AXION
TECHNOLOGIES

ELECTRONIC DESTINATION SIGN SYSTEMS - SERIES 40

USER MANUAL

Axion Ref. No.3042145
(Revision --)

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

Electronic Destination Sign Systems - Series 40

USER MANUAL

Axion Ref. No.3042145
(Revision --)

2013

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List of revisions

REVISION	DATE	DESCRIPTION OF CHANGES
--	07/03/2013	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 wriststrap 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 TECHNOLOTIES Ltd., has developed a new generation of high-performance Electronic Destination Signs based on the technology of High Intensity Light Emitting Diodes (LED). Our Electronic Destination Sign Systems (EDSS) are designed to increase satisfaction of the public transit users and to meet the particular needs and requirements of the Transit Sector such as the ADA regulations.

1.2. FEATURES

This section presents the features specific to each component of the EDSS.

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 EDSS. 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 our destination signs gives you the opportunity for various configurations. They are generally used to display messages such as the route number and destination including public interest message, "yield" message 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.

The 40 series includes five basic types of signs.

1.2.2.1. The 8.5-inch Character Sign

The 8.5-inch character sign is the biggest, most versatile and most visible model of our line of products. It is used as a Front Sign on buses. It has multiple font sizes displayed in a proportional mode on one or several lines. It is generally used to display messages such as the route number and destination as well as public service announcements and emergency messages in a fixed or multiline mode. It can also display pictograms and has special effect capabilities such as reverse video, horizontal and vertical scrolling, flashing and more.

1.2.2.2. The 8-inch Character Sign

The 8-inch character sign is used essentially as a Front Sign on buses. The features and functionality are identical to those of the 8.5-inch character sign. It has multiple font sizes

displayed in a proportional mode on one or several lines. It is generally used to display messages such as the route number and destination as well as public service announcements and emergency messages in a fixed or multiline mode. It can also display pictograms and has special effect capabilities such as reverse video, horizontal and vertical scrolling, flashing, etc.

1.2.2.3. The 6-inch Character Sign

Smaller than the 8-inch character model, it is mainly used as a Rear Sign. However, it can be used as a Front Sign on vehicles with restricted space and as a Curb Side Sign. Just like the 8-inch character sign, it can display messages such as the route number and destination as well as public service announcements and emergency messages in a fixed or multiline mode. It can also display pictograms and has special effect capabilities such as reverse video, horizontal and vertical scrolling, flashing, etc.

1.2.2.4. The 4.5-inch Character Sign

Generally used as a Curb Side, a Rear Sign and/or a Key Number Sign, it can display up to two lines of alphanumeric characters at a time. It has multiple font sizes displayed in a proportional mode. Just like the previous models, it has the same features and functionality.

1.2.2.5. The 3.2-inch Character Sign

The smallest of our line of products, it is usually used as a Curb Side Sign. It displays one line of alphanumeric characters at a time. It also has multiple font sizes displayed in a proportional mode. Just like the biggest signs, the 3.2-inch character sign displays messages such as the route number and destination as well as public service announcements and emergency messages in a fixed or multiline mode. It can also display pictograms and has special effect capabilities such as reverse video, horizontal and vertical scrolling, flashing and more.

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

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

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.

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 by 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.

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 high 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

The Control Console is the interface between the operator and the EDSS. It 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 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.

2.1.2. 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 Route Side Sign is located inside the vehicle, on the first route side window (left side of the vehicle).

- The Key Number Sign is located on the dashboard of the vehicle, facing outside. It is positioned on the right side of the vehicle to do not interfere with the field of view of the bus driver.

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 on a specific type of vehicle.
- That power cables connected to signs are properly secured to prevent stress on connector pins.
- 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 on a specific type of vehicle.

- That power cable connected to the rear sign is properly secured to prevent stress on connector pins.

- 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 EDSS. *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 prior to connecting or disconnecting components.

The power supply of the EDSS is 9-36 Vdc. Figure 1 is a simplified diagram offering a bird's eye view of the location of the system components on the vehicle.
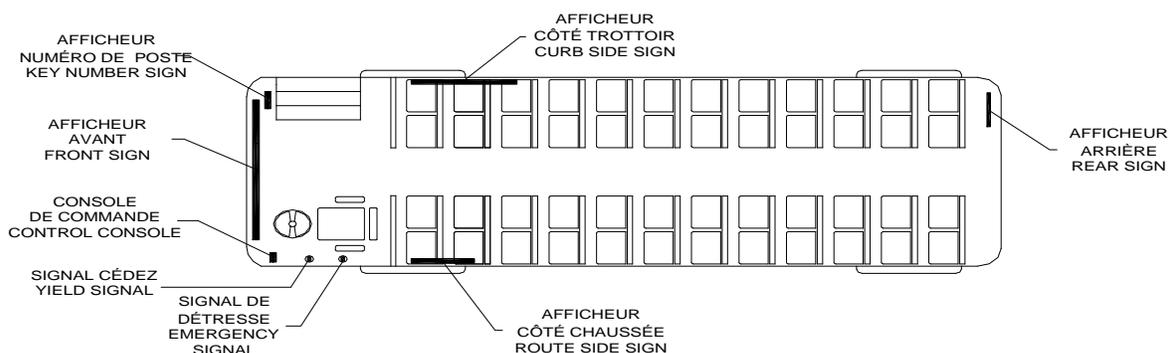
Figure 1: System Components Interconnection and Location

Figure 34: 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) or four (4) wires:

- BATT+
- GND
- IGN
- ACC (*optional*)
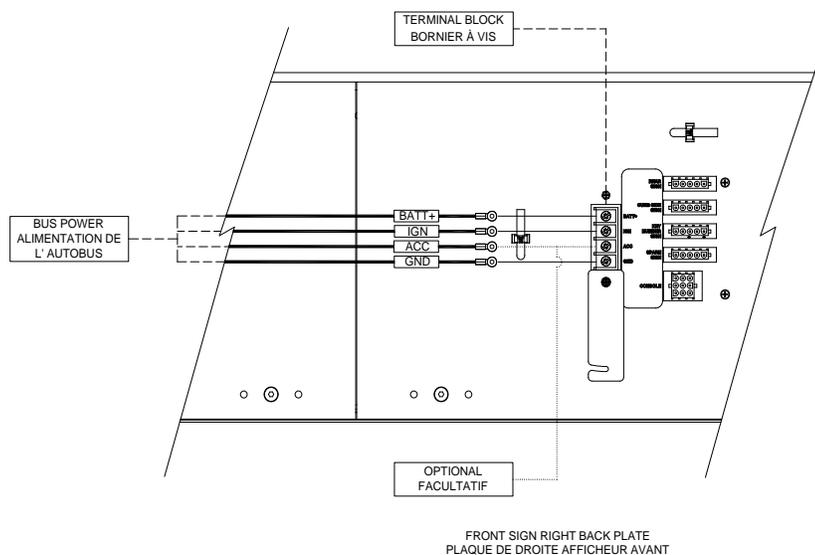
Figure 2: Main Power Cable Connection

NOTE
Main power cable is supplied by the bus manufacturer. This 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 Back Plate of the Front Destination Sign. The minimum rating of this wire is 12 AWG.

2.2.1.2. GND Wire

The GND wire must be connected to the vehicle mass. The GND wire is connected to the power connector located on the Back Plate of the Front Destination Sign. The minimum rating of this wire is 12 AWG.

2.2.1.3. IGN Wire

The IGN wire must be connected to a 9-36 Vdc 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 EDSS on. The IGN wire is connected to the power connector located on the Back Plate of the Front Destination Sign. The minimum rating of this wire is 18 AWG.

2.2.1.4. ACC Wire

The ACC wire is *optional*. When used, it must be connected to a 9-36 Vdc source activated by a device other than the Master Coach Run Switch of the vehicle. The supplied power signal commands the Control Console to turn the EDSS on. The ACC wire is connected to the ACC screw of the terminal block located on the Back Plate of the Front Destination Sign using a #10 Ring Tongue terminal lug. The minimum rating of this wire is 18 AWG.

2.2.2. CONTROL CONSOLE POWER CABLE

The Control Console power cable connects the Console to the sign junction and other bus communication networks, if required. Also, this cable can connect the Distress Signal switch to the Control Console. There are various types of the power cable. The figures in Section 6.3 CONTROL CONSOLE CABLE show the different types of cables that can be used.

The Control Console power cable connects as follows:

- Connect the Control Console extension cable (9-pin connector) to the **CONSOLE** connector (9-pin connector) located on the Back Plate of th e Front Destination Sign. (See Figure 3)

- Connect the other end of the Control Console extension cable (12-pin connector) to the corresponding connector located on the Control Console. (Se e Figure 3).
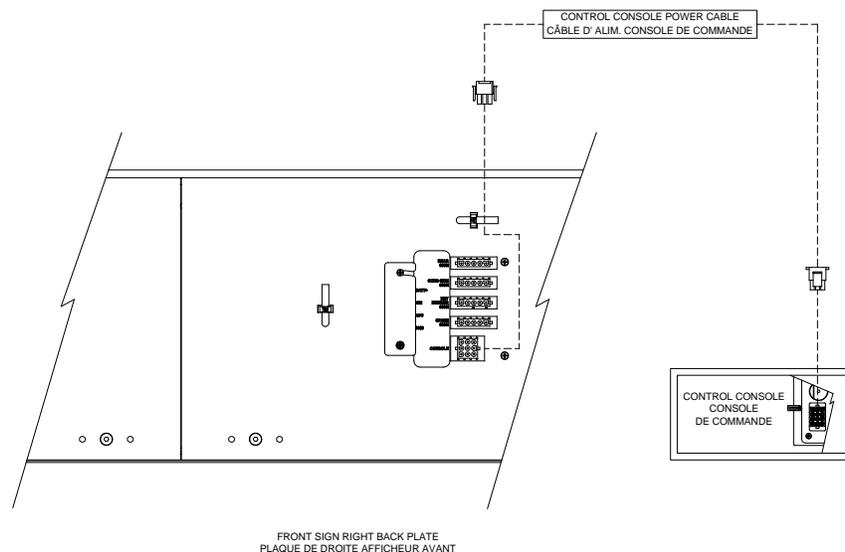
Figure 3: Control Console Cable Connection

- 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 6.3.1, the power signal supplied by the distress switch must be a ground signal (GND).

- If the Control Console power cable used is the one shown in Sections 6.3.2 and 6.3.3, 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.
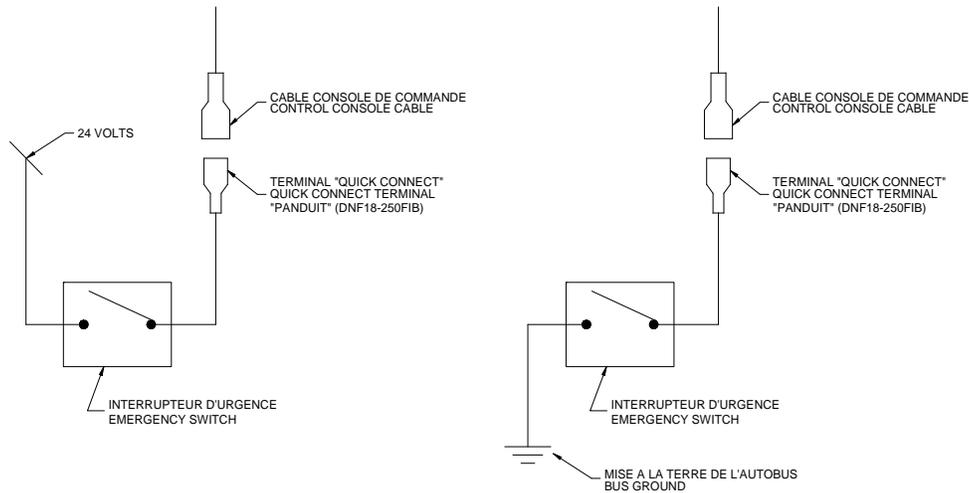
Figure 4: Distress Switch Connection

- Connect the yield signal switch wire to the bus yield switch. (See Figure 6).

  - If the Control Console power cable used is the one shown in Section 6.3.1, the power signal supplied by the yield switch must be a ground signal (GND).

