

**MURPHY**®

by **ENOVATION** CONTROLS



# Infotainment Core Expansion™ module (ICE) Installation Manual

In order to consistently bring you the highest quality, full-featured products, we reserve the right to change our specifications and designs at any time.

**Warranty** - A limited warranty on materials and workmanship is given with this Murphy product.  
A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/warranty](http://www.fwmurphy.com/warranty).



Please read the following information before installing.

**BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT:**

- A visual inspection of this product before installation for any damage during shipping is recommended.
- It is your responsibility to have a qualified technician install the unit and make sure installation confirms with local codes.
- Observe all Warnings and Cautions in each section of these instructions.
- Please contact ENOVATION CONTROLS immediately if you have any questions.

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## Introduction

Murphy's Infotainment Core Expansion™ module (ICE) brings sound control, connectivity, customization and more to the water. With software and hardware designed to fit with the existing PowerView® line of displays, ICE takes the functionality of stereo and multifunctional displays and brings them to the recreational marine market.

ICE software features the standard radio and stereo functions expected, but it also allows for Bluetooth connectivity for hands-free notifications on the display for new texts, missed and incoming calls, signal strength, battery life and BT connection status. The software also offers audio profiles, four zone control, five band EQ and customizable sound control. By giving users the ability to sync their smartphone, ICE brings car-like features designed to withstand the marine environment.

The ICE components include:

ICE Software	AM/FM
	Auto Station Discovery (finds local stations from any city)
	Auto Discover Based on PTY Category (e.g., scan for all rock stations)
	Favorites / Presets
	Search Stations by Genre (PTY category)
	PTY Recognition (genre radio artwork)
	Bluetooth Phone and Audio
	Hands-free Notifications (new texts, missed calls, incoming call, signal strength, battery life, BT connection status)
	Auxiliary
	Audio Profiles
	Four Zone Control
	Five Band EQ
	Customizable Sound Control
ICE Hardware	Internal Source
	AM Tuner
	Weather Band
	Digital FM Tuner (with RDS, title tagging)
	Bluetooth Audio
ICE Inputs	3.5mm Analog Stereo Aux Input
	Two 2-channel RCA Analog Inputs
	Networking and Device Connections
	Bluetooth Audio Streaming
	Hands-free Bluetooth Functionality
ICE Audio Features	Eight Channels with 4V Differential Pre Out for Audio Quality
	Four Zones with Level and EQ Control
	Five Band Tone Control
	Wired Remote Control Capabilities
	Wireless RF Receiver for Remote Control

## Before Installation

1. Locate the mounting position within 3 feet of the Murphy display to be used with the black box.
2. If the vessel does not have harnessing in place for the black box, Murphy part number 78-00-0931 will be needed. Contact your nearest dealer or sales representative. (This is a kit including the 4-pin Deutsch and 24-pin Delphi harness on page 7).
3. If the battery is in place, disconnect it.

## Package Contents

	Quantity
Black Box Stereo .....	1

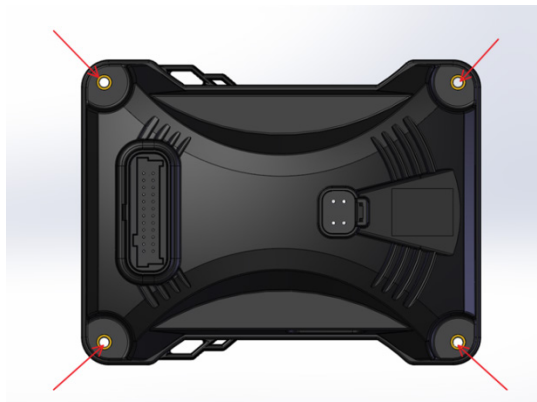
## Installation Cautions

1. To avoid noise, do not install unit near power rail or run power lines parallel to audio lines.
2. Be sure to install mounting screws in all 4 mounting holes.
3. To reduce the risk of corrosion of the input harness, adhesive-lined heat shrink should be installed over the harness connections.

