the bus cabling or in other components may require your intervention.   Perform troubleshooting promptly. This section is organized to efficiently assist the user in solving problems quickly. Error messages displayed on the LCD of the Control Console help you pinpoint the problem.

5.1. FAULT FINDING

The tables on the following pages are laid out in a logical sequence and easy to follow. In the event your problem is not covered in this manual, contact AXION TECHNOLOGIES LTD., Customer Service.

5.1.1. POWER SUPPLY PROBLEMS

		CHECK	PASSES	FAILS/CORRECTIVE ACTION
		SIGN SYSTEM DOES NOT TURN ON		
	STEP 1	Power cable connection between battery and sign system.	GO TO STEP 2	Connect power cable or repair damaged connector
	STEP 2	Power supply voltage	GO TO STEP 3	Low voltage – Check battery / No voltage – Check bus circuit breaker
	STEP 3	Ignition power source when activated	GO TO STEP 4	Connect power cable or repair damaged connector
	STEP 4	Front Sign Junction board fuses	GO TO STEP 5	Replace blown fuses
	STEP 5	Control Console cable connection	GO TO STEP 6	Connect Control Console cable or repair damaged connector
	STEP 6	Control Console connector wiring	GO TO STEP 7	Rewire Control Console connector
	STEP 7	Control Console	GO TO STEP 8	Replace Control Console
	STEP 8	Front Sign Junction board		Replace Junction board

5.1.2. CONSOLE PROBLEMS

		CHECK	PASSES	FAILS/CORRECTIVE ACTION
		CONSOLE DOES NOT TURN ON		
	STEP 1	Control Console connection	GO TO STEP 2	Connect Control Console cable or repair damaged connector
	STEP 2	Control Console connector wiring	GO TO STEP 3	Rewire Control Console connector
	STEP 3	Control Console fuse	GO TO STEP 4	Replace blown fuse
	STEP 4	Control Console		Replace Control Console

		CHECK	PASSES	FAILS/CORRECTIVE ACTION
		LCD SEEMS OK, BUT LED REMAINS UNLIT OR VICE VERSA		
	STEP 1	Restart Control Console		Replace Console

LCD DISPLAYS INCOHERENT MESSAGES			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Shut off system and reboot		GO TO STEP 2
STEP 2	Transfer database		Replace Control Console

5.1.3. SIGN PROBLEMS

NO POWER TO SIGN			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Sign system connection	GO TO STEP 2	Connect power cable or repair faulty connector
STEP 2	Sign connector wiring	GO TO STEP 3	Rewire connector
STEP 3	Front Sign Junction board Sign fuse		Replace blown fuse or Junction board

SIGN DOES NOT DISPLAY			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Test LED as per Menu 12 procedure	GO TO STEP 2	GO TO STEP 3
STEP 2	Download database and check if problem remains unsolved	GO TO STEP 3	GO TO STEP 3
STEP 3	Sign power supply	GO TO STEP 4	Refer to Section 5.1.3 "No power to sign"
STEP 4	Sign CPU board	GO TO STEP 5	Replace CPU board as per Parts Manual instructions
STEP 5	All internal cables and harnesses	GO TO STEP 6	Replace faulty cable(s) or harness(es)
STEP 6	LED-DRIVER boards	GO TO STEP 7	Replace defective LED-DRIVER board(s) as per Parts Manual instructions
STEP 7	Sign operation		Replace Sign

SIGN DISPLAYS ONLY VERTICAL LINES			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Download database		GO TO STEP 2
STEP 2	Sign CPU board		Replace Sign CPU board

SIGN DISPLAYS INCOHERENT MESSAGES			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Sign connectors and internal cables	GO TO STEP 2	Replace faulty cable or connector as per Parts Manual instructions
STEP 2	LED-DRIVER boards	GO TO STEP 3	Replace defective board(s) as per Parts Manual instructions
STEP 3	Sign CPU board		Replace Sign CPU board as per Parts Manual instructions

