INSTALL MANUAL

EQSS Model6253 – OverWatch™
Swift TSxxE

Failure to follow this installation manual will void warranty

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DOCUMENT ABSTRACT:
This Installation Manual details the manufacturer's installation instructions for installing the Model6253 OverWatch™ on a Swift TSxxE Electric Track Scissor

PRODUCT NAME:
Model6253 OverWatch™ Operator Detection System

REFERENCE DOCUMENTS:
DO0001195 Model6253 OverWatch™ User Manual

CURRENT DOCUMENT REVISION:
1.2

REVISION INFORMATION:

1.0 Initial draft
1.1 Inclusion of AS002166 harness drawing, modification of safety parameters and general formatting
1.2 Add additional steps and update photos

Important Information

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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

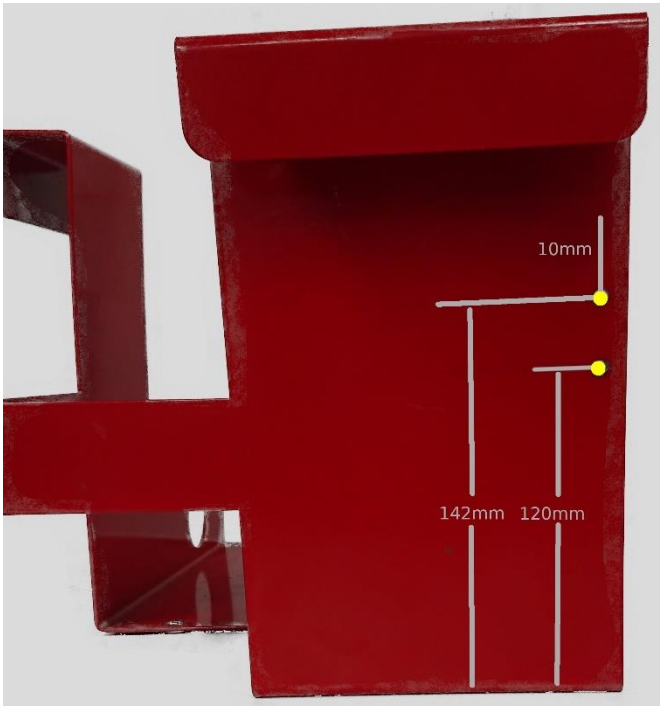
Installation Instructions

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.	Remove the control box from the mounting bracket	
2.	Slide the operator sensor into the sensor guard. Mount that to the L-shaped bracket's 45 degree holes using the supplied M4 bolts and washers as shown.	

PARTS LIST			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	1	AS001910	Overwatch™ Operator Sensor
2	1	ME001794	Overwatch™ Sensor Guard
3	1	ME001818	Overwatch™ Bracket - L shape 30/45 degrees
4	2	FA001433	M4x12 Button Head
5	2	FA001235	M4 Washer

3.	Drill two 5.2mm holes as shown in the diagram. Top hole: (10mm, 142mm) Bottom hole: (10mm, 120mm)	

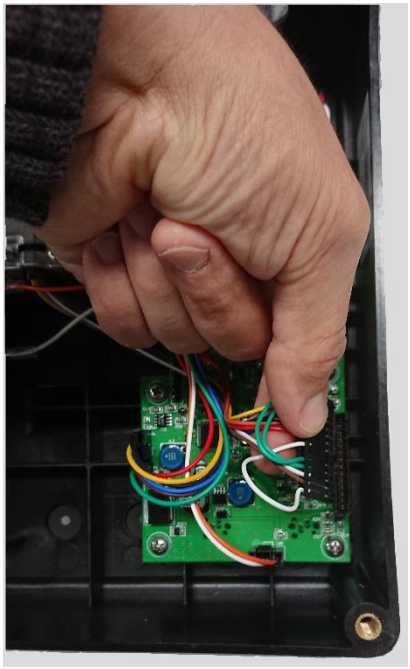
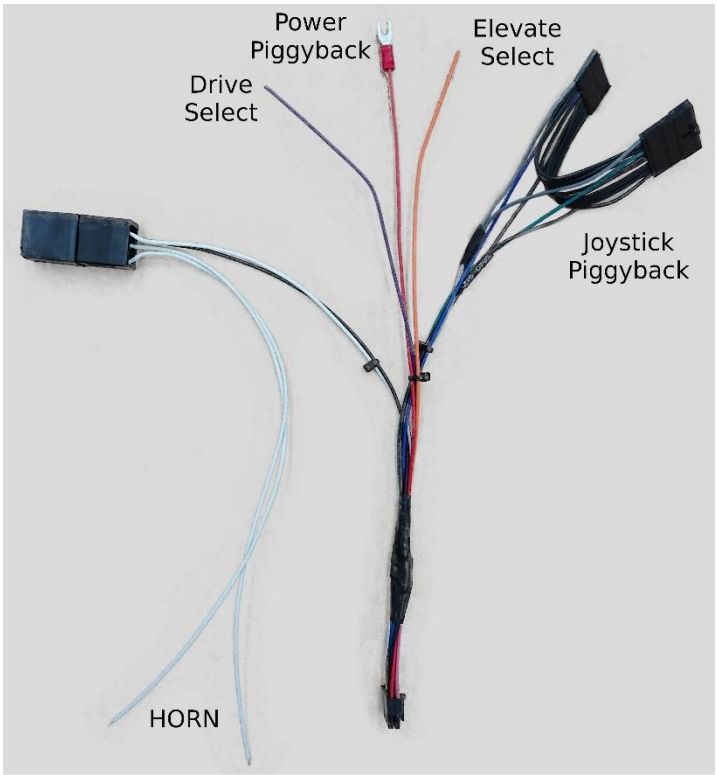
4.	Mount the operator sensor bracket in the located position using the supplied M5 nuts, bolts, and washers.	

