INSTALL MANUAL

EQSS Model6253 – OverWatch™
LGMG RT Series

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

AUTHORS:	AUTHORISED BY:	CHECKED BY:
Andrew Donegan	Kieren Grogan	Kieren Grogan

DOCUMENT ABSTRACT:
This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch™ on a LGMG RT scissor lift.

PRODUCT NAME:
Model6253 OverWatch™ Operator Detection System

REFERENCE DOCUMENTS:
DO0001195 Model6253 OverWatch™ User Manual

CURRENT DOCUMENT REVISION:
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REVISION INFORMATION:

- 1.0 – Initial
- 1.1 – Edit and updated of images

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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

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 4.5mm
6	Drill 7.0mm
7	Hole Saw 20mm
8	Metric Sockets or Spanners
9	Needle Nose Pliers
10	Screw Drivers
11	Threadlocker
12	Soldering Iron

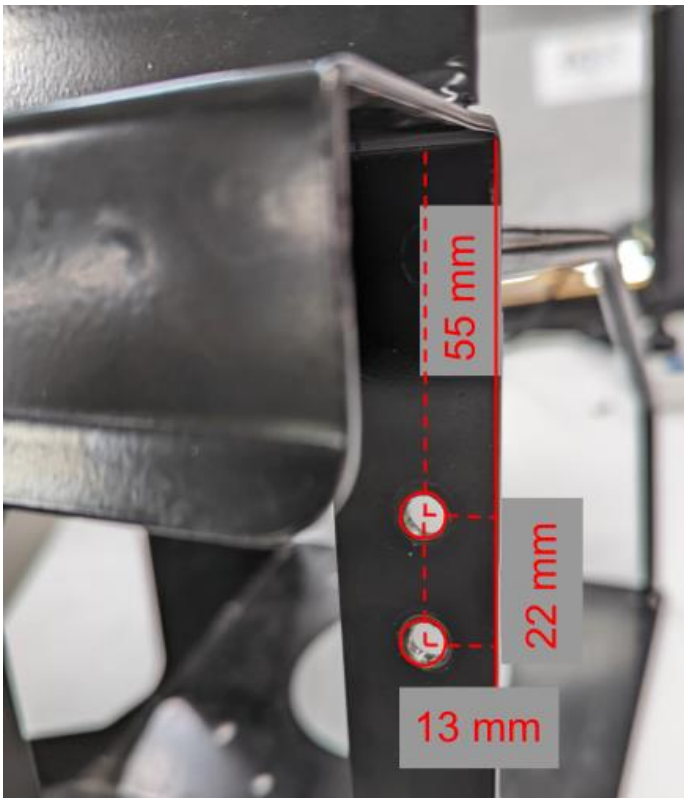
Installation Time

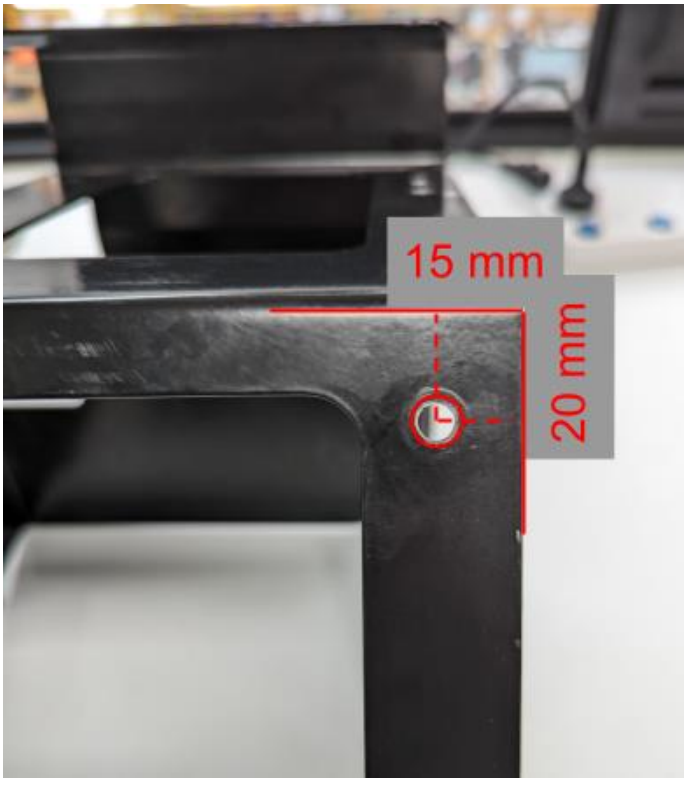
The suggested time required to install the OverWatch is as detailed below.

