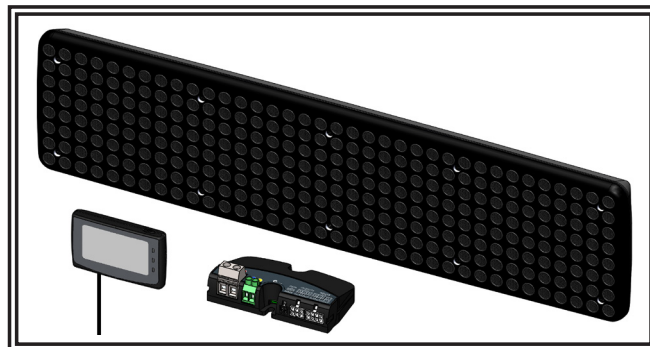


The Code 3 M5 Message Display is designed for multi-voltage operation. Co-moulded optically tinted TIR optics produce 10mm pixels with excellent contrast and reduced sunshine washout.

The controller features touch screen functionality. Customer programmable messages are stored on the microSD card. The M5 message display is fully C3 DNA Network compatible and can be configured to operate with multiple controllers or displays.



WARNING!

Failure to install or use this product according to manufacturers 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 maximised 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. 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.
6. 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.
7. 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.
8. This device produces high sound pressure levels which can cause damage to hearing. Appropriate safety precautions should be taken to minimise exposure.

SPECIFICATIONS

Part Number (Standalone Kit)		CD0012X
Part Description		Display & Controller
Input Voltage Range		10-30 VDC
Current Draw	Max	2.6 A (@ 13.6V) 1.25A (@ 27.2V)
	Typical	1A (@ 13.6V) 0.5A (@ 27.2V)
	Standby (Typ.)	14 mA
M5 Message Display Dimensions (H x W x D mm)		145 x 591 x 40
Controller Dimensions (H x W x D mm)		55 x 92 x 15
Network Junction Box Dimensions (H x W x D mm)		65 x 121 x 37
System Weight		2.2 Kg
Ambient Operating Temperature		-20 to +65 °C

¹ Using Code 3 11 Ohm speaker(s) at 13.6Vdc or 27.2Vdc

FEATURES

M5 Message System

- 10-30V operation
- ECE R10 & RCM approved
- Protected against
 - Reverse-Polarity
 - Supply Transients
 - Thermal Overload
- Firmware updates over C3 DNA network
- Network configurable

M5 Display

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

Network Junction Box

- Power and C3 DNA distribution
- Reduces wiring to the display
- Park, Ignition and remote switching inputs (where configured)

Controller

- OLED graphic display
- Resistive touch screen
- Multiple screen interface
- MicroSD card message storage
- Up to 99 messages
- PC software to reprogram messages
- Swivel mount cradle (sold separately)

INSTALLATION & MOUNTING

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

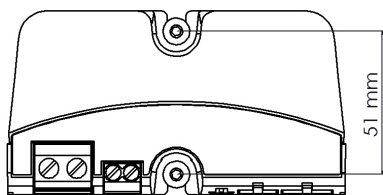
Important! This unit is a safety device and it must be connected to its own separate, fused power point to assure its continued operation should any other electrical accessory fail.

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 NETWORK 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.

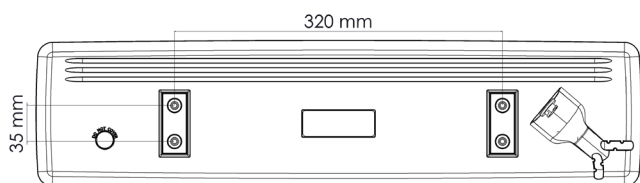


THE M5 MESSAGE DISPLAY

The M5 display 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)

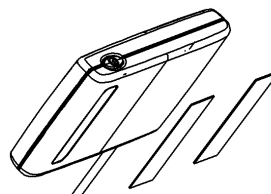
Caution: Do not over tighten the M6 Bolts, the maximum torque for the M6 Bolts is 2.0 Nm (18in.lbs). Excessive torque will damage the product.