  - If the Control Console power cable used is the one shown in Sections 6.3.2 and 6.3.3, 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.
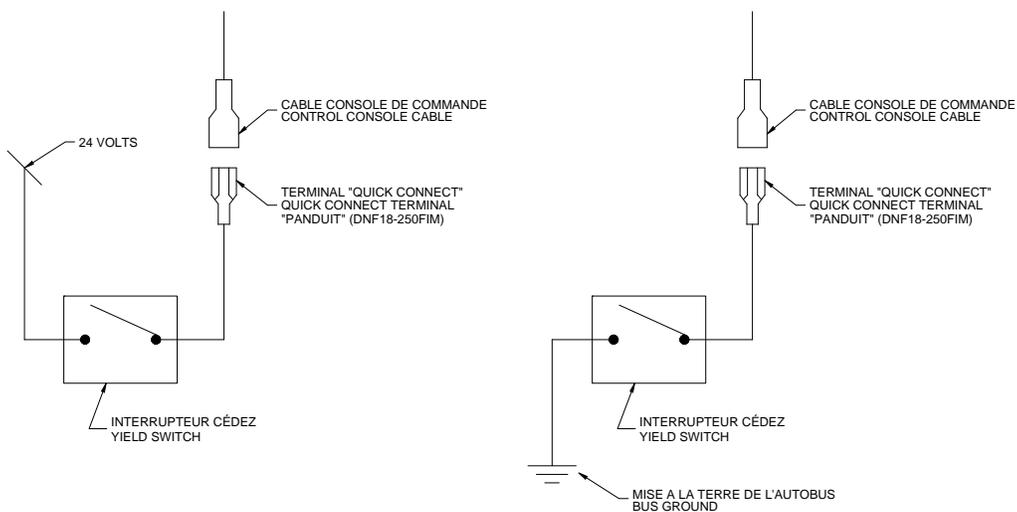
Figure 5: Yield Switch Connection

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

2.2.3. THE 802.11 b/g WI-FI MODULE ANTENNA CABLE FOR 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) on the back plate of the console.
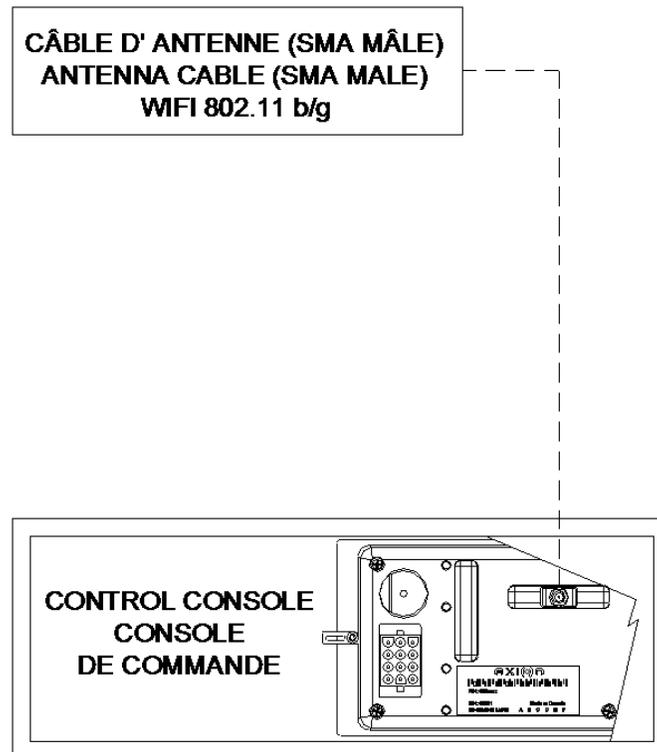
Figure 6: Wi-Fi Module - Antenna Cable Connection

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 the power cable (5-pin connector) to the **CURB SIDE SIGN** connector (5-pin connector) located on the Back Plate of the Front Destination Sign. (See Figure 7)
- Connect power cable (4-pin connector) to the Curb Side Sign connector.

CURB SIDE SIGN POWER CABLE
CÂBLE D' ALIM. AFF. CÔTÉ TROTTOIR

CURB SIDE SIGN
AFFICHEUR CÔTÉ
TROTTOIR

FRONT SIGN RIGHT BACK PLATE
PLAQUE DE DROITE AFFICHEUR AVANT
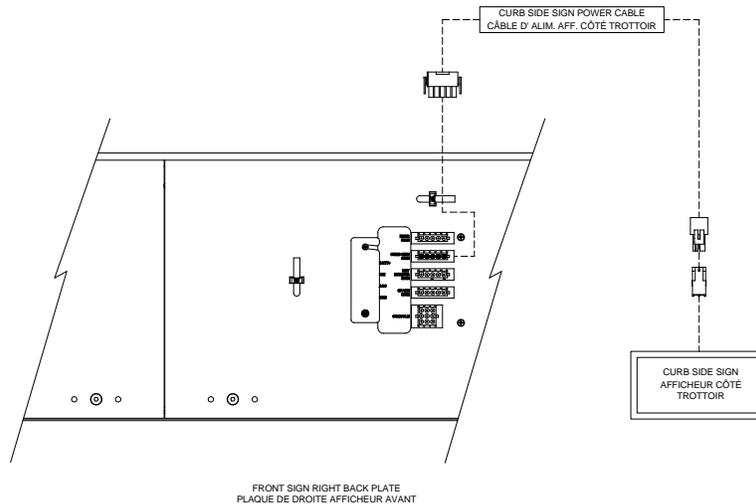
Figure 7: Curb Side Sign Cable Connection

2.2.5. ROUTE SIDE SIGN POWER CABLE

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

- Connect the power cable (5-pin connector) to the **ROUTE SIDE SIGN** connector (5-pin connector) located on the Back Plate of the Front Destination Sign (See Figure 8).

- Connect the power cable (4-pin connector) to the Route Side Sign connector.

ROUTE SIDE SIGN POWER CABLE
CÂBLE D' ALIM. AFF. CÔTÉ CHAUSSÉE

ROUTE SIDE SIGN
AFFICHEUR CÔTÉ
CHAUSSÉE

FRONT SIGN RIGHT BACK PLATE
PLAQUE DE DROITE AFFICHEUR AVANT
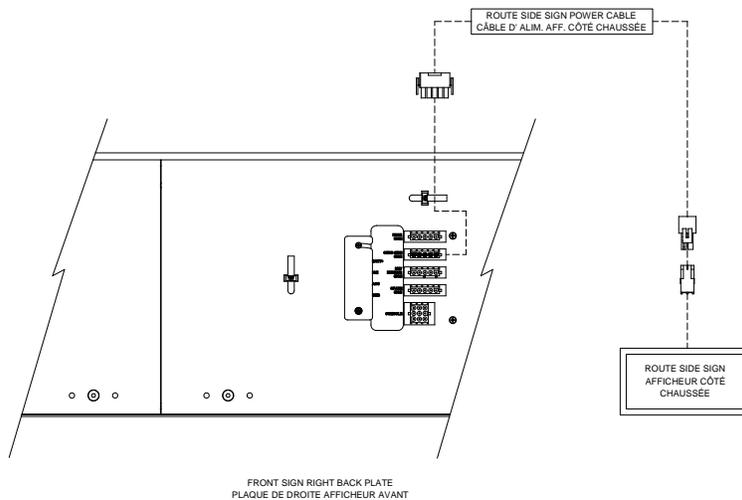
Figure 8: Route Side Sign Cable Connection

2.2.6. REAR SIGN POWER CABLE

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

- Connect the power cable (5-pin connector) to the **REAR SIGN** connector (5-pin connector) located on the Back Plate of the Front Destination Sign (See Figure 9).

- Connect the power cable (4-pin connector) to the Rear Sign connector.

REAR SIGN POWER CABLE
CÂBLE D' ALIMENTATION AFF. ARRIÈRE

REAR SIGN
AFFICHEUR ARRIÈRE

FRONT SIGN RIGHT BACK PLATE
PLAQUE DE DROITE AFFICHEUR AVANT
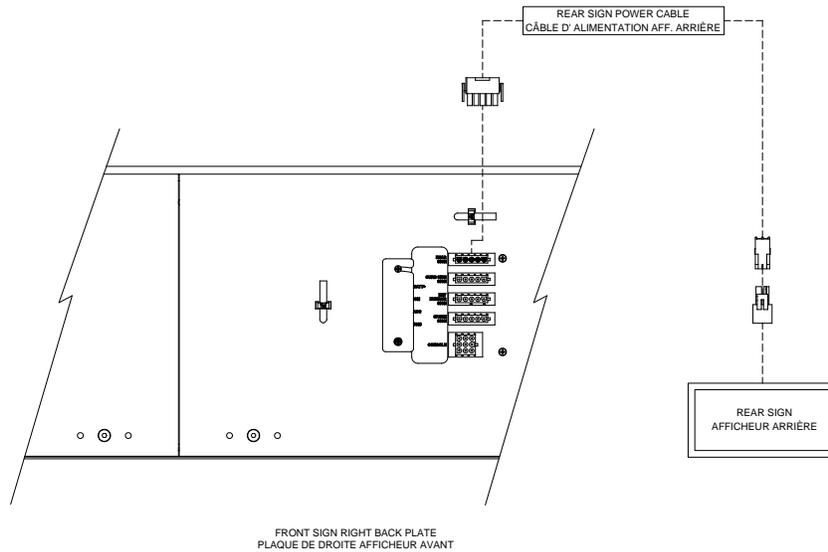
Figure 9: Rear Sign Cable Connection

2.2.7. KEY NUMBER SIGN POWER CABLE

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

- Connect the power cable (5-pin connector) to the **KEY NUMBER SIGN** connector (5-pin connector) located on the Back Plate of the Front Sign. (See Figure 10).

- Connect the power cable (4-pin connector) to the Key Number Sign connector.
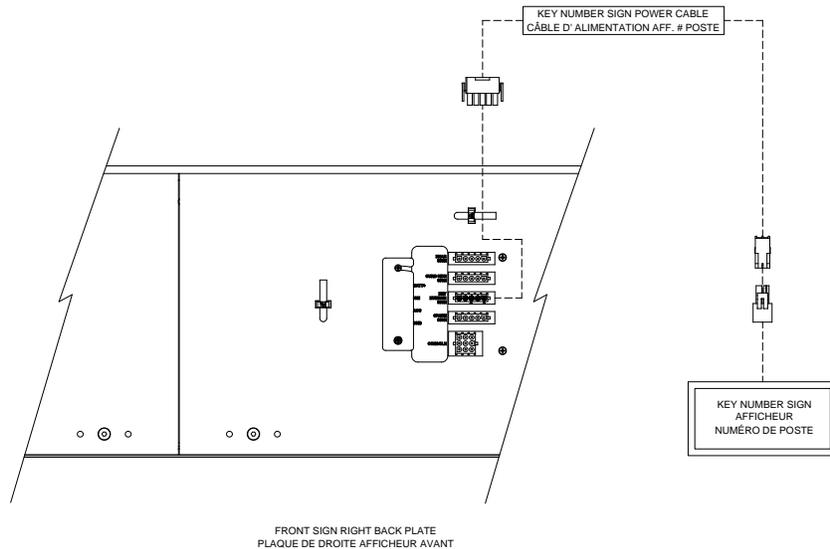
FRONT SIGN RIGHT BACK PLATE
PLAQUE DE DROITE AFFICHEUR AVANT
Figure 10: Key Number Sign Cable Connection

2.3. INSTALLATION FINAL CHECKS

Ensure that all components of the EDSS 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 EDSS and check functionality of each of its components.

2.4.1. STEP 1: EDSS STARTUP

First, the Control Console displays the following information at startup:

AXION

OPTION NO: xxx

where "xxx" is the sign option number.

Second, the control Console displays the system configuration as follows:

FT: xx   SD: xx   RR: xx

RS: xx   KN: xx   NS: xx

where "xx" is the ID of the signs configured in the Control Console. At the first startup, there is no sign configured. The Control Console displays the following text.

CONFIG. NOT DEFINED

PRESS ANY KEY

Press Enter. The Control Console verifies the config present on the bus prior to continuing. Finally, the Control Console starts the test mode and displays the following information:

00001

TEST MODE

The test mode allows the signs to display messages in sequence to ensure they properly operate.   The message sequence is as follows:

- Lit and unlit squares display alternately.
- Lit and unlit lines display alternately (one lit line every four lines).
- Axion logo.
- Sign dimensions in terms of number of lines and columns.

2.4.2.   STEP 2: CONTROL CONSOLE CONFIGURATION

The configuration of the Control Console must correspond to that of the installed EDSS. 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.   Entering Menu 09 of the Control Console (Section 4.1.9) also displays the configuration.   If configurations do not match, you must reconfigure the network to make it functional (Section 4.1.9, Menu 1).