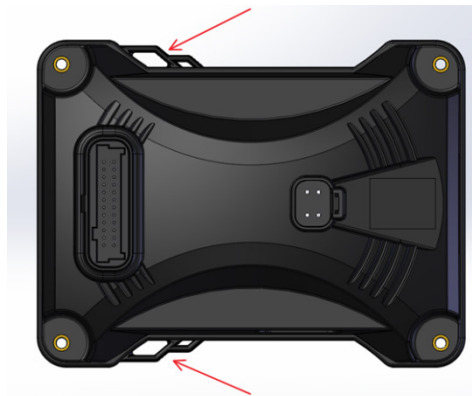
## Black Box Installation

**NOTE:** It is imperative that the black box is mounted within 3 feet of Murphy Display.

1. The unit should be mounted with the 24-pin connector on the left and the 4-pin on the right.
2. Using the 4 mounting holes shown in the image below, mount the black box to a solid surface.



3. All wires should be secured in place to avoid complications. Please allow slack in harnessing to avoid damage to the harness.
4. Shown below are two locations on the black box to which harnessing may be secured, if needed.



## Wired Connections

The 24-pin Delphi and 4-pin Deutsch harnesses can be purchased from Enovation Controls as part of a set or individually:

- Part # 78-00-0931 contains both harnesses
- Part # 78-00-1088 contains the Audio (24-Pin) harness
- Part # 78-00-1089 contains the Power (4-pin) harness

### 24-pin Delphi Harness (Audio)

A 24-pin Delphi connector will be needed to pin out the RCA lines that run to the amplifier. The components for this harness are listed below along with the pinout of the harness. This connector joins directly to the stereo. The RCAs will then run to the 2 to 8 channels on the amplifier(s). Please follow this diagram carefully.

Note: The AUX IN 2 (LT&RT) & AUX IN 3 (LT&RT) in this pinout are optional external auxiliary inputs.

Audio Harness Components				
Item	Supplier	Part Number	Description	Qty
1	Delphi	12129225-B	Automotive Connectors CON MP 100 24W FEM	1
2	Delphi	12110403-B	Automotive Connectors SEAL MIC/P 100 24W FEM CABL	1
3	Delphi	12129666	Automotive Connectors STRAIN RELIEF LOCK BLACK	1
4	Delphi	12084912	Automotive Connectors TERM MIC/P 100 FEM	24
5	Delphi	12129183-B	Automotive Connectors CON MP 100 24W FEM	1
6	Delphi	12110299-B	Automotive Connectors CPA MP 100 RED LK	1
7	-	-	CABLE, RCA, FEMALE, RED	6
8	-	-	CABLE, RCA, FEMALE, WHITE	6

24 PIN DELPHI PINOUT		
PIN	Description	Labeled As
1	LINE OUT ZONE 1 LEFT +	Z1 LT
2	LINE OUT ZONE 1 LEFT -	
3	LINE OUT ZONE 1 RIGHT +	Z1 RT
4	LINE OUT ZONE 1 RIGHT -	
5	LINE OUT ZONE 2 LEFT +	Z2 LT
6	LINE OUT ZONE 2 LEFT -	
7	LINE OUT ZONE 2 RIGHT +	Z2 RT
8	LINE OUT ZONE 2 RIGHT -	
9	AUX IN 2 LEFT -	AUX IN 2 LT
10	AUX IN 2 LEFT +	
11	AUX IN 2 RIGHT -	AUX IN 2 RT
12	AUX IN 2 RIGHT +	
13	LINE OUT ZONE 3 LEFT +	Z3 LT
14	LINE OUT ZONE 3 LEFT -	
15	LINE OUT ZONE 3 RIGHT +	Z3 RT
16	LINE OUT ZONE 3 RIGHT -	
17	LINE OUT ZONE 4 LEFT +	Z4 LT
18	LINE OUT ZONE 4 LEFT -	
19	LINE OUT ZONE 4 RIGHT +	Z4 RT
20	LINE OUT ZONE 4 RIGHT -	
21	AUX IN 3 LEFT -	AUX IN 3 LT
22	AUX IN 3 LEFT +	
23	AUX IN 3 RIGHT -	AUX IN 3 RT
24	AUX IN 3 RIGHT +	

## 4-pin Deutsch Harness (Power)

A 4-pin Deutsch plug will be required for the system. The harness will consist of 1 black wire, 1 red wire, 1 orange wire and 1 blue wire. The pinout of this harness can be seen below. Ignition is to be wired directly to ACC on the ignition switch. Vbatt and Ground need to terminate to Amp power and ground. Under the helm, power and ground should split to the display and ICE. This should be an isolated power rail. Vbatt from the amp should be fused at 5-Amps. The blue amplifier Turn On wire should be tied to the remote connection on the amplifier(s). If multiple amplifiers are to be used, the amp On wire is to be daisy chained to the other amplifiers.

