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Installation Guide:
CenCom Core-S™ Main Control Box
Model: C399S / C399SH
C399S6
C399S7
C399S6H
C399S7H

DANGER! Sirens produce extremely loud emergency warning tones! Exposure to these tones without proper and adequate hearing protection, could cause ear damage and/or hearing loss! The Occupational Safety & Health Administration (www.osha.gov) provides information necessary to determine safe exposure times in Occupational Noise Exposure Section 1910.95. Until you have determined the safe exposure times for your specific application, operators and anyone else in the immediate vicinity should be required to wear an approved hearing protection device. Failure to follow this recommendation could cause hearing loss!

Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections.Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.

Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

⚠ **WARNING:** This product can expose you to chemicals including Lead which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.**
- **Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.**
- **Failure to use specified installation parts and/or hardware will void the product warranty.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro®, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).**
- **If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

ACTIVATION OF THIS SIREN MAY DAMAGE UNPROTECTED EARS!

⚠CAUTION
Loud siren noise can cause hearing damage and/or loss.
Refer to OSHA Section 1910.95 prior to putting ANY siren into service!

Form No.14F14C (071323)

For warranty information regarding this product, visit **www.whelen.com/warranty**

Automotive: Sirens/Switches

Specifications:

Input Voltage . . . . . 12.8 VDC ±20% - Negative Ground Only
Main Input Current . . . . . 70 Amps Max.
Siren Input Fuse . . . . . 15 Amps
Stand-by Current (no ignition) . . . . . 1 mA
Operating Temperature . . . . . -30°C to +60°C
Storage Temperature . . . . . -40°C to +70°C
Humidity . . . . . 99% (Non-condensing)

Siren Amplifier Module Module

Standard Audio Bandwidth @25 Watts . . . . . 300 to 10000 Hz ±3db
Distortion @25Watts . . . . . 1% Maximum
Output Voltage @15VDC @11 ohms . . . .24Vrms Maximum
Speaker Impedance . . . . . 11 Ohms Minimum
Howler Audio Bandwidth @25 Watts . . . . . 200-10000 Hz

High Current Outputs

4 High Current Outputs: . 2 - 15 Amps Max. **2 -** 10 Amps Max. (internally limited)
NOTE: Total current of High Current Outlets not to exceed 60 Amps
1 Dry Contact Relay: 15 Amp (Fused)

Low Current Outputs
12 Low Current Outputs . . . . . 2 Amps Max (internally limited)
6 Digital Inputs / 4 Analog Inputs / 1 Ignition Sense

Installation:

This siren is designed to be mounted directly onto the dash or other surface through the use of a bail strap mounting bracket. The unit may also be mounted into your vehicle's console (if so equipped).

Bail Mount:

1. Locate a suitable mounting location.
2. Position bail strap in selected mounting location and drill mounting holes, then secure the bail strap to the vehicle.
3. Secure the siren to the bail strap using the included hardware.

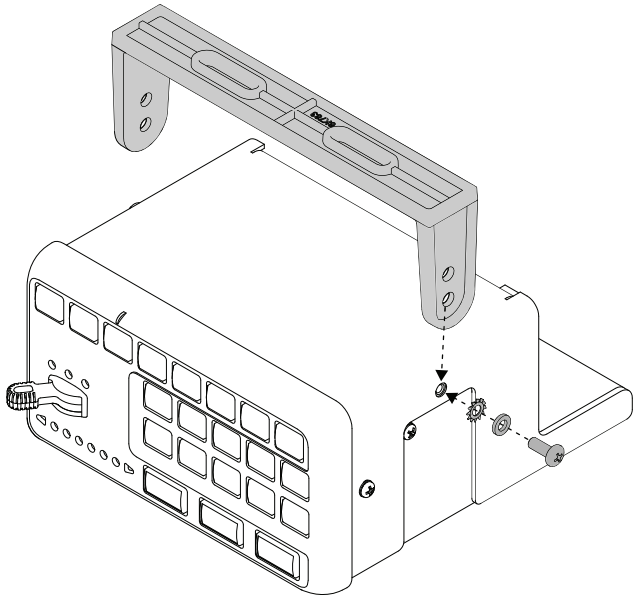
Console Mount:

1. Console manufacturers offer mounting kits that include all the necessary hardware and brackets to mount this unit into their console. The console mount brackets are secured onto the unit in the same way. Please refer to the manual included with your console.