2.4.3.   STEP 3: EMERGENCY SWITCH TEST (IF INSTALLED)

Check correct functioning of the Emergency Switch (If installed). Turn on Emergency Switch and check that signs display the distress signal. Enter "00" on the Control Console keypad to deactivate the emergency mode.

2.4.4.   STEP 4: YIELD SWITCH TEST (IF INSTALLED)

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

2.4.5.   STEP 5: OFF DELAY FUNCTIONALITY TEST

Check correct functioning of the OFF delay. The factory programmed value is one minute. Follow the following steps:

- Turn off the Master Run Switch of the bus.
- Wait for one minute to confirm that the EDSS turns off.

2.4.6.   STEP 6: PHOTOSENSOR LIGHT INTENSITY CONTROL

Enter Menu 15 of the Control Console (Section 4.1.9).   Every sign displays a number corresponding to its current intensity level. Check correct functioning of the light intensity control 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.

SECTION 3

3. MAINTENANCE

This section provides the information required for the proper maintenance of your EDSS. 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 be 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

<div style="border:1px solid black; text-align:center;">

⚠️

CAUTION!

Do not use highly concentrated solvents to clean the signs !

</div>

The different components of the EDSS 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 the Back Plate of the Front Destination Sign.
- Locate the faulty fuse and replace it with a new one of the same specifications. (See Figure 11: Fuse Definition).
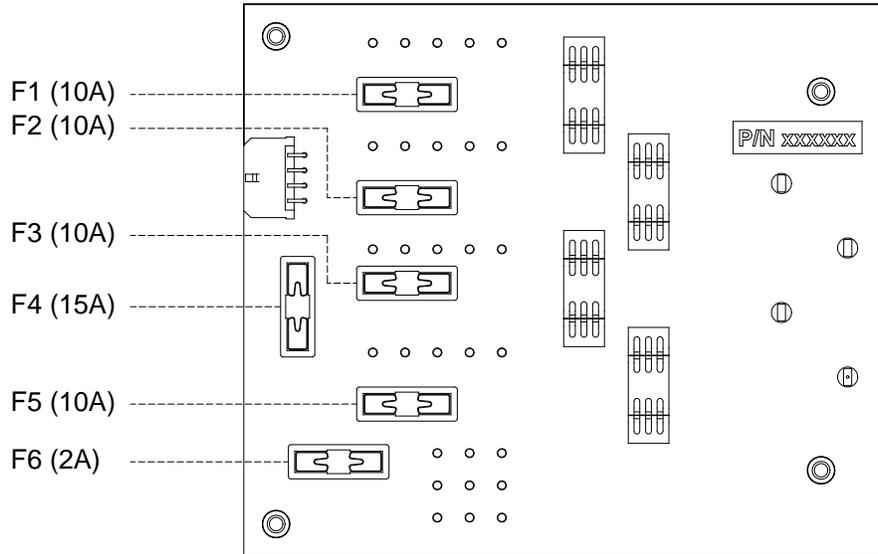
FUSES ON JUNCTION BOARD
FRONT SIGN RIGHT BACK PLATE
FUSIBLES SUR LA CARTE JONCTION
PLAQUE ARRIÈRE DROITE AFFICHEUR AVANT
Figure 11: Fuse Definition

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. EDSS OPERATION

The operation of the EDSS is very simple. This section presents the various available functions of the EDSS.

4.1. USE OF THE CONTROL CONSOLE

4.1.1. INTRODUCTION TO THE USER INTERFACE

Management of EDSS 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.
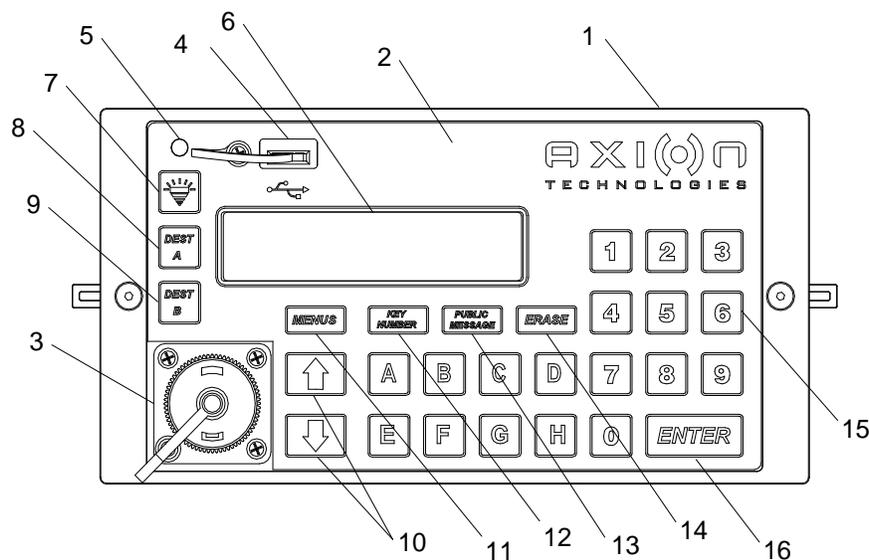
Figure 12: Keypad Definition

No.	Description	No.	Description
1	Control Console	9	*DEST B* programming key
2	Keyboard	10	Scroll up arrow / Scroll down arrow keys
3	PTU programming connector	11	*MENUS* key
4	2.0 USB connector	12	*KEY NUMBER* key
5	Status LED	13	*PUBLIC MESSAGE* key
6	Liquid Crystal Display (LCD)	14	Last entry delete key (*ERASE*)
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 validate the Control Console configuration. The first message to be displayed is the company name followed by the number of the option chosen 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 EDSS. The Control Console is delivered pre-configured. To verify that the configuration corresponds to that of your signs 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.
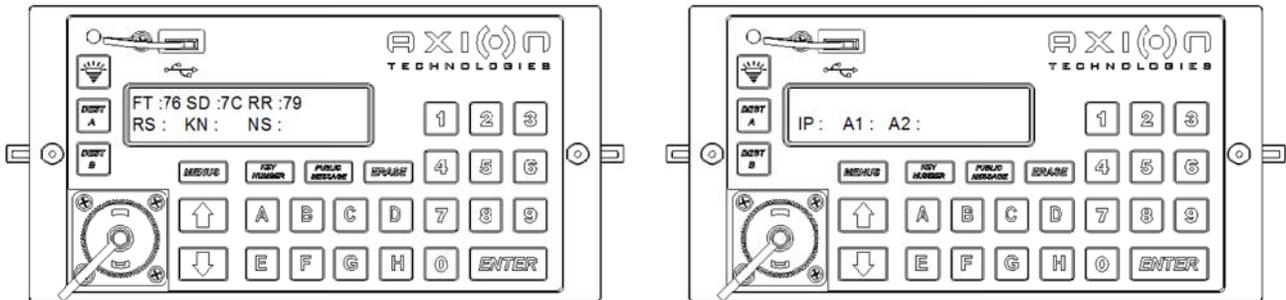
Figure 13: Example of Network Configuration

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, A1 or A2 signs, the second figure does not display at startup.

Refer to Section 7.1 to find the sign identification codes.

If the displayed configuration matches the one installed on the bus, the EDSS is ready to operate. Otherwise, you must reconfigure the Console. Refer to Section 4.1.9 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.
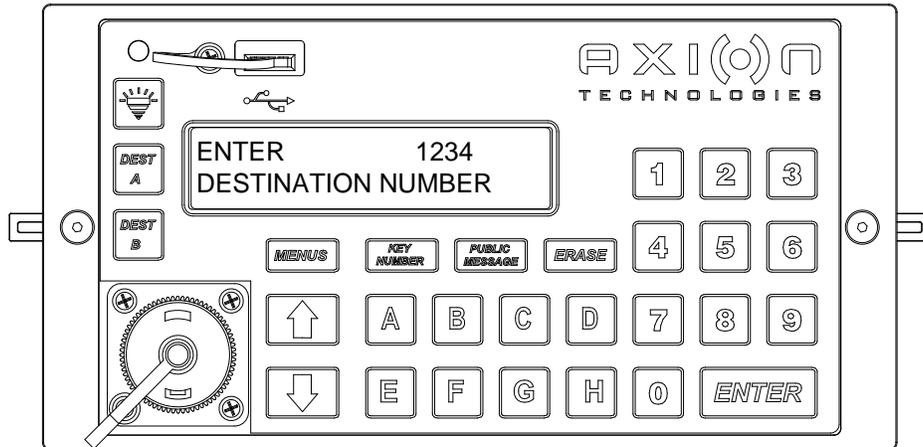
Figure 14: Entering a Route (Example)

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.
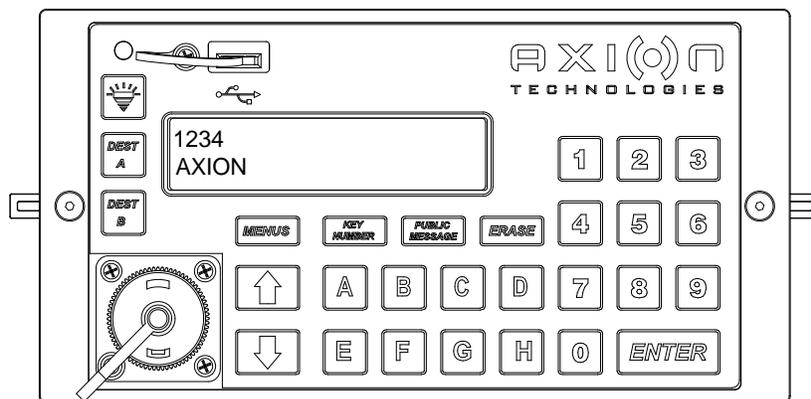
Figure 15: Route Display on the LCD (Example)

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 PUBLIC MESSAGE 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 4.1.9), the entering of a public message number may be protected by a password. This option is deactivated when the console leaves the factory. 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.
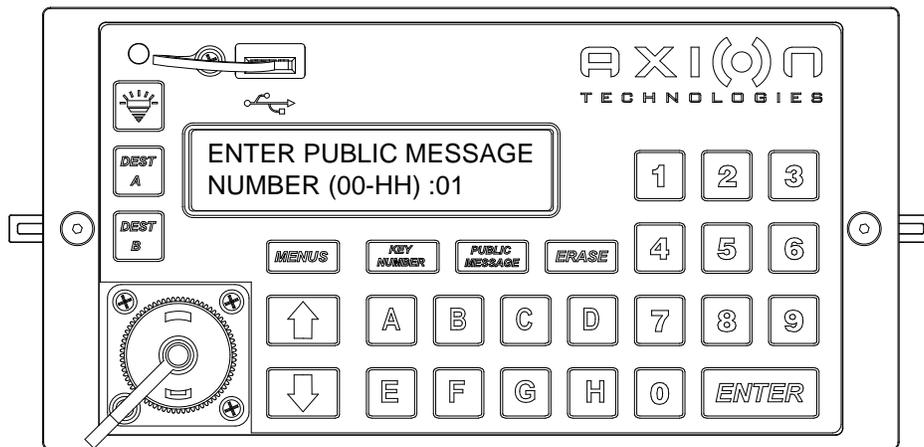
Figure 16: Entering a Public Message (Example)

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.
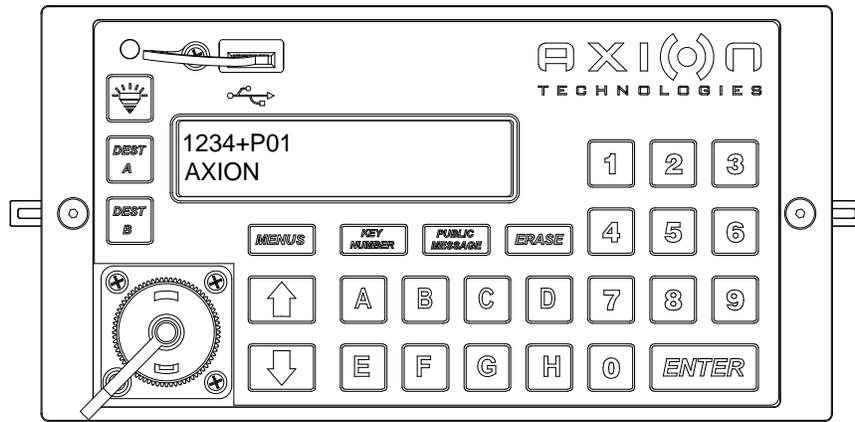
Figure 17: Displaying a PA on the LCD (Example

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. ENTERING TEXT FOR KEY NUMBER SIGN

- Press KEY NUMBER twice on the Control Console keypad.