Flying Lead Power Cable Components				
Item	Supplier	Supplier Part Number	Description	Qty
1	Deutsch	DT06-4S	Connector, Deutsch DT06-4S	1
2	-	-	Ignition, Orange Wire	1
3	-	-	Vbatt, Red Wire	1
4	-	-	Ground, Black Wire	1
5	-	-	Amp On, Blue Wire	1

Connector Pinout Table, Flying Lead Power Cable		
Pin #	Description	Labeled As
1	Ignition, Orange Wire	Ignition
2	Vbatt, Red Wire	Vbatt +
3	Ground, Black Wire	Vbatt -
4	Amp On, Blue Wire	Amp On

## Input harness

The input harness is part of the black box and requires no installation. This harness includes: two USB sockets, one USB plug, one 3.5mm stereo socket and one antenna socket. The function of each input can be seen in the table below. Included with the stereo is a heat shrink kit that includes one piece of heat shrink for each of the five possible connections on the input harness. To keep connections isolated from the environment and prevent corrosion, please install the provided heat shrink to each of the connections.

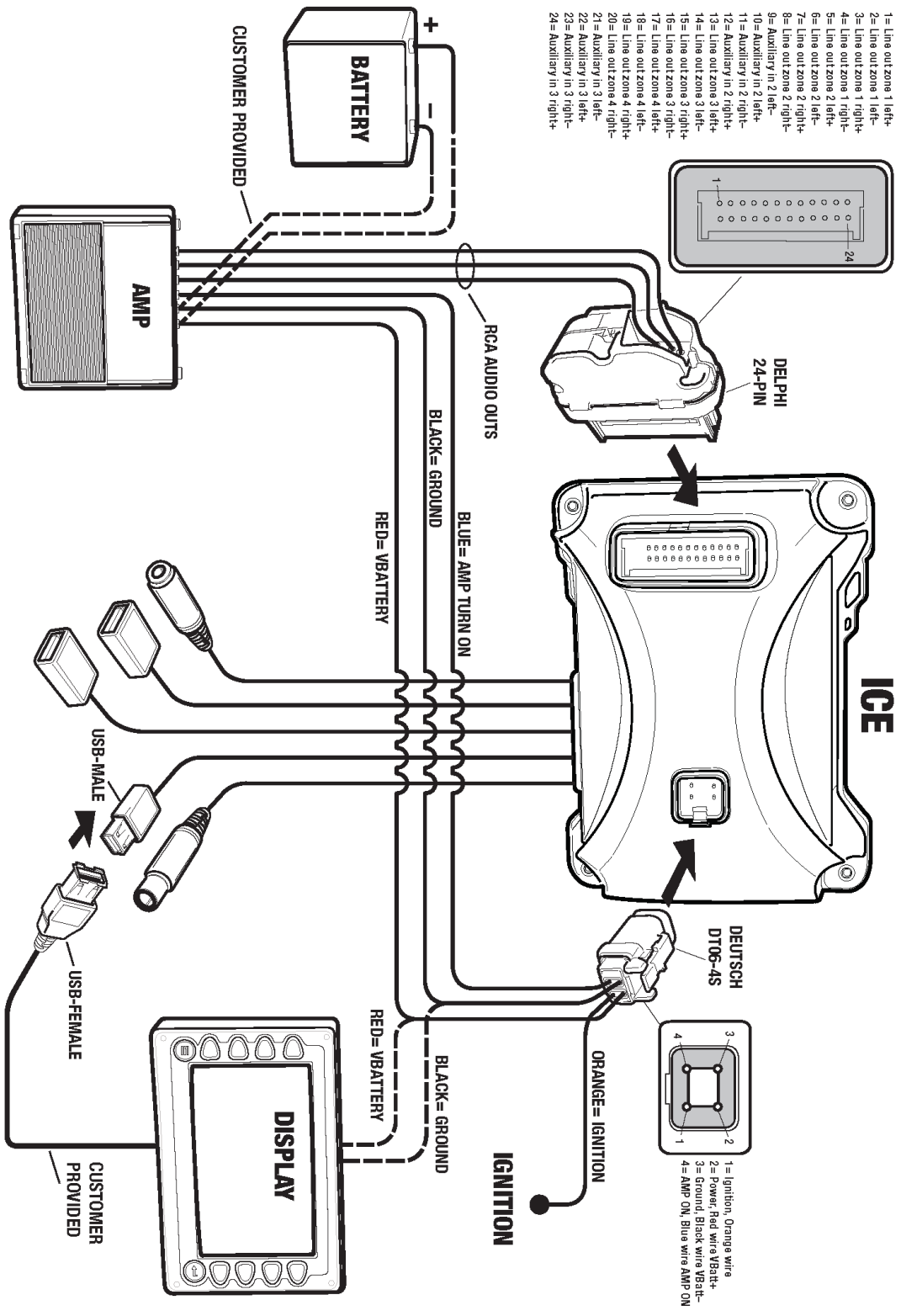
Input	Function
USB Socket	1. MP3/iPhone media connection (if used with next gen display) 2. Software updates for both display and black box 3. Port for display map drive
USB Plug	Serves as connection to Murphy Display
3.5mm Stereo receptacle	Audio in
Antenna socket	Antenna connection

