

I
N
S
T
A
L
L

M
A
N
U
A
L

EQSS Model6253 – OverWatch™ Genie RT Series



****Failure to follow this installation manual will void warranty ****



REV 1.8

28/11/2023

Model6253 OverWatch™ Installation Manual

Document # DO001234

AUTHORS: Kieren Grogan, Bhavani Kacharapu	AUTHORISED BY: Kieren Grogan	CHECKED BY: Andrew Donegan
DOCUMENT ABSTRACT: This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch on a GS2669RT, GS3384RT, GS4069RT, GS4390RT and GS5390RT Scissor Lifts.		
PRODUCT NAME: Model6253 OverWatch Operator Detection System		
REFERENCE DOCUMENTS: DO0001195 Model6253 OverWatch User Manual		
CURRENT DOCUMENT REVISION: 1.8		
REVISION INFORMATION: <ul style="list-style-type: none">• 1.1 Initial Document Creation for installation on a Genie 2669 RT• 1.2 Addition of Wiring Diagrams• 1.3 Update of photos• 1.4 Update of connection descriptions• 1.5 Updated with Stabilizer signal connection.• 1.6 Update on document abstract and installation images. Update on installation images and inclusion of rapid harness.• 1.7 Inclusion of instructions for installation of operator sensor guard V2• 1.8 Update to model configuration instructions and spare part order numbers		

Important Information

Information contained in this publication regarding this device's applications and the like, is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that the application or our equipment meets with your specifications.

EQUIPMENT SAFETY SYSTEMS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESSED OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING, BUT NOT LIMITED TO, IT'S CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE.

Equipment Safety Systems disclaims all liability arising from this information and its use. Use of Equipment Safety Systems' products as critical components in life support systems is not authorised except with express written approval by Equipment Safety Systems. No licenses are conveyed, implicitly or otherwise, under any Equipment Safety Systems intellectual property rights.



N23041

This is a class A product certified to AS/NZS CISPR 22:2006. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



Table of Contents

Preparation	5
Required Tools	5
Installation Time	5
Installation Instructions	6
Operator Sensor	6
Control Module	10
Post Installation Configuration	14
Overview	14
Minimum system requirements	14
Wi-Fi Connection & Web Page Access	14
Machine Model Selection	15
Installation Test.....	16
Change Model Configuration	17
System Settings.....	18
Default Parameters	18
Polarity and Input Style.....	19
Harness Drawing AS001956.....	20
Replacement Parts.....	21

Preparation

Required Tools

The OverWatch has been designed to be fitted using basic workshop tools. Shown below is a list of tools required to complete the installation.

Item	Tool / Description
1	Electric Drill
2	Centre punch
3	Hammer
4	Side Cutters
5	Drill 5.0mm
6	Drill 6.0mm
7	Metric sockets or spanners
8	Needle nose pliers
9	Screw drivers

Installation Time

The suggested time required to install the OverWatch is as detailed below

Task	Estimated Time (Minutes)
Open the operator control box	2
Drilling of all mounting holes for the various components	10
Mechanical assembly	10
Electrical assembly	15
Post installation system tests	10
Close the operator control box	3
Total	50

Installation Instructions

If any decals are damaged during the installation process or if any decals are obstructed following the installation, they should be replaced accordingly.