LIGHT INTENSITY DOES NOT CHANGE WITH AMBIENT LIGHT VARIATIONS			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	If photosensor is blocked or window is dirty	GO TO STEP 2	Clean Sign photosensor or window
STEP 2	Test photosensor as per Control Console Menu 15	GO TO STEP 3	
STEP 3	Photosensor connection	GO TO STEP 4	Connect cable or repair faulty connector
STEP 4	If LED intensity lowers when disconnecting CPU board photosensor connector. If LED intensity increases when short-circuiting connector pins.	Replace Photosensor board as per Parts Manual instructions	Replace CPU board as per Parts Manual instructions

5.2. INTERPRETATION OF THE ERROR MESSAGES ON THE LCD

5.2.1. COMMUNICATION ERROR MESSAGE

FLASHING "E" ON LCD			
INDICATES A LINK ERROR BETWEEN CONSOLE AND ONE OR MORE SIGNS			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Go to Menu 13 to find out which sign has a link problem (See Section 4.1.8)	GO TO STEP 2	
STEP 2	Go to Section 5.1.3 and conduct "Sign does not turn on" procedure		

5.2.2. LINE OF PRODUCTS ERROR MESSAGE

FLASHING "G" ON LCD			
INDICATES A LINE OF PRODUCTS ERROR, SIGN MODEL IS NOT RECOGNIZED BY THE CONSOLE			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Go to Menu 13 to find out which sign has a link problem (See Section 4.1.8)	GO TO STEP 2	
STEP 2	Validate that CPU board dip switches are set according to the sign model (See Table 7.1)	GO TO STEP 3	Set CPU board dip switches according to the model of the sign. Refer to Table 7.1)
STEP 3	Take note of the version of the console (See Section 4.1.8) and contact AXION TECHNOLOGIES LTD., Customer Services to get assistance on the compatibility between console and sign models.		

5.2.3. SIGN IDENTITY ERROR MESSAGE

FLASHING 'I" ON LCD			
INDICATES THAT IDENTITY OF SIGN PRESENT ON NETWORK DIFFERS FROM THAT CONFIGURED ON CONTROL CONSOLE			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Go to Menu 13 to find out which sign has an identity problem (See Section 4.1.8)	GO TO STEP 2	
STEP 2	Reconfigure Sign Network (See Section 4.1.8, Menu 1)		

5.2.4. SIGN DATABASE ERROR MESSAGE

FLASHING 'D" ON LCD INDICATES THAT THE CONTROL CONSOLE CONFIGURATION DIFFERS FROM THE DATABASE CONFIGURATION			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Go to Menu 13 to find out which sign has an identity problem (See Section 4.1.8)	GO TO STEP 2	
STEP 2	Download database corresponding to the sign network configuration or reconfigure the Control Console		

5.2.5. PHOTOSENSOR ERROR MESSAGE

FLASHING "P" ON LCD INDICATES A PHOTOSENSOR ERROR WITH ONE OR MORE SIGNS			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Go to Menu 13 to find out which sign has a photosensor problem (See Section 4.1.8)	GO TO STEP 2	
STEP 2	Go to Section 5.1.3 and conduct "Light intensity does not change with ambient light variations" procedure		

5.2.6.   SIGN OPERATING FREQUENCY ERROR MESSAGE

	FLASHING "C" ON LCD INDICATES THAT THE SIGN PRESENT ON THE NETWORK DOES NOT SUPPORT THE OPERATING FREQUENCY CONFIGURED IN THE CONTROL CONSOLE		
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Go to Menu 13 to find out which sign has a photosensor problem (See Section 4.1.8)	GO TO STEP 2	
STEP 2	Reset signs operating frequency to 29.4912 MHz. Reconfigure sign network (See Section 4.1.8 Menu 14)		

5.2.7.   PTU ERROR MESSAGES

	"SYSTEM NOT PRESENT" ON LCD INDICATES THAT PTU DATABASE IS INCOMPATIBLE WITH SYSTEM INSTALLED ON VEHICLE		
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	If Control Console configuration matches that of Section 4.1.2	GO TO STEP 2	Reconfigure Control Console
STEP 2	PTU content	GO TO STEP 3	Download desired database into PTU
STEP 3	Control Console		Replace Control Console