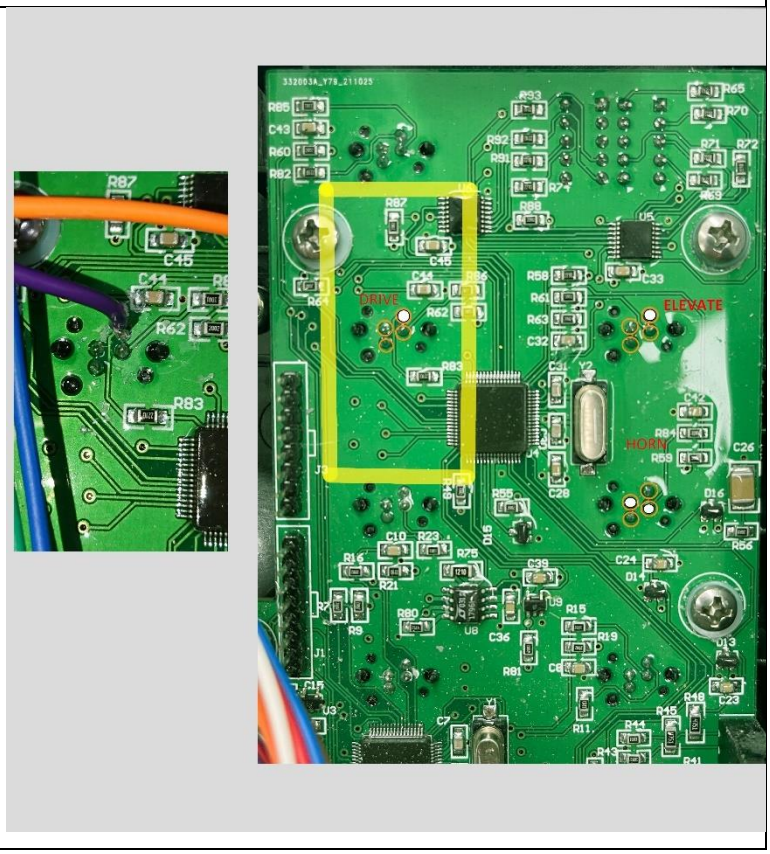
PARTS LIST			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	2	FA001067	M5x12 - Socket head cap screw
2	4	FA001306	M5x15 - Flat washer
2	2	FA001219	M5 - Nylock nut