Operator Sensor

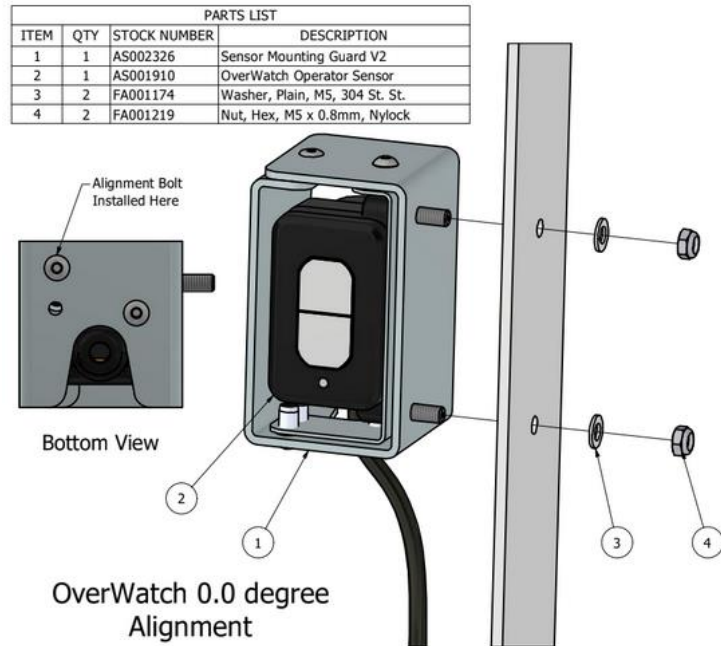
Step	Description	Diagram																												
1.	<p>Drill two 6mm holes using the sensor backing plate (ME001848) as a drilling template as shown in the image.</p> <p>The backing plate should be oriented with the large hole towards the bottom of the unit and pushed up against the side and top of the channel.</p>																													
2.	<p>Sensor Mounting Guard V1 (ME001794)</p> <p>Mount the operator sensor in the 30-degree position by using the sensor guard, bolts and washers.</p>	<table><tr><th colspan="4">PARTS LIST</th></tr><tr><th>ITEM</th><th>QTY</th><th>PART NUMBER</th><th>DESCRIPTION</th></tr><tr><td>1</td><td>1</td><td>AS001910</td><td>Overwatch™ Operator Sensor</td></tr><tr><td>2</td><td>1</td><td>ME001794</td><td>Overwatch™ Sensor Guard</td></tr><tr><td>3</td><td>2</td><td>FA001417</td><td>M4 x 12mm Butt screw</td></tr><tr><td>4</td><td>2</td><td>FA001235</td><td>Washer, Plain, M4, 304 St. St.</td></tr><tr><td>5</td><td>1</td><td>ME001818</td><td>Operator Sensor Mounting Bracket</td></tr></table>	PARTS LIST				ITEM	QTY	PART NUMBER	DESCRIPTION	1	1	AS001910	Overwatch™ Operator Sensor	2	1	ME001794	Overwatch™ Sensor Guard	3	2	FA001417	M4 x 12mm Butt screw	4	2	FA001235	Washer, Plain, M4, 304 St. St.	5	1	ME001818	Operator Sensor Mounting Bracket
PARTS LIST																														
ITEM	QTY	PART NUMBER	DESCRIPTION																											
1	1	AS001910	Overwatch™ Operator Sensor																											
2	1	ME001794	Overwatch™ Sensor Guard																											
3	2	FA001417	M4 x 12mm Butt screw																											
4	2	FA001235	Washer, Plain, M4, 304 St. St.																											
5	1	ME001818	Operator Sensor Mounting Bracket																											

3. Sensor Mounting Guard V2 (AS002326)

This guard (AS002326) supersedes the original V1 design.

Mount the operator sensor in the **30-degree position** on the mounting bracket using the supplied M5 washers and nuts. Make sure that the sensor is on the 0.0-degree angle, such that it is **not** twisted away from the joystick.

The 0.0-degree angle is achieved by using the bolt hole as shown in the image.



4. Mount the operator sensor to the control box by using the M5 nuts bolts and washers. Make sure to place the backing plate in position.



5. Remove the bottom plate of the control box and drill a **20mm** hole for the operator sensor gland.

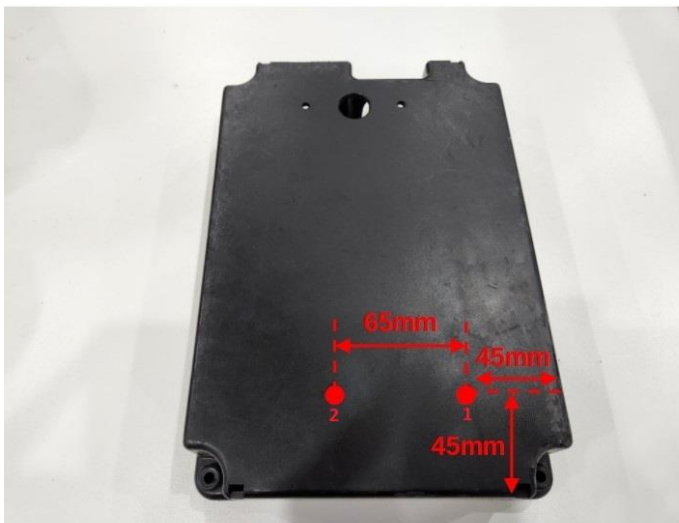
The centre of the gland should be in line with the existing corner on the bottom plate above the gland position as shown in the image.

Drill two **5.2mm** holes for the gland guard as shown in the image.



6. Drill two 5mm holes spaced **65mm** to install ECU at the bottom plate of the control box.

The horizontal and vertical distance from the centre of the first hole is **45mm**.



7. Install the supplied cable gland in the location shown and feed the cable from the operator sensor into the enclosure.