THE CONTROLLER (MTC)

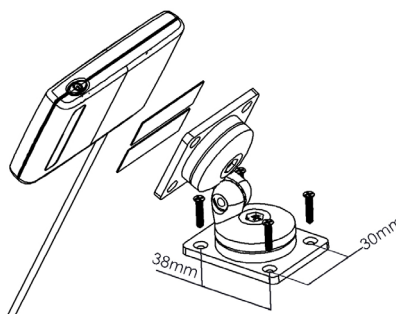
Caution: Don't install the controller where it will block your view while you're driving. It is recommended to mount the controller out of direct sunlight to avoid excessive heat damage. If the vehicle is fitted with air-bags, ensure that the chosen mounting position will not effect their deployment.

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.



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

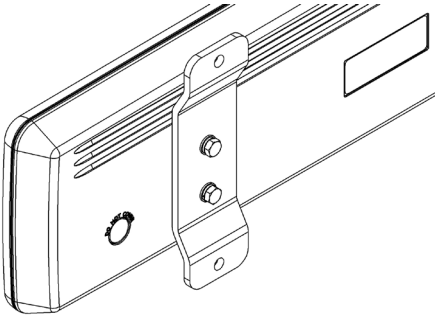
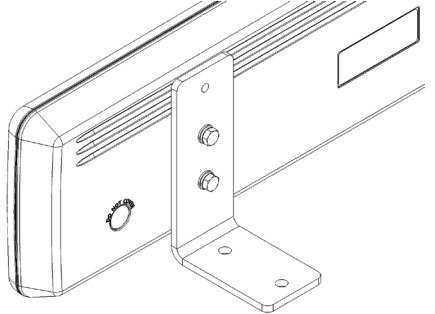
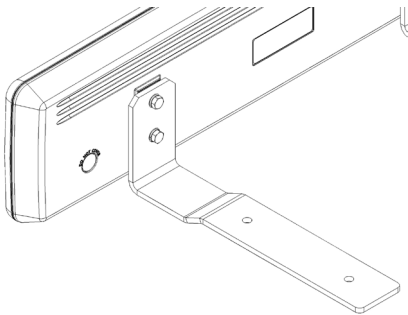
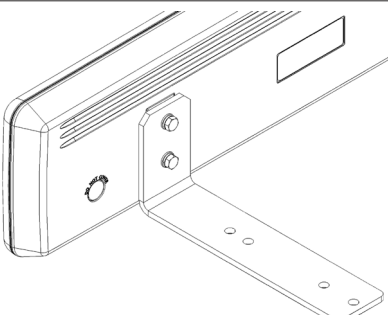
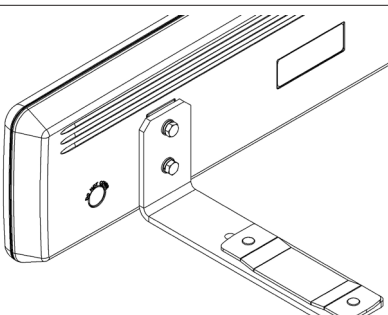
SWIVEL MOUNT
(sold separately 155-0342-00)



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.