	FLASHING "PTU COMMUNICATIONS INTERRUPTED" ON LCD INDICATES A DEFECTIVE CONNECTION BETWEEN PTU AND CONSOLE		
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Cable and connectors between PTU and Control Console	GO TO STEP 2	Replace faulty cable or connector
STEP 2	PTU	GO TO STEP 3	Replace PTU
STEP 3	Control Console		Replace Control Console

5.2.8.   GENERAL ERROR MESSAGES

	FLASHING "JUNCTION BOX RELAY DEFECTIVE" ON LCD INDICATES A DEFECTIVE RELAY ON JUNCTION BOARD OR DEFECTIVE CONTROL CONSOLE		
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Front Sign Junction board	GO TO STEP 2	Replace Junction board
STEP 2	If Control Console functionality matches that of Table "Console does not turn on" in Section 5.1.2 .	GO TO STEP 3	Replace Control Console
STEP 3	Wiring between Control Console and Junction		Replace Control Console power cable

FLASHING "CONSOLE CONFIG. CORRUPT" (SYSTEM NOT PRESENT) ON LCD			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Press "ENTER" and follow instructions on LCD	GO TO STEP 2	
STEP 2	If Control Console reconfigures, this should solve the problem		Replace Control Console

"CONFIG DIFFERS FROM ACTIVE DATABASE" INDICATES THAT DATABASE CONFIGURATION DIFFERS FROM THAT OF THE CONTROL CONSOLE NETWORK			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Press "ENTER". Control Console operates normally	GO TO STEP 2	
STEP 2	Go to Menu 13 to find out which sign has a database problem (See Section 4.1.8)	GO TO STEP 3	
STEP 3	Download database corresponding to sign network configuration or reconfigure Control Console		

5.3. SIGN SYSTEM LEDs DEFINITION
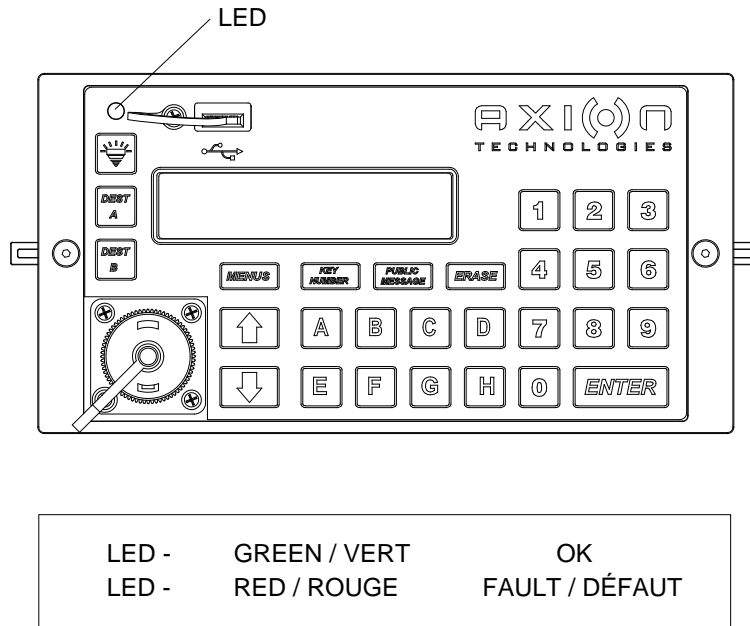
5.3.1. CONTROL CONSOLE LED

Figure 27: Control Console LED

5.4. DATABASE TRANSFER STATUS

5.4.1. WIRELESS DATABASE TRANSFER STATUS

Enter menu 16 of the Control Console (section 4.1.8).

Select item 2 CURRENT STATUS and use the arrows "⇧" or "⇩" to navigate through the three status windows of the last wireless transfer.

Window 1 Console and FTP router IP addresses.

>   CO: Console IP address

>   SE: Last FTP router IP address

Window 2 Last FTP router SSID.