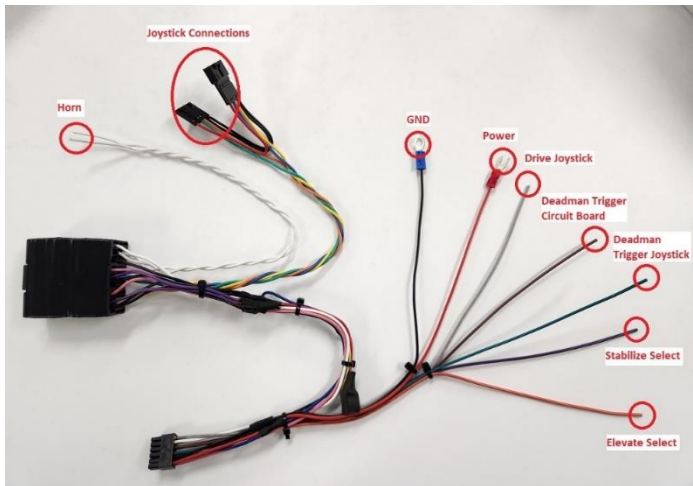


8. Pull the operator sensor cable tight and secure the cable to the large hole in the base of the operator sensor mounting bracket by using a cable tie.

Mount the gland guard over the gland and use the included P-Clip to secure the cable as shown in the image.



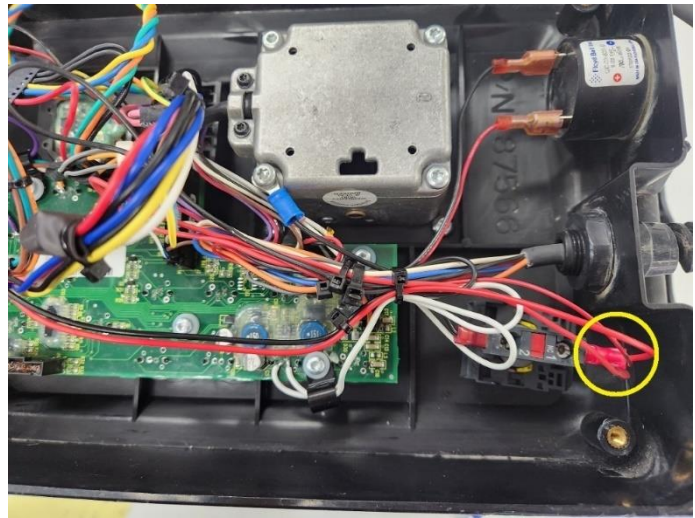
Control Module

Step	Description	Diagram
1.	Mount the ECU using the M4 bolts, and washers.	
2..	Wiring connections are made by the OverWatch harness AS001956.	

3.

Power Connection:

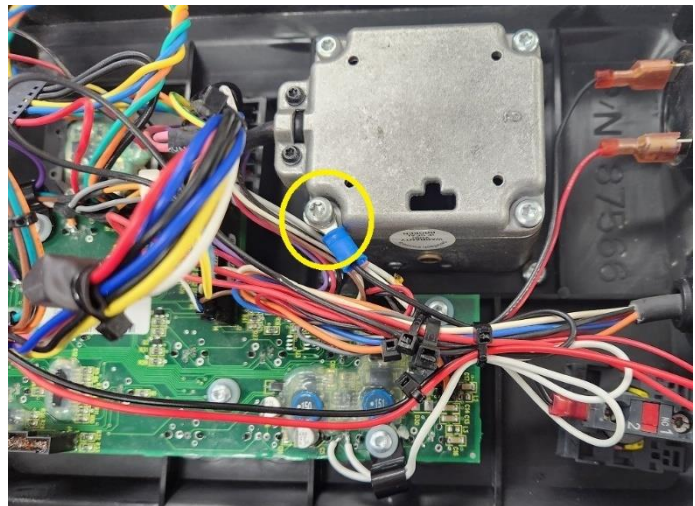
At the back of the E-Stop connect the red wire from the OverWatch harness to location #1 on the E-Stop switch block.



4.

Ground Connection:

Using the pre crimped black wire from the OverWatch harness, attach to the body of the joystick using the existing bolt.

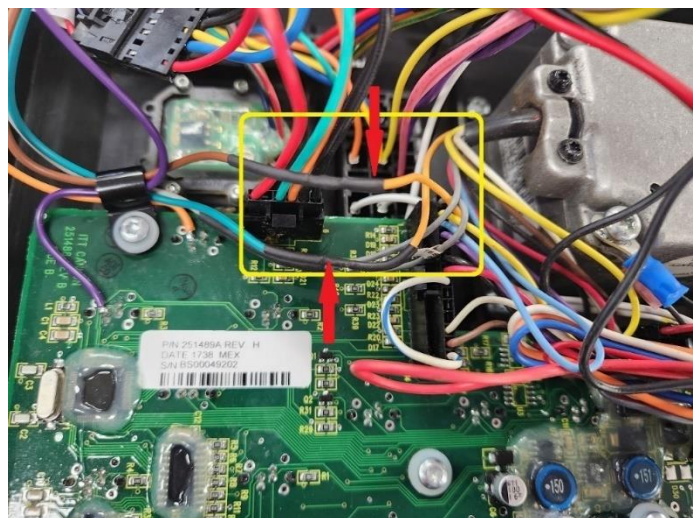


5.

