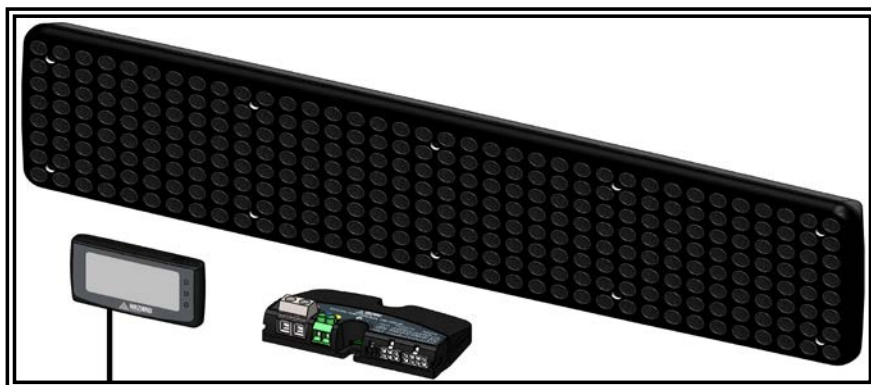


The Code 3® Message Board is designed for multi-voltage operation. This product includes total internal reflector (TIR) collimating optics to produce 10 mm pixels. Optically tinted for improved legibility and reduce sunshine washout.

The controller features touch screen functionality. Customer programmable messages can be stored on the microSD card or programmed into the Message Board (for hard-wire versions).



## Specifications:

Part Number (Kit)	HD0012X	
Part Description	Display & Controller	
Input Voltage Range	10-30VDC	
Current Draw	Max	2.6A (@ 13.6V); 1.25A (@ 27.2V)
	Typical	1A (@ 13.6V); 0.5A (@ 27.2V)
	Standby (Typ.)	14mA
Message Board Dimensions (mm)	145 H x 591 W x 40 D	
Controller Dimensions (mm)	55 H x 92 W x 15 D	
Code 3 Junction Box Dimensions (mm)	65 H x 121 W x 37 D	
System Weight	2.2 Kg	
Ambient Operating Temperature	-20 to +65 °C	

Replace X in part number with colour A=Amber, B=Blue, R=Red, and W=White

## WARNING!

Failure to install or use this product according to manufacturer's recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!



**Do not install and/or operate this safety product unless you have read and understand the safety information contained in this manual.**

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of you and those you are seeking to protect.
2. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation are vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that s/he can operate the system without losing eye contact with the roadway.
5. Do not install this product or route any wires in the deployment area of an air bag. Equipment mounted or located in an air bag deployment area may reduce the effectiveness of the air bag or become a projectile that could cause serious personal injury or death. Refer to the vehicle owner's manual for the air bag deployment area. It is the responsibility of the user/operator to determine a suitable mounting location ensuring the safety of all passengers inside the vehicle particularly avoiding areas of potential head impact.
6. It is the responsibility of the vehicle operator to ensure during use that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.
7. The use of this or any other warning device does not ensure all drivers can or will observe or react to a warning signal. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes.
8. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding warning signal devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.

## Features:

### Message Board System

- 10-30VDC operation
- ECE R10 & C-Tick approved
- Protected against
  - Reverse-polarity
  - Supply transients
  - Thermal overload
- Firmware updates over Code 3 network

### Message Board Display

- IP67 approved
- Improved legibility and sunshine washout
- Up to 15 messages (hard-wire version)
- Flexible mounting options
- Auto text rotation
- Bracket mounting kits (sold separately)

## Installation and Mounting:

Before installation, examine the equipment for transit damage. Do not use damaged or broken parts.

**Important!** This unit is a safety device and it must be connected to its own separate, fused power point to assure its continued operation should any other electrical accessory fail.

### Code 3 Junction Box

- Power and Code 3 distribution
- Reduces wiring to the display
- 1 aux light output
- Park, ignition and remote switching inputs

### Controller

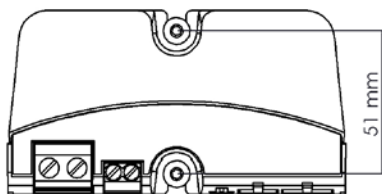
- O-LED graphic display
- Resistive touch screen
- Multiple screen interface
- MicroSD card message storage
- Up to 99 messages
- PC software to reprogram messages
- Firmware upgradable from microSD card
- Swivel mount cradle (sold separately)

**Caution:** When drilling into any vehicle surface, make sure the area is free from any electrical wires, fuel lines, vehicle upholstery, etc. that could be damaged

### THE CODE 3 JUNCTION BOX (J-Box)

Before any installation work is carried out, plan where the various components will be mounted and what route the wiring will take. The junction box is not waterproof, so it must be mounted within the vehicle cabin. The junction box can be mounted by screwing it into any flat surface using the 2 x supplied screws, preferably with a drip loop so it is not possible for water to run down the cables into the unit.

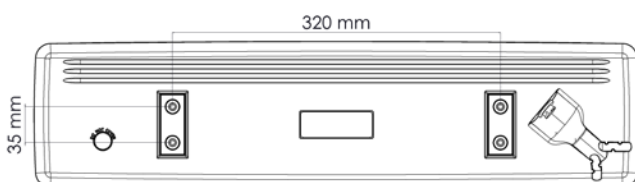
Suggested mounting locations include the boot, under passenger seat or passenger footwell area.



### THE MESSAGE BOARD

The Message Board has 4 built-in M6x12 moulded brass inserts to directly mount to a flat surface. The display is weatherproof and designed to be mounted outside the vehicle.