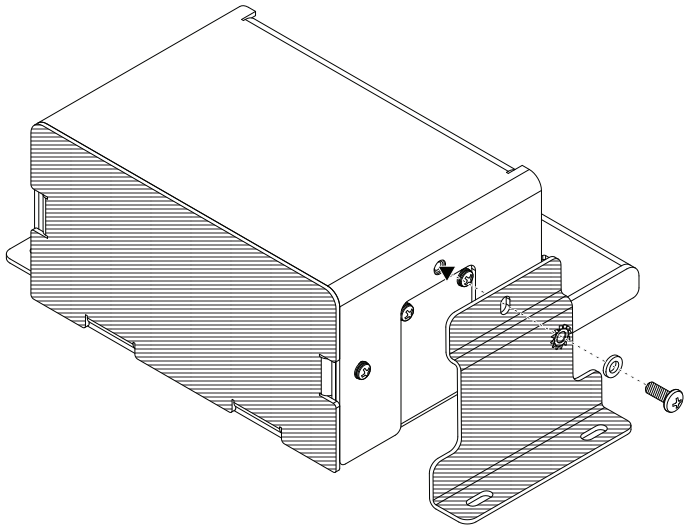
Remote Mounting Solution:

1. Install the two remote mounting brackets using the included hardware.
2. Position and install the Core-S™ / Remote Mounting bracket assembly and secure it with the included four mounting screws.

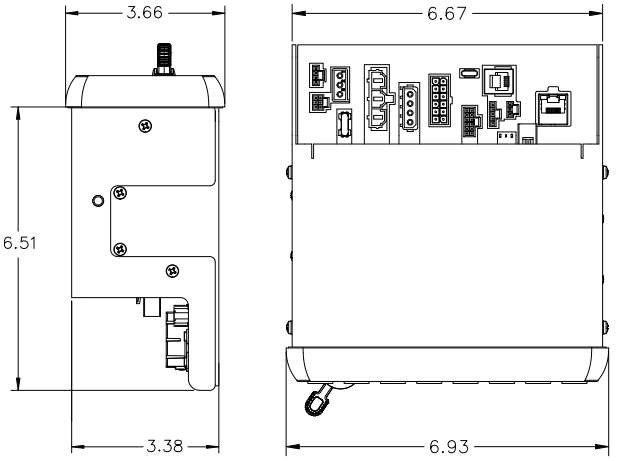
Bail Mount:

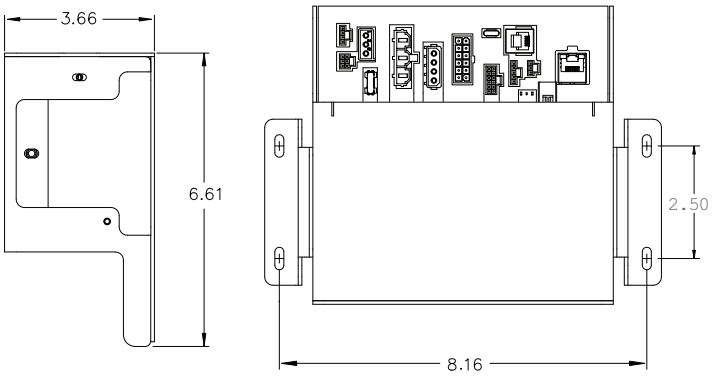


Remote Mounting Solution:



Dimensions:





Wiring:

All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!

Main Power (J16):

1. Locate the connector with RED & BLK wires, sized to fit into the system power connectors (included).
2. Route the two RED 10 AWG wires (included) from the Core-S™ module to an unused circuit fused @ 40 Amps each wire (the fuse panel, for example). Do not connect to this circuit yet.
3. Route the BLACK 10 AWG wire (included) from the Core-S™ module to the vehicle's chassis ground typically adjacent to the battery.
4. Complete the connections and plug the connectors into the Core-S™ Module.

Programmable Inputs:

There are 6 digital and 4 Analog programmable inputs in the Core-S™ system.

Digital Inputs (J9) (Pins 1-6)

These digital inputs can be configured to detect either a positive or ground activated signal.

Analog Inputs and Ignition Sense(J9)

Analog Inputs (Pins 7,8,9,10)

These inputs can detect a varying, analog voltage range. The output signal line from devices such as a K-9 temperature sensor may be connected to these inputs.

Ignition Sense (Pin 12)

This input should be wired to an ignition signal and controls when the Core-S™ system turns on (when ignition is detected) and when the system turns off (when ignition line turns off). The Core-S™ system turning off can be further configured by programing a Shutdown Delay to keep the system active after the ignition signal turns off.