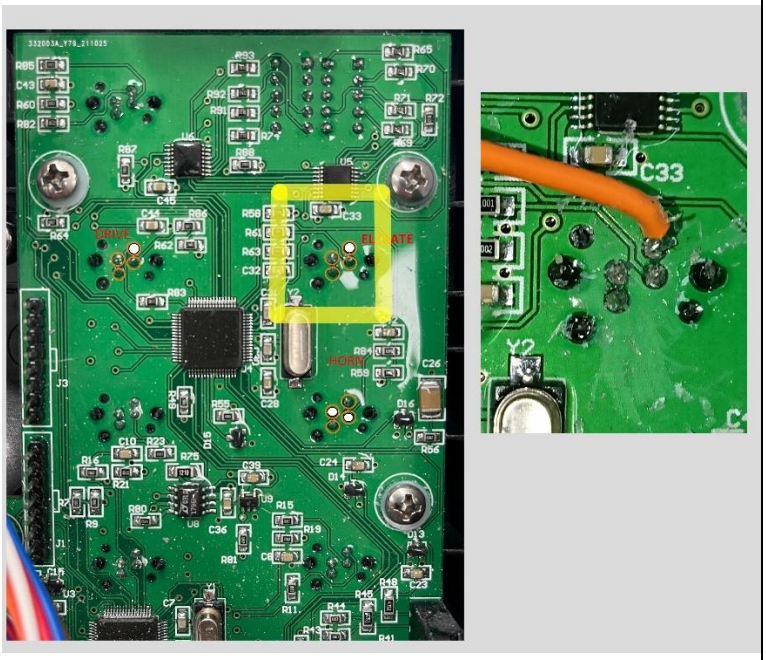
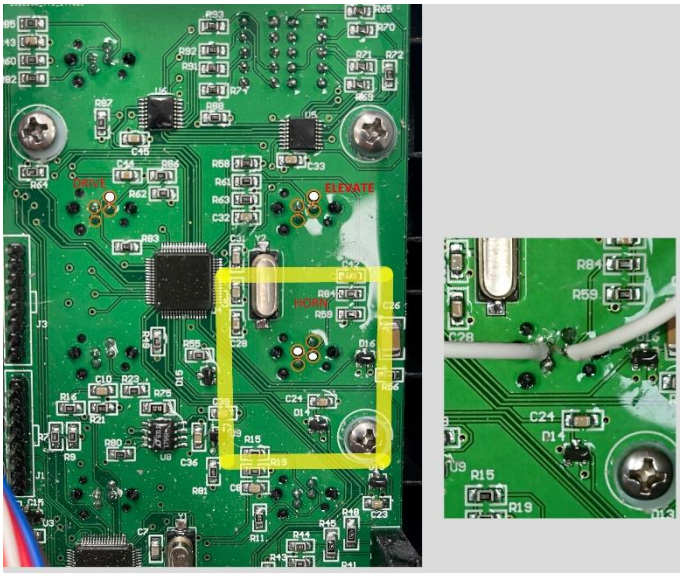
5.	Operator sensor installation is complete	

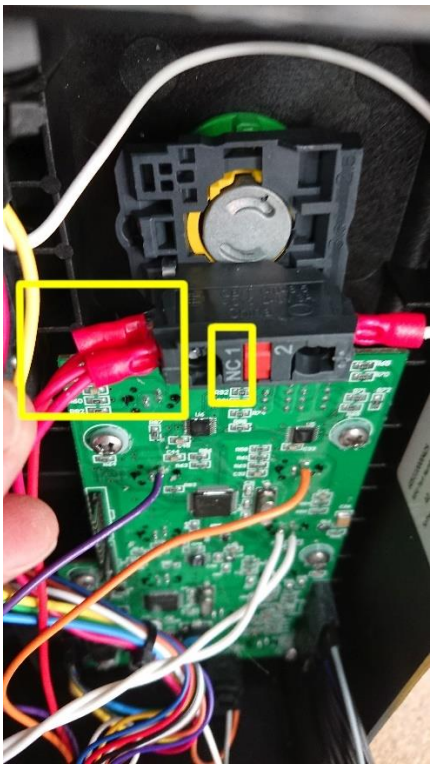
Control Module

Step	Description	Diagram
1.	Drill a 20mm hole in the location shown for the operator sensor cable gland. The cable gland will be installed towards the end of the installation.	

2.	Disconnect the 14-pin connector from the PCB. Note that there is a clip on the side of the connector that holding it in.	
3.	Locate the OverWatch™ harness (AS002166)	

4.	Connect the 14-pin female connector from the OverWatch™ harness (AS002166) into the control board, and the male 14-pin connector of the OverWatch™ harness to the connector removed in previous step.	
5.	Remove the PCB coating around the “DRIVE” pin highlighted in white with a sharp object to allow solder to flow. Solder the **purple** wire from the OverWatch™ harness into the drive select position as shown	

6.	Remove the PCB coating around the “ELEVATE” pin highlighted in white with a sharp object to allow solder to flow. Solder the **orange** wire from the OverWatch™ harness into the Elevate position as shown	
7.	Remove the PCB coating around the two “HORN” pins highlighted in white with a sharp object to allow solder to flow. Solder the two **white** wires from the OverWatch™ harness into the horn position as shown. (Note that the wires can go either way they are not polarized)	