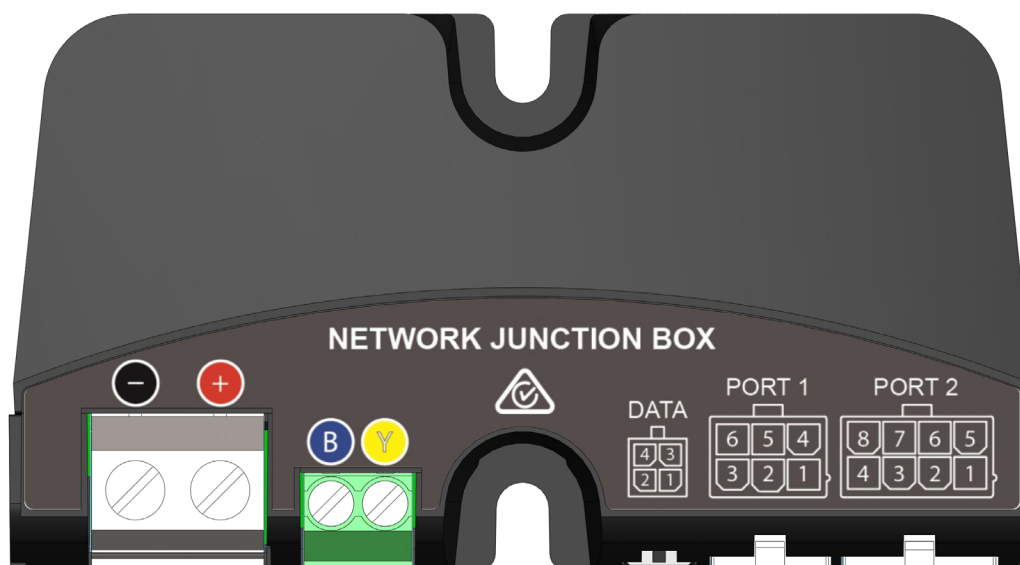
DISPLAY MOUNTING BRACKETS

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
	AD0012-20S	10/15/20/30 Series Lightbar Mounting Bracket Kit
	AD0012-60S	60/70 Series Lightbar Mounting Bracket Kit
	AD0012-90S	90 Series Lightbar Mounting Bracket Kit

WIRING INSTRUCTIONS - JUNCTION BOX (DEFAULT CONFIGURATION)

This section is for standalone M5 message Display kits only. For M5 Message Displays used in conjunction with a C3 DNA system or any C3 DNA compatible lightbar please refer to the wiring sheet included with the system.

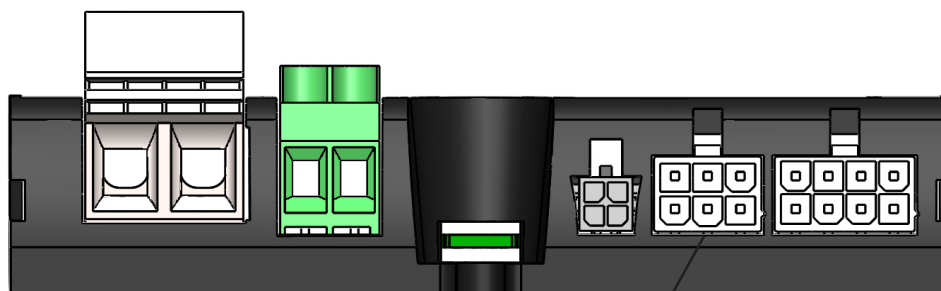


Before proceeding with installation, plan all cable routing and wiring carefully.

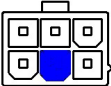
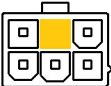
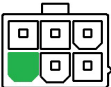
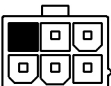
The table below should be used in conjunction with the wiring diagram on page 12 to make all connections.

REF	PORT	DESCRIPTION
	Black screw terminal	Strip both the Black wire from the M5 Message 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 ² (14 AWG) automotive wire.
	Red screw terminal	Connect to 2mm ² (14 AWG) automotive wire to a 10 Amp fused power source, using the shortest possible wire length. Do not connect this power wire until all other connections have been made to the unit.
	Blue screw terminal	Connect the Blue wire from the Ma5 Message Display
	Yellow screw terminal	Connect the Yellow wire from the M5 Message Display
DATA	4 Way Socket	Connect the controller (via extension cable if required) to this port. (not used in hard-wire versions)
PORT 1	6 Way Socket	See Page 6 for individual pin information
PORT 2	8 Way Socket	See Page 7 for individual pin information

WIRING INSTRUCTIONS - 6 WAY CONNECTOR (DEFAULT CONFIGURATION)