Switched Outputs:

Low Current Outputs (J15)

- **2 Amp Active High, internally limited (Pins 1-11)**
- **2 Amp Active Low, internally limited (Pin 12)**

High Current Outputs (J14)

These outputs can be programmed by the Whelen Command® software to activate in any combination, they also can be set up to source current at VBAT.

- **15 Amp Max, internally limited (Pins 1-2,)**
- **10 Amp Max, internally limited (Pins 3-4)**

Dry Contact Relay (J3) *(See "Hands Free Siren")*

- **15 Amp Max, Fused**
- **Pin 1 is the Normally Open terminal.**
- **Pin 2 is the relay's Common terminal.**
- **Pin 3 is the Normally Closed terminal.**

Siren Speaker (J1)

Note: Use the GREY (+) and ORANGE (-) wires when installing a Howler® speaker.

1. Route the ORANGE, GREY, YELLOW and BROWN 18 AWG wire (included) from the amp/relay module to the siren speakers.
2. Connect the YELLOW (+) and BROWN (-) wires to speaker one.
3. Connect the GREY (+) and ORANGE (-) wires to speaker two.

Audio signals (J10):

Radio Rebroadcast (Pins 1, 2)

Two blue wires are used to connect the audio output of your two-way radio to the Whelen Siren Module for radio rebroadcast. (Optional connection).

NOTE: Radio rebroadcast will NOT work with radios requiring amplified remote speakers! If your remote speaker is amplified (i.e. contains a power amp circuit in the speaker assembly), the signal from the radio will not be appropriate for this input.

Locate the two wires that connect the external speaker to the two-way radio. Splice one of the blue wires into one of the radio's speaker wires, then splice the other blue wire into the other radio speaker wire.

Radio Repeat Volume Adjustment

Locate the Radio Repeat adjustment potentiometer on the left side of the Core module. Set the volume of the vehicle's two-way radio to its normal operating level. Press the RAD button on the control head to activate Radio Repeat. As incoming transmissions are received, adjust the Radio Repeat potentiometer to set the desired level. Turn the potentiometer clockwise to increase and counter-clockwise to decrease the level.

Auxiliary Audio Input (Pins 4,5)

Two green wires are proved to connect the auxiliary audio output of an appropriate Whelen device to this unit.

Cabin Speaker (Pins 3,6)

The yellow wire goes to the positive (+) speaker terminal, and the white-yellow wire goes to the negative (-) speaker terminal.

Note: Recommended cabin speaker is 5 Watts at 8 Ohm.

Microphone (J11):

Attach the microphone extension cable to this connector, route the cable to the desired location in the vehicle and secure the other end to a fixed location and then attach the microphone.

PA Volume Adjustment

To adjust the PA volume refer to the WeCan® Whelen Command® software.

USB-C Programming Port (J7):

Attach to computer using USB-C cable when programming the system with the Whelen Command® Software. **NOTE: Charging-only Cables from multiple mobile devices (i.e. cell phones or tablets) are not recommended for data transfer use. Not all cables are capable of charging and data transfer.**

Ethernet Port (J2):

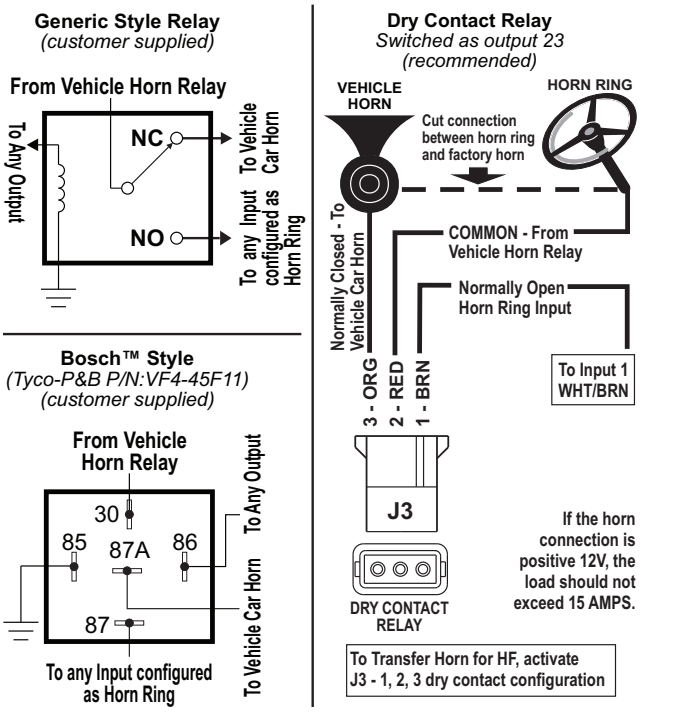
To be used with a Whelen Ethernet device.