- Using the Control Console alphanumeric keypad and the cursor arrows (to get letters I to Z), select and enter the text to be displayed by the Key Number Sign (Four characters maximum can be displayed.)

- Press ENTER to confirm your choice.

- When the text is entered, the Control Console LCD displays the following information:
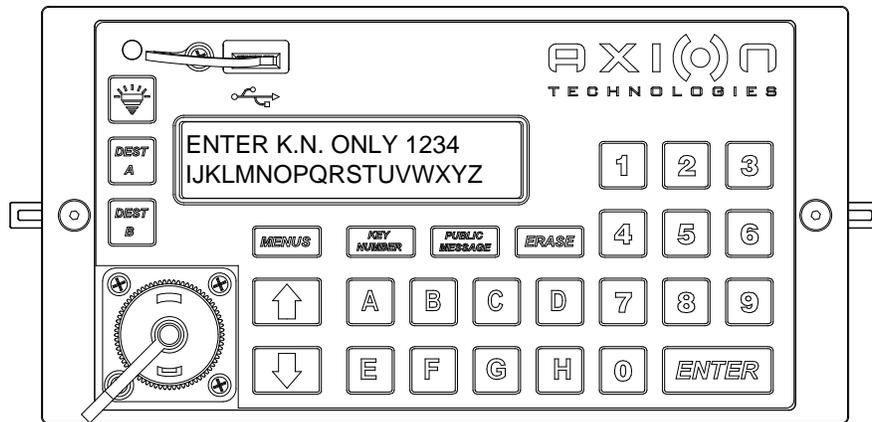
Figure 18: Entering Text for Key Number Sign (Example)

- Route number and Key Number text message are displayed in the upper left corner of the LCD.

● Route content (message) is displayed on the second line. If this a multiline route, the lines display alternately depending on the time interval set at database programming.
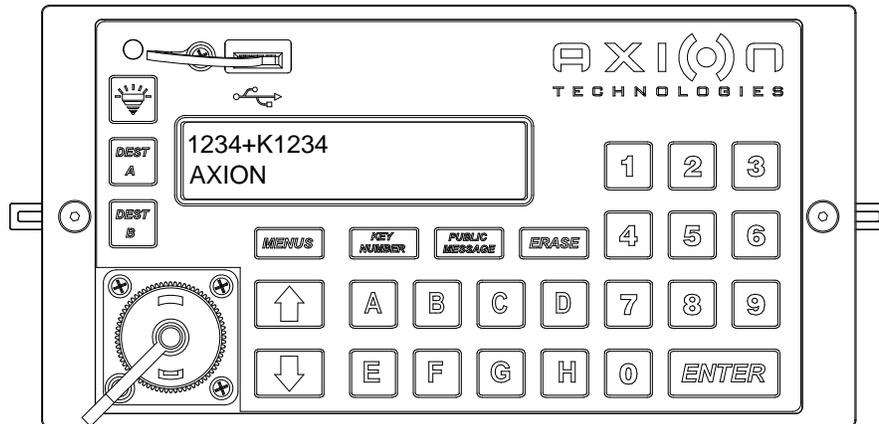
Figure 19: Displaying Key Number on the LCD (Example)

NOTE
Verify that Key Number Sign displays the correct information.

● To deactivate the display of the text on the Key Number Sign, repeat the above steps and enter "0" as text to be displayed.

4.1.6. 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.

4.1.7. 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.

4.1.8. USING THE ERASE KEYBUTTON

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

During power-up of the bus, you can press the ERASE key to bypass the reading of the YIELD and distress signals and the autorouting function.

4.1.9. 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.
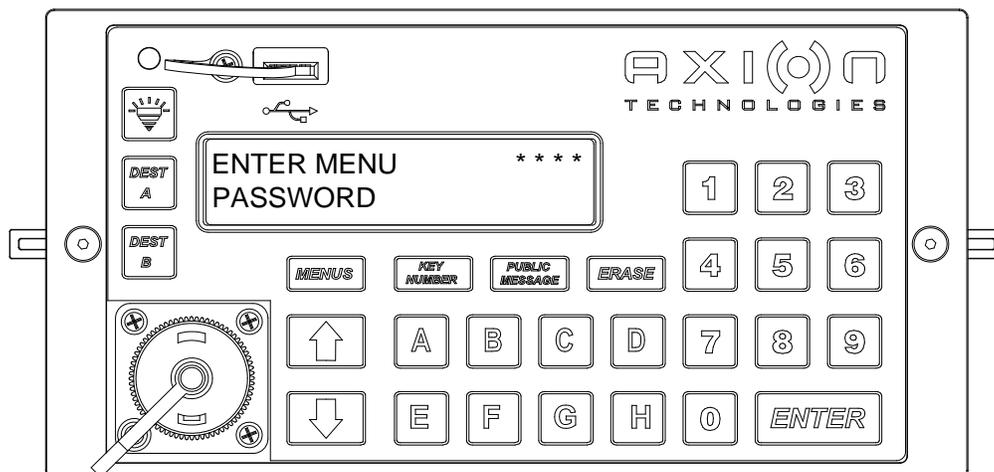
Figure 20: Entering the Menus Password

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 deletes a component to EDSS or resets network.
		1- Reset	Resets network.
		2- Reconfigure	Reconfigures network using signs detected by the Control Console.
2	Off Delay		EDSS 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	Displays "off" delay currently programmed for a few seconds.
		Step 2	Enter new "off" delay (00 to 99 minutes) (Always enter two digits).

Menu No.	Use			Action
3	Menus 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 (to be used 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			When you start the bus, it allows Control Console to automatically recall the last route number entered before you switched off the bus engine.
	Step 1			Displays current status for a few seconds (Factory programmed value: activate).
	Step 2			Allows to modify current status.
		1. Activate		Activates automatic recall of last route entered before you switched off the vehicle engine. At start-up, recalls last route entered.
		2. Deactivate		Deactivates automatic recall. At start-up, Control Console deletes sign contents.

Menu No.	Use				Action
7	Emergency Menu				Emergency sub-menu.
		1. Stop Emergency Mode			Selection of the stop emergency mode.
			Step 1		Displays current stop emergency mode for a few seconds.
			Step 2		Allows to modify stop emergency mode.
				1. Automatic	Automatic shutdown of the emergency message when the emergency switch returns to OFF.
				2. Password	Stops the emergency message when the emergency switch returns to OFF and the password programmed in Menu 4 is supplied.
				3. DEST A/B	Stops the emergency message when the emergency switch returns to OFF and DESTA or DESTB is pressed followed by ENTER. Note: It is possible to provide a new route number between key DEST A/B and ENTER.
		2. Activate/Deactivate Blank LCD			Enables or disables LCD Console clear function during an emergency message.
			Step 1		Displays current status of the LCD screen clear function for a few seconds
			Step 2		Allows to modify the LCD Console clear function during an emergency message.
				1. Activate	Activates LCD Console clear function during an emergency message.
				2. Deactivate	Deactivates LCD Console clear function during an emergency message.
		3. Activate/Deactivate Distress Signal Switch			Activates or deactivates checking of the activation of the Distress Signal Switch.
			Step 1		Displays current status for a few seconds (Factory programmed value: "activate").
			Step 2		Allows to modify current status of the checking function.
				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			Displays current status for a few seconds (Factory programmed value: activate).
		Step 2			Allows to 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				Requests PTU connection or FTT to be inserted to begin the process. Transfers new intensity level table to signs. PTU or FTT must be preprogrammed using intensity level table included in Data Transit software.

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 do not limit access to these messages.
	Step 1			Displays current status for a few seconds (Factory programmed value: deactivate).
	Step 2			Allows to 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 Section 4.2 to find error code interpretation.

Menu No.	Use			Action
14	Manufacturer's Menu			Password is required to access this sub-menu a. Enter password: BAHG.
	1. Version			Displays the version of every module on the network. Use "⇧" or "⇩" arrows to navigate among modules of the network.
	2. Manual Config.			Allows to manually change 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			Allows to change the option number of the control console.
	4. Test Mode			Allows to control Console activation of the test mode of the signs.
		Step 1		Displays current status of the test mode for a few seconds (Factory programmed value: deactivate).
		Step 2		Allows to modify current status of the test mode.
			1. Activate	Starts 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	Stops the test mode of the displays on the network. IMPORTANT: An update of the database is required.
	5. Font Char Set			Controls Console activation of the font set used by the displays on the network.
		Step 1		Displays current font set for a few seconds (Factory programmed value: normal).
		Step2		Allows to 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			Allows to modifies operating frequency of the displays.
		Step 1		Displays current status of the operating frequency of the displays.
		Step 2		Allows to 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.
	7. Language			Allows to change the user interface language.
		Step 1		Displays current user interface language for a few seconds.
		Step 2		Allows to modify the user interface language.
			1. English	English user interface.
			2. French	French user interface.

Menu No.	Use			Action
	8. Automatic ENTER			Allows to cancel the requirement to press the ENTER key to complete the route number.
		Step 1		Displays the current requirement to press ENTER for a few seconds.
		Step 2		Allows to cancel the requirement to press ENTER.
			1. Activate	ENTER required to complete the route number capture.
			2. Deactivate	ENTER not required to complete the route number when typing a letter or after entering the fourth digit.
	9. Protocol Used			Allow to change RS-232 protocol of the B port.
		Step 1		Displays the current protocol of B port for a few seconds.
		Step 2		Allows to modify the protocol of B port.
			1. Cubic	CUBIC protocol.
			2. Consat	CONSAT protocol.
15	Activate Intensity Level Test			Checks photosensor functionality. Displays current intensity level digit of each sign.

Menu No.	Use	Action
	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	Displays in a sub-menu the actual status of the last transfer through the wireless link. Use "⇧" or "⇩" arrows to navigate between the three status windows.<table><tr><td>Window 1</td><td>CO: IP address of the console SE: IP address of the last FTP server</td></tr><tr><td>Window 2</td><td>SSID of the last WI-FI network</td></tr><tr><td>Window 3</td><td>Status of the last database wireless update.</td></tr></table>
16	3. WIC list VER	Shows in a sub-menu the configuration information related to the FTP servers present in the WIC file. 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.<table><tr><td>Display the ID and IP address of the first FTP server</td><td>Display SSID window</td></tr><tr><td>:</td><td></td></tr><tr><td>Displays the ID and IP address of the last FTP server.</td><td>Displays SSID window</td></tr></table>
	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 is in progress. Displayed message: ┌─────────────────┐ │ 4 DIAG WIRELESS │ ├─────────────────┤ │ IN PROGRESS... │ └─────────────────┘ Step 2: Displays the following results of the wireless link:<table><tr><td>MODULE WI-FI CONSOLE FUNCTIONAL</td><td>No problem.</td></tr><tr><td>MODULE WIFI CONSOLE NOT AVAILABLE</td><td>Failure to communicate with the WIFI device.</td></tr><tr><td>WIC FILE NOT AVAILABLE</td><td>No configuration file for the dedicated FTP server within the console.</td></tr><tr><td>WI-FI LINK NOT AVAILABLE</td><td>No access to a dedicated FTP server in the console.</td></tr><tr><td>IP ADDRESS NOT AVAILABLE</td><td>Failure to obtain a DHCP address.</td></tr><tr><td>FTP SERVER NOT AVAILABLE</td><td>The FTP server does not reply to the ping.</td></tr></table>
	5. Update DB	Allows the user to force a database wireless update without verifying the database ID. Displays the result of the process.