Deadman Trigger:

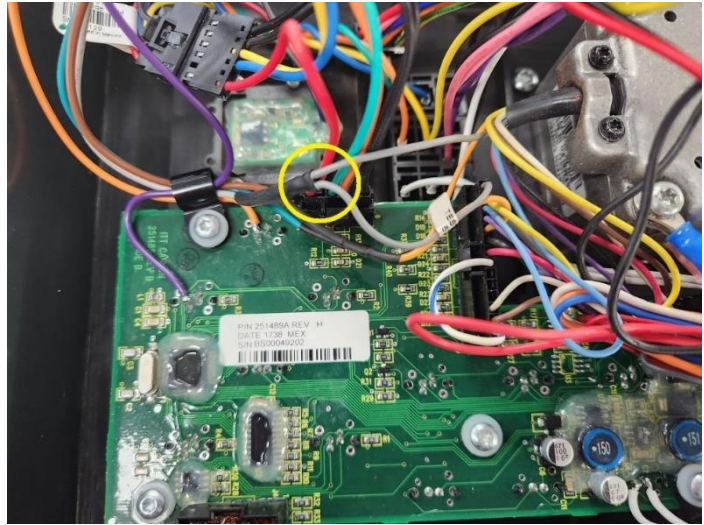
Locate the orange wire between the joystick module and circuit board. Cut this wire and solder the green wire from the OverWatch harness to the joystick side and the brown wire to the circuit board side.

Secure all the solder joints with heat shrink.



6. **Joystick Connection:**

Locate the grey wire between the joystick and the circuit board. Cut this wire and splice in the grey wire from the OverWatch harness to make. Secure the solder joints with heat shrink.



7. **Horn Connection:**

At the back of the horn push switch

Solder two white wires from the OverWatch harness to the locations shown in the image.

Use hot glue to protect the solder joint.

Use the supplied P-clip to secure the cables as shown in the image.

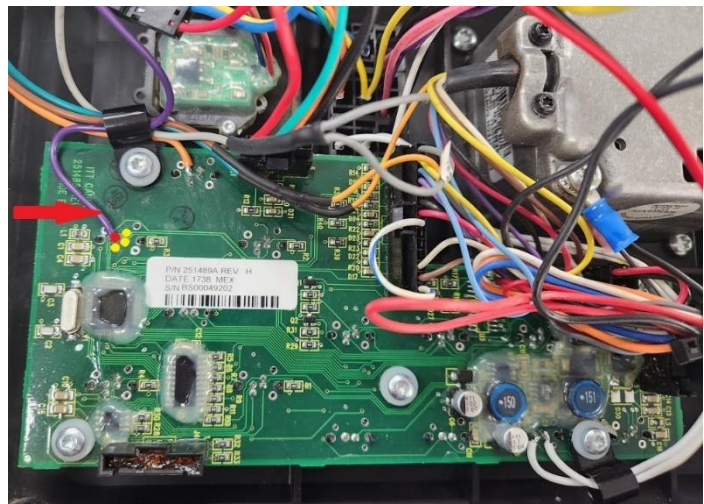


8. **Outrigger Connection:**

At the location shown on the circuit board:

Solder the violet wire from the OverWatch harness to the location as shown in the image.

Use heat glue to protect the solder joint.

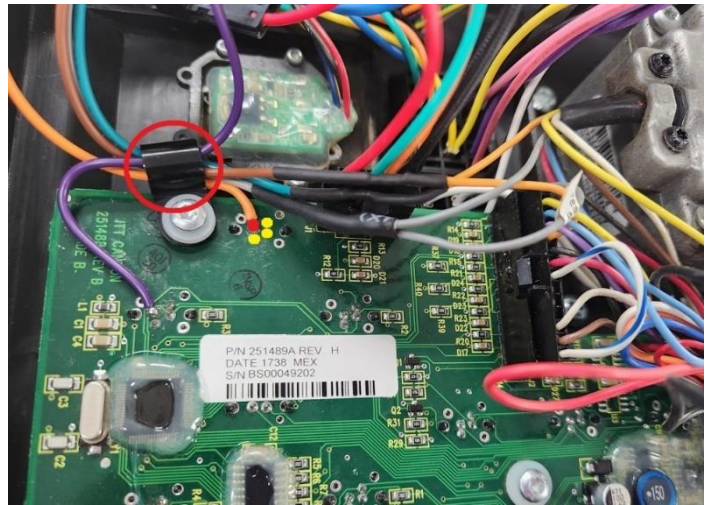


9. **Elevate Connection:**

At the location shown on the circuit board:

Solder in the orange wire from the OverWatch harness to the location as shown in the image. Use heat glue to protect the solder joint.