**NOTE:** Please reference the Appendix / USB Specification at the end of this manual. It is imperative to follow this specification for the system's display USB harness to operate properly.



**24-PIN DELPHI PINOUT**

- 1= Line out zone 1 left-
- 2= Line out zone 1 left+
- 3= Line out zone 1 right-
- 4= Line out zone 1 right+
- 5= Line out zone 2 left-
- 6= Line out zone 2 left+
- 7= Line out zone 2 right-
- 8= Line out zone 2 right+
- 9= Auxiliary in 2 left-
- 10= Auxiliary in 2 left+
- 11= Auxiliary in 2 right-
- 12= Auxiliary in 2 right+
- 13= Line out zone 3 left-
- 14= Line out zone 3 left+
- 15= Line out zone 3 right-
- 16= Line out zone 3 right+
- 17= Line out zone 4 left-
- 18= Line out zone 4 left+
- 19= Line out zone 4 right-
- 20= Line out zone 4 right+
- 21= Auxiliary in 3 left-
- 22= Auxiliary in 3 left+
- 23= Auxiliary in 3 right-
- 24= Auxiliary in 3 right+



## Remote Installation

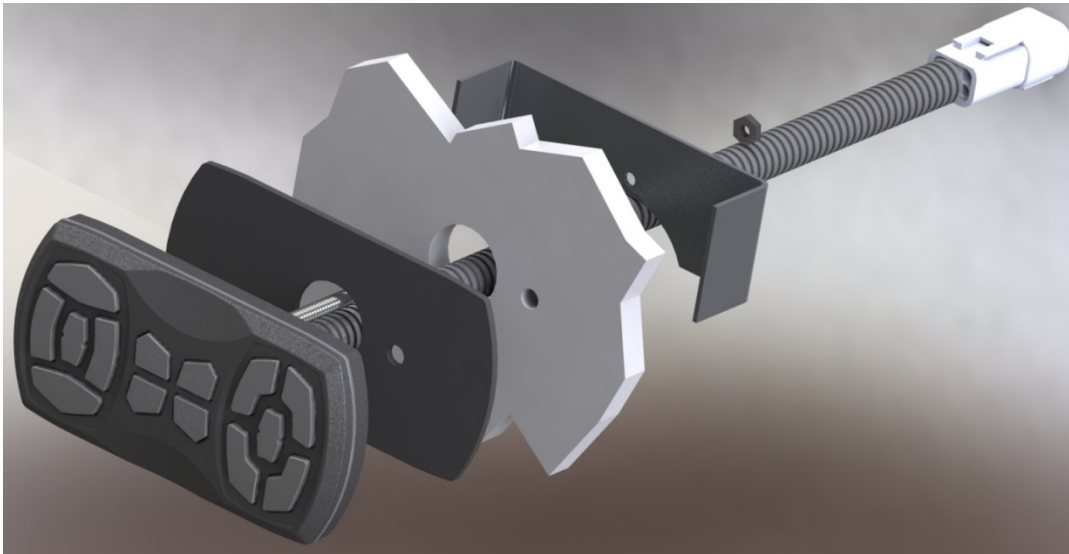
### Package Contents

Component	Quantity
CAN Remote	1
Foam Spacer	1
Mounting Bracket	1
Hardware Packet	1

### Remote Installation Instructions

**NOTES:**

1. Choose a location for the remote that will not disturb the driver or interfere with any safety devices.
2. Avoid curved surfaces as this can put strain on the remote.
3. See image below for reference.