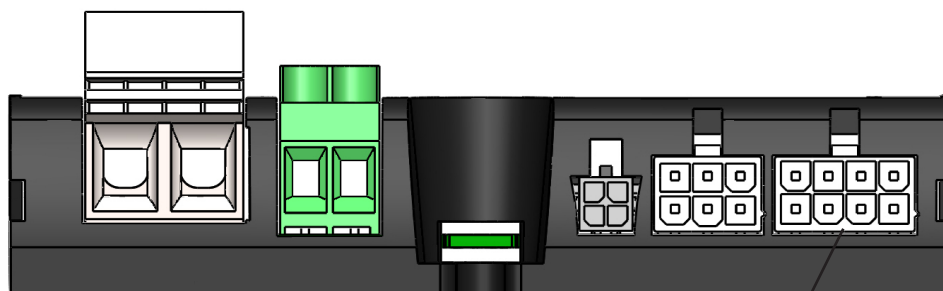


6 Way Harness
Connector (Front View)

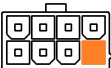
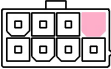
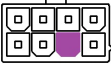
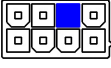
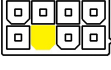
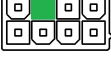


PIN	WIRE COLOUR	FUNCTION (FACTORY DEFAULT)	DESCRIPTION
	Blue	Park input (+)	This will dim the M5 Message Display to the brightness setting chosen in the configuration software (1 being the dimmest 10 being full power)
	Yellow	Ignition input (+)	Connect this wire to the vehicle's ignition circuit. When ignition is off the power button must be used to turn the controller on. The controller will automatically turn off if there is no 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
	Green	Unused	Unused
	White	Unused	Unused

Note: Leave all unused wires disconnected and isolated

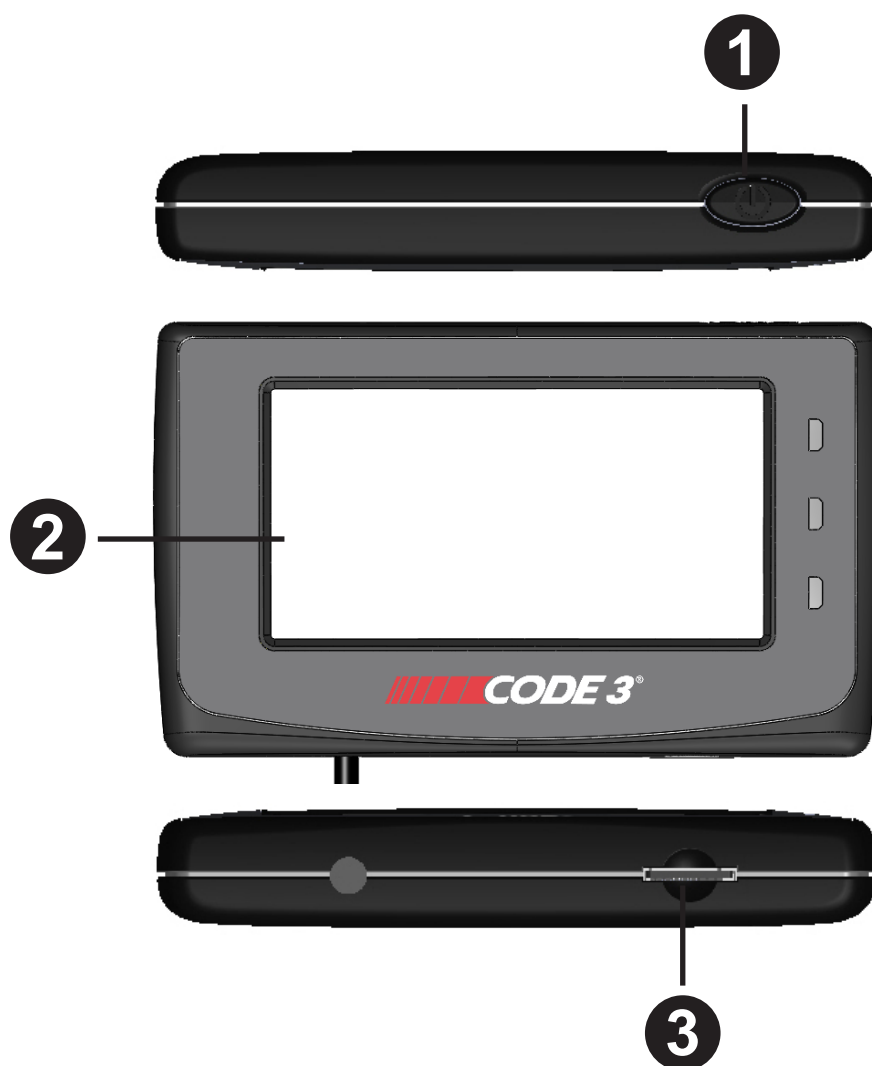
WIRING INSTRUCTIONS - 8 WAY CONNECTOR (DEFAULT CONFIGURATION)