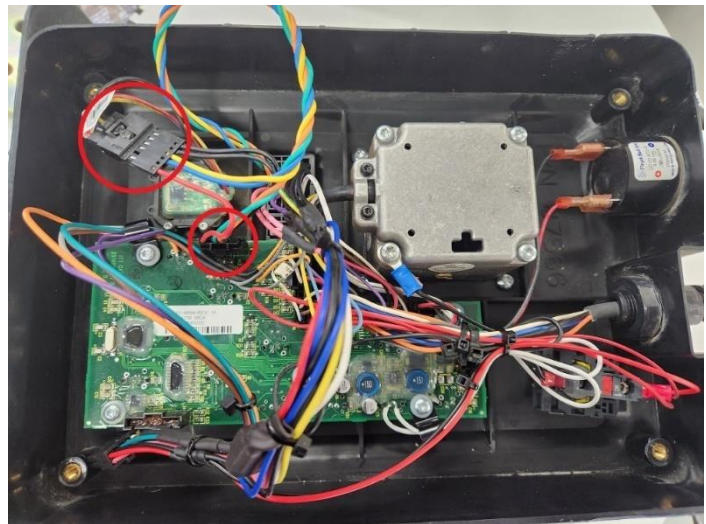
Use the supplied P-clip to secure the cables.



10. **Elevate Joystick:**

Disconnect the existing connector between the elevate joystick and the circuit board.

Install the elevate joystick connectors from the OverWatch harness inline as shown in the image.



11. **Connect the 8-pin connector from the Operator Sensor and the 12-pin connector from the OverWatch harness into the ECU.**



Post Installation Configuration

Overview

After the system has been installed it must be configured with the parameters to suit the machine. Follow the instructions below to configure the OverWatch.

Minimum system requirements

Any smart phone, tablet or laptop that meets the following requirements:

- The device can connect to a Wi-Fi access point
- The device has an up to date web browser installed. Firefox, Chrome or Safari are recommended.

Wi-Fi Connection & Web Page Access

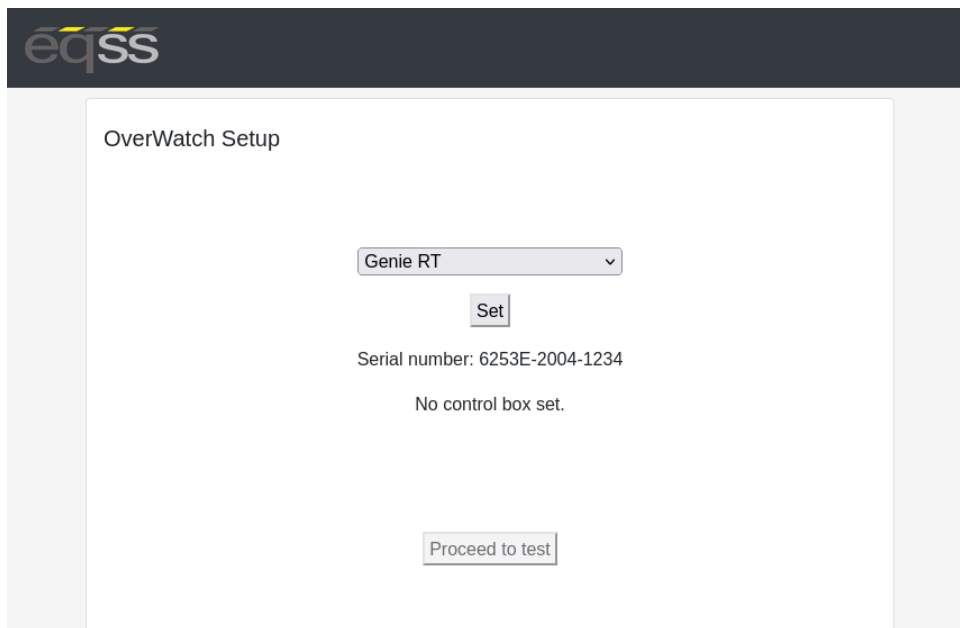
To enable the Wi-Fi connection on the OverWatch to complete the configuration follow the steps below.