Mounting brackets are separately available for various mounting locations (see next page)



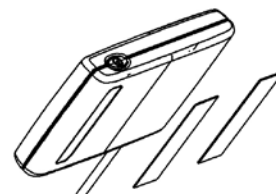
### THE CONTROLLER (MTC)

**Caution:** Do not install the controller where it will block your view while you are driving. It is recommended to mount the controller out of direct sunlight to avoid excessive heat damage. If the vehicle is fitted with air-bags, ensure that the chosen mounting position will not effect their deployment.

Determine the best mounting position for the controller in the vehicle. Mount the controller on any suitable flat surface via either of the 2 methods detailed below.

#### TAPE MOUNT

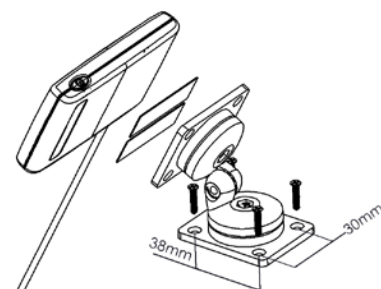
The controller can be mounted directly onto the dash using 2 x supplied strips of tape.



#### SWIVEL MOUNT

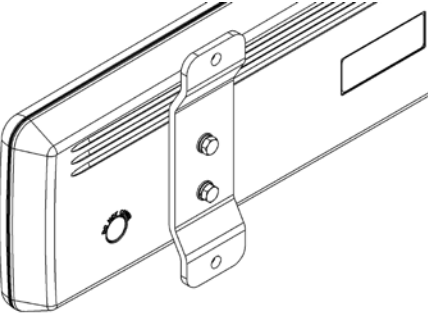
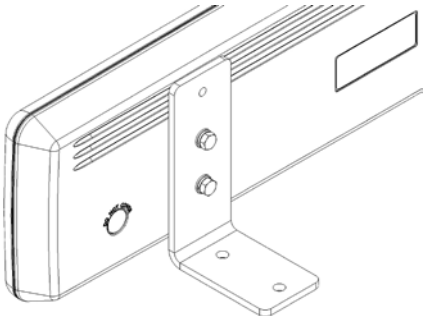
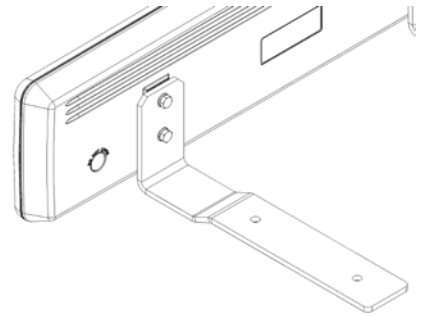
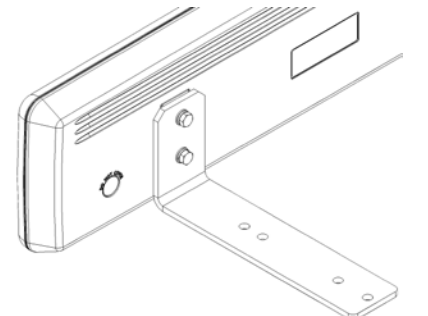
(sold separately 155-0342-00)

Alternatively the controller can be attached to a swivel to mount to any suitable surface in the vehicle. This can be angled to suit the user. Screws and tape are supplied with swivel mount.

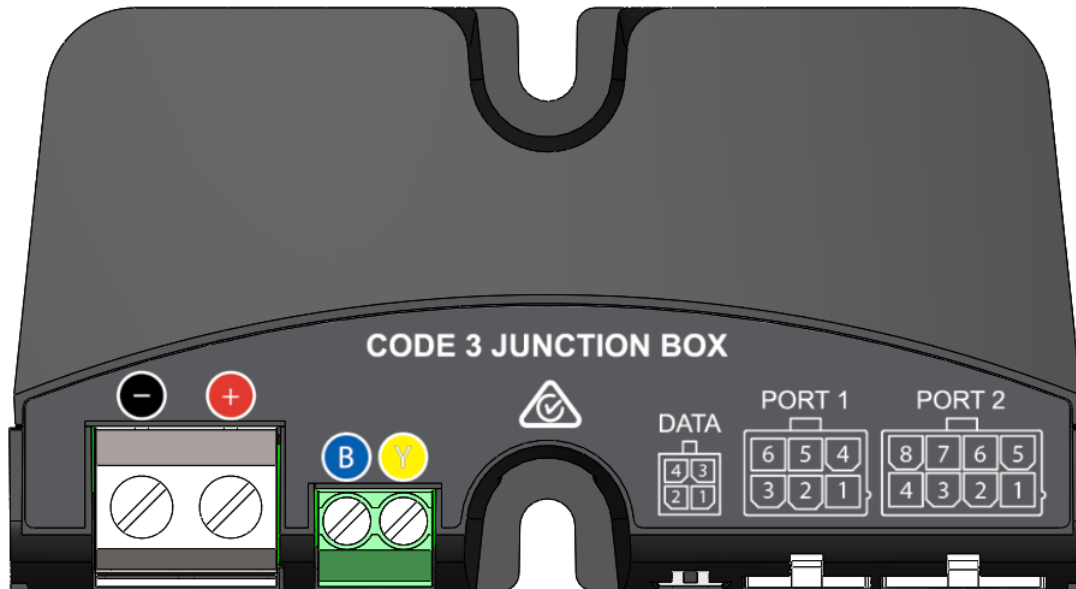


## Mounting Brackets:

Mounting brackets are separately available for various mounting locations.