>   SSID: last FTP router

Window 3 Result of the last database transfer.

>   " UPDATE WIFI "

>   " SUCCESSFUL! " or "   FAILED!   " or" INCOMPLETE! "

In the event of update failure, you may manually start the update database process with the menu 16, item 5 Update DB. See section 4.1.8

5.4.2. USB DATABASE TRANSFER STATUS

During the database files update, the console displays:

" COPYING FROM USB "

" DO NOT REMOVE!   "

At the end of the database update process, the console displays, if applicable, the list of files in error. Press ENTER to get the next display, if there is any.

"   BAD FILE FOR   "

"   FRONT SIGN   "

"   NEXT STOP   "

"   REAR   "

"   CURB SIDE   "

"   ROUTE SIDE   "

"   KEY NUMBER   "

" PUBLIC INTEREST   "

"   AUXILIARY 1   "

"   AUXILIARY 2   "

"   CONSOLE   "

Also, the console displays an overall status of the update as follows:

- Successful database update:

" UPDATE COMPLETE! "

" YOU MAY REMOVE USB "

- Database update in error:

"   UPDATE FAILED!   "

" YOU MAY REMOVE USB "

- No file in the AXION-DB folder on the USB key:

" NO FILE TO UPDATE! "

" YOU MAY REMOVE USB "

SECTION 6

6. DRAWINGS

6.1. INTERCONNECTION DIAGRAM

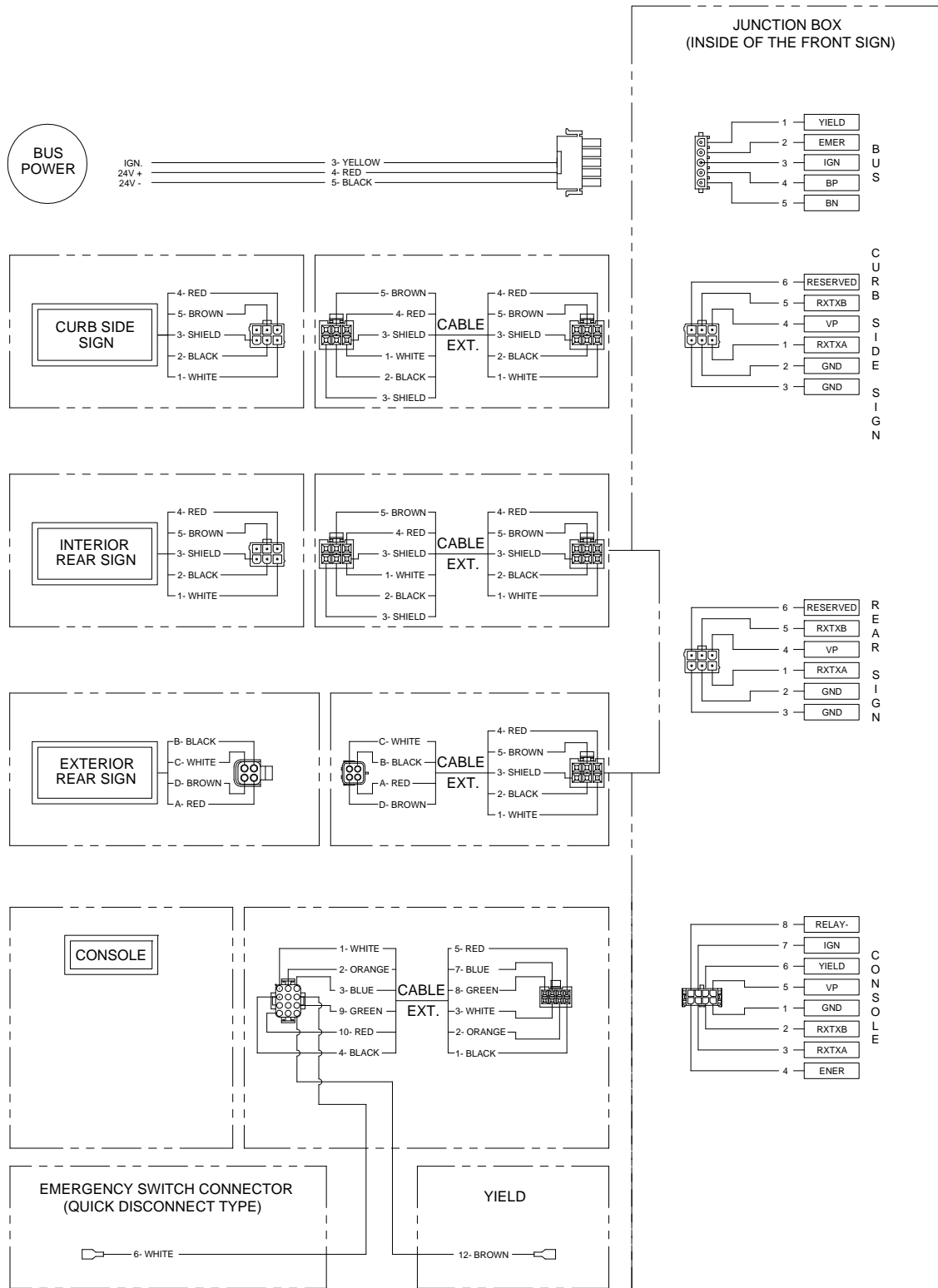**Figure 28: Electrical Interconnection**