1. Power down the platform control box with the ESTOP
2. Wait 5 seconds
3. Power up the platform control box with the ESTOP
4. While standing **in front of the operator sensor**, switch on the OverWatch
5. As the welcome chime starts to play, cover the sensor. The LED will flash white then black to acknowledge.
6. Remove your hand from the sensor. The LED will flash white then black to acknowledge.
7. After covering then uncovering the sensor this way 2 more times, "Wi-Fi On" will be announced
8. On your Wi-Fi enabled device (laptop, tablet, smartphone, etc), show the available wireless networks
9. Select the wireless network (starts with "overwatch") to connect to the OverWatch
10. When prompted, enter the **password 12345678**
11. Open your preferred web browser (Chrome, Firefox, Safari)
12. Enter the following into the address bar <http://192.168.4.1> to open the OverWatch main page

Machine Model Selection

Follow the instructions below to configure the OverWatch.

1. Select the Setup option
2. If there is a password field at the bottom of the page, follow the instructions in Change Model Configuration to obtain the password and enter the password field
3. Select the EWP Model from the drop-down list and click Set
4. Click on Proceed to test to begin the installation test



OverWatch Setup

Genie RT ▼

Set

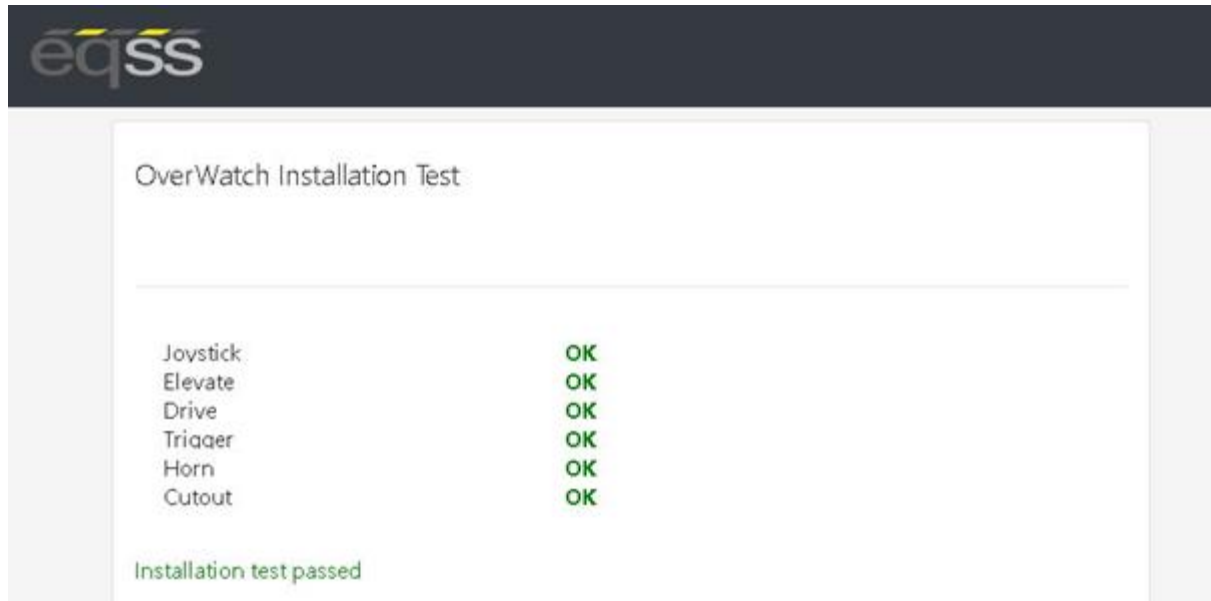
Serial number: 6253E-2004-1234

No control box set.

Proceed to test

Installation Test

After the model configuration has been set or updated an Installation Test must be performed. This will ensure the installation has been correctly performed and the OverWatch is functioning correctly. Follow the instructions on the web page to complete the Installation Test.