	KIT PART NUMBER	DESCRIPTION
	AD0012-PAR	Parallel Mounting Bracket Kit
	AD0012-PERP	Perpendicular Mounting Bracket Kit
	AD0012-DEF	Defender Series Lightbar Mounting Bracket Kit
	AD0012-MX	MX Series Lightbar Mounting Bracket Kit

## Wiring Instructions - Junction Box:

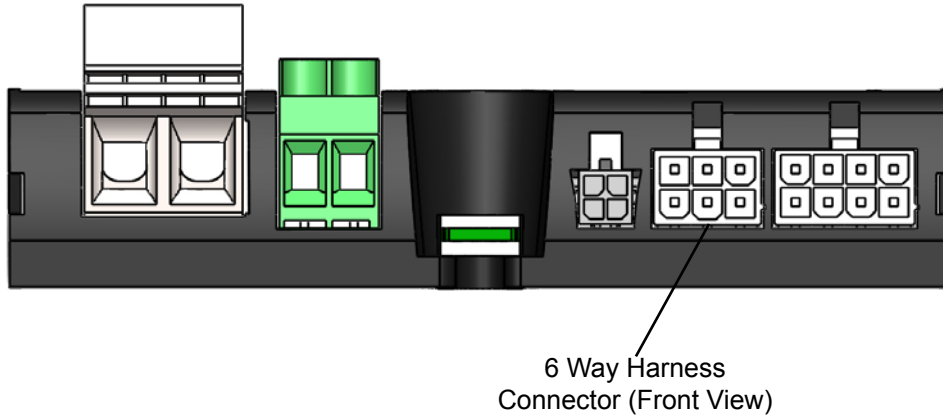


Before proceeding with installation, plan all cable routing and wiring carefully.

The table below should be used in conjunction with the wiring diagram on page 12 to make all connections.

REF	PORT	DESCRIPTION
⊖	Black screw terminal	Strip both the Black wire from the Message Board Display and vehicle ground connection together, insert both into the screw terminal and tighten . Using a good chassis ground point or the battery negative terminal, using the shortest possible wire length with a 2mm <sup>2</sup> (14 AWG) automotive wire
⊕	Red screw terminal	Connect to 2mm <sup>2</sup> (14 AWG) automotive wire to a 10 amp fused power source, using the shortest possible wire length. <b>Do not connect this power wire until all other connections have been made to the unit</b>
B	Blue screw terminal	Connect the Blue wire from the Message Board Display
Y	Yellow screw terminal	Connect the Yellow wire from the Message Board Display
DATA	4 Way Socket	Connect the controller (via extension cable if required) to this port. (not used in hard-wire versions)
OUTPUTS	6 Way Socket	See Page 6 for individual pin information
INPUTS	8 Way Socket	See Page 7 for individual pin information

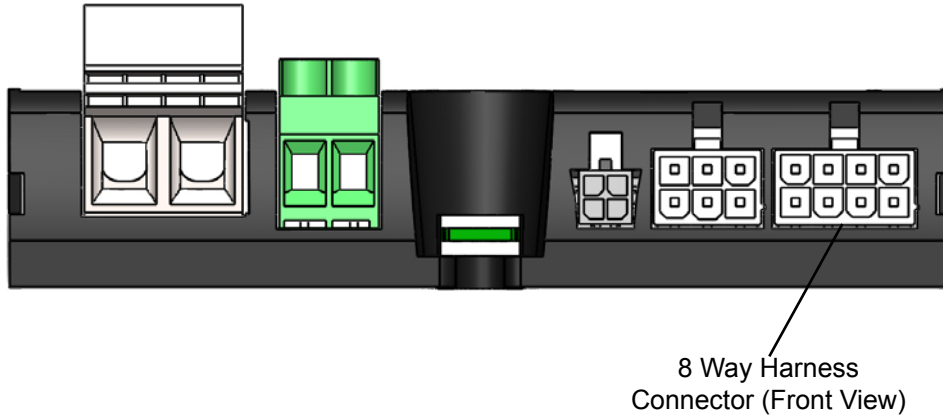
## Wiring Instructions - 6 Way Connector:

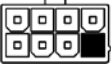
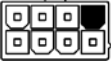
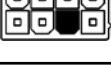
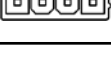


PIN	WIRE COLOUR	FUNCTION	DESCRIPTION
	Grey	Auxiliary Output	This output turns on when the matrix is displaying a message. 1 Amp maximum load an optional relay can be used to turn on higher current devices.
	-	Unused	Unused
	-	Unused	Unused
	-	Unused	Unused
	-	Unused	Unused
	-	Unused	Unused

Note: Leave all unused wires disconnected and isolated

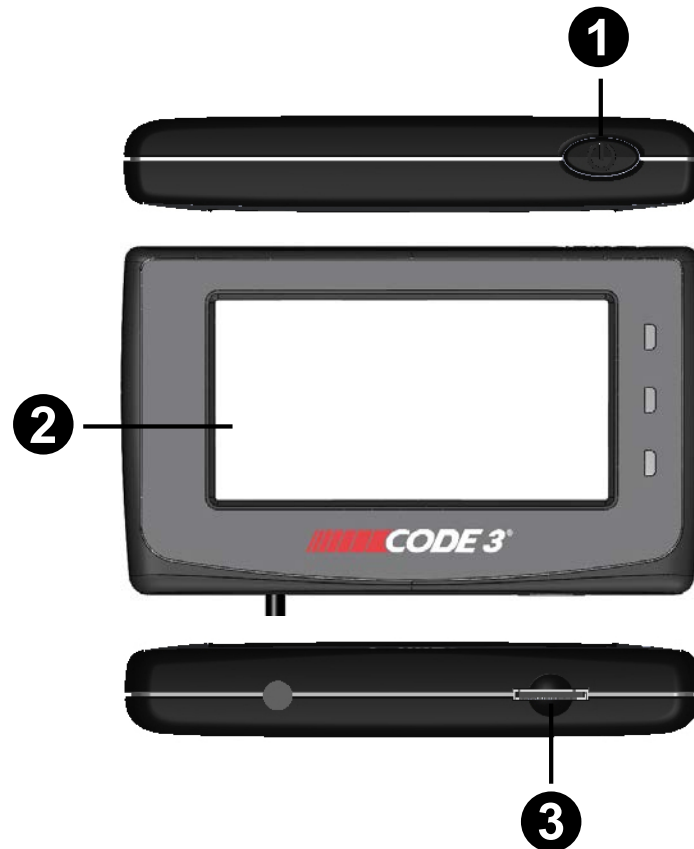
## Wiring Instructions - 8 Way Connector:



PIN	WIRE COLOUR	FUNCTION	DESCRIPTION
	Yellow	Ignition input (+)	Connect this wire to the vehicle's ignition circuit. When ignition is off the power button must be used to turn the controller on. The controller will automatically turn off if there is no message active message or activity for 10 minutes. When ignition is on the controller can be turned on by pressing the touchscreen, the controller will always remain active
	Blue	Park input (+)	This will dim the Message Board Display to the brightness setting chosen in the message editor software (1 being the dimmest 10 being full power)
	Brown	Remote display (+)	This will activate the message selected on the controller
	-	Unused	Unused

Note: Leave all unused wires disconnected and isolated

## Controller Operation:



ITEM	COMPONENT	DESCRIPTION
1	Power button	Turns the controller on or off regardless of status of the vehicle ignition. The power button may also be held in for 5 seconds to perform a hard reboot of the controller or continue holding for 10 seconds to reset the screen calibration of the controller.
2	Touch screen	Press to turn on the controller when the vehicle ignition is connected and active.
3	microSD card Slot	The microSD card holds the message list and can be used to update firmware (SD & SDHC compatible, SDXC is not compatible.)

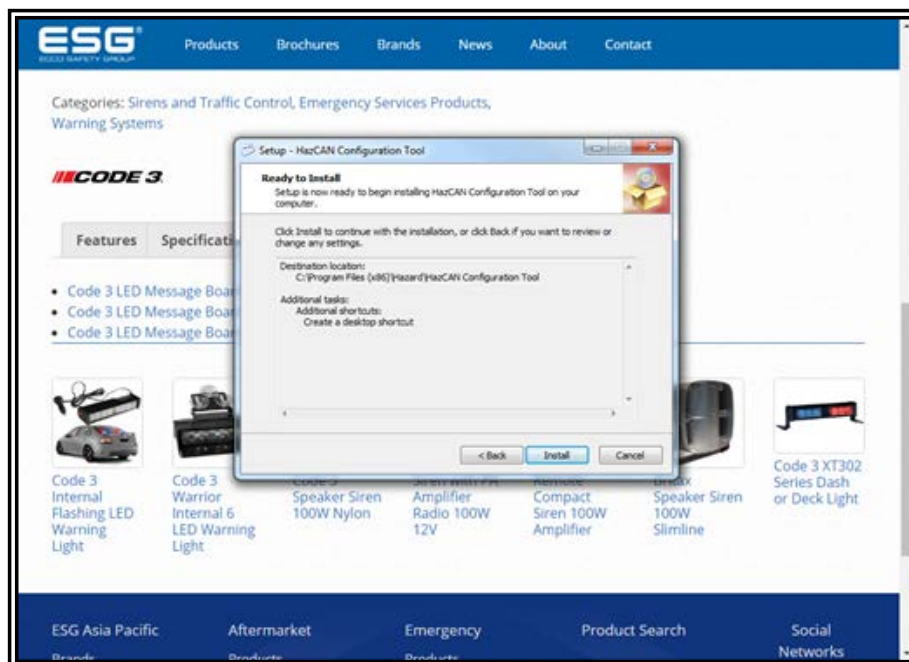
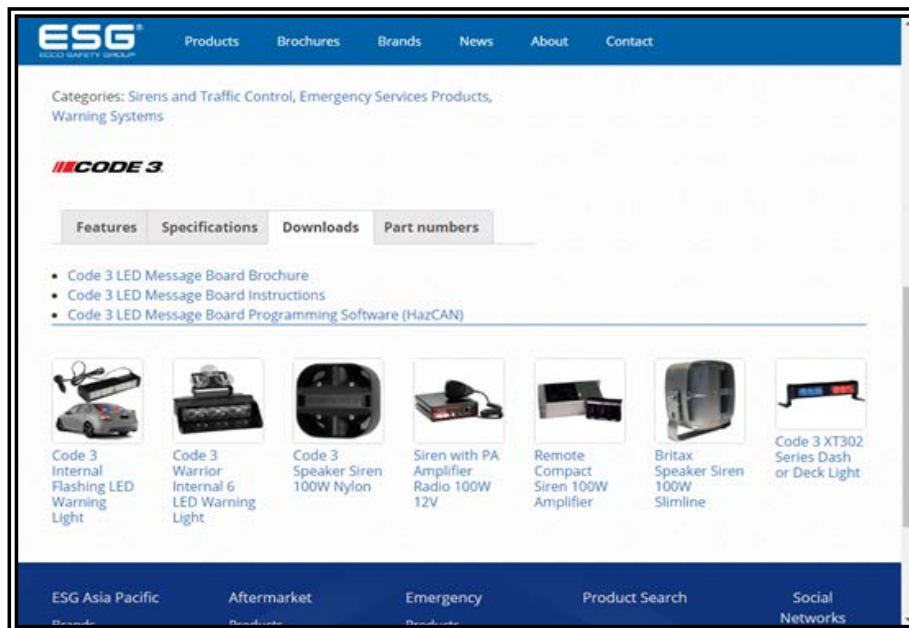
To remove the microSD card, gently push the top edge of the card inwards to release it, then pull it out of the slot.