Task	Estimated Time (Minutes)
Open the operator control box	5
Drilling of all mounting holes for the various components	15
Mechanical assembly	10
Electrical assembly	10
Close the operator control box	5
Post installation system tests	5
Total	**50**

Installation Instructions

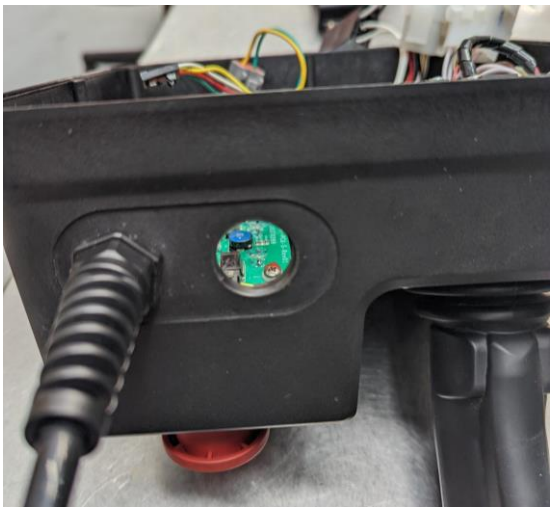
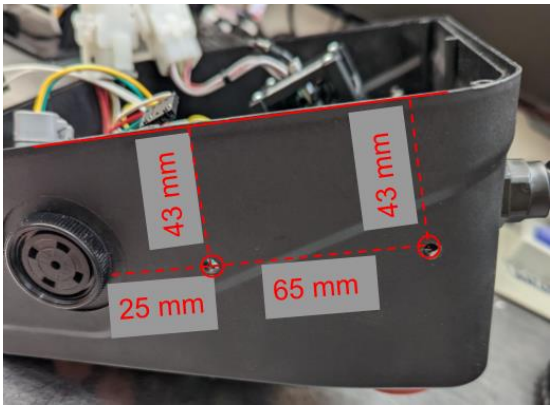
Operator Sensor

Step	Description	Diagram
1	Mount the operator sensor to the mounting bracket using the supplied bolts to the 30 degree position as shown	
2	Drill two M6 holes at the location shown on the control box frame for the operator sensor mounting bracket	

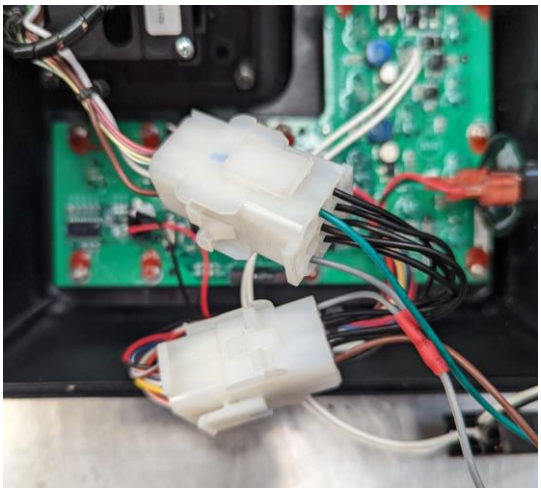
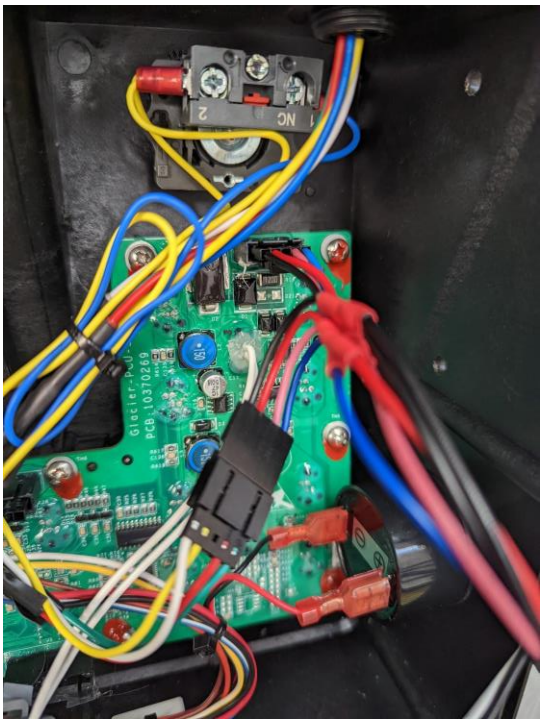
3	Mount the operator sensor mounting bracket to the control box frame using the supplied M6 bolts, washers, and nuts	
4	Drill a M6 hole at the location shown for the p-clip to secure the operator sensor cable to the control box frame.	