CAN Communications (J8,J4):

J8 is the control link between all WeCanX® devices. Core-S™ ties into the vehicles OBDII port using J4.

Hands-Free Siren / Optional:

You may either use a customer supplied relay capable of handling the current of your vehicle horn connected as shown or the Dry Contact Relay located on the main control box (recommended)



Connecting the USB:

Connect a computer with Whelen Command® software via USB once the boot-up and initialization process is complete to transfer a new configuration. If you send a configuration to Core-S™ with only USB connected, the configuration will not be sent to all devices until power and ignition are applied to Core-S™ with WeCanX® connection maintained to powered devices. Note: Make sure power is applied to Core-S™ before connecting USB.

If you are updating the firmware of the main Core-S™ or transferring/ extracting a new configuration, connect to Core-S™ via a USB-C connector without external power. This provides communication and power to the central controller only. If there is no configuration currently on Core-S™, the status indicator will be steady Orange. If there is a valid configuration, the status indicator will be steady Green. If there are no OBDII or analog connections, the status indicator will be steady Blue.

Booting up Core-S™:

When you first apply power and ignition to Core-S™, the status indicator will blink **Magenta** to indicate that it is booting up. After 2 seconds, Core-S™ should complete boot up and go through the initialization process outlined in the next section.

Troubleshooting Boot up:

If the Status indicator is steady Red (not flashing) and the Activity indicator is off, then there is a firmware corruption. After power and ignition is applied to the unit, connect USB to the unit and open Whelen Command® software. Follow the update firmware instructions below to see if this fixes the corruption. If this does not work, then the device must be sent in for repair.

Initializing Devices and Updating Firmware:

Initialization:

To ensure proper initialization, make sure all devices are connected via a WeCanX® connector and are powered with 12VDC **BEFORE** applying ignition to Core-S™. When ignition is applied, Core-S™ will then register all devices it can communicate with through the WeCanX® bus. The Status indicator will flash WHITE, and the Activity indicator will flash Blue**,** showing message communication.

NOTE: If you have no configuration on Core-S™, the Status indicator will be steady Orange. If a configuration is present, the Status indicator will be a steady Green. When the status indicator is no longer flashing White, the initialization process is complete. USB can now be plugged into Core and hooked up to Whelen Command®.

Updating Firmware:

To update the firmware in Whelen Command®, ensure you have gone through the Core-S™ initialization process and that all devices are connected via WeCanX® and powered with 12VDC. Plug in USB, open Whelen Command®, and select “Core-S™” from the product menu. Click the “**W**” icon in the top left corner and select “Update Firmware” from the list. Click the refresh button to see a list of all available devices connected to Core-S™. Verify that every device you have connected is displayed. If any are missing, restart the initialization process and try again. Update the firmware of any device that needs it. Do not remove the WeCanX® connection or power until Whelen Command® states the process has been completed. The firmware update is completed one device at a time. That device's diagnostic indicator will slowly flash Blue to indicate that the firmware is loading. The device's diagnostic indicator will start blinking faster to indicate that the firmware is currently installing. **Note: When the peripheral devices have finished updating, the diagnostic indicator on each respective device will turn off unless the diagnostic indicators are configured to be on, in which case they will turn Green when finished.**

Troubleshooting Firmware Updates:

If Whelen Command® informs you that the transfer failed, unplug the USB and cycle power to all units. Then plug the USB back into Core-S™ and hit the refresh button on the Whelen Command® “Update Firmware” page. Repeat the firmware update process if the firmware is not up to date. If a device fails to update and all connections are intact, its diagnostic indicator will remain blinking blue to indicate that it is loading the firmware. After reinitializing the system, the device will show up on the “Update Firmware” page with firmware version “Unknown”. From there, you can then update the firmware to the newest version. **Note: If at any point your device stops working and you have verified that all the proper connections are intact, re-initialize and check for firmware updates.**

Configuring Devices:

The fastest and easiest way to configure your system is immediately after the initialization and firmware update processes are complete. An up-to-date system allows for easily importing connected devices into a new configuration using the “Detect via USB” feature on the “My Hardware” page. All devices presently communicating with Core-S™ will populate the hardware list. Certain devices will not automatically populate due to the need for further configuration, such as lightbars, Inner edges, and Traffic Advisors. Whelen Command® will alert the user to these devices, but they will not automatically populate the list. Core-S™ will show a steady Cyan status indicator if a device is connected to the control system but is not in the configuration. **Note: Any device that you have multiples of require configured installation ID’s.**