8.	Install the **red** wire form the OverWatch™ harness to the screw terminal of the E-stop labelled “1”. It is inserted in addition to the terminal that is already in it.	
9.	Using a hot glue gun, cover the exposed areas around the solder connections for the purple, orange, and white wires. Secure loose wiring with a cable tie	 

10.	Thread the cable of the laser module through the 20mm hole, fixing the cable gland to the housing by tightening the 26mm nut. Tip: Be sure that the cable from the sensor runs under the red bar	

11.	Position the cut-out for the speaker on the right-hand side. Attach the control module to the base of the control box using the Velcro supplied, with the bottom corner 20mm from the bottom and right-hand side.	

12.	Connect the 8-pin connector from the operator sensor module and the 12-pin connector from the OverWatch™ harness to the control module	
13.	Reattached the control box	

14.	Push the excess cable from the sensor back in the unit and tighten the cable gland.	
15.	Installation of the control module is complete.	

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

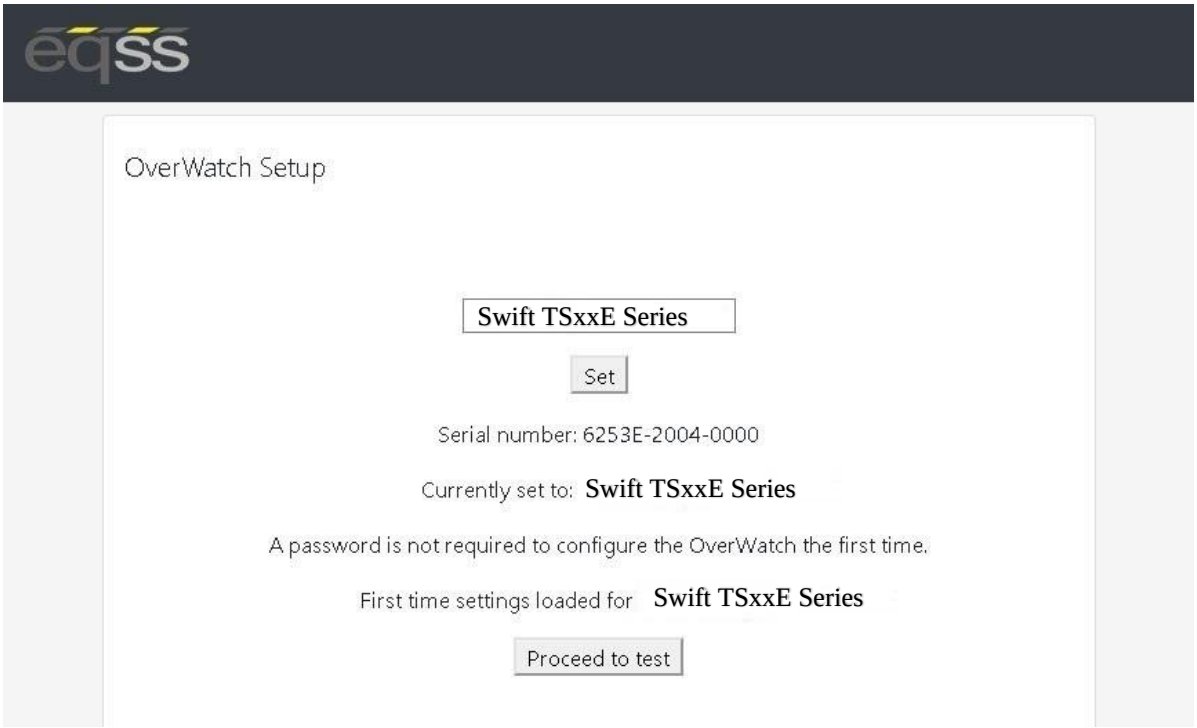
To enable the Wi-Fi connection on the OverWatch™ to complete the configuration follow the steps below.

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™.