Menu No.	Use		Action
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	Displays 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 EDSS. 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.
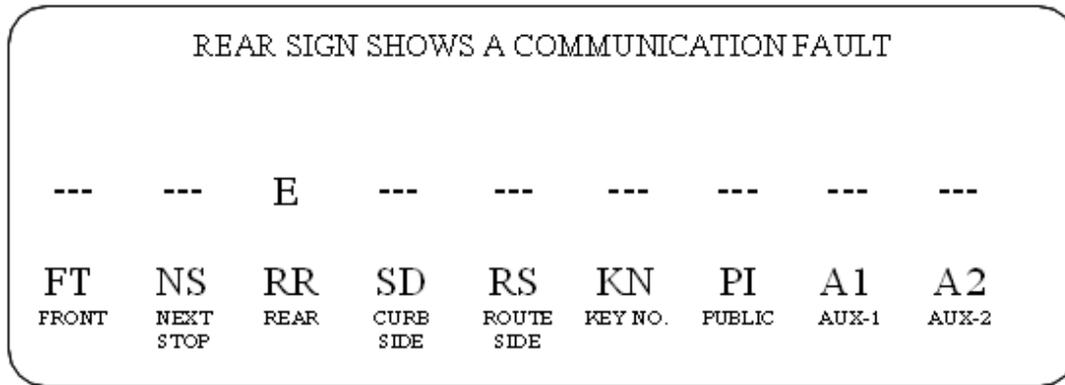
Figure 21: Link Error

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.
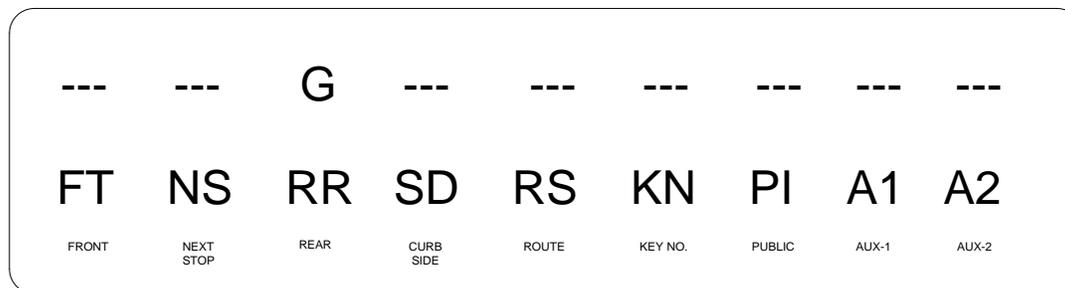
Figure 22: Line of Products Error

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 the identity error on the Rear Sign.
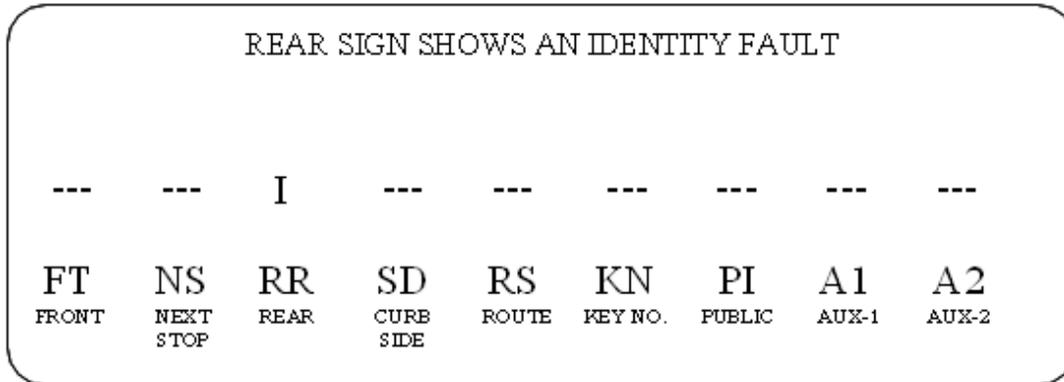
Figure 23: Identity Error

4.2.4. DATABASE INCOMPATIBILITY ERROR ("D" SYMBOL)

The 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 startup. The message on the LCD reads as follows:

CONFIGURATION DIFFER
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.
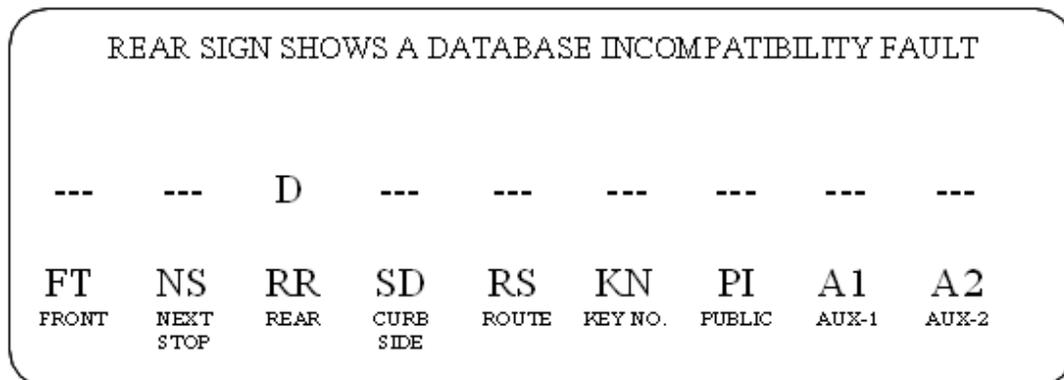
Figure 24: Database Incompatibility Error

4.2.5. PHOTOSENSOR ERROR ("P" SYMBOL)

The 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
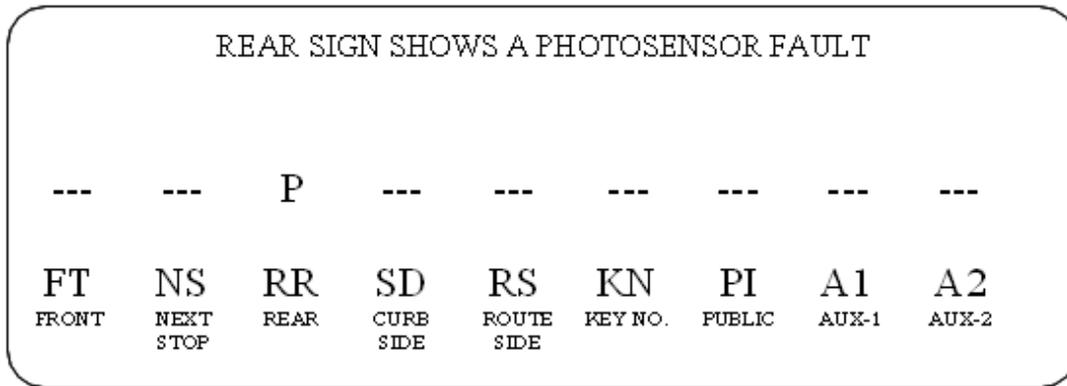
Figure 25: Photosensor Error

4.2.6. OPERATING FREQUENCY ERROR ("C" SYMBOL)

This error shows that the operating frequency of one or more signs differs 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
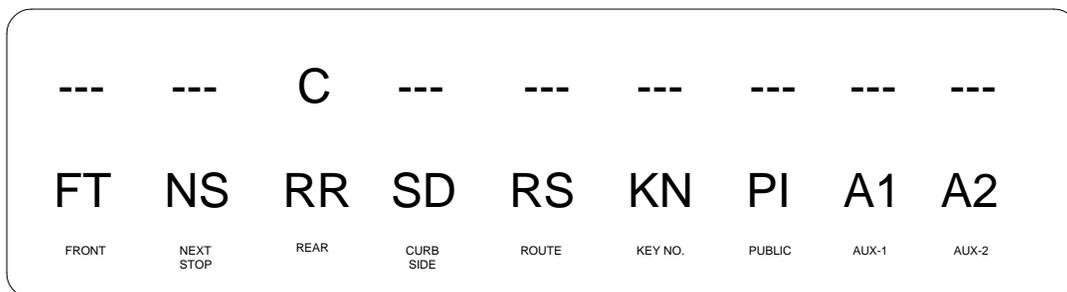
Figure 26: Operating Frequency Error

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 using a computer (IBM PC or compatible) running the "DataTransit" software. Each message is attributed a route code that the operators enter on the Control Console for related information to be displayed.

When your database is complete, transfer it from the computer to a PTU or 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 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.
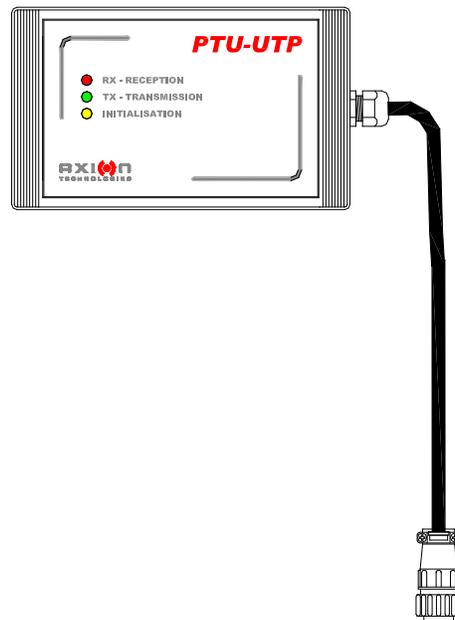
Figure 27: Portable Transfer Unit (PTU)

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 under way.
- The message "REMOVE PTU" prompts you to disconnect the PTU once the transfer is over.

Figure 28: 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 under way.
- The message: "UPDATE COMPLETE! YOU MAY REMOVE USB" prompts you to remove the USB key once the transfer is over.

Figure 29: 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 WIFI

Enter Menu 16 of the Control Console (Section 4.1.9) and select item 5 update DB.
- The message: "UPDATE WIFI IN PROGRESS....." appears on the LCD to indicate that transfer is under way.
- The message: "UPDATE WIFI SUCCESSFUL!" prompts you once the transfer is over.

Figure 30: 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

EDSS DOES NOT TURN ON			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
STEP 1	Power cable connection between battery and EDSS	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 fuse(s)
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

CONSOLE DOES NOT TURN ON			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
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

LCD SEEMS OK, BUT LED REMAINS UNLIT OR VICE VERSA			
	CHECK	PASSES	FAILS/CORRECTIVE ACTION
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	EDSS 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 LEDs 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	All internal cables	GO TO STEP 5	Replace faulty cable(s)
STEP 5	Sign LED-DRVR-PS-CPU board	GO TO STEP 6	Replace LED-DRVR-PS-CPU board as per Parts Manual instructions
STEP 6	LED-DRVR-PS boards	GO TO STEP 7	Replace defective LED-DRVR-PS 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 LED-DRVR-PS-CPU board		Replace Sign LED-DRVR-PS-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(s) or connector(s) as per Parts Manual instructions
STEP 2	LED-DRIVER-PS boards	GO TO STEP 3	Replace defective LED-DRVR-PS board(s) as per Parts Manual instructions
STEP 3	Sign LED-DRVR-PS-CPU board		Replace Sign LED-DRVR-PS-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	Replace Sign LED-DRVR-PS-CPU board as per Parts Manual instructions

5.2.   INTERPRETATION OF ERROR MESSAGES DISPLAYED ON 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 4.1.9)	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 4.1.9)	GO TO STEP 2	
STEP 2	Validate that LED-DRVR-PS-CPU board dip switches are set according to the sign model (See Table 7.1)	GO TO STEP 3	Set LED-DRVR-PS-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 4.1.9) 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

<table>
<tr><td colspan="4" align="center">FLASHING 'I" ON LCD

INDICATES THAT IDENTITY OF SIGN PRESENT ON NETWORK DIFFERS FROM THAT CONFIGURED ON CONTROL CONSOLE</td></tr>
<tr><td></td><td align="center">CHECK</td><td align="center">PASSES</td><td align="center">FAILS/CORRECTIVE ACTION</td></tr>
<tr><td>STEP 1</td><td>Go to Menu 13 to find out which sign has an identity problem (See Section 4.1.9)</td><td>GO TO STEP 2</td><td></td></tr>
<tr><td>STEP 2</td><td>Reconfigure Sign Network (See Section 4.1.9, Menu 1)</td><td></td><td></td></tr>
</table>

5.2.4. SIGN DATABASE ERROR MESSAGE

<table>
<tr><td colspan="4" align="center">FLASHING 'D" ON LCD

INDICATES THAT THE CONTROL CONSOLE CONFIGURATION DIFFERS FROM THE DATABASE CONFIGURATION</td></tr>
<tr><td></td><td align="center">CHECK</td><td align="center">PASSES</td><td align="center">FAILS/CORRECTIVE ACTION</td></tr>
<tr><td>STEP 1</td><td>Go to Menu 13 to find out which sign has an identity problem (See Section 4.1.9)</td><td>GO TO STEP 2</td><td></td></tr>
<tr><td>STEP 2</td><td>Download database corresponding to the sign network configuration or reconfigure the Control Console</td><td></td><td></td></tr>
</table>

5.2.5. PHOTOSENSOR ERROR MESSAGE

<table>
<tr><td colspan="4" align="center">FLASHING "P" ON LCD

INDICATES A PHOTOSENSOR ERROR WITH ONE OR MORE SIGNS</td></tr>
<tr><td></td><td align="center">CHECK</td><td align="center">PASSES</td><td align="center">FAILS/CORRECTIVE ACTION</td></tr>
<tr><td>STEP 1</td><td>Go to Menu 13 to find out which sign(s) has (have) a photosensor problem (See Section 4.1.9)</td><td>GO TO STEP 2</td><td></td></tr>
<tr><td>STEP 2</td><td>Go to Section 5.1.3 and conduct "Light intensity does not change with ambient light variations" procedure</td><td></td><td></td></tr>
</table>