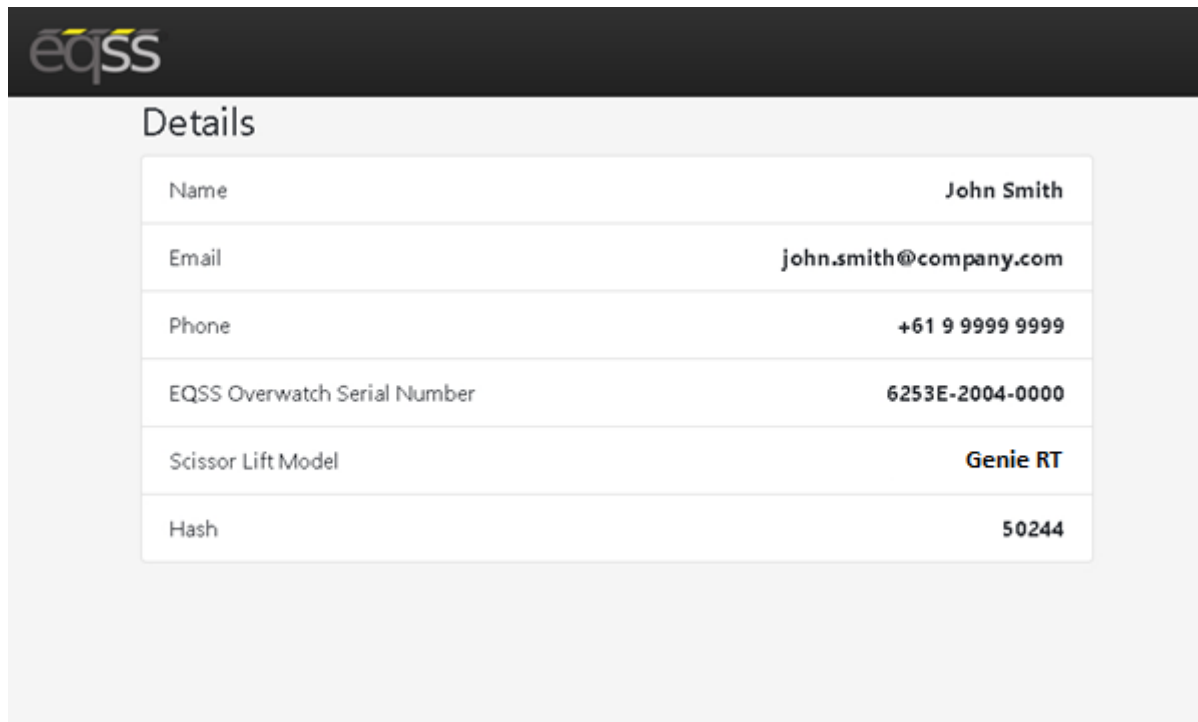


Change Model Configuration

To reconfigure the OverWatch for a different model requires an authorisation password. The authorisation password is generated from the EQSS website. The EQSS website requires a login username and password, contact EQSS for these details.

Follow the instructions below to obtain an authorisation password. It is important to note that each ECU has a unique serial number and a unique password.

1. Open your web and enter the following into the address bar <http://www.eqss.com.au/overwatch> to open the Login page
2. Enter your username and password
3. Enter the EUC serial number which is shown on the setup page or on the ECU serial number sticker, also enter the owner and model details of the EWP and then click Generate Hash
4. The generated Hash code or password can be used to change the model configuration.



The screenshot shows the 'Details' section of the EQSS website. It features a table with six rows, each containing a label and a value. The values are: Name (John Smith), Email (john.smith@company.com), Phone (+61 9 9999 9999), EQSS Overwatch Serial Number (6253E-2004-0000), Scissor Lift Model (Genie RT), and Hash (50244).

Details	
Name	John Smith
Email	john.smith@company.com
Phone	+61 9 9999 9999
EQSS Overwatch Serial Number	6253E-2004-0000
Scissor Lift Model	Genie RT
Hash	50244

System Settings

Default Parameters

The OverWatch is configured with the following default parameters.