6.2. MAIN POWER CABLE
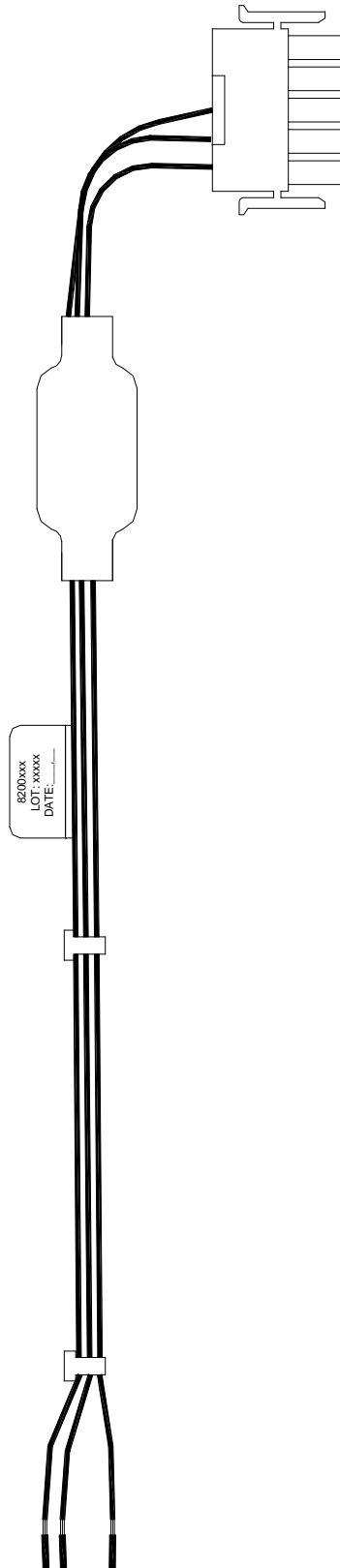
8200xxx
LOT: xxxxx
DATE:_____

Figure 29: Main Power Cable

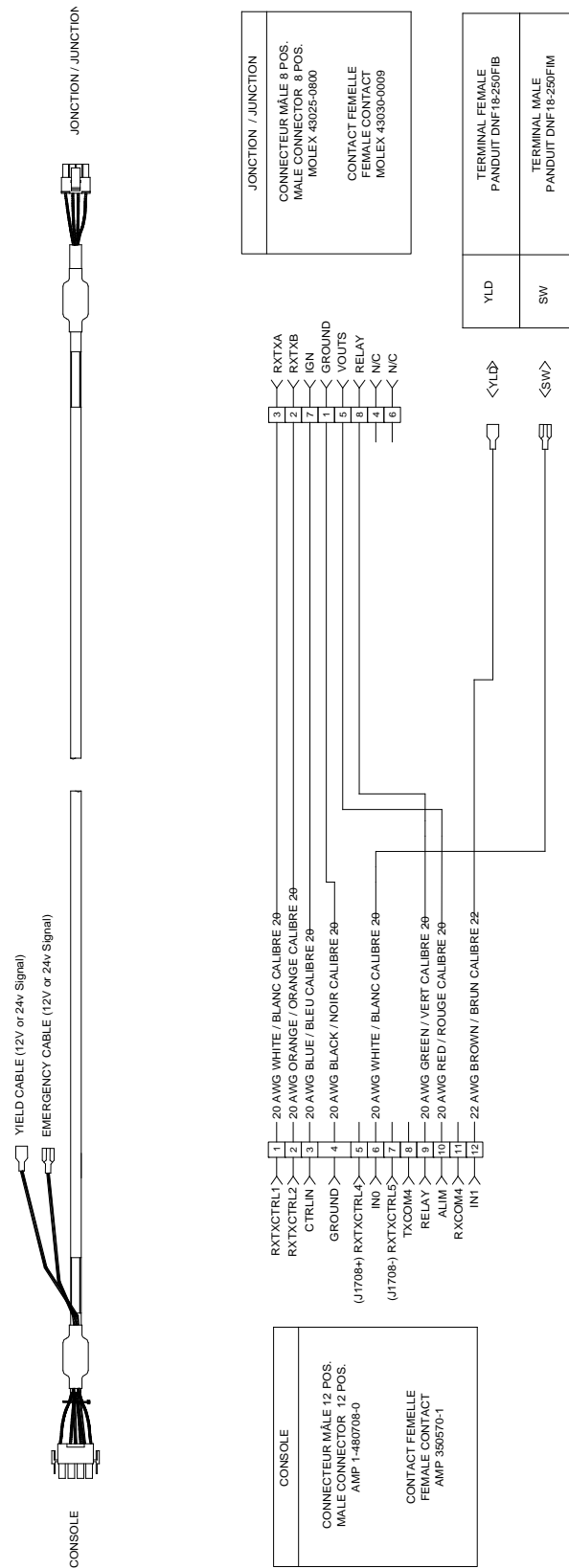## 