5.2.6. SIGN OPERATING FREQUENCY ERROR MESSAGE

<table>
<tr><td colspan="4">FLASHING "C" ON LCD

INDICATES THAT THE SIGN PRESENT ON THE NETWORK DOES NOT SUPPORT THE OPERATING FREQUENCY CONFIGURED IN THE CONTROL CONSOLE</td></tr>
<tr><td></td><td>CHECK</td><td>PASSES</td><td>FAILS/CORRECTIVE ACTION</td></tr>
<tr><td>STEP 1</td><td>Go to Menu 13 to find out which sign has a frequency problem (See Section 4.1.9)</td><td>GO TO STEP 2</td><td></td></tr>
<tr><td>STEP 2</td><td>Reset signs operating frequency to 29.4912 MHz. Reconfigure sign network (See Section 4.1.9 Menu 14)</td><td></td><td></td></tr>
</table>

5.2.7. PTU ERROR MESSAGES

<table>
<tr><td colspan="4">"SYSTEM NOT PRESENT" ON LCD

INDICATES THAT PTU DATABASE IS INCOMPATIBLE WITH SYSTEM INSTALLED ON VEHICLE</td></tr>
<tr><td></td><td>CHECK</td><td>PASSES</td><td>FAILS/CORRECTIVE ACTION</td></tr>
<tr><td>STEP 1</td><td>If Control Console configuration matches that of Section 4.1.2</td><td>GO TO STEP 2</td><td>Reconfigure Control Console</td></tr>
<tr><td>STEP 2</td><td>PTU content</td><td>GO TO STEP 3</td><td>Download desired database into PTU</td></tr>
<tr><td>STEP 3</td><td>Control Console</td><td></td><td>Replace Control Console</td></tr>
</table>

<table>
<tr><td colspan="4">FLASHING "PTU COMMUNICATIONS INTERRUPTED" ON LCD

INDICATES A DEFECTIVE CONNECTION BETWEEN PTU AND CONSOLE</td></tr>
<tr><td></td><td>CHECK</td><td>PASSES</td><td>FAILS/CORRECTIVE ACTION</td></tr>
<tr><td>STEP 1</td><td>Cable and connectors between PTU and Control Console</td><td>GO TO STEP 2</td><td>Replace faulty cable or connector(s)</td></tr>
<tr><td>STEP 2</td><td>PTU</td><td>GO TO STEP 3</td><td>Replace PTU</td></tr>
<tr><td>STEP 3</td><td>Control Console</td><td></td><td>Replace Control Console</td></tr>
</table>

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 board		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	The 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 4.1.9)	GO TO STEP 3	
STEP 3	Download database corresponding to sign network configuration or reconfigure Control Console		

5.3. EDSS LEDs DEFINITION

5.3.1. CONTROL CONSOLE LED

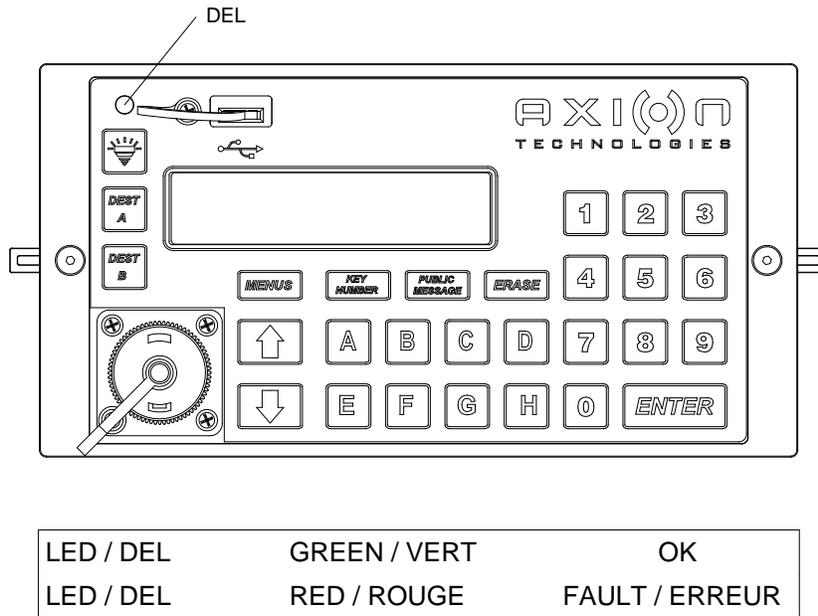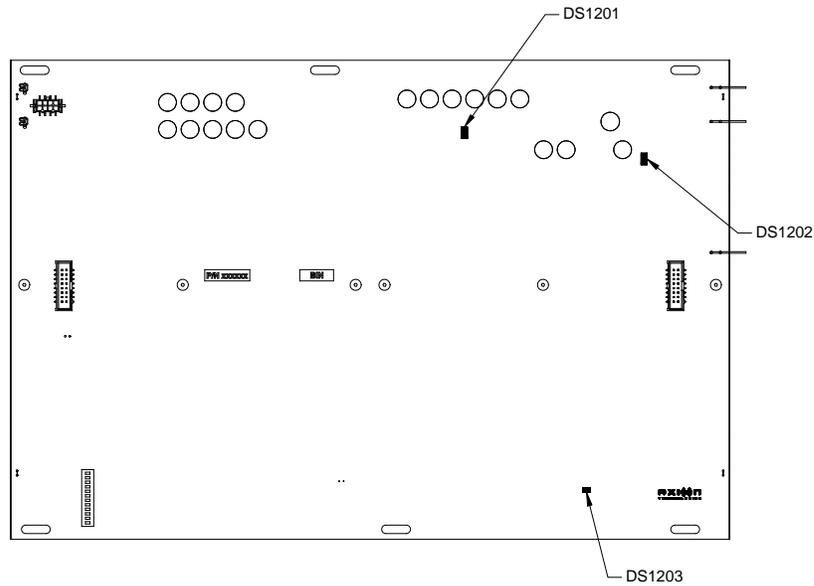| LED / DEL	GREEN / VERT	OK
LED / DEL	RED / ROUGE	FAULT / ERREUR

Figure 31: Control Console LED

5.3.2.   LED-DRVR-PS-CPU BOARD LEDs

DS1201	GREEN LED	LIT = FUNCTIONAL 2.8 Vdc SUPPLY UNLIT = NON-FUNCTIONAL 2.8 Vdc SUPPLY
DS1202	GREEN LED	LIT = FUNCTIONAL 5 Vdc SUPPLY UNLIT = NON-FUNCTIONAL 5 Vdc SUPPLY
DS1203	RED LED	FLASHING: NON-FUNCTIONAL CPU UNLIT: FUNCTIONAL CPU

Figure 32: LED-DRVR-PS-CPU Board LEDs

5.3.3. LED-DRVR-PS BOARD LEDs
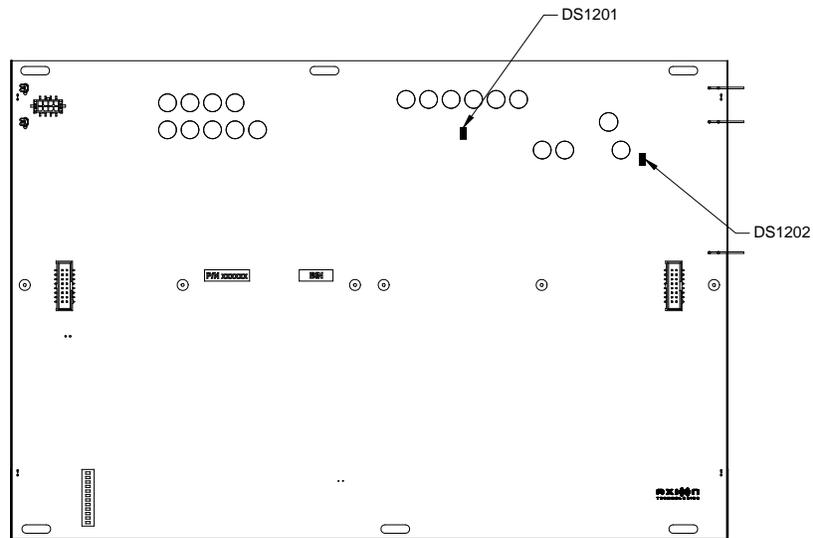
DS1201	GREEN LED	LIT = FUNCTIONAL 2.8 Vdc SUPPLY UNLIT = NON-FUNCTIONAL 2.8 Vdc SUPPLY
DS1202	GREEN LED	LIT = FUNCTIONAL 5 Vdc SUPPLY UNLIT = NON-FUNCTIONAL 5 Vdc SUPPLY

Figure 33: LED-DRVR-PS Board LEDs

5.4. DATABASE TRANSFER STATUS

5.4.1. WIRELESS DATABASE TRANSFER STATUS

Enter menu 16 of the Control Console (section 4.1.9).

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

Window 1 Console and FTP router IP addresses.

CO: Console IP address

SE: Latest FTP router IP address

Window 2 Latest FTP router SSID.

SSID: latest FTP router

Window 3 Result of the latest database transfer.

" UPDATE WIFI "

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

In the event of update failure, you may start manually the update database process with the menu 16, item 5 Update DB. See section 4.1.9.

5.4.2. USB DATABASE TRANSFER STATUS

During the database files update, the console displays the following information:

" 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.

When the update of the database is successful

       " UPDATE COMPLETE! "

       " YOU MAY REMOVE USB "

When the update of the database is in error

       "   UPDATE FAILED!   "

       " YOU MAY REMOVE USB "

When there is no file in the AXION-DB folder on the USB key

       " NO FILE TO UPDATE! "

       " YOU MAY REMOVE USB "