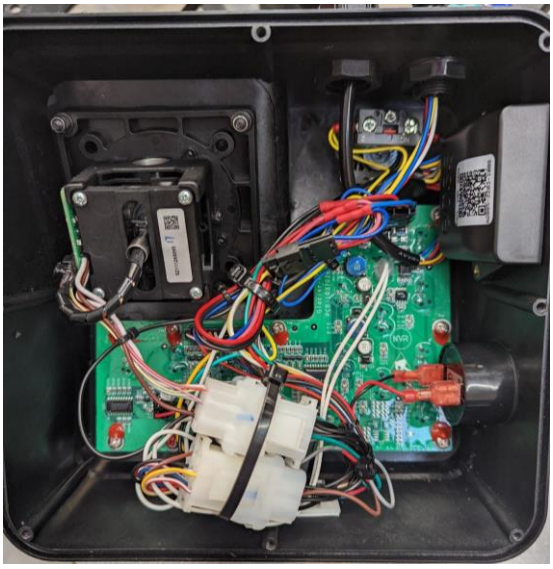
5	Secure the cable using the p-clip as shown	
6	Operator sensor installation complete	

Control Module

Step	Description	Diagram
1	**Control Box Cover** Remove the control box from the mounting bracket and remove the cover from the bottom of the control box	
2	**Cable Gland** Drill a 20 mm hole in the location shown for the operator sensor cable gland. The cable gland will be installed towards the end of the installation.	
3	**OverWatch ECU Mount** Remove the adhesive cable tie point on the inside of the control box enclosure. Drill two M4 holes into the side of the control box in the location shown. The ECU will be installed towards the end of the installation. The ECU mounting holes positions need to be precise as space inside the control box is very tight.	

4	**Wire Harness** Use the plug and play loom to connect the machine to the OverWatch	
5	**Horn** Cut away the protective PCB coating on the horn switch. Solder the two white wires from the OverWatch harness to the horn switch PCB as shown. Seal the contacts with hot glue	 

6	**Deadman & Joystick** Connect the large white 9 pin tee connector from the OverWatch harness to the joystick connections	
7	**Power & CAN** Connect the small black 5 pin tee connector from the OverWatch harness to the power connector on the PCB	

8	**Cable Gland & ECU Mounted** Install the cable gland into the control box, pull approximately 120mm of cable from the operator sensor through and secure the cable gland. Connect the operator sensor and wire harness to the OverWatch ECU. Remove the 5 pin connector installed earlier from the PCB to mount the OverWatch ECU. Mount the OverWatch ECU to the control box using the supplied bolts and secure using threadlocker. Reconnect the 5 pin connector removed previously to the PCB.	
9	**Cables Secured** Use cable ties to secure the relay block and joystick connectors to the existing wire harness. Secure the power tee connectors to the existing wire harness.	
10	**Control Box Cover** Replace the control box cover and mount back onto the bracket	

Post Installation Configuration

Overview

After the OverWatch 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 (2019 onwards). Firefox or Chrome are recommended.