6.3. CONTROL CONSOLE CABLE

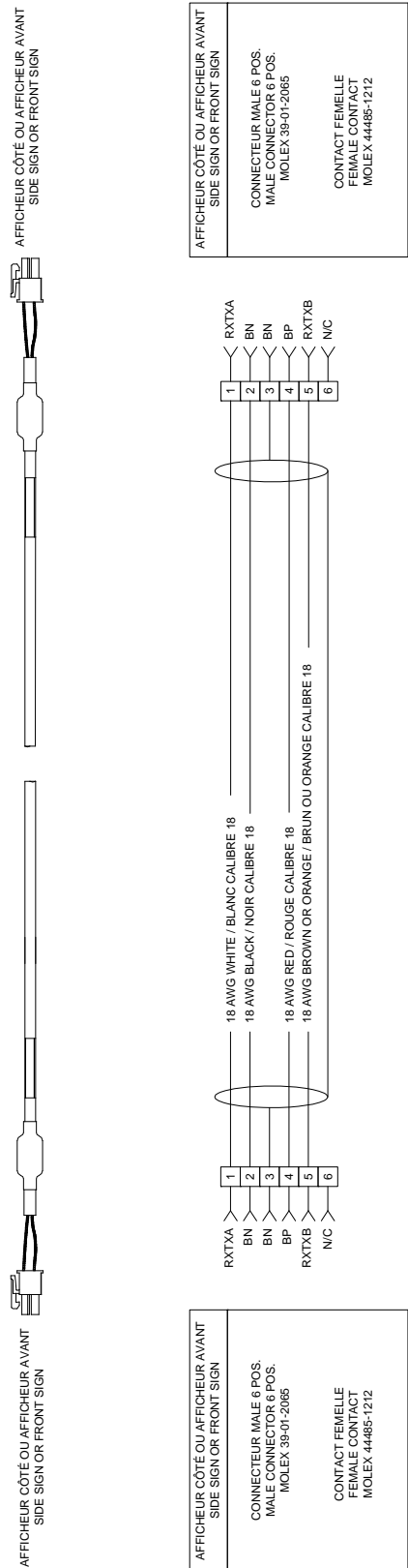**Figure 30: Control Conxole Cable (without inverter)**