SECTION 6

6. DRAWINGS
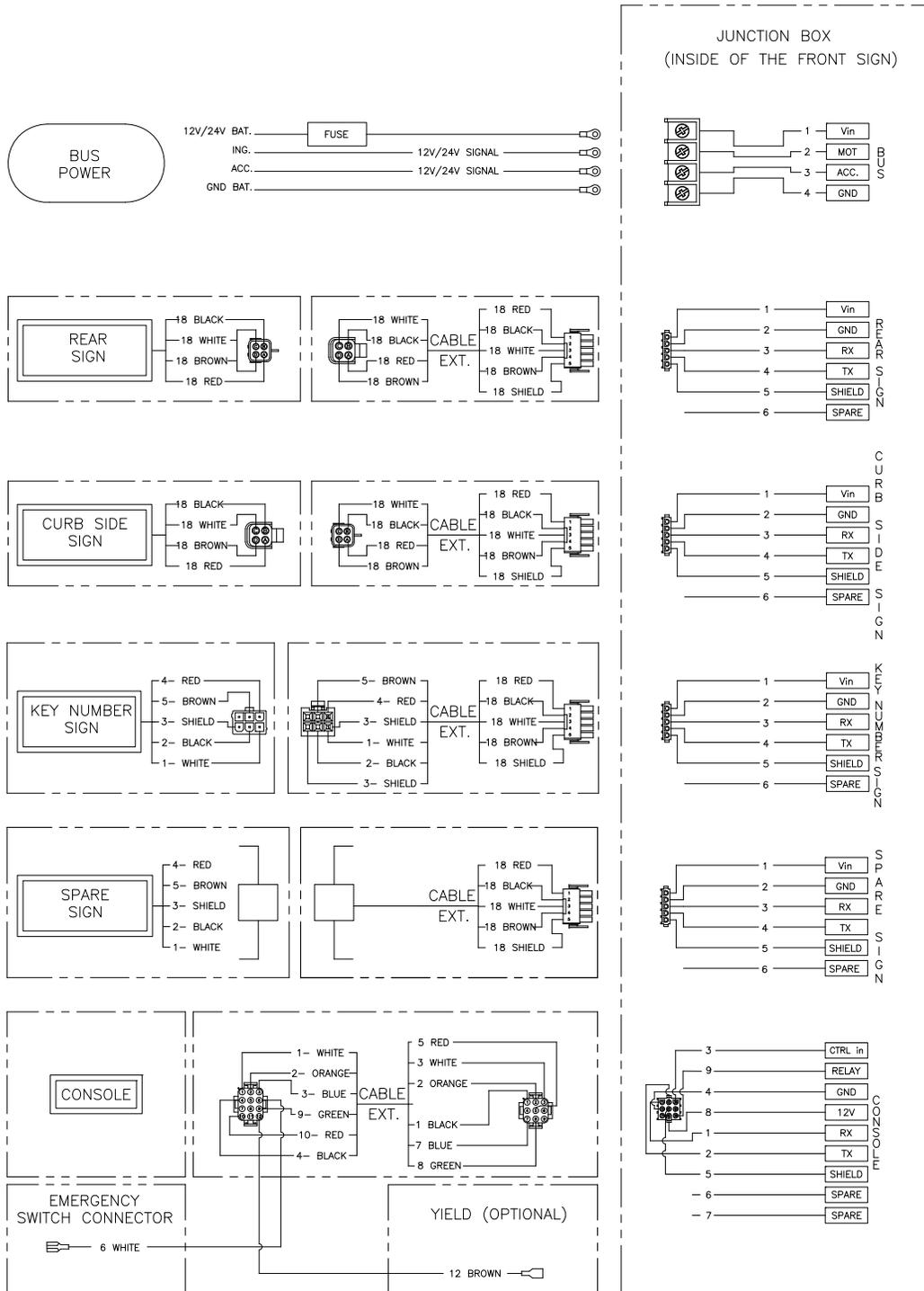
6.1. INTERCONNECTION DIAGRAM

Figure 34: Electrical Interconnection
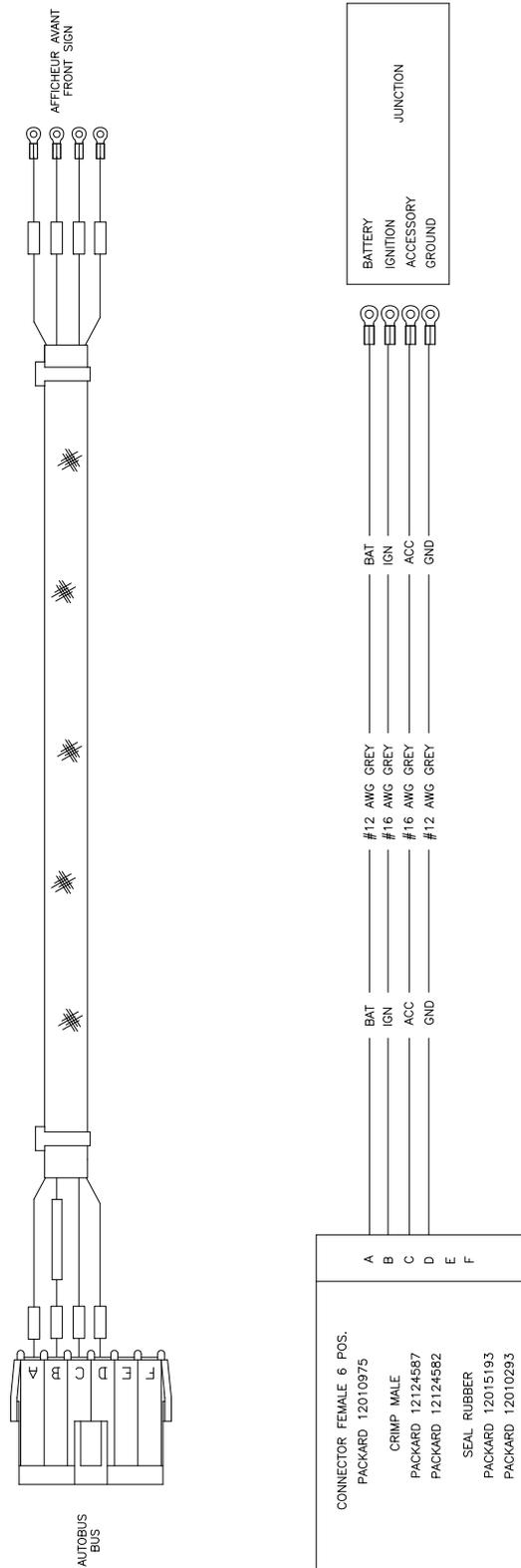
6.2. MAIN POWER CABLE

Figure 35: Main Power Cable

6.3. CONTROL CONSOLE CABLE

6.3.1. CABLE w/o INVERTER AND w/o J1708 AND RS-232 CONNECTION
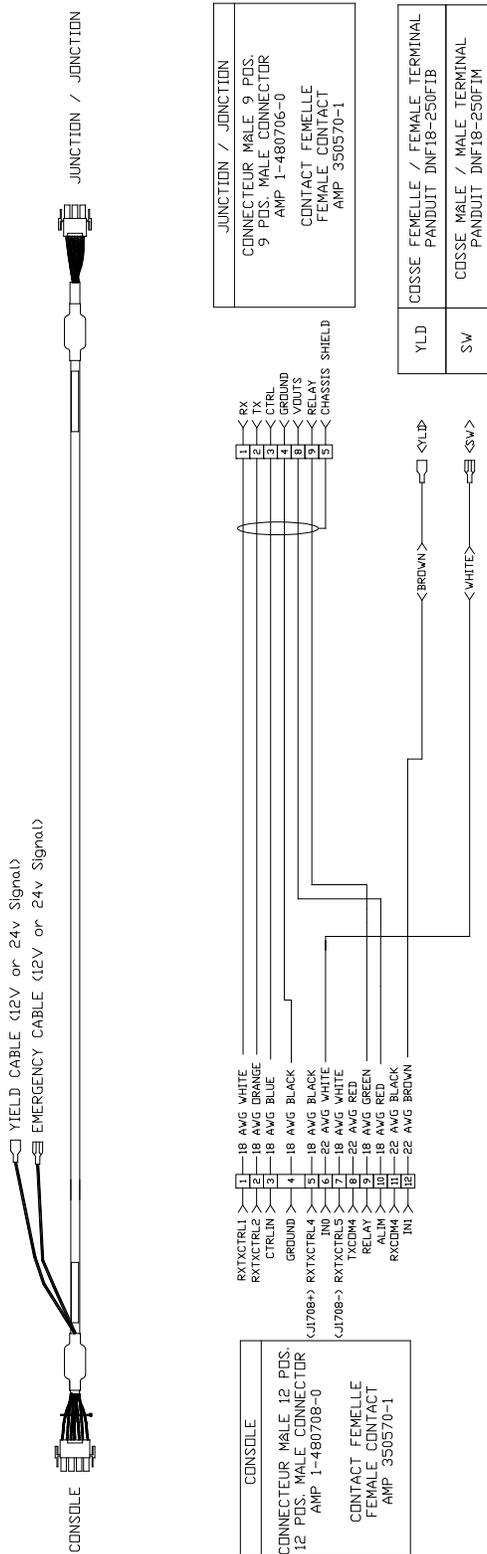

Figure 36: Cable w/o Inverter and w/o J1708 and RS-232 Connection

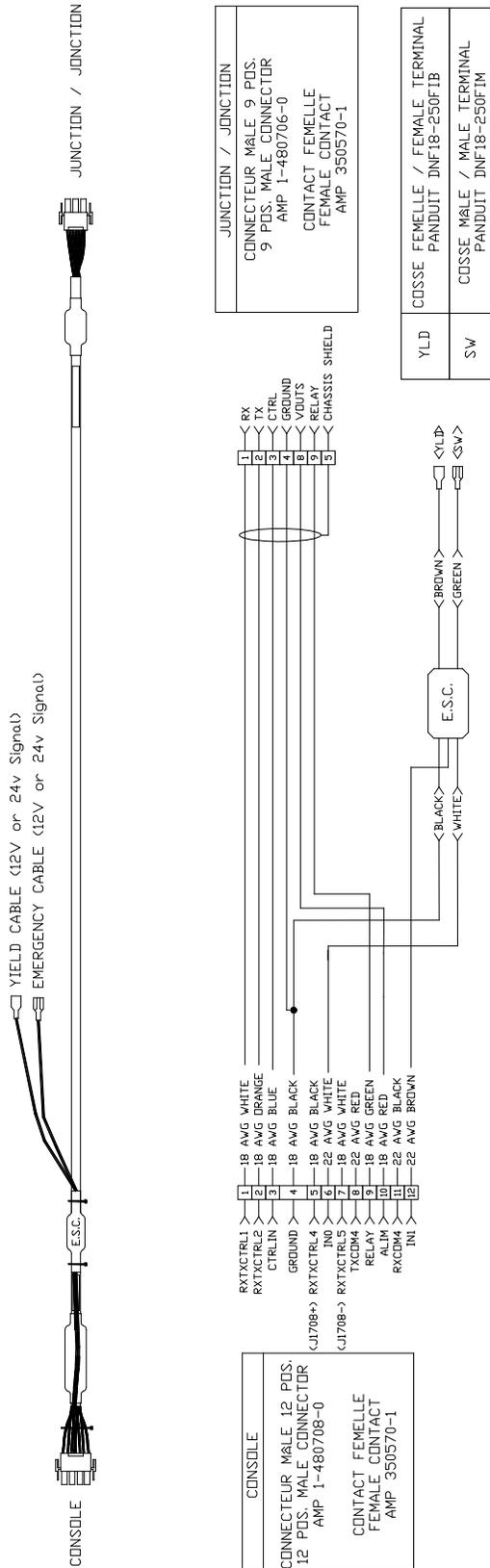## 6.3.2.   CABLE WITH INVERTER AND YIELD

Figure 37: Cable with Inverter and Yield

6.3.3. CABLE WITH INVERTER AND YIELD AND WITH J1708 AND RS-232 CONNECTION
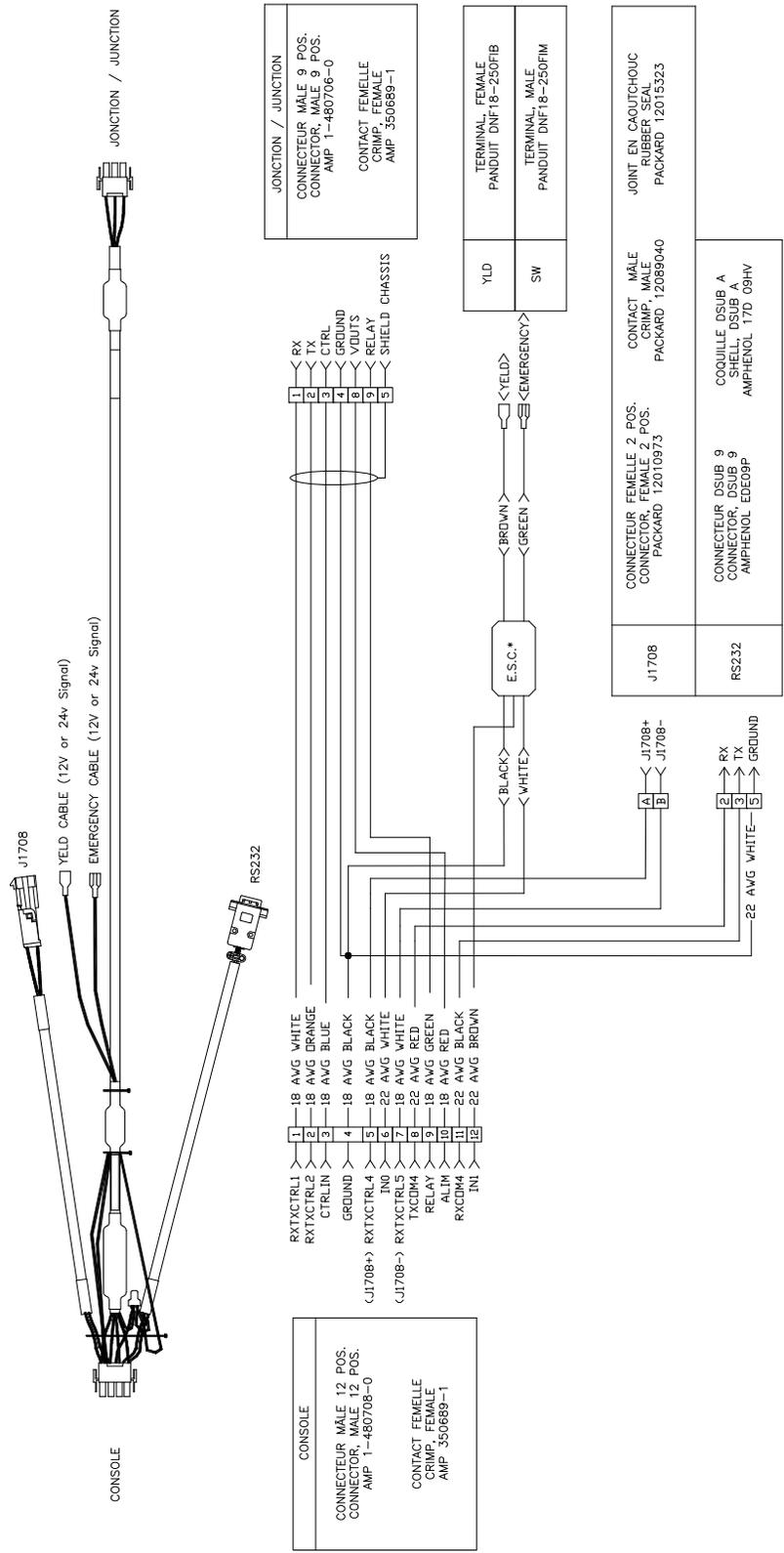
Figure 38: Cable with Inverter and Yield and with J1708 and RS-232 Connection

6.4. CURB/ROUTE SIDE SIGN CABLE

Figure 39: Curb/Route Side Sign Cable

6.5. EXTERIOR REAR NUMBER SIGN CABLE

Figure 40: Exterior Rear Sign Cable

6.6. KEY NUMBER SIGN CABLE

Figure 41: Key Number Sign Cable

6.7.   CONTROL CONSOLE CUTOUT SIZE

Refer to Control Console Parts Manual.