Wi-Fi Connection & Web Page Access

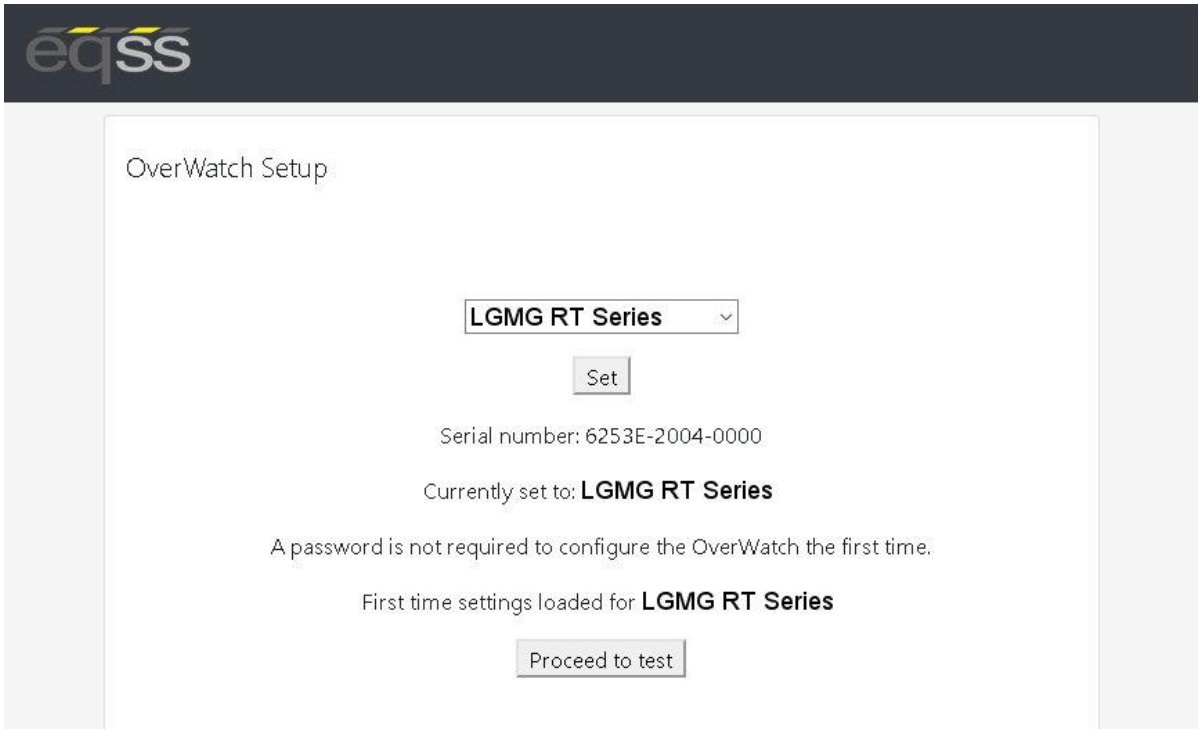
To enable the Wi-Fi connection on the OverWatch to complete the configuration follow the steps below.

1. Power down the platform control box with the ESTOP
2. Wait 10 seconds
3. Power up the platform control box with the ESTOP
4. While standing in the operator position, 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, Edge)
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.

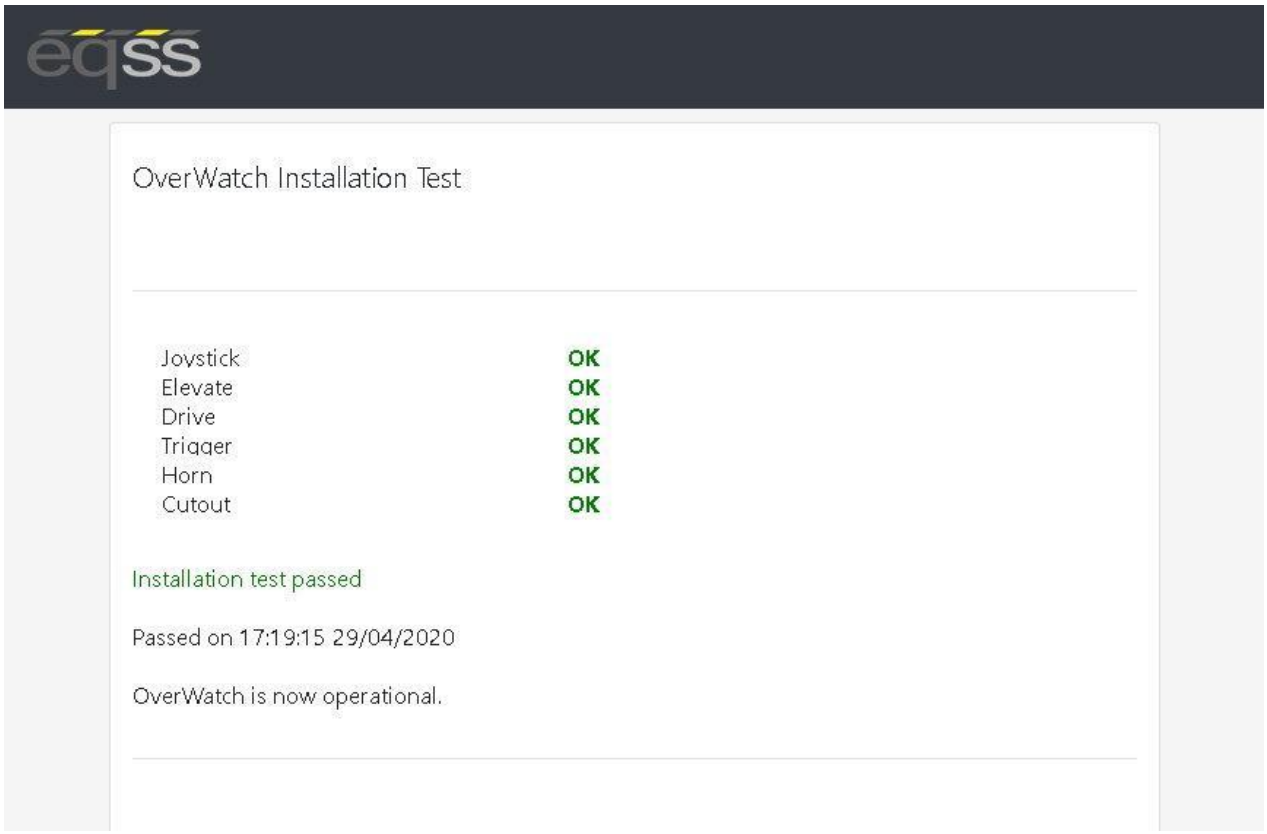
1. Select the Setup option
2. If there is a password field at the bottom of the page, follow the instructions in Change Model Configuration to obtain the password and enter the password field
3. Select the EWP Model from the drop-down list and click Set
4. Click on Proceed to Test to begin the installation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