Step	Action
1	Use masking tape to cover the surface to which the remote will be mounted.
2	Drill a 1" hole in the center of where the remote is to be mounted.
3	Remove masking tape.
4	Place the foam gasket on the back of the remote.
5	Feed wire harness through the 1" hole to bring the remote's back flush with the surface.
6	Slide bracket over the metal post on the remote's back.
7	Slide the lock washer onto the threaded post.
8	Fasten the hex nut onto the threaded post and tighten until the remote is snug.
9	Connect the wiring harness to the mating connector.

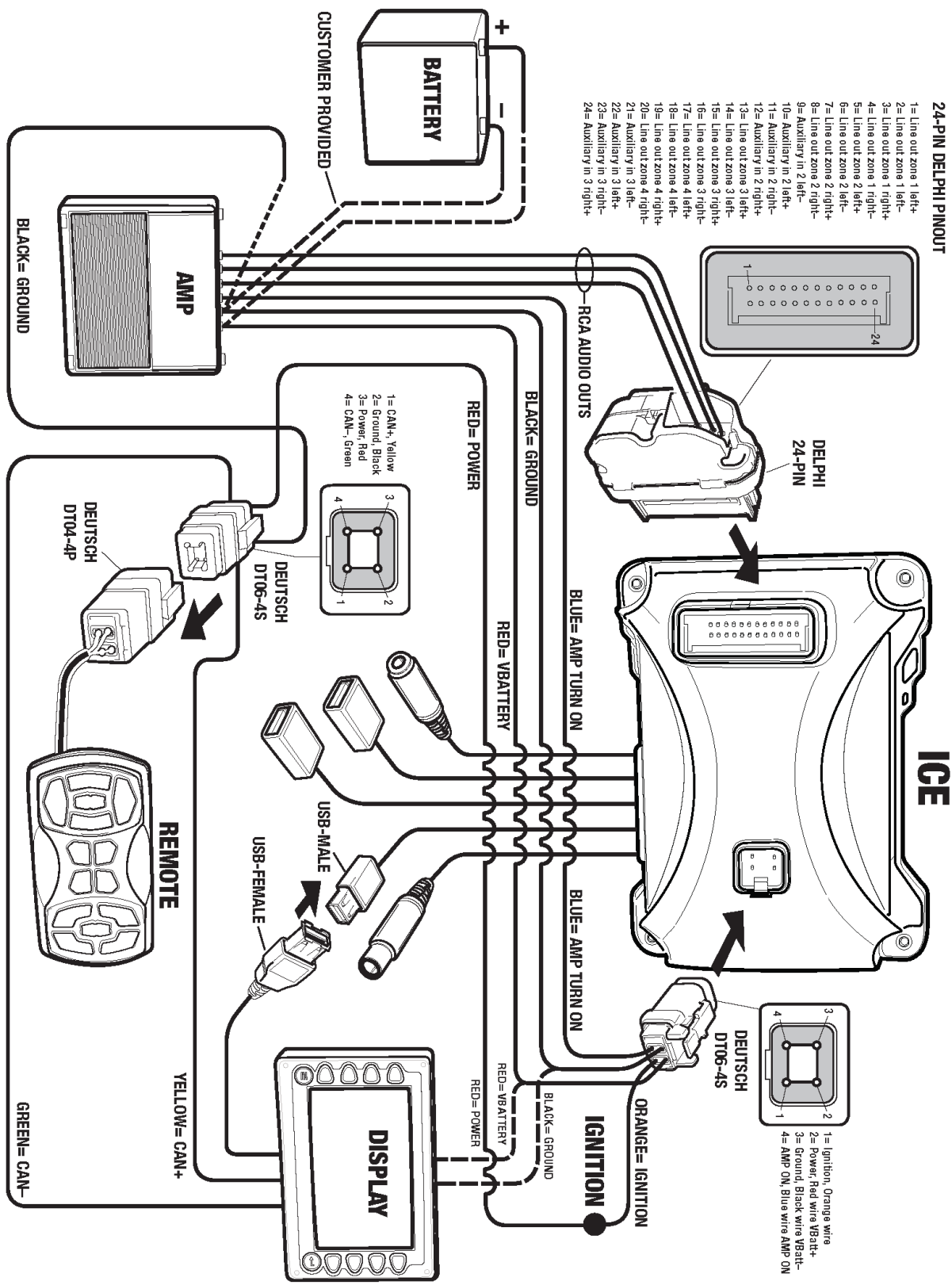
## Remote Wired Connections

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The remote is to be powered from the 12V ignition. It is also acceptable to power the remote from the 12V Amplifier Turn On terminal from the ICE stereo (also known as Remote Power). The pinout for the remote can be seen below. The CANH and CANL are to be wired into CAN 2 on the display. In addition, power must be connected to the CAN 2 bus on the display.