8 Way Harness
Connector (Front View)

PIN	WIRE COLOUR	FUNCTION (FACTORY DEFAULT)	DESCRIPTION
	Orange	Input 1 (+)	Network configurable input
	Pink	Input 2 (+)	Network configurable input
	Purple	Input 3 (+)	Network configurable input
	Blue	Input 4 (+)	Network configurable input
	Yellow	Unused	Network configurable input
	Green	Unused	Network configurable input
	Grey	Unused	Network configurable input
	Brown	Unused	Network configurable input

CONTROLLER OPERATION

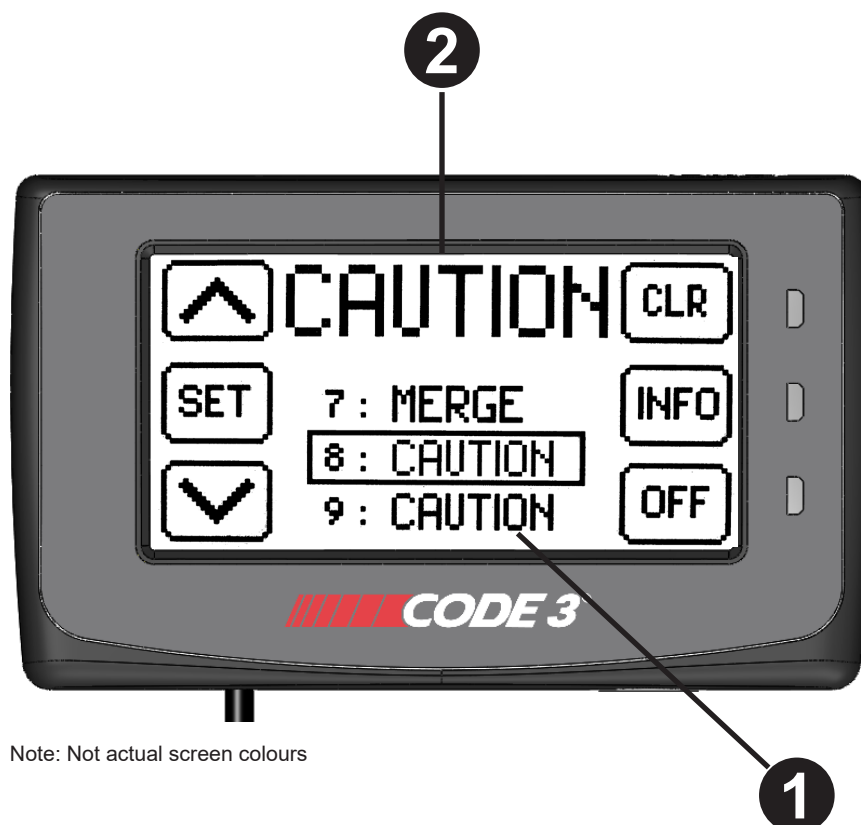


ITEM	COMPONENT	DESCRIPTION
1	Power button	Turns the controller on or off regardless of status of the vehicle ignition. The power button may also be held in for 5 seconds to perform a hard reboot of the controller or continue holding for 10 seconds to reset the screen calibration of the controller.
2	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 www.eccosafetygroup.com.au.