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.

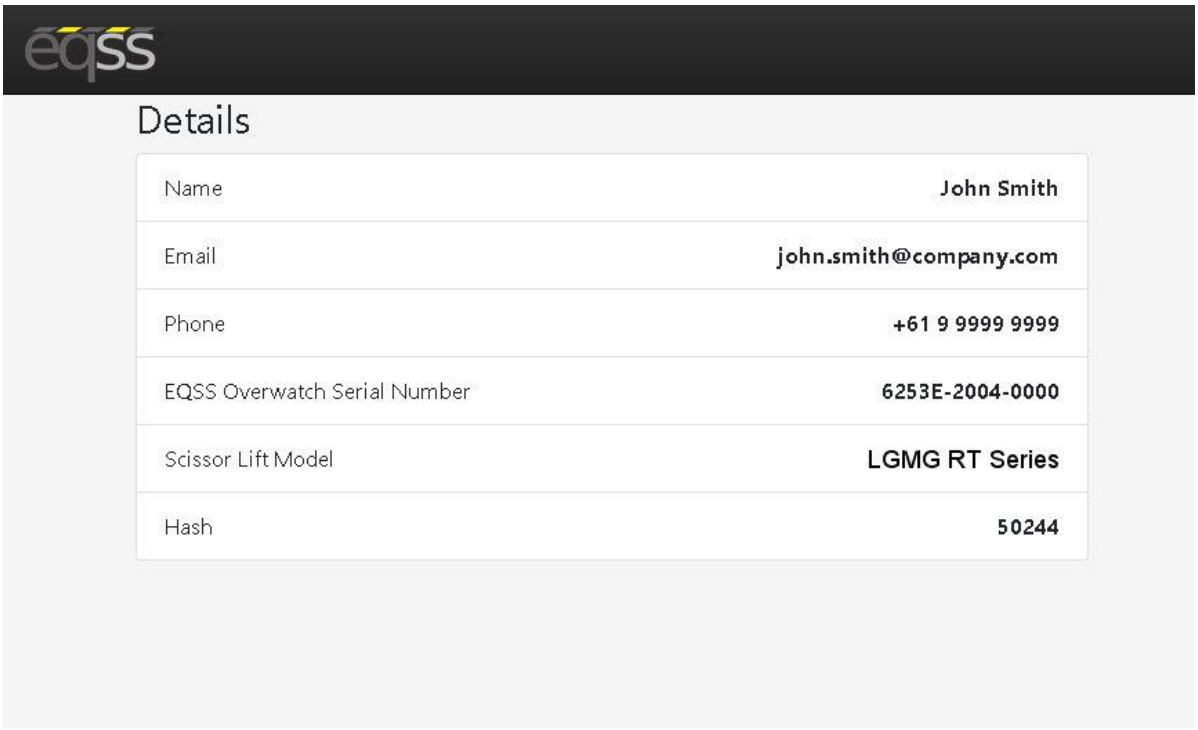
Follow the instructions on the web page to complete the Installation Test.



Change Model Configuration

To reconfigure the OverWatch for a different model requires an authorisation password to be supplied by a service manager. The authorisation password is generated from the EQSS website. The EQSS website requires a login username and password. If you are a service manager and don't have a username and password, contact EQSS to register. Follow the instructions below to obtain an authorisation password.

