

Safewater Controller Test Script v1.2.4
Firmware Version:

Standby mode is the normal powered-up status of the controller, monitoring floats status.
 Float 'S' is at the bottom of the source tank, positive logic, level low, float contact unmade, level high float contact made.
 Float 'T1' is at the bottom of the treated tank, positive logic, level low, float contact unmade, level high float contact made.
 Float 'T2' is at the top of the treated tank, positive logic, level low, float contact unmade, level high float contact made.
 Override is a manual input button, depressed by user.
 Silence Alarm is a manual input button, depressed by user.

Test ID	Subsystem	Description	Initial Condition							Test Action 1	Test Action 2	Expected Result	Actual Result	Pass/Fail
			Controller	T1 Switch	T2 Switch	S Switch	Alarm	UVC Tube	Pump					
SWT001	Startup	Confirm controller powers on correctly.	OFF	HIGH	Any	HIGH	None	Attached	Attached	Turn controller power ON.	N/A	All lights will be lit for 3 seconds to indicate operational status. Buzzer will sound 3 short beeps. Pump and UVC Tube will be OFF initially. Alarm Indicators will reflect live status.	Are all indicators lit during startup test?	
SWT002	Float Switch Fault Alarm	Confirm that controller will sound alarm when in Standby mode, and an erroneous condition is observed on the T1 and T2 float switches.	Standby	HIGH	HIGH	HIGH	None	Attached	Attached	T1 Level Switch to LOW	N/A	Alarm will be activated, Float Switch Warning Light will be ON. Operations will be locked out for 30 minutes. Return to Standby afterwards.		
SWT003	Float Switch Fault Alarm	Confirm that controller will sound alarm when in Pumping mode, and an erroneous condition is observed on the T1 and T2 float switches.	Pumping	LOW	LOW	HIGH	None	Attached	Attached	T2 Level Switch to HIGH	N/A	Active pumping operations will stop. Alarm will be activated, Float Switch Warning Light will be ON. Operations will be locked out for 30 minutes. Return to Standby afterwards.		
SWT004	Silence Alarm Button	Confirm that the Silence Alarm button will work to silence any active alarms.	Any	HIGH	HIGH	HIGH	Any	Attached	Attached	Trigger any Alarm state (e.g. UVC Tube Fault). Press the Silence Alarm button to quiet the sounder.	Trigger a further, different alarm state (e.g. Pump Fault).	Silence (do not sound buzzer) for any Active Alarms Suppress any future Alarms from sounding buzzer, until power reset occurs Otherwise, alarms will still trigger alarm indicator lights and stop functions as appropriate		
SWT005	Override Button	Confirm that the Override Button will work when system is in Standby mode.	Standby	HIGH	HIGH	HIGH	None	Attached	Attached	Press the Override Button.	N/A	System will immediately begin pumping cycle as normal, starting with UVC Tube warmup. Cycle will last 30 minutes and will not obey or recognise Float Switch states, including fault states. Operations will be locked for 60 minutes afterwards for anti-cycle lockout. Return to Standby afterwards.	How long did the pumping cycle last?	
SWT006	Override Button	Confirm that the Override Button will not work when system is in Lockout mode.	Lockout	HIGH	HIGH	HIGH	None	Attached	Attached	Press the Override Button.	N/A	Nothing will happen - Lockout will continue as before.		
SWT007	Override Button	Confirm that the Override Button will not work when system is in Pumping mode.	Pumping	HIGH	LOW	HIGH	None	Attached	Attached	Press the Override Button.	N/A	Nothing will happen - pumping will continue as before.		
SWT008	Alarm	Confirm that no alarm indicators will be active, when no previous or current alarms have been flagged.	Standby	HIGH	HIGH	HIGH	None	Attached	Attached	Observation only	N/A	All Fault Indicators should be OFF. The buzzer should not be sounding.		
SWT009	Pumping Cycle	Confirm that the Pumping Cycle will commence when activation conditions are met.	Standby	HIGH	LOW	HIGH	None	Attached	Attached	T1 Level Switch to LOW	N/A	Controller transitions to UVC Tube Warmup after T1 is moved to LOW. UVC Tube warmup will commence, lasting 2 minutes. Pumping will then begin, lasting maximum of 100/60 minutes depending on runtime jumper state, until the success conditions are met.		
SWT010	Pumping Cycle	Confirm that the pumping cycle will end correctly after T1 and T2 are set, i.e. treated water tank is full.	Pumping	LOW	LOW	HIGH	None	Attached	Attached	T1 Level Switch = HIGH	T2 Level Switch = HIGH	After success conditions are met, the UVC Tube and Pump will deactivate. Operations will be locked out for 1 hour. Return to Standby afterwards.	How long did the pumping cycle last? Is this correct for the region?	
SWT011	Pumping Cycle / Source Tank Empty Fault	Confirm that the pumping cycle will end after S goes low and flag an alarm, i.e. source water tank is empty.	Pumping	LOW	LOW	HIGH	None	Attached	Attached	S Level Switch = LOW	N/A	The UVC Tube and Pump will deactivate, and the Source Tank Low alarm indicator will light, along with Alarm Buzzer and Light. Operations will be locked out for 1 hour. Return to Standby afterwards.		
SWT012	UVC Tube Fault Alarm	Confirm that if the UVC Tube is disconnected (simulated fault), the pumping cycle will not commence, and a fault condition will be entered.	Standby	HIGH	LOW	HIGH	None	Detached	Attached	T1 Level Switch to LOW	N/A	Wait for UVC Tube startup time to elapse before current measurement commences (presently 1m). If 2m has been exceeded or pumping begins, test has failed. Alarm will be activated, UVC Tube Warning Light will be ON. Operations will be locked out for 30 minutes. Return to Standby afterwards.	How long before the UVC Tube fault was triggered?	
SWT013	UVC Tube Fault Alarm	Confirm that if the UVC Tube is disconnected (simulated fault), during a pumping cycle, the present cycle will abort. Upon recommencement of UVC Tube warmup, a fault condition will be noted.	Pumping	LOW	LOW	HIGH	None	Attached	Attached	Disconnect UVC Tube Power	N/A	When current test in subsequent UVC Tube Warmup fails, Alarm will be activated, UVC Tube Warning Light will be ON. Operations will be locked out for 30 minutes. Return to Standby afterwards.		
SWT014	Source Tank Empty Fault Clearing	As a precursor, execute SWT011 'Pumping Cycle/Source Tank Empty Fault'. Then refill the source tank to set S HIGH.	Pumping	LOW	LOW	LOW	Source Tank Empty Fault	Attached	Attached	S Level Switch = HIGH	N/A	When the S Level Switch is set HIGH, the Source Tank Empty fault will be cleared. Provided that there are no other faults in progress, the alarm will also be turned off, if it was operating. Please note that the fault lockout period will still be observed.		