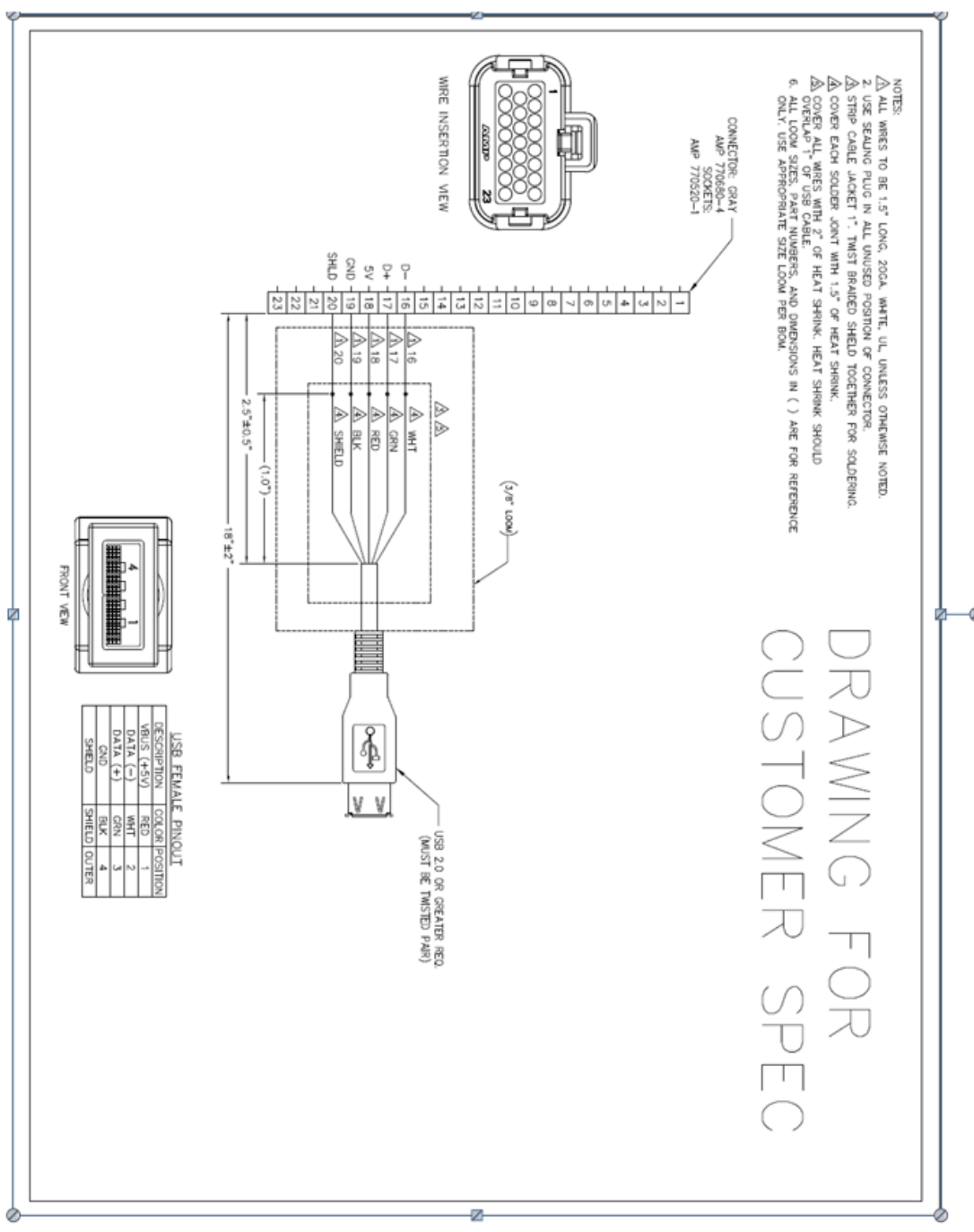
Pin	Function
1	CAN Low
2	CAN High
3	Ground
4	Remote Power/Ignition

(Drawing on next page)



# Appendix

## USB Specification







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