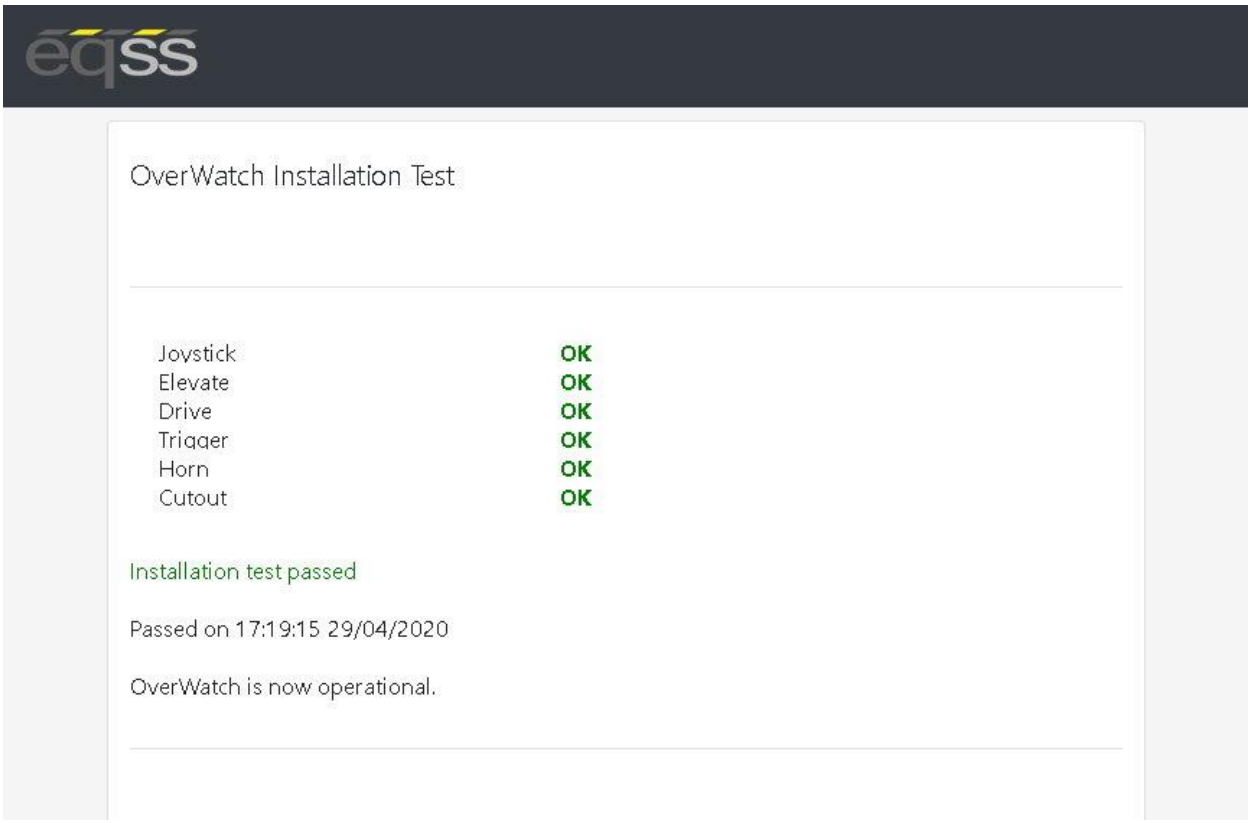
1. Select the Setup option
2. If there is a password field at the bottom of the page, follow the instructions in Change Model Configuration to obtain the password and enter the password field
3. Select the EWP Model from the drop-down list and click Set
4. Click on Proceed to Test to begin the installation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