Transferring Configuration Files to Device:

There are two ways to transfer configurations to your system. You can connect to Core-S™ via USB or over the air using WHELEN CLOUD PLATFORM®. Core-S™ must be connected to power and ignition during a transfer via USB, or the configuration will not transfer to the internal siren or IO. For this configuration to reach other WeCanX® devices, Core-S™ must be connected and initialized to the other devices in the configuration. Core-S™ diagnostic indicators are always on. During the transfer, the Status indicator will be solid or flashing white. In contrast, the activity indicator will flash Blue to show communication. A finished configuration is indicated by the device's diagnostic indicator turning solid Green or turning off. (This depends on whether or not you have turned device diagnostic indicators on in “configuration settings”). If a large DVM tone is being transferred to an external siren or howler, the device will display a blinking Red indicator while receiving the configuration data only if the diagnostic indicator is enabled. If the indicators are turned off, you will only have the Status and Activity indicators on the Core-S™ controller to determine the state of the configuration.

Idle States:

After a configuration transfer, Core-S™ will enter an idle state and wait for inputs/instructions pending the trigger of a programmed event. Core-S’s™ activity indicator is always on and will blip every time it is processing a communication. If an analog or OBDII connection is present, the activity indicator will always show activity in an idle state. The activity indicator will blip every time any input state change is sensed. You can watch for the Activity blip on Core-S™ when testing an input to verify the input state change. If no blip occurs, verify you have made all the right connections. If everything on the WeCanX® bus is initialized and there is a valid and fully populated configuration, then the Core-S™ status indicator will be a steady Green. If there are devices on the bus that are initialized but not present in the configuration, then the status indicator will be steady Cyan. If there is no valid configuration on Core-S™, then the status indicator will be steady Orange.

System Shutdown:

The Core-S™ system is designed to have constant 12VDC power. Every device, including the main Core-S™ controller, has a built-in sleep function to minimize battery drain. Applying ignition voltage to Core-S’s™ ignition pin will wake the system, and removing the ignition voltage will put Core-S™ to sleep. After 3 seconds, all other devices connected to Core-S™ via WeCanX® will go to sleep and turn off diagnostic indicators.

Installation IDs

While detecting via USB, Whelen Command® will prompt an “Installation IDs are not set” error if more than one of the same device types is recognized. As a rule, if you have more than one of the same device types, you must manually set the installation ID. For Example, two Remote 16s would need their IDs set, but one Remote 16 and one Remote 8 would not. Two Arges® Remote Spotlights would need their IDs set, but one Arges® Remote Spotlight and one Arges® Profocus would not. Click on the “**W**” icon on the top left of the “My Hardware” page and select “Assign Installation IDs”. All devices you are setting will have a default ID of unassigned. Unplug all the devices you plan to rename except for one. Refresh the list and select the number you want from the drop-down menu, check the box next to the device and click assign. After you have assigned the device, you can add each subsequent device one at a time and iterate the installation ID. If you have set installation IDs before you “Detect via USB”, Whelen Command® will automatically populate the hardware list with the correct configuration ID to match the Installation ID. **Note: The installation ID numbers only differentiate between devices of the same device type, meaning that you can have multiple devices with the same installation ID if they are different devices types.**

Troubleshooting Installation IDs:

Installation IDs may not have been set if you have more than one of the same device types in your configuration and only one of them is working. After firmware initialization, check to ensure that you have proper connections and that all identical device types have installation IDs set.

Core-S™ Diagnostic Indicators

Status Indicator LEDs

All CoreOS devices have both a Status and Activity indicator. In some cases the indicators use a single RGB LED or a separate blue LED and an RGB LED. The indicators are used to communicate system status and error information:

- The **Activity Indicator** is a blue LED that flashes to indicate when the device is processing data.
- The **Status Indicator** is a multi-color RGB LED that indicates the system status and error conditions.

The state tables below are used to decode the system status and activity.

State Table - Update Status

System Status	Status Indicator Colors	Details
Booting	**Magenta**	The system is booting up. When a CoreOS device firmware update is being installed, this process could take up to 30 seconds.
System Failed to Boot	**Red**	A fatal error occurred and the system was unable to boot. Contact customer support.