6.4. CURB SIDE SIGN CABLE

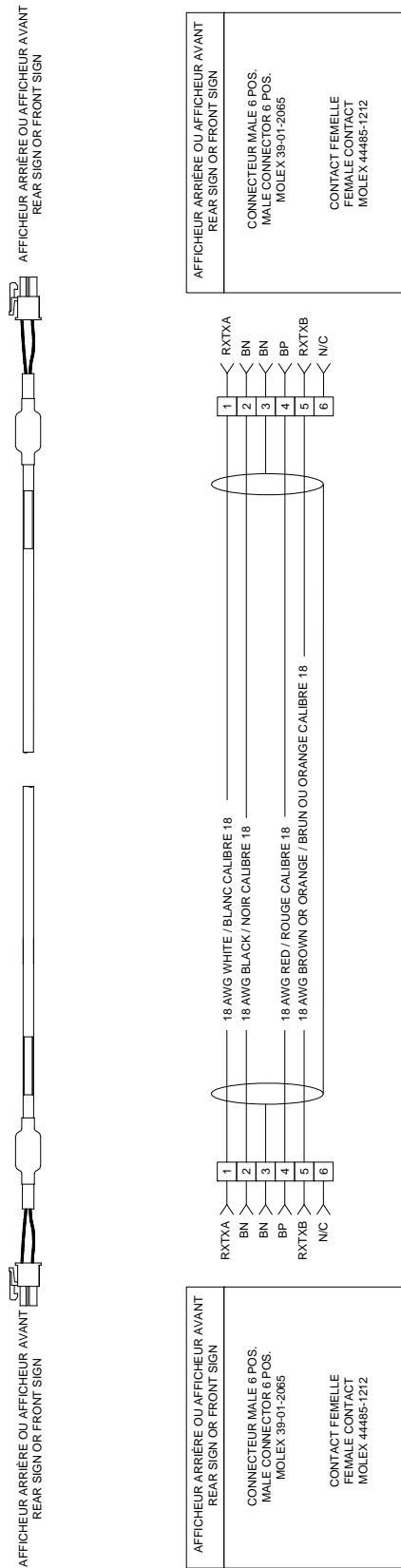Figure 31: Curb Side Sign Cable

6.5. INSIDE REAR SIGN CABLE

Figure 32: Rear Sign Cable

6.6. OUTSIDE REAR SIGN CABLE

AFFICHEUR ARRIÈRE EXTÉRIEUR
EXTERIOR REAR SIGN

AFFICHEUR ARRIÈRE EXTÉRIEUR
EXTERIOR REAR SIGN

CONNECTEUR FEMELLE 4 POS.
FEMMALE CONNECTOR 4 POS.
PACKARD 12015024

CONTACT MALE
MALE CONTACT
PACKARD 12089040

CONTACT SCELLANT
SEAL CONTACT
PACKARD 12015323

C RXTXA
B BN
A BP
D RXTXB

18 AWG WHITE / BLANC CALIBRE 18
18 AWG BLACK / NOIR CALIBRE 18
18 AWG RED / ROUGE CALIBRE 18
18 AWG BROWN OR ORANGE / BRUN OU ORANGE CALIBRE 18