Installation Test

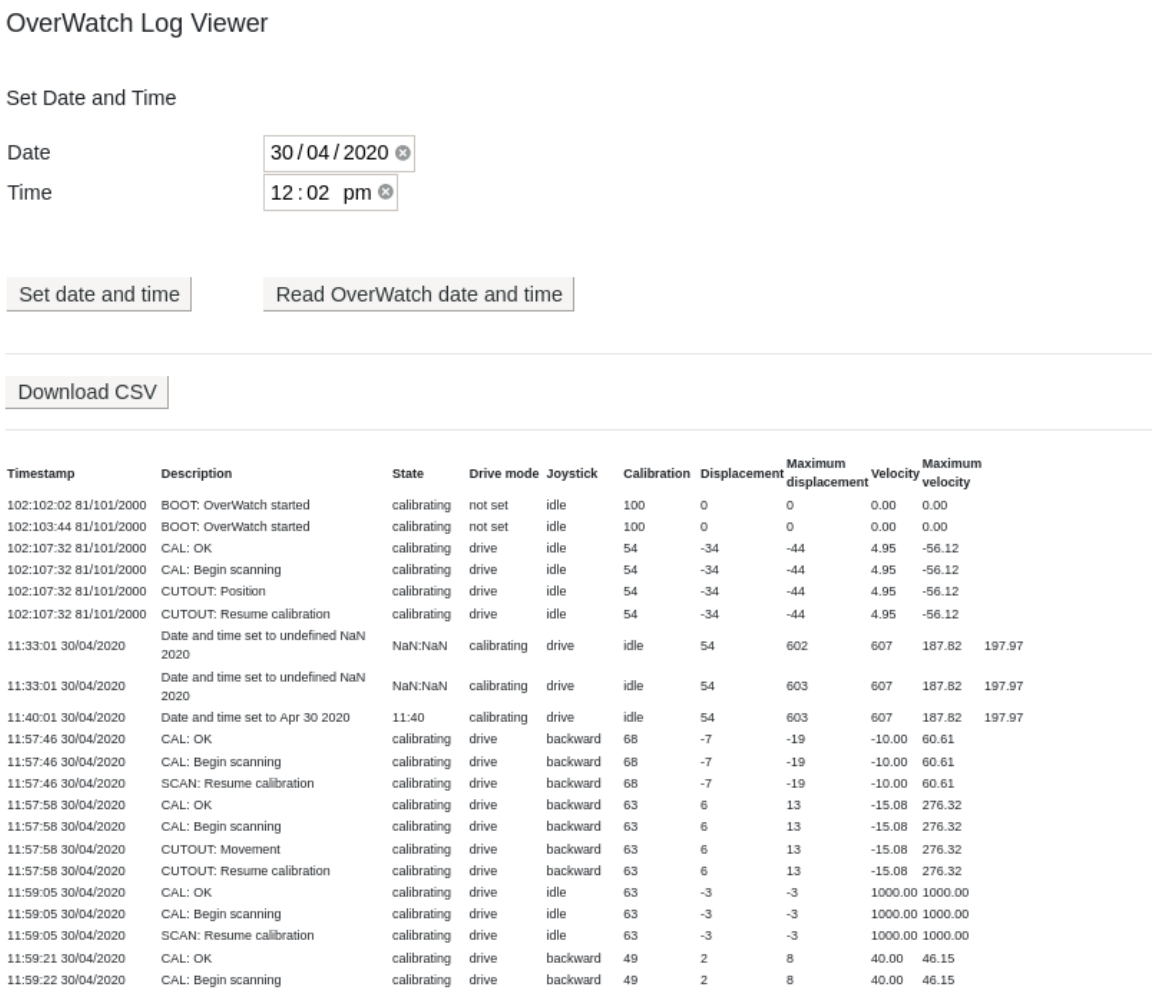
After the model configuration has been set or updated an Installation Test must be performed. This will ensure the installation has been correctly performed and the OverWatch™ is functioning correctly.

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



Set Date and Time

Date and time should be set accordingly. The date and time can be set on the log page. This page allows adjustment of the system's real time clock and calendar if required. Please note, any time or date change is logged and recorded.