State Table - Operational Status

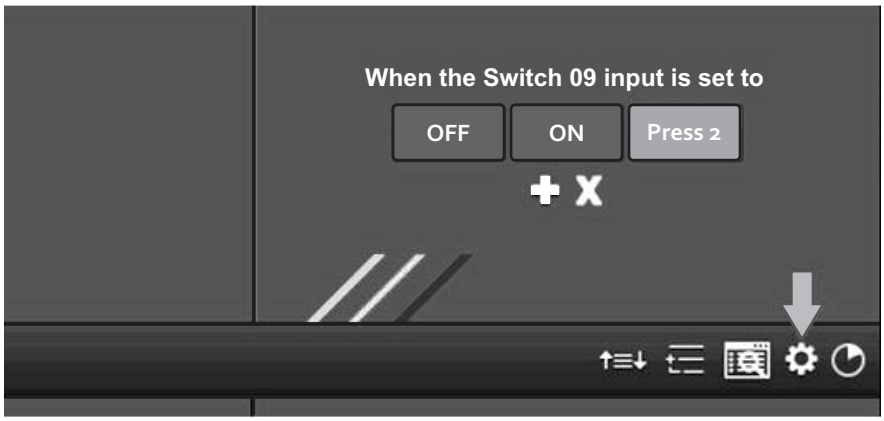
System Status	Status Indicator Colors	Details
File Error	**Orange**	A configuration is missing.
Working	**White**	A new configuration file has been transferred to the CoreOS device and is actively transferring it to other WeCanX® devices. Some functionality may be unavailable during this time.
Unconfigured Node	**Cyan**	The system has a valid configuration file installed, but a device is present on the bus that is not in the configuration.
Active	**Green**	The system is actively communicating with attached devices and processing events.
Communication	**Blue Flash**	System communications are active.

Core-S™ Diagnostic Indicator Troubleshooting

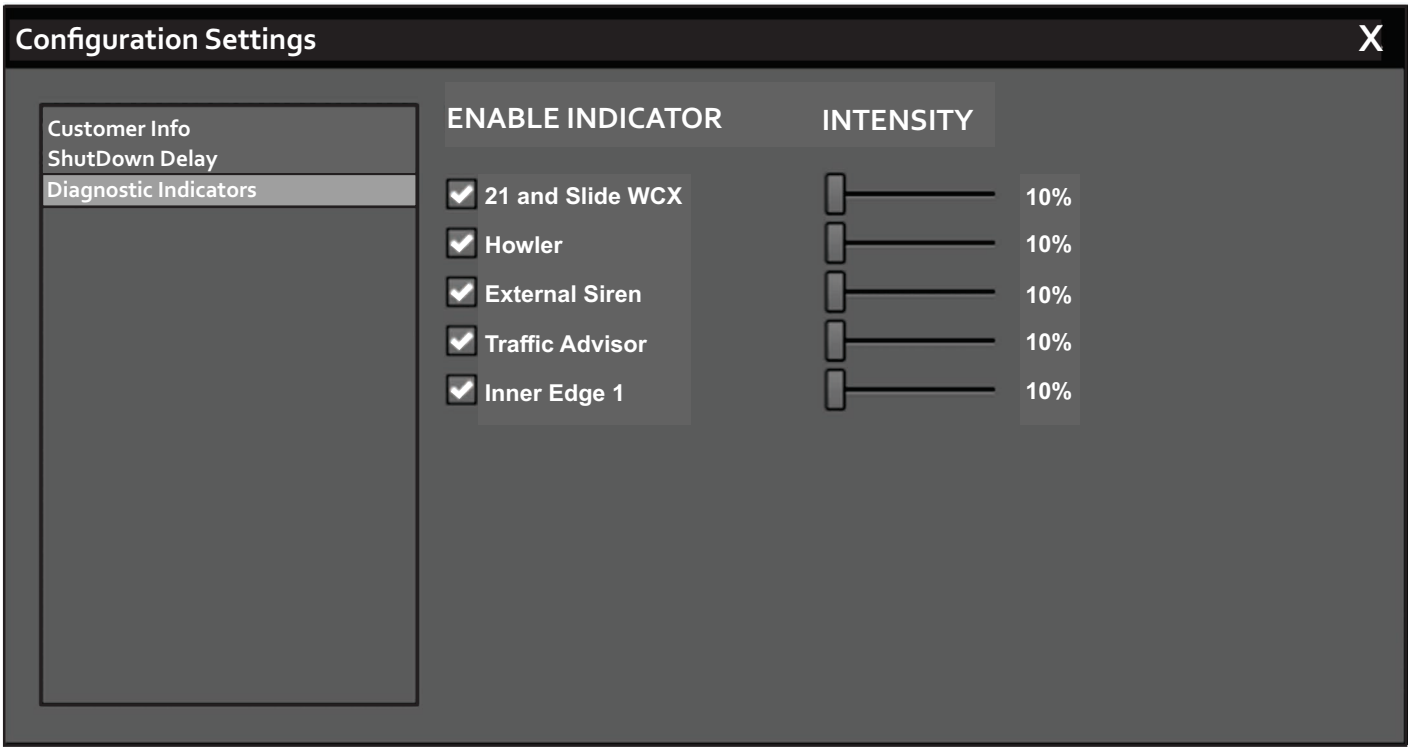
System Status	Status Indicator Colors	Troubleshooting Steps
Booting	**Magenta**	A CoreOS device firmware update can take up to 30 seconds to install. If the diagnostic LED is still magenta after 30 seconds, contact customer service.
Missing Configuration	**Orange**	Transfer a valid configuration from Whelen Command®.
Unconfigured Node	**Cyan**	Verify that all peripheral devices connected to Core-S™ are included in your Whelen Command® configuration.
Communication	**Blue Flash**	A blue flashing LED indicates Core-S™ detects an input change. Large siren DVMs can take up to 15 minutes to download. If power is lost during transfer, the process will restart on power-up. The siren will not function until this process is complete.