The message editor software is located on the original microSD card sent with the product. The latest version can be downloaded from our website <http://eccosafetygroup.com.au/product/code-3-led-message-board-10-30v/>

## Download Instructions:

The link to begin the download process is <http://www.eccosafetygroup.com.au/product/code-3-led-message-board-10-30/>

1. Upon reaching the webpage, scroll down and select the download tab pictured below.
2. Select Code 3 LED Message Board Programming Software (HazCAN)



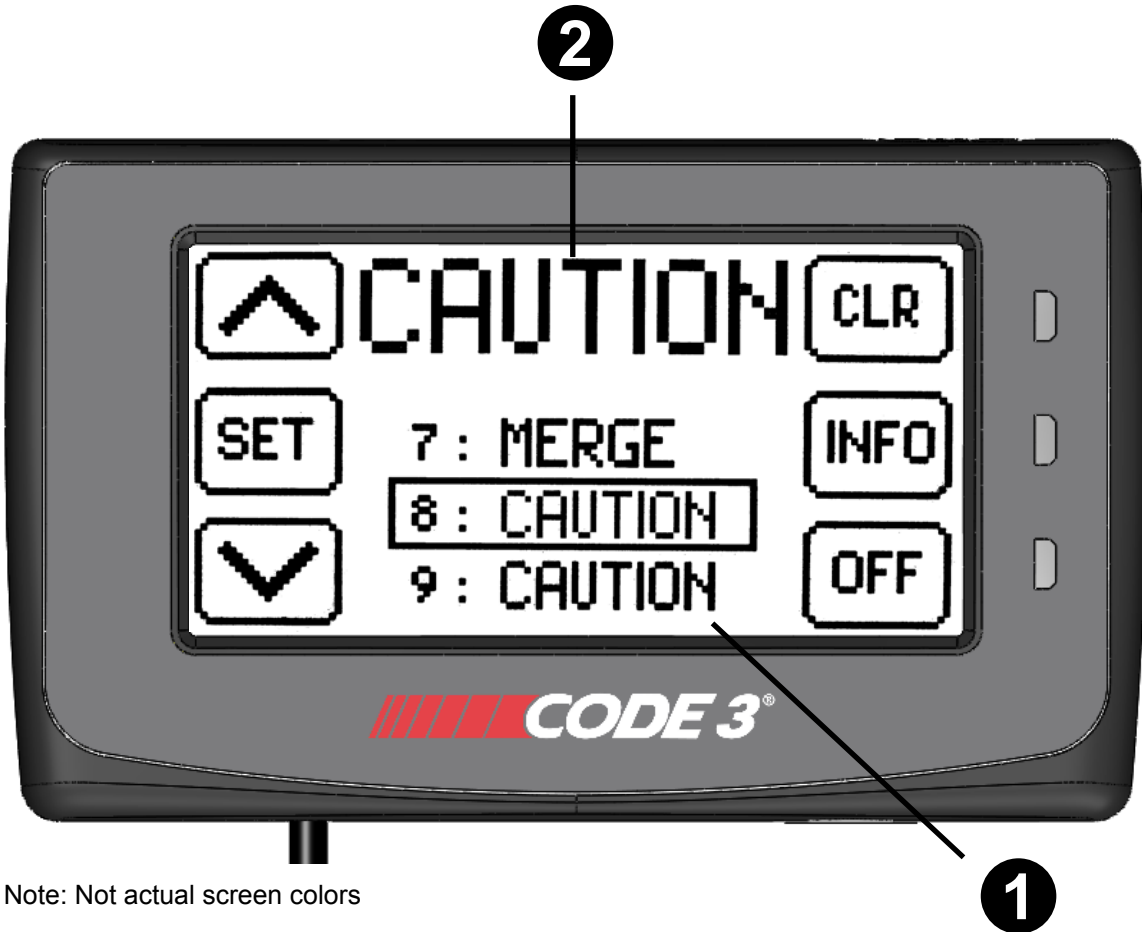
3. Follow the prompt to 'Run' the program.
4. Proceed through the Setup Wizard by agreeing to terms and conditions
5. Proceed through the Setup screens until the 'Next' icon becomes 'Install', select 'Install' and the program will open.

## Specifications:

Using micro SD to SD card adapter, insert SD card into reader.



Controller Main Screen:

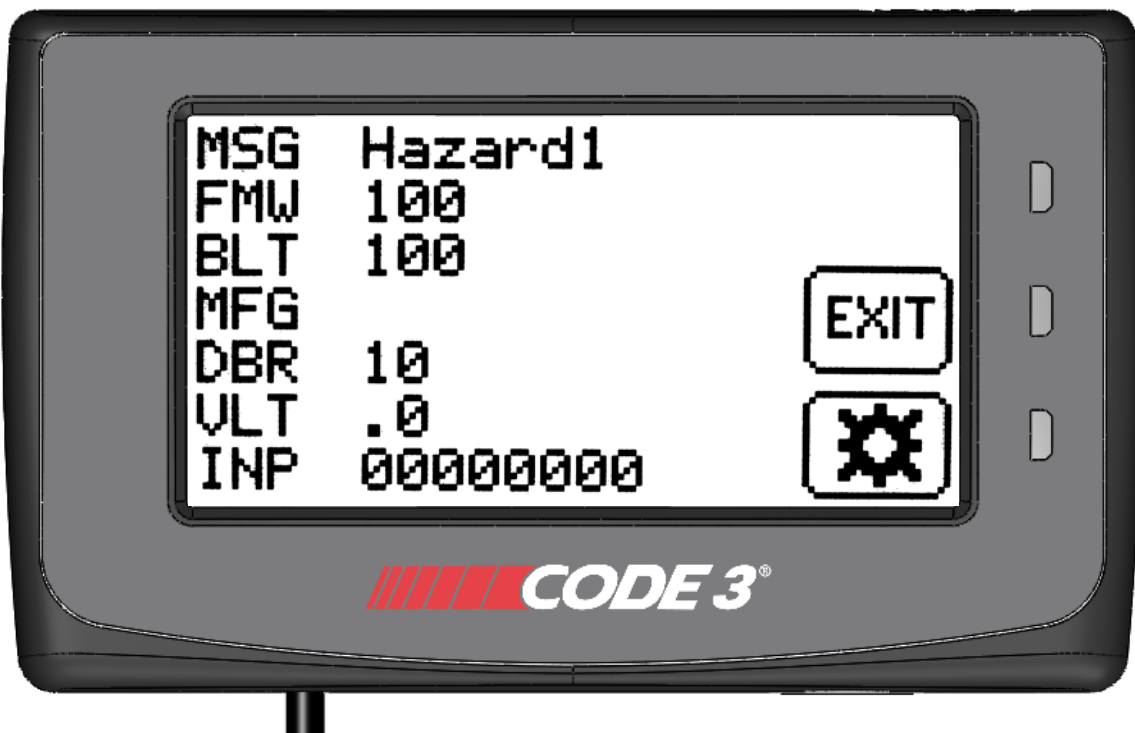


Note: Not actual screen colors

ITEM	COMPONENT	DESCRIPTION
1	Message list	The message list stored on the microSD card
2	Activated message	The active message that is being displayed on the Message Board Display



BUTTON	FUNCTION	DESCRIPTION
	Up button	Scans backwards through the message list
	Set button	Activates the message highlighted within the rectangle into the ITEM 2 position and displays this on the Message Board Display
	Down button	Scans forwards through the message list
	Clear button	Stops the message from being displayed
	Information button	Activates the Information Screen
	Off button	Turns off the controller, before this happens it will switch to a shutdown screen which allows 3 seconds to cancel shut down

## Controller Information Screen:



Note: Not actual screen colors

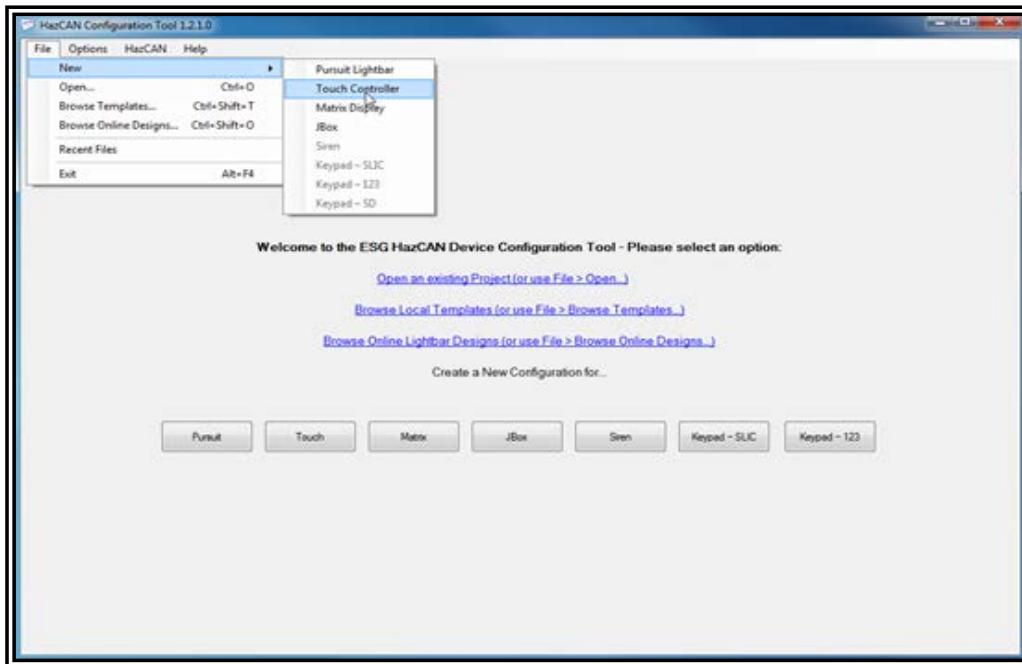
TEXT	MEANING	DESCRIPTION
MSG	Message ID	The filename of the message file on the microSD card
FMW	Firmware version	For internal reference when troubleshooting
BLT	Bootloader version	For internal reference when troubleshooting
MFG	Manufacture date	The recorded manufacture date of the product
DBR	Display brightness	This is set in the message editor software (1-10)
VLT	Vehicle voltage	The voltage is measured at Message Board Display
INP	Input status	The 8 digits represent the state of the input wires 0 represents 0 Volts or ground on the input wire 1 represents +VE voltage on the input wire 00000001 - Yellow wire 00000010 - Blue wire 00000100 - Brown wire 00001000 - Not Used 00010000 - Orange wire 00100000 - Pink wire 01000000 - Purple wire 10000000 - Green wire

BUTTON	FUNCTION	DESCRIPTION
	Exit button	Returns to the main screen
	Factory configuration button	Enters a setup screen which requires a passcode to reconfigure the screen calibration or to update the firmware