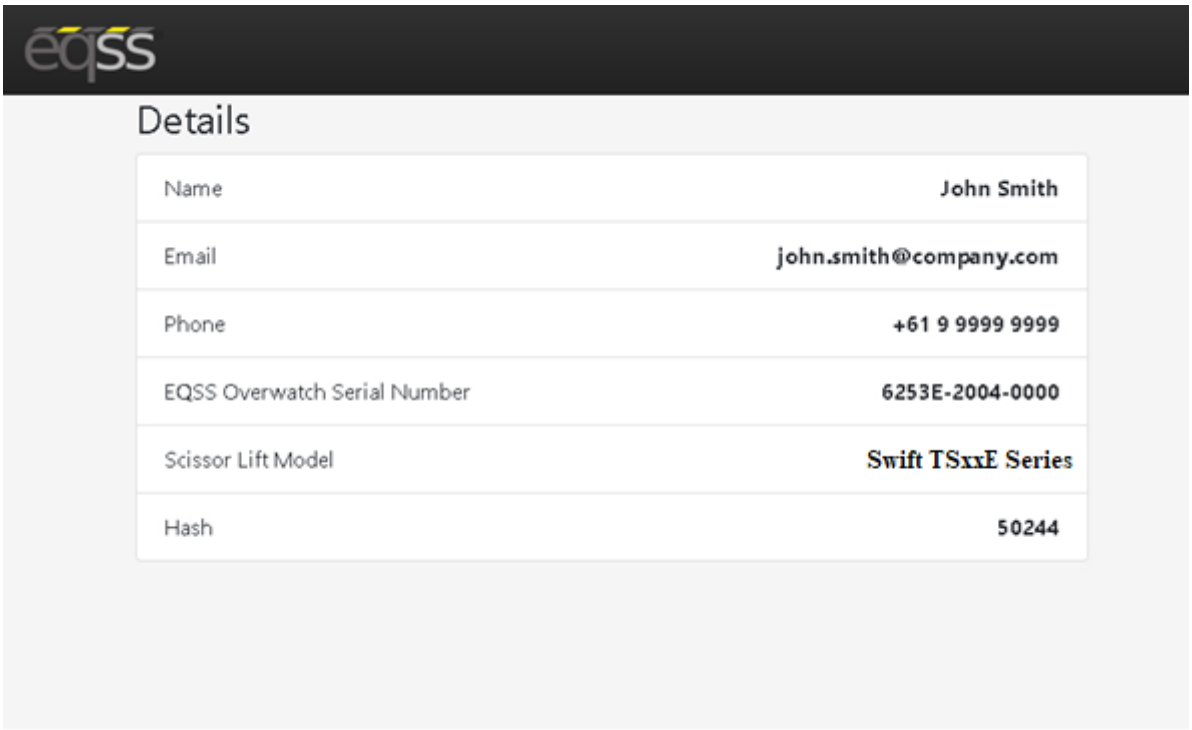


Timestamp	Description	State	Drive mode	Joystick	Calibration	Displacement	Maximum displacement	Velocity	Maximum velocity	
102:102:02 81/101/2000	BOOT: OverWatch started	calibrating	not set	idle	100	0	0	0.00	0.00	
102:103:44 81/101/2000	BOOT: OverWatch started	calibrating	not set	idle	100	0	0	0.00	0.00	
102:107:32 81/101/2000	CAL: OK	calibrating	drive	idle	54	-34	-44	4.95	-56.12	
102:107:32 81/101/2000	CAL: Begin scanning	calibrating	drive	idle	54	-34	-44	4.95	-56.12	
102:107:32 81/101/2000	CUTOUT: Position	calibrating	drive	idle	54	-34	-44	4.95	-56.12	
102:107:32 81/101/2000	CUTOUT: Resume calibration	calibrating	drive	idle	54	-34	-44	4.95	-56.12	
11:33:01 30/04/2020	Date and time set to undefined NaN 2020	NaN:NaN	calibrating	drive	idle	54	602	607	187.82	197.97
11:33:01 30/04/2020	Date and time set to undefined NaN 2020	NaN:NaN	calibrating	drive	idle	54	603	607	187.82	197.97
11:40:01 30/04/2020	Date and time set to Apr 30 2020	11:40	calibrating	drive	idle	54	603	607	187.82	197.97
11:57:46 30/04/2020	CAL: OK	calibrating	drive	backward	68	-7	-19	-10.00	60.61	
11:57:46 30/04/2020	CAL: Begin scanning	calibrating	drive	backward	68	-7	-19	-10.00	60.61	
11:57:46 30/04/2020	SCAN: Resume calibration	calibrating	drive	backward	68	-7	-19	-10.00	60.61	
11:57:58 30/04/2020	CAL: OK	calibrating	drive	backward	63	6	13	-15.08	276.32	
11:57:58 30/04/2020	CAL: Begin scanning	calibrating	drive	backward	63	6	13	-15.08	276.32	
11:57:58 30/04/2020	CUTOUT: Movement	calibrating	drive	backward	63	6	13	-15.08	276.32	
11:57:58 30/04/2020	CUTOUT: Resume calibration	calibrating	drive	backward	63	6	13	-15.08	276.32	
11:59:05 30/04/2020	CAL: OK	calibrating	drive	idle	63	-3	-3	1000.00	1000.00	
11:59:05 30/04/2020	CAL: Begin scanning	calibrating	drive	idle	63	-3	-3	1000.00	1000.00	
11:59:05 30/04/2020	SCAN: Resume calibration	calibrating	drive	idle	63	-3	-3	1000.00	1000.00	
11:59:21 30/04/2020	CAL: OK	calibrating	drive	backward	49	2	8	40.00	46.15	
11:59:22 30/04/2020	CAL: Begin scanning	calibrating	drive	backward	49	2	8	40.00	46.15	

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



System Settings

Default Settings

See the sections below for details on each of the Skyjack SJII RT OverWatch™ system default settings.