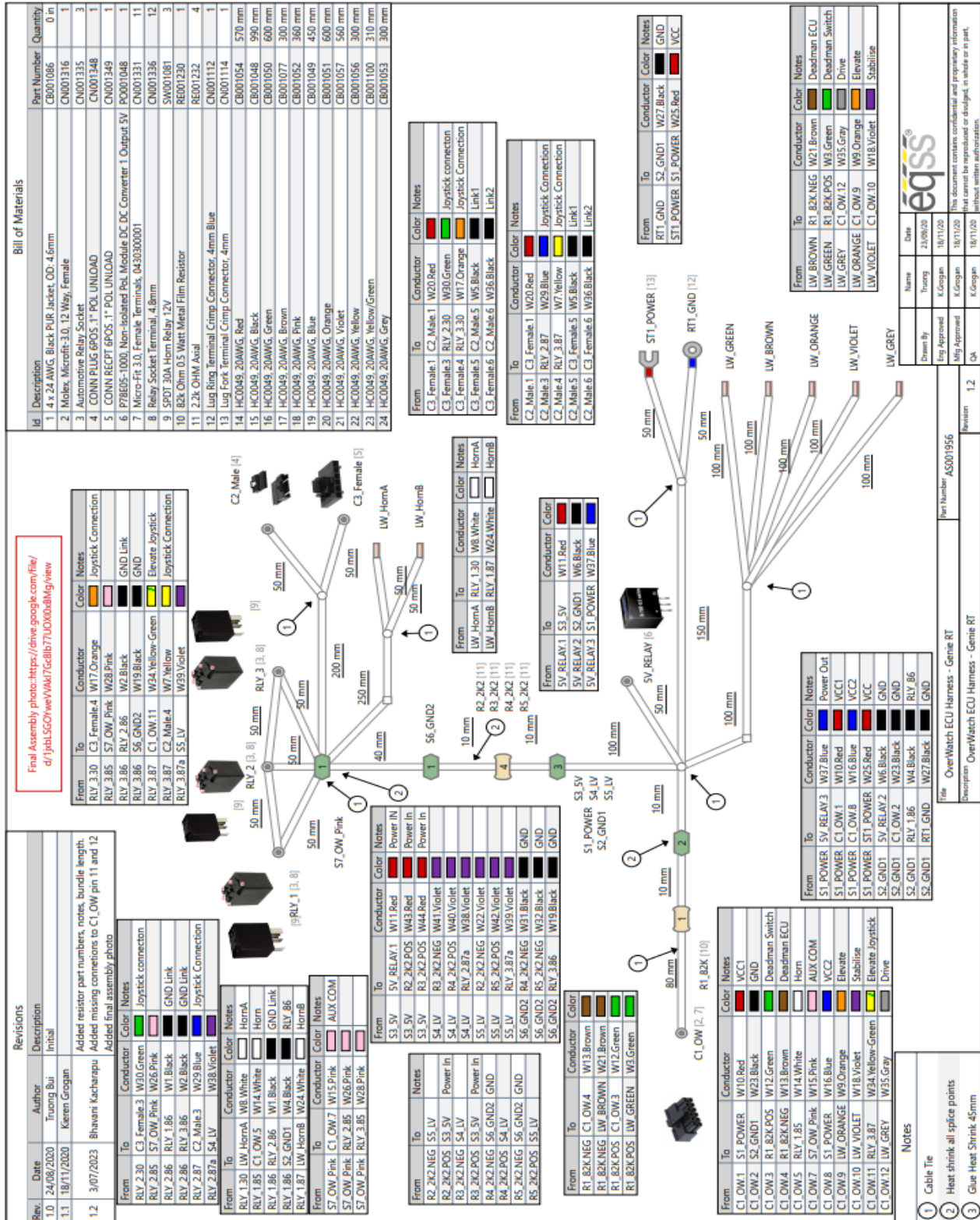
Setting Name	Description	Default
max_safe_velocity	This is the velocity threshold for the cutout in cm/s for drive mode.	95
max_safe_displacement	This is the maximum permitted distance in cm the operator may be away from the calibration position in drive mode.	50
max_safe_velocity_elevate	This is the velocity threshold for the cutout in cm/s for elevate mode.	75
max_safe_displacement_elevate	This is the maximum permitted distance in cm the operator may be away from the calibration position in elevate mode.	50
fwddispadj	The proportion of the calibration distance toward the sensor permitted to the operator.	0.7
fwdveloadj	The coefficient to apply to the maximum allowable velocity when the movement of the operator is toward the sensor.	1.0
zone_obstruction	If the lidar sensor reading is below this, the lidar is considered to be obstructed (with paint or thick coat of dust) and the system is cutout until the obstruction is cleared.	5
zone_minimum	The minimum calibration distance. If the operator is closer to the sensor than this "operator zone" will be announced.	17
zone_maximum	The maximum calibration distance. If the operator is further from the sensor than this "operator zone" will be announced.	120
adc_elevate_threshold	Threshold value for the elevate ADC input.	300
adc_drive_threshold	Threshold value for the drive ADC input.	300
adc_trigger_threshold	Threshold value for the trigger ADC input.	2000
adc_joystick_fwd_threshold	Forward threshold value for the joystick ADC input.	1100
adc_joystick_bwd_threshold	Backward threshold value for the joystick ADC input.	800
throttle_time	Period after the trigger is pressed (ms) during which initial velocity reading is computed.	500
driving_state_timeout	Mode selection switch timeout (ms)	7000

Polarity and Input Style

The table below describes each setting

Setting Name	Description	Default
joystick_drive_forward	Direction of joystick to move machine forward	forward
joystick_elevate_upward	Direction of joystick to move machine upwards	forward
elevate_polarity	Direction of signal logic	high
drive_polarity	Direction of signal logic	low
trigger_polarity	Direction of signal logic	high
joystick_polarity	Direction of signal logic	high
driving_state_input	Direct or timer based	separate

Harness Drawing AS001956



Replacement Parts

Replacement parts for this OverWatch kit are available from EQSS, for all inquiries please email sales@eqss.com.au
Shown below are the part numbers for the major components included in this model specific kit.

Part Number	Description
AS001961	OverWatch - Complete kit for Genie RT Series Control Box
AS001910	OverWatch - Operator Sensor with M20 gland
AS001916	OverWatch – Electronic Control Unit (ECU)
AS001956	OverWatch - Genie RT Harness
AS002326	OverWatch - Sensor Guard V2
ME001818	OverWatch – L Bracket 30/45