## Programming Instructions:

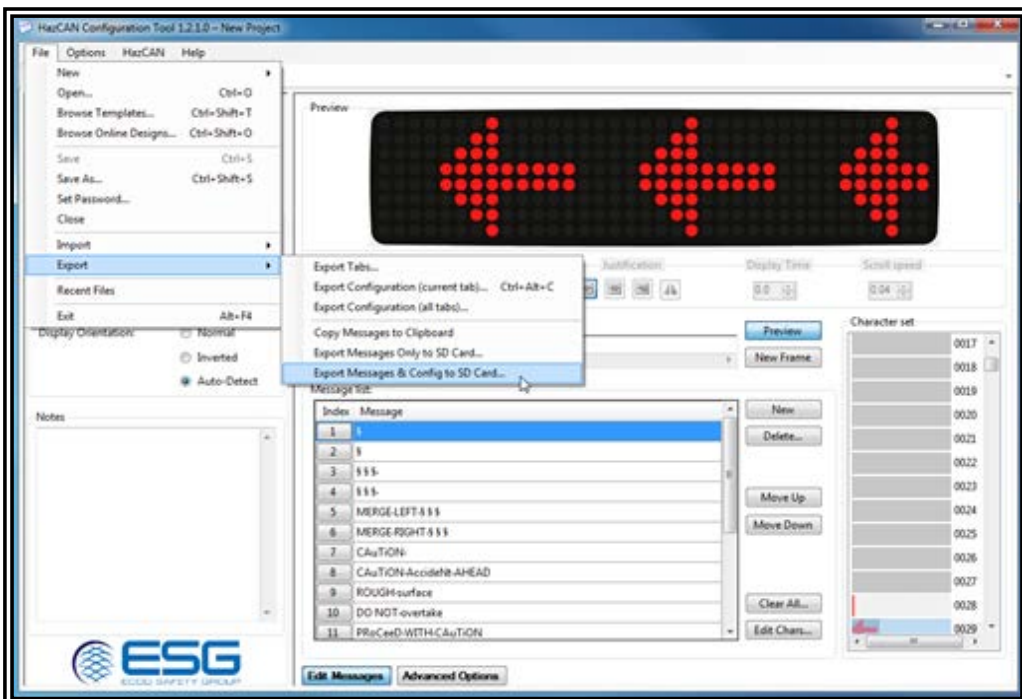
Use HazCAN Configuration Tool 1.2.1.0 to program the SD card.

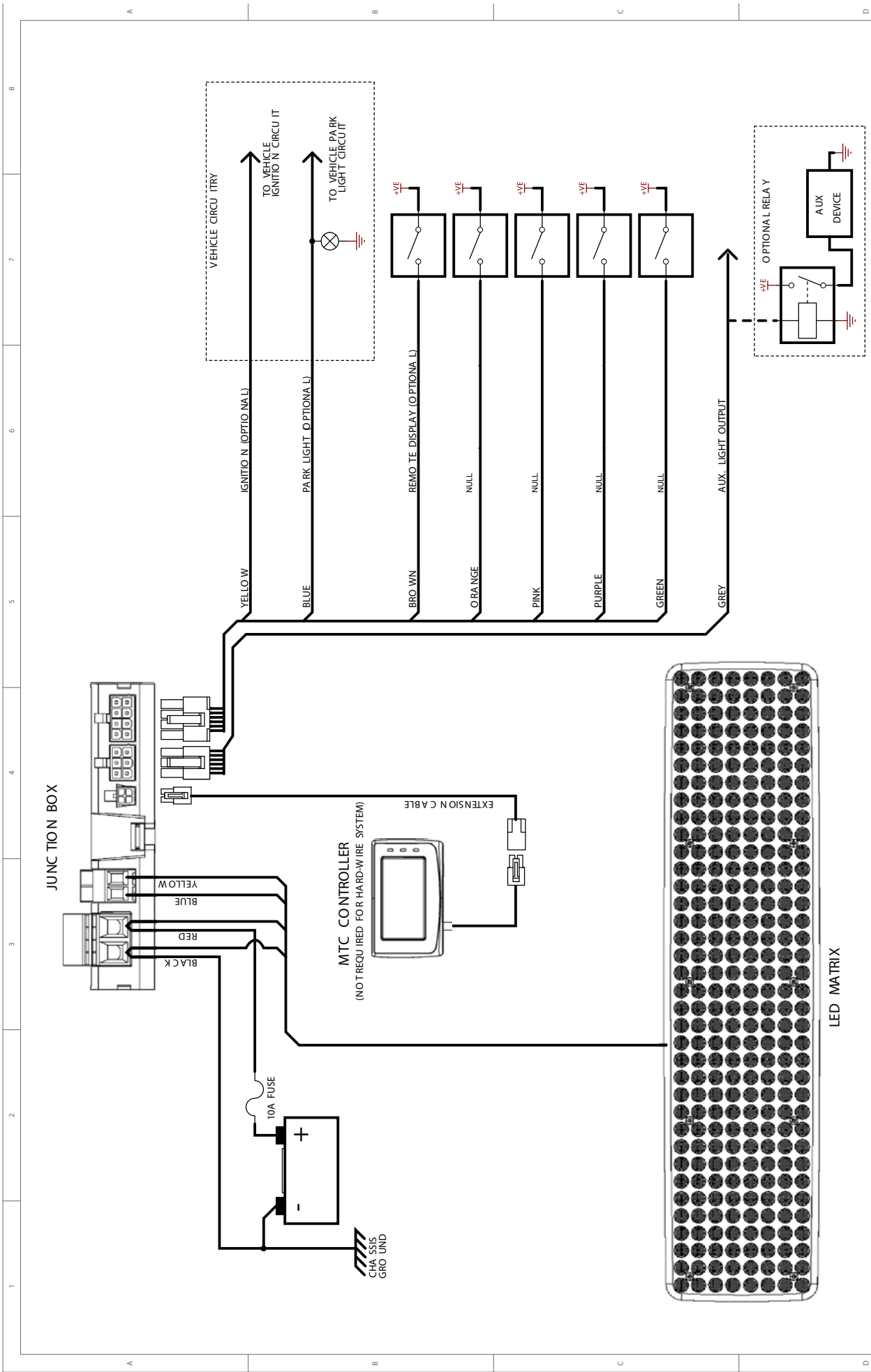
1. Follow the path -> File -> New -> Touch Controller as shown below.