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.	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. in 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
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
fwddispadj	The coefficient to apply to the displacement when the displacement is toward the sensor.	-0.8
fwdveloadj	The coefficient to apply to the velocity when the displacement is toward the sensor.	-1
zone_obstruction	If the lidar sensor reading is below this, the lidar is considered 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”	15
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 trigger remains pressed during the cutout.	2
horn_time_ms	The amount of time in milliseconds each individual horn should play.	200
adc_elevate_threshold	For the elevate ADC input, a reading above this indicates the EWP is in elevate mode.	900

Setting Name	Description	Default
adc_drive_threshold	For the drive ADC input, a reading above this indicates the EWP is in drive mode.	900
adc_trigger_threshold	For the trigger ADC input, a reading above this indicates the trigger is pressed.	900
adc_inhibit_threshold	For the inhibit input, a reading above this bypasses the OverWatch™	2000
adc_joystick_fwd_threshold	For the joystick ADC input, a reading above this indicates the joystick has been pushed forward.	100
adc_joystick_bwd_threshold	For the joystick ADC input, a reading below this indicates the joystick has been pulled backward.	200
adc_joystick_elevate_fwd_threshold	For the elevate joystick ADC input, a reading above this indicates the joystick has been pushed forward.	300
adc_joystick_elevate_bwd_threshold	For the elevate joystick ADC input, a reading below this indicates the joystick has been pulled backward.	200
adc_stabilizer_threshold	For the stabilizer input, a reading above this indicates that the stabilizers are down.	350
override_cooldown	The period in milliseconds the system will wait before accepting another override request.	20000
override_time	The period in milliseconds the override will last before it expires, and normal operation is resumed.	15000
override_listening_time	The period in milliseconds the system will wait while the trigger is held down before considering it not to be part of the triple click override request.	300
override_reset_time	The period in milliseconds the override system will wait before resuming listening after the trigger has been released at the end of an override period.	500
override_triple_click_time	The period in milliseconds during which 3 trigger clicks need to occur 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
cutout_fault_timeout	The amount of time in milliseconds a discrepancy between the cutout and the cutout sensor is permitted before a fault condition is triggered.	3000
throttle_time	The period after the trigger is pressed during which the system does not track velocity.	2000
time_before_welcome	Time after power on before welcome audio is played	250
stuck_displacement	The distance the operator would need to remain in after a cutout to be considered trapped	20
stuck_time	The period after a cutout the operator would need to remain in the trapped area to trigger the alarm	5000
stuck_time_long	After the stuck time this is the interval between horn alerts	10000

Setting Name	Description	Default
wifi_on_click_count	The number of times the trigger needs to be pressed after startup to enter Wi-Fi mode.	10
wifi_on_click_time	The timeout after startup before OverWatch stops listening to the trigger click method of turning on the Wi-Fi	10000
wifi_on_gesture_count	The number of times to cover and uncover the sensor to enter Wi-Fi mode.	3
wifi_on_gesture_time	The timeout before OverWatch stops waiting for the next part of the gesture in milliseconds	3000
wifi_on_gesture_initial_time	The timeout after startup before OverWatch stops waiting for start of the gesture in milliseconds	10000
driving_state_timeout	Mode selection switch timeout	7000
stabilizer_debounce_charge_time	ADC input debouncer charge time	0
stabilizer_debounce_discharge_time	ADC input debouncer discharge time	0
drive_debounce_charge_time	ADC input debouncer charge time	0
drive_debounce_discharge_time	ADC input debouncer discharge time	0
elevate_debounce_charge_time	ADC input debouncer charge time	0
elevate_debounce_discharge_time	ADC input debouncer discharge time	0

Polarity and Input Style

Setting Name	Description	Default
joystick_drive_forward	Direction of joystick to move EWP forward	forward
joystick_elevate_upward	Direction of joystick to move EWP upward	forward
joystick_neutral_move	Direction of joystick that requires monitoring when in neutral	forward
elevate_polarity	Direction of signal logic	high
drive_polarity	Direction of signal logic	high
trigger_polarity	Direction of signal logic	high
joystick_polarity	Direction of signal logic	low
inhibit_polarity	Direction of signal logic	high
joystick_elevate_polarity	Direction of signal logic	high
stabilizer_polarity	Direction of signal logic	high
neutral_safe	Monitor when no drive mode set	yes
driving_state_input	Direct, timer based or separate joysticks	direct

Bypass

Setting Name	Description	
test_cutout_state	Test channel enabled for primary cutout	bypassed

Date and Time

Setting Name	Description
Date	Enter the current date to be saved into the OverWatch
Time	Enter the current time to be saved into the OverWatch
Set date and time	Press to store the displayed date and time into the OverWatch
Read OverWatch date and time	Press to display the current date and time stored in the OverWatch

AS002166 Plug and Play Harness Drawing