1. Open your preferred web and enter the following into the address bar http://www.eqss.com.au/overwatch to open the Login page
2. Select Customer
3. Enter your username and password
4. Ask the service technician for the serial number shown on the Setup page or on the ECU module along with the owner details of the EWP and complete the details form then click Generate Hash
5. Provide the 5-digit hash password to the service technician



OEM Special Configuration

Overview

When installing the OverWatch on a new model there are a number of parameters which need to be adjusted or fine-tuned to suit a specific EWP model. The instructions below should be performed by the OEM of the EWP. Once the OverWatch settings have been set and tested, they will then be supplied to EQSS to be used for other installations.

Wi-Fi Connection & OEM Web Page Access

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

1. Press the emergency stop button to power off the EWP
2. Cover the sensor with your hand
3. While the sensor is still covered release the emergency stop button to power on the EWP
4. Leave your head over the sensor until it says “Wi-Fi On”
5. On your Wi-Fi enabled device (laptop, tablet, smartphone, etc), show the available wireless networks
6. Select the wireless network starts with “overwatch” to connect to the OverWatch
7. When prompted, enter the password “12345678”
8. Open your preferred web browser (Chrome, Firefox, Safari, Internet Explorer)
9. Enter the following into the address bar http://192.168.4.1/oem.html to open the OverWatch OEM page
10. Follow the instructions in OEM Password below to obtain the OEM login password

OEM Password

The OEM settings are password protected. The OEM password is generated from the EQSS website. The EQSS website requires a login username and password. If you are an OEM and do not have a username and password, contact EQSS to register. Follow the instructions below to obtain an OEM password.

1. Open your preferred web and enter the following into the address bar http://www.eqss.com.au/overwatch to open the Login page
2. Select OEM
3. Enter your username and password
4. Enter your name and contact details along with the serial number of the OverWatch then click Generate Hash
5. Enter the 5-digit hash password into the OEM password field

Settings

The OEM Settings page allows modification of all the OverWatch parameters. See the sections below for details on each setting.

Setting Name	Description	Default
deltaseek	This specifies which of the previous lidar readings to compare against the current one to calculate the speed.	20
max_safe_velocity	This is the velocity threshold for the cutout in cm/s. for drive mode.	90
max_safe_displacement	This is the maximum permitted distance in cm the operator may be away from the calibration position in drive mode.	40
max_safe_velocity_elevate	This is the velocity threshold for the cutout in cm/s. in elevate mode.	70
max_safe_displacement_elevate	This is the maximum permitted distance in cm the operator may be away from the calibration position in elevate mode.	40
max_safe_velocity_neutral	This is the velocity threshold for the cutout in cm/s. in neutral mode.	60
max_safe_displacement_neutral	This is the maximum permitted distance in cm the operator may be away from the calibration position in neutral mode.	40
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	Any lidar reading below this will trigger a cutout with the message: “Operator Zone”	20
zone_maximum	Any lidar reading above this will trigger a cutout with the message: “Operator Zone”	120
horn_count_max	The number of times the horn will sound when alerting the operator if the deadman remains pressed during the cutout.	2
horn_time_ms	The amount of time in milliseconds each individual horn should play.	200
override_cooldown	The amount of time in milliseconds the system will wait before accepting another override request.	20000
override_time	The amount of time in milliseconds the override will last before it expires, and normal operation is resumed.	15000
override_listening_time	The amount of time in milliseconds the system will wait while the deadman is held down before considering it not to be part of the triple click override request.	300

Setting Name	Description	Default
override_reset_time	The amount of time in milliseconds the override system will wait before resuming listening after the deadman has been released at the end of an override period.	500
override_triple_click_time	The amount of time in milliseconds 3 clicks of the deadman needs to occur in order to trigger the override.	2000
lidar_fault_timeout	The amount of time in milliseconds of silence from the sensor module before a fault condition is triggered.	1000
throttle_time	Period after the trigger is pressed, the system does not track velocity.	2000
stuck_time	Period, after cutout to determine if the operator is not moving and is trapped	5000
stuck_time_long	After the stuck time this is the interval between horn alerts	10000
stuck_displacement	How much movement is considered to be non operator movement / trapped	20
wifi_on_clicks_count	The number of times the deadman trigger is pressed to enter Wi-Fi mode.	10
wifi_on_clicks_time	The amount of time in milliseconds after power on to enter Wi-Fi mode.	10000
time_before_chime	Time after power on before welcome audio is played	250

Connection Schematics – Typical Application