Setting Device Diagnostic Indicators:

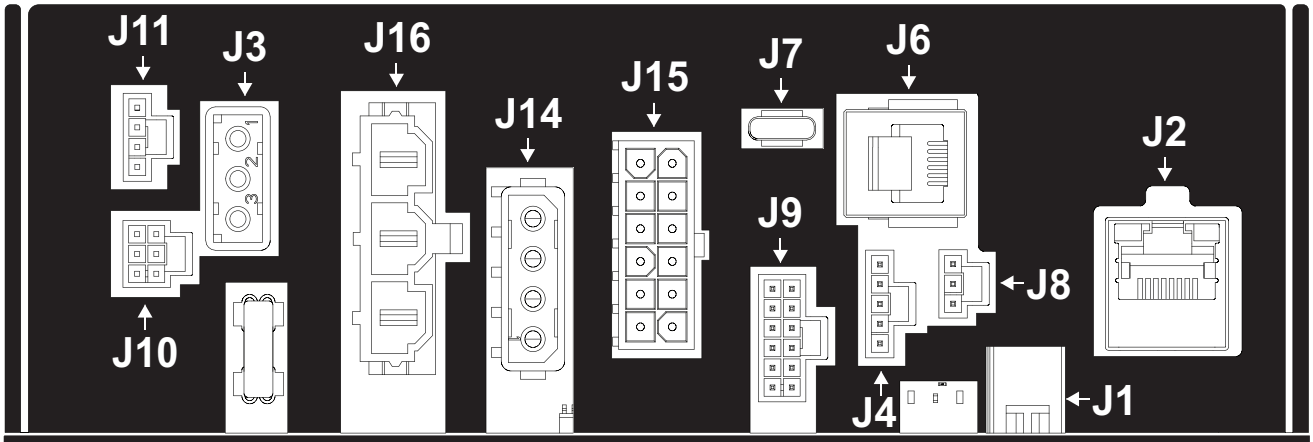
The central Core-S™ diagnostic indicators are always on to provide insight into the system's current state. Individual devices connected to Core-S™ need to be configured manually in the configuration itself. Enabling diagnostic indicators on all WeCanX® devices in your configuration lets you see their status visually. Which helps to determine what state the device is in and if the device has gone to sleep. To turn these indicators on, open Whelen Command®, navigate to configuration settings and select diagnostic indicators. From there, you can choose which devices to enable and the intensity of their indicator lights.



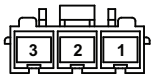
NOTE: The diagnostic indicators are very useful for following the progress of large configuration transfers to external sirens.

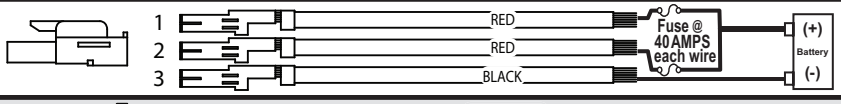


CORE-S™ Wiring Diagram

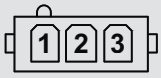


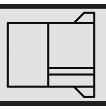
J16 Main Power





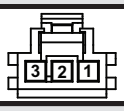
J3 Dry Contact Relay

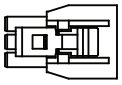




3	ORANGE	Normally Closed
2	RED	Common
1	BROWN	Normally Open

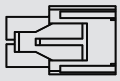
J8 WeCanX Input





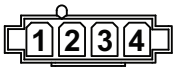
1	GREEN	CAN H
2	BLK/WHT	Shield
3	GREY	CAN L