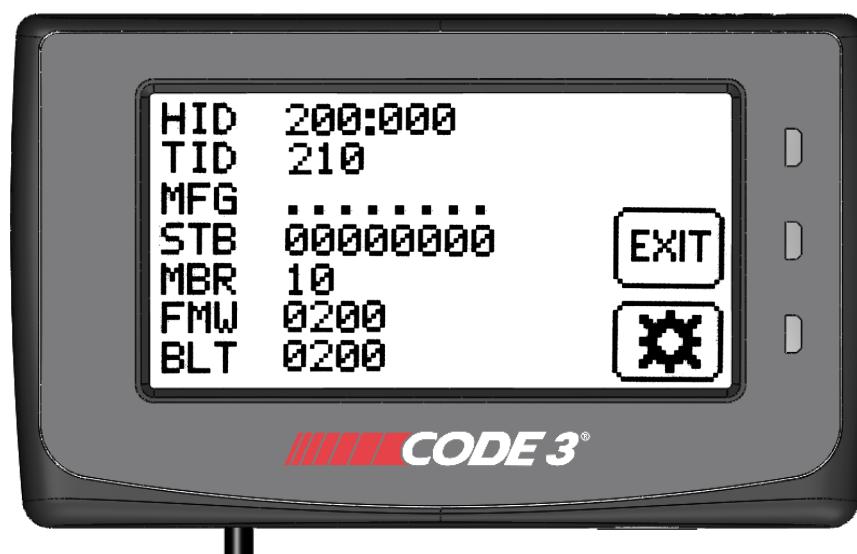
CONTROLLER MAIN SCREEN



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 M5 Message 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 M5 Message 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