2. Make the desired changes in the message board. Use the New/Delete tabs to create or remove messages.

3. To save the changes, follow the path -> File -> Export -> Export Messages & Config to SD Card... as seen below.





<p>Group: Headquarter &amp; Innovation          No. 11          European Division          +44 (0) 113 237 5340          Fax: +44 (0) 113 237 5300          www.ecco-group.com</p>		<p>NON DISCLOSURE AGREEMENT</p> <p>THIS DRAWING AND THE CONTENTS THEREOF ARE THE PRIVATE PROPERTY OF ECCO GROUP. NO PART OF THIS DRAWING OR THE CONTENTS THEREOF MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE PRIOR WRITTEN CONSENT OF ECCO GROUP. THE DRAWING IS SUBJECT TO RECALL AT ANY TIME. YOUR POSSESSION OF THIS DOCUMENT CONSTITUTES ACCEPTANCE OF THESE TERMS. © 2011 ECCO GROUP.</p>		<p>APPROVALS</p> <p>DESIGNER: D. GREEN          CHECKED: E. GREEN          ELEC. ENG. MFG. ENG.</p>		<p>DATE</p> <p>2013-01-16          YYYY-MM-DD</p>		<p>Date Created: 2013-01-16          Filename: V:\data\name.k not interpreted with output          Sheet 1 of 1          Sheet size: A3</p>		<p>Description: <b>MATRIX DISPLAY</b></p> <p>Project: HP1008          Drawing #: n/a</p>		<p>Rev: 1.0</p>	
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## Troubleshooting:

All products are thoroughly tested prior to shipment. However, should you encounter a problem during installation or during the life of the product, follow the guide below for troubleshooting and repair information. If the problem cannot be rectified using the solutions given below, additional information may be obtained from the manufacturer – contact details are at the end of this document.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Fuse Blows <sup>1</sup>	Wires short circuit	Check power and ground for short circuits
	Faulty unit	If fuse continues to blow after checking the wiring replace the product
Message not being displayed on Message Board Display	Communication / Power loss	Check Junction Box and Message Board wiring
	Faulty unit	Replace product
Controller not turning on with power button	Fuse blown	Check fuse on power to the Junction Box
	Wires open circuit	Check power and ground wires at the Junction Box and the data cable from the controller
	Faulty unit	Replace controller / Junction Box
Controller not turning on when screen is pressed	No power	Check fusing, power and ground wiring
	Ignition not hooked up or turned on	Connect ignition wire to vehicle as shown in wiring diagram, or try using the power button to test the controller is working
	Faulty unit	Replace controller
Unstable operation	Haz-Can wiring fault	Check wire colours match the label positions on Junction Box
Output on Junction box is not working	Junction box fuse blown (excessive load)	Replace the Junction Box
Touch screen buttons are not working accurately	Reboot the controller	Hold the power button for 5 seconds until you see the reboot screen and then release it
	Reset the screen calibration	Hold the power button for 10 seconds until you see the calibration screen and release it, the screen may now need to be recalibrated - contact manufacturer
	Faulty Unit	Replace controller
There are no messages showing on the controller	microSD card has been removed or corrupted	Program messages onto a new microSD card

<sup>1</sup> Note: Always replace the fuse with the same value as shown on the wiring diagram

## Notes

## Notes

## Manufacturer Limited Warranty Policy:

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Sixty (60) months from the date of purchase.

**DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS Voids THIS LIMITED WARRANTY.**

### Exclusion of Other Warranties:

MANUFACTURER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE IMPLIED WARRANTIES FOR MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE ARE HEREBY EXCLUDED AND SHALL NOT APPLY TO THE PRODUCT AND ARE HEREBY DISCLAIMED, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ORAL STATEMENTS OR REPRESENTATIONS ABOUT THE PRODUCT DO NOT CONSTITUTE WARRANTIES.

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MANUFACTURER'S SOLE LIABILITY AND BUYER'S EXCLUSIVE REMEDY IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER THEORY AGAINST MANUFACTURER REGARDING THE PRODUCT AND ITS USE SHALL BE, AT MANUFACTURER'S DISCRETION, THE REPLACEMENT OR REPAIR OF THE PRODUCT, OR THE REFUND OF THE PURCHASE PRICE PAID BY BUYER FOR NON-CONFORMING PRODUCT. IN NO EVENT SHALL MANUFACTURER'S LIABILITY ARISING OUT OF THIS LIMITED WARRANTY OR ANY OTHER CLAIM RELATED TO THE MANUFACTURER'S PRODUCTS EXCEED THE AMOUNT PAID FOR THE PRODUCT BY BUYER AT THE TIME OF THE ORIGINAL PURCHASE. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR LOST PROFITS, THE COST OF SUBSTITUTE EQUIPMENT OR LABOR, PROPERTY DAMAGE, OR OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES BASED UPON ANY CLAIM FOR BREACH OF CONTRACT, IMPROPER INSTALLATION, NEGLIGENCE, OR OTHER CLAIM, EVEN IF MANUFACTURER OR A MANUFACTURER'S REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. MANUFACTURER SHALL HAVE NO FURTHER OBLIGATION OR LIABILITY WITH RESPECT TO THE PRODUCT OR ITS SALE, OPERATION AND USE, AND MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES THE ASSUMPTION OF ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCT.

This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.

## Product Returns:

If a product must be returned for repair or replacement\*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3®, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

\*Code 3®, Inc. reserves the right to repair or replace at its discretion. Code 3®, Inc. assumes no responsibility or liability for expenses incurred for the removal and/or reinstallation of products requiring service and/or repair; nor for the packaging, handling, and shipping; nor for the handling of products returned to sender after the service has been rendered.



10986 North Warson Road  
St. Louis, MO 63114

**Technical Service**

(314) 996-2800

c3\_tech\_support@code3esg.com

www.code3esg.com

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www.eccosafetygroup.com

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