J1 4 Pos. MUMNL



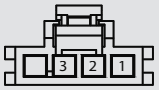
4	YELLOW	Speaker 1 (+)
3	BROWN	Speaker 1 (-)
2	GREY	Speaker 2 (Howler™) (+)
1	ORANGE	Speaker 2 (Howler™) (-)

J14 High Current Outputs



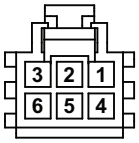
4	YELLOW	High Current Output 4
3	ORANGE	High Current Output 3
2	RED	High Current Output 2
1	BROWN	High Current Output 1

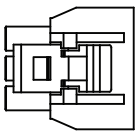
J11 Mic. Extension Cable



1	RED
2	BLACK
3	SHIELD

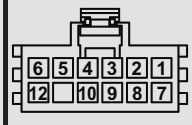
J10 Audio Outputs





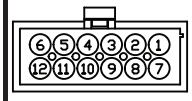
1	BLUE	Radio (+)
2	BLUE	Radio (-)
3	WHT/YEL	Cabin Speaker (-)
4	GREEN	AUX Input (-)
5	GREEN	AUX Input (+)
6	YELLOW	Cabin Speaker (+)

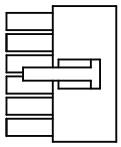
J9 Core-S Input Harness



1	WHT/BRN	Digital Input (1)
2	WHT/RED	Digital Input (2)
3	WHT/ORG	Digital Input (3)
4	WHT/YEL	Digital Input (4)
5	WHT/GRN	Digital Input (5)
6	WHT/BLU	Digital Input (6)
7	BROWN	Analog Input (1)
8	RED	Analog Input (2)
9	ORANGE	Analog Input (3)
10	YELLOW	Analog Input (4)
12	RED/WHT	Ignition

J15 Low Current Outputs





1	BROWN	Low Current Output (1)
2	RED	Low Current Output (2)
3	ORANGE	Low Current Output (3)
4	YELLOW	Low Current Output (4)
5	GREEN	Low Current Output (5)
6	BLUE	Low Current Output (6)
7	VIOLET	Low Current Output (7)
8	GREY	Low Current Output (8)
9	WHT/BRN	Low Current Output (9)
10	WHT/RED	Low Current Output (10)
11	WHT/ORG	Low Current Output (11)
12	WHT/YEL	Low Current Output (12)

Cencom™ Core-S™ Installation Worksheet

This worksheet has been provided so that a written record of all Input, Output and Axillary connections may be created. After all data has been verified and recorded, store and retain this sheet for future reference. It is recommended that you make a copy of this worksheet before filling in. so that if any changes need to be made you will have a blank copy.

CONNECTOR - PIN - FUNCTION	ASSIGNED TO:
J10- 1- BLU - RADIO (+)	
2 - BLU - RADIO (-)	
3 - WHT/YEL CAB SPKR (+)	
4 - GRN - AUX IN (+)	
5 - GRN - AUX IN (-)	
6 - YEL - CAB SPKR (-)	
J3 - 1 - BRN - Normally Open	
2 - RED - Common	
3 - ORG - Normally Closed	
J14 - 1 - BRN - HC Output 1	
2 - RED - HC Output 2	
3 - ORG - HC Output 3	
4 - YEL - HC Output 4	
J15 - 1 - BRN - LC Output 1	
2 - RED - LC Output 2	
3 - ORG - LC Output 3	
4 - YEL - LC Output 4	
5 - GRN - LC Output 5	
6 - BLU - LC Output 6	
7 - VIO - LC Output 7	
8 - GRY - LC Output 8	
9 - WHT/BRN - LC Output 9	
10 - WHT/RED - LC Output 10	
11 - WHT/ORG - LC Output 11	
12 - WHT/YEL - LC Output 12	
J9 - 1 - WHT/BRN - Dig. Input 1	
2 - WHT/RED - Dig. Input 2	
3 - WHT/ORG - Dig. Input 3	
4 - WHT/YEL - Dig. Input 4	
5 - WHT/GRN - Dig. Input 5	
6 - WHT/BLU - Dig. Input 6	
7 - BRN - Analog Input 1	
8 - RED - Analog Input 2	
9 - ORG - Analog Input 3	
10 - YEL- Analog Input 4	
11 - N/A	
12 - RED/WHT - Ignition	