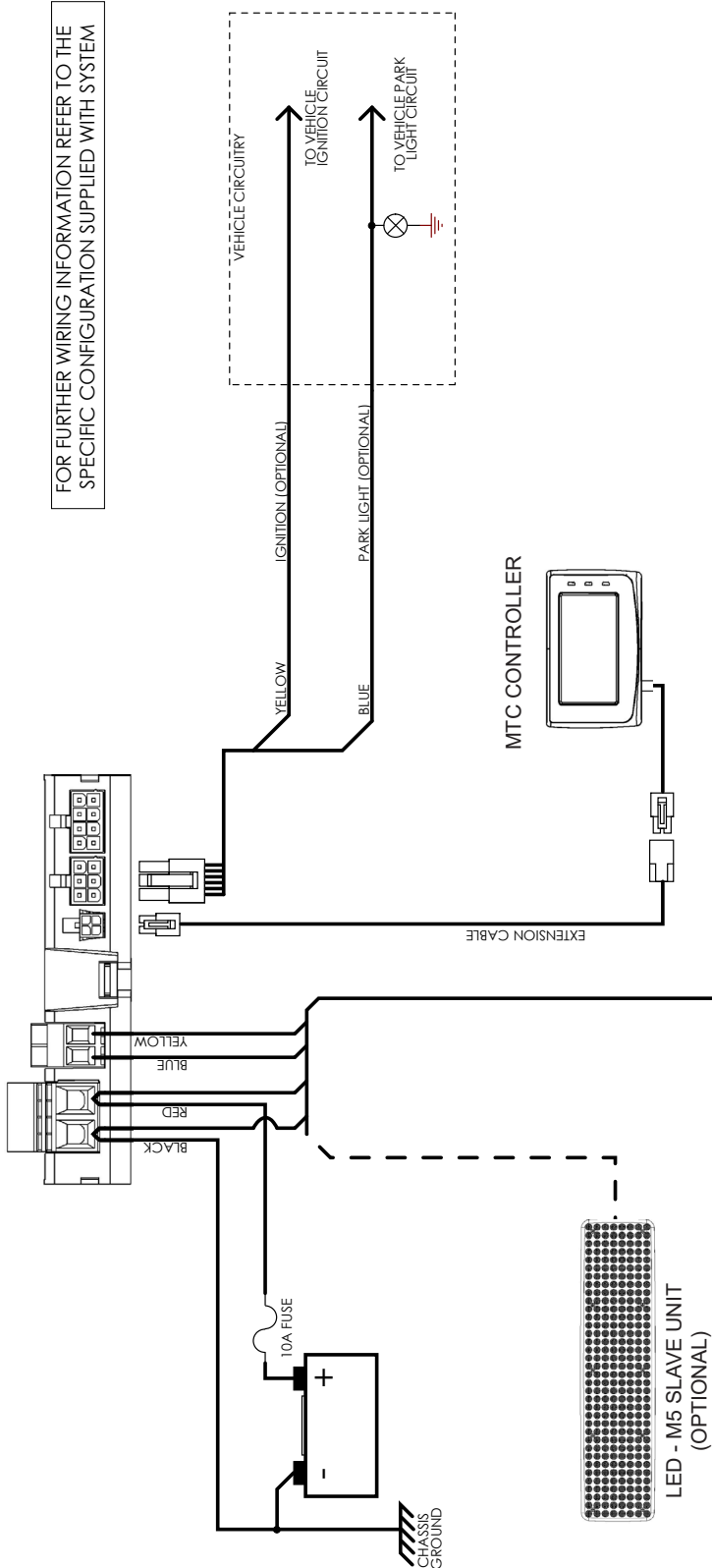


Note: Not actual screen colours

TEXT	MEANING	DESCRIPTION
HID	C3 DNA ID	The C3 DNA ID of the MTC
TID	Target ID	The C3 DNA ID of the display
MFG	Manufacture date	The recorded manufacture date of the product
STB	Status Bits	For internal diagnostic information
MBR	M5 brightness	Current M5 brightness level.
FMW	Firmware version	For internal reference when troubleshooting
BLT	Bootloader version	For internal reference when troubleshooting

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

JUNCTION BOX



LED - M5 MESSAGE DISPLAY

NON DISCLOSURE AGREEMENT				Description:			
THIS DRAWING AND THE DESIGN IT ENCLOSES ARE THE PRIVATE PROPERTY OF ECCO GROUP AND ARE ISSUED IN CONFIDENCE FOR ENGINEERING INFORMATION ONLY. THE DRAWING AND/OR DESIGN MAY NOT BE USED, COPIED, REPRODUCED OR OTHERWISE DISCLOSED IN PART OR AS A WHOLE TO OUTSIDERS OR USED FOR ANY OTHER PURPOSES WITHOUT THE PRIOR WRITTEN CONSENT OF ECCO GROUP. YOUR ACCEPTANCE OF THIS DOCUMENT CONSTITUTES YOUR ACCEPTANCE OF THESE TERMS. © 2011 ECCO GROUP.				M5 MESSAGE DISPLAY			
APPROVALS				Date Created: 2016-05-20			
DESIGNER: ACS				Variant: [No Variation]			
CHECKED				Sheet 1 of 1			
ELEC. ENG.				Sheet size: A3			
MFG. ENG.				Project: HP1008			
				Drawing #: n/a			
				Rev: 2.0			

TROUBLESHOOTING:

All sirens 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 ¹	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 M5 Message Display	Communication / Power loss	Check Junction Box and M5 wiring
	Faulty unit	Replace product
	Incorrect hardware version(s)	Check hardware compatibility and change where necessary
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	C3 DNA 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

NOTES:

Manufacturer Limited Warranty and Limitation of Liability:

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), and Manufacturer further warrants that this product is free from defects in materials and workmanship. This Limited Warranty extends for twenty-four (24) months from the date of purchase. Other warranties may apply, call Manufacturer for details. Manufacturer will, at its discretion, repair or replace any product found by the Manufacturer to be defective and subject to this Limited Warranty.

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