6.8.   OUTSIDE REAR SIGN CUTOUT SIZE

Refer to Sign Parts Manual.

SECTION 7

7. REFERENCE TABLES

7.1. SIGN IDENTIFICATION CODES
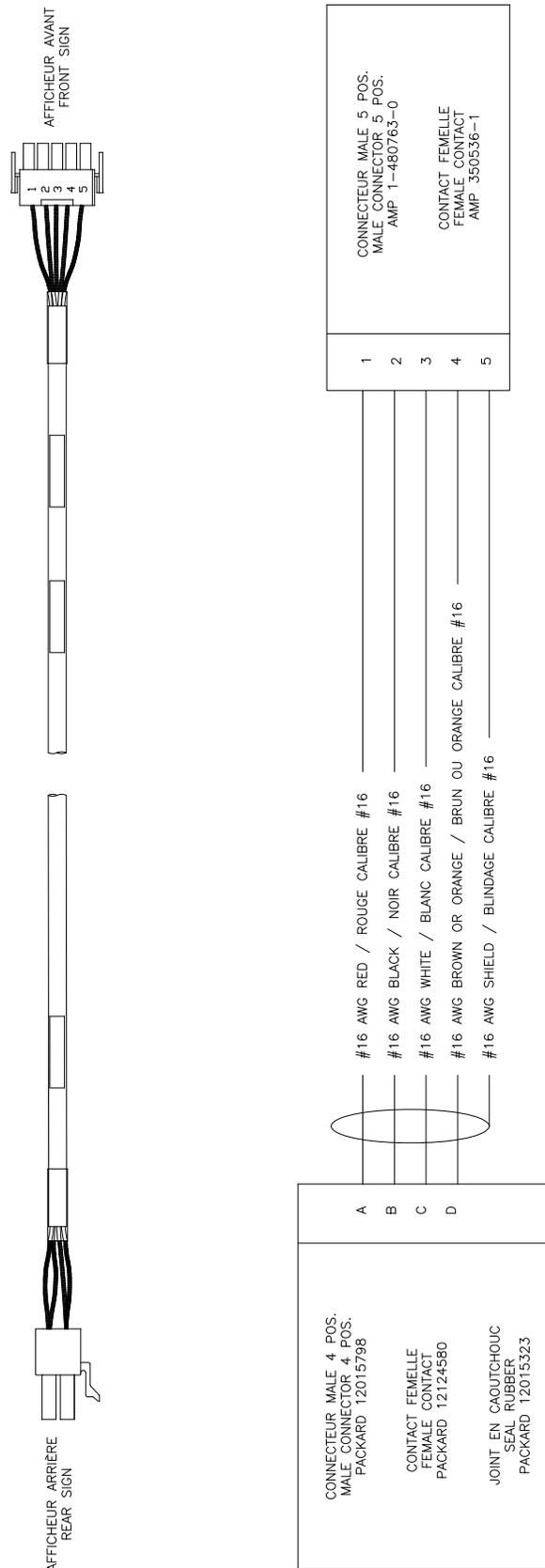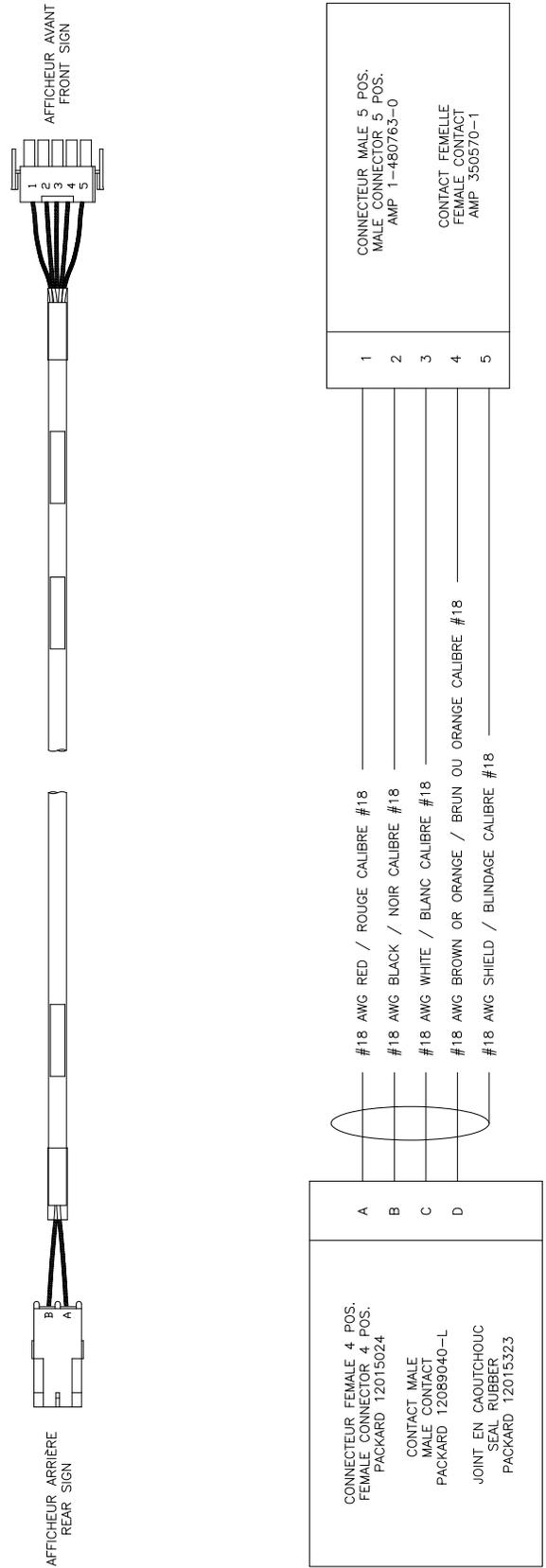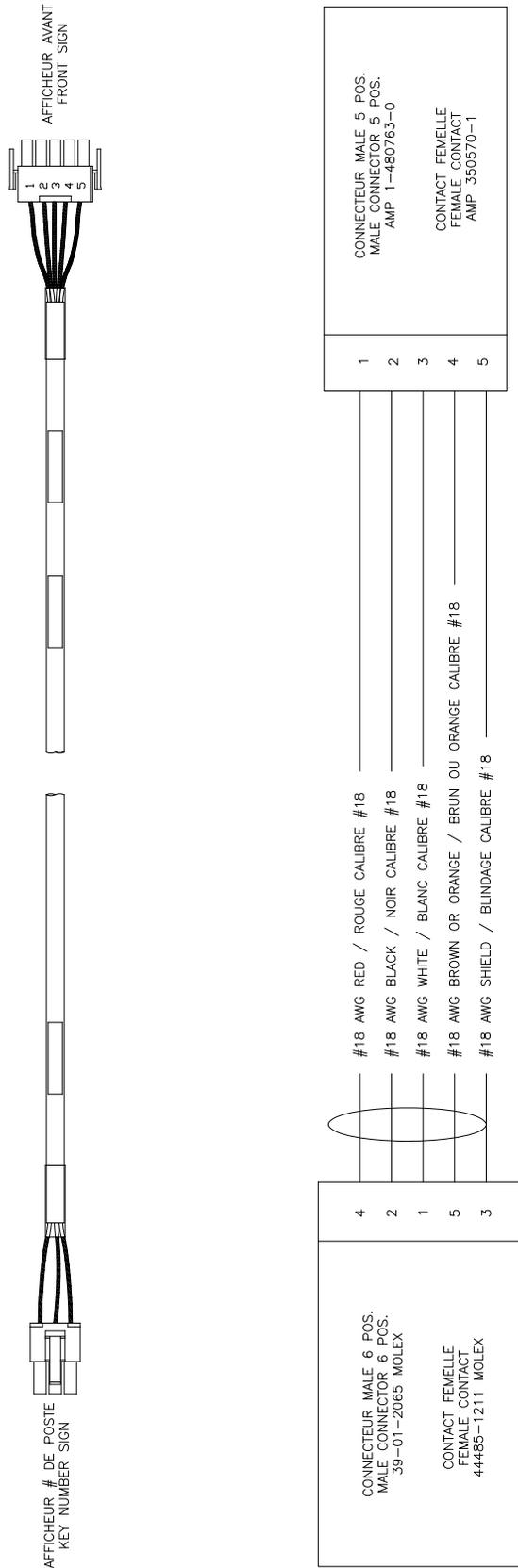
In the CPU DIP SWITCH SETTINGS columns, ▪↑ indicates the switch square shown in the upper (top) position and ▪↓ indicates the lower (bottom) position.

Serial Number	Sign ID	1	2	3	4	5	6	7	8	9	10	11	12
FRONT SIGN		1	2	3	4	5	6	7	8	9	10	11	12
FRONT 24 X 200	B5	▪↑	▪↓	▪↑	▪↓	▪↑	▪↑	▪↓	▪↑	▪↓	▪↓	▪↓	▪↓
FRONT 16 X 160	76	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑		▪↓	▪↓	▪↓	▪↓
CURB SIDE SIGN		1	2	3	4	5	6	7	8	9	10	11	12
SIDE 8 X 96	7C	▪↓	▪↓	▪↑	▪↑	▪↑	▪↑	▪↑	▪↓	▪↑	▪↑	▪↓	▪↓
SIDE 16 X 160	76	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑	▪↓	▪↑	▪↑	▪↓	▪↓
SIDE 16 X 120	B6	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑	▪↓	▪↓
SIDE 16 X 80	B8	▪↓	▪↓	▪↑	▪↑	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑	▪↓	▪↓
SIDE 16 X 40	B7	▪↑	▪↑	▪↑	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑	▪↓	▪↓
REAR SIGN		1	2	3	4	5	6	7	8	9	10	11	12
REAR 16 X 48	79	▪↑	▪↓	▪↓	▪↑	▪↑	▪↑	▪↑	▪↓	▪↓	▪↑	▪↓	▪↓
REAR 16 X 40	B7	▪↑	▪↑	▪↑	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑	▪↓	▪↓
KEY NUMBER SIGN		1	2	3	4	5	6	7	8	9	10	11	12
KEY NUMBER 16 X 40	B7	▪↑	▪↑	▪↑	▪↓	▪↑	▪↑	▪↓	▪↑	▪↑	▪↑	▪↓	▪↓
CONTROL CONSOLE													
All signs	6C						s/o						

Table 4: Sign Identification Code

7.2. EDSS FUSE TABLE

Serial Number	Value	Type of Fuse
FRONT SIGN		
FRONT 24 X 200	15 A	Low Profile MINI® BLADE FUSE
FRONT 16 X 160	15 A	Low Profile MINI® BLADE FUSE
CURB SIDE SIGN		
SIDE 8 X 96	10 A	Low Profile MINI® BLADE FUSE
SIDE 16 X 160	10 A	Low Profile MINI® BLADE FUSE
SIDE 16 X 120	140 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 48	10 A	Low Profile MINI® BLADE FUSE
REAR 16 X 40	10 A	Low Profile MINI® BLADE FUSE
KEY NUMBER SIGN		
KEY NUMBER 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.