SWT015	Float Switch Fault Alarm remains active	Run test SWT002 'Float Switch Fault Alarm'. Keep the faulty float switch arrangement, and leave to let the lockout period expire. This will test that the fault is persistent and does not allow future pumping cycles until it has been fixed.	Standby	HIGH	LOW	HIGH	Float Switch Level Alarm	Attached	Attached	Leave system running in present state until 30 minute fault lockout from previous alarm expires. Observe system behaviour.	N/A	It should be observed that system remains in Lockout mode, and does not incorrectly begin a pumping cycle despite the Float Switch Fault Alarm state still being active, due to the Float Switch positions for T1/T2.		
SWT016	Pumping Cycle Timeout Alarm	Confirm that after 100/60 minutes of operation, depending on the Runtime Jumper state, the Pumping Cycle will automatically timeout and end, signalling a fault condition. Attempt this test in both Runtime Jumper positions. System Reset is required for new jumper position to be acknowledged.	Pumping	LOW	LOW	HIGH	None	Attached	Attached	No action required.	N/A	Alarm will be activated, Max Runtime Alarm Light will be ON. Operations will be locked out for 30 minutes. Return to Standby afterwards.	How long did the pumping cycle last? Is this correct for the region?	
SWT017	Operations Lockout	Confirm that after a successful pumping cycle, any non-fault changes in Float Switch states will be ignored until the 1 hour lockout period has expired.	Pumping	HIGH	LOW	HIGH	None	Attached	Attached	T1 Level Switch = LOW	N/A	The Pumping Cycle will complete. After it has completed and the Pump and UVC Tube have been turned off, the system will enter Operations Lockout mode, for anti-cycling. This will continue for 1 hour. During this, the system will not transition to Pumping Cycle based on Float Switch states.		
SWT018	Multiple Fault Display	Confirm that multiple fault states will be successfully indicated via fault indicators.	Standby	HIGH	LOW	HIGH	None	Attached	Attached	Trigger a Pump Fault as per SWT013. Trigger a UVC Fault as per SWT012.	Trigger a Float Switch Fault as per SWT002.	The Fault indicators for Pump, UVC Tube and Float Switch Fault will all be lit simultaneously. The only thing that will reset these fault indicators is a power reset.	Do the fault indicators disappear after a power reset?	
SWT019														
SWT020														
SWT021														
SWT022														
SWT023														
SWT024														