1 RXTXA
2 BN
6 N/C
4 BP
5 RXTXB
3 BN

AFFICHEUR AVANT
FRONT SIGN

AFFICHEUR AVANT
FRONT SIGN

CONNECTEUR MALE 6 POS.
MALE CONNECTOR 6 POS.
MOLEX 39-01-2065

CONTACT FEMELLE
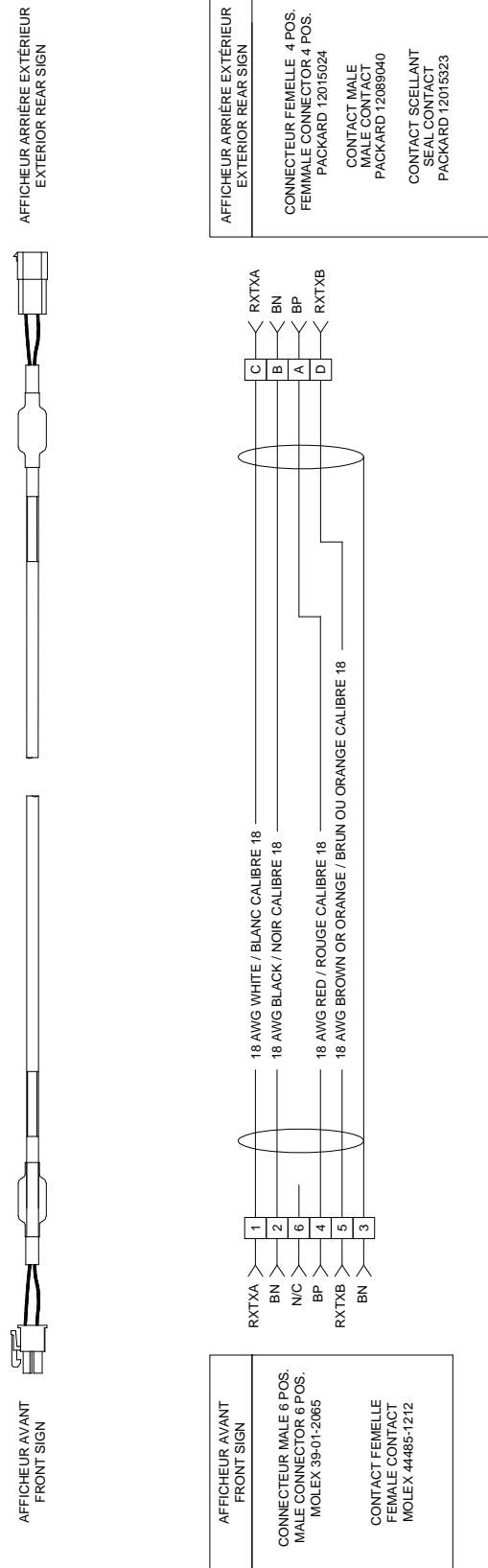FEMALE CONTACT
MOLEX 44485-1212

Figure 33: Outside Rear Sign

6.7. CONTROL CONSOLE CUTOUT SIZE

Refer to Control Console Parts Manual.

6.8. OUTSIDE REAR SIGN CUTOUT SIZE

Refer to Outside Rear Sign Parts Manual.

SECTION 7

7. REFERENCE TABLES

7.1. SIGN IDENTIFICATION CODES

Serial Number	Sign ID	CPU DIP SWITCH SETTINGS
FRONT SIGN		
FRONT 16 X 160	76	
CURB SIDE SIGN		
SIDE 16x120	B6	
SIDE 16 X 80	B8	
SIDE 16 X 40	B7	
REAR SIGN		
REAR 16 X 40	B7	
CONTROL CONSOLE		
All signs	6C	N/A

Table 4: Sign Identification Code

7.2. SIGN SYSTEM FUSE TABLE

Serial Number	Value	Size
FRONT SIGN		
FRONT 16 X 160	15 A	Low Profile MINI® BLADE FUSE
CURB SIDE SIGN		
SIDE 16 X 120"	10 A	Low Profile MINI® BLADE FUSE
SIDE 16 X 80	10 A	Low Profile MINI® BLADE FUSE
SIDE 16 X 40	10 A	Low Profile MINI® BLADE FUSE
REAR SIGN		
REAR 16 X 40	10 A	Low Profile MINI® BLADE FUSE
CONTROL CONSOLE		
All signs	2 A	Low Profile MINI® BLADE FUSE

Table 5: Fuse Value According to Sign Model

NOTE: All fuses used are fast blow type.