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Earth-Rite® RTR Tester

Operating Instructions EN

Earth-Rite® RTR Tester

The **Earth-Rite RTR** Tester is designed to ensure that the Road Tanker Recognition, Static Ground Verification and Continuous Ground Loop Monitoring functions of the Earth-Rite RTR are operating within the correct parameters. The Tester performs four basic functional tests which ensure that:

1. The RTR'S Road Tanker Recognition function recognises when it is connected to a Road Tanker with a minimum capacitance of 1000 pF.
2. The RTR's Static Ground Verification check only permits the RTR to go permissive when the resistance to true earth is less than 1000 ohms.
3. The Continuous Ground Loop Monitoring function, which continuously monitors the resistance through the circuit running from the RTR's verified ground connection points to the road tanker, only permits the RTR to go permissive if the resistance is 10 ohms or less.

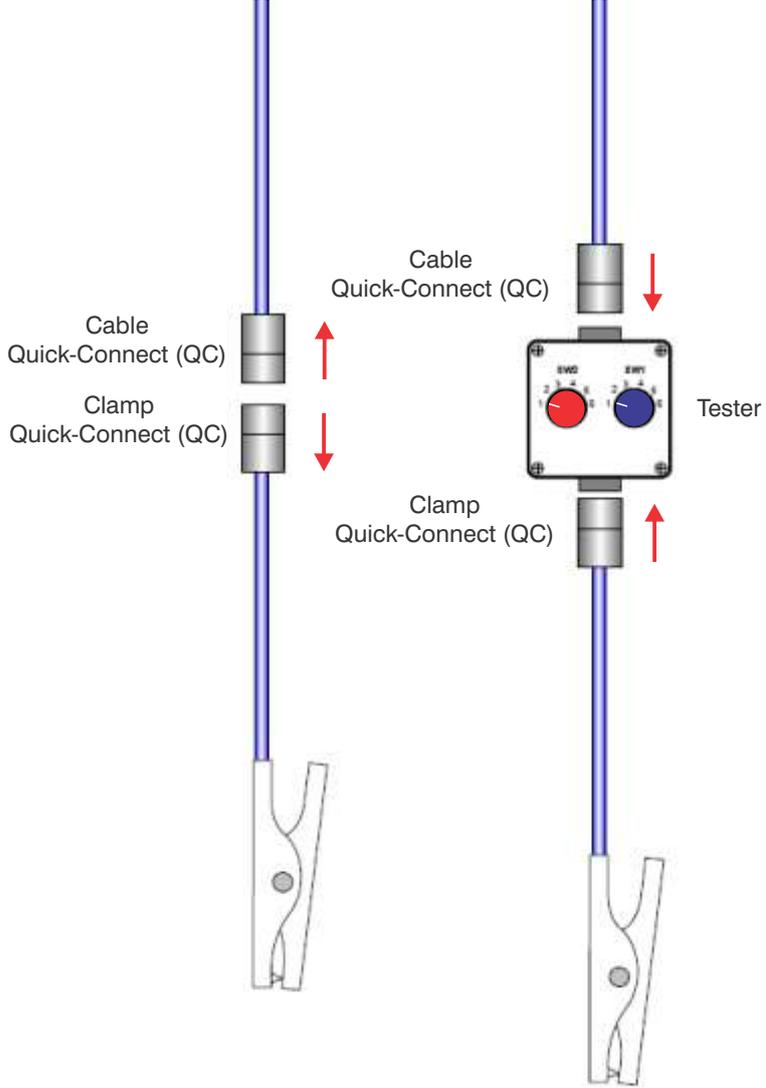
4. The clamp teeth, connectors and conductors of the grounding clamp are in good working condition.

The Tester operates on the principle of "PASS" or "FAIL" testing. The step by step instructions contained in this manual will instruct the user to dial in a series of switch settings which represent the various tests outlined above. "PASS" or "FAIL" results are displayed by the LEDs located on the RTR system that is mounted at the road tanker loading location. The instructions will indicate what the user should expect to see when each test is carried out.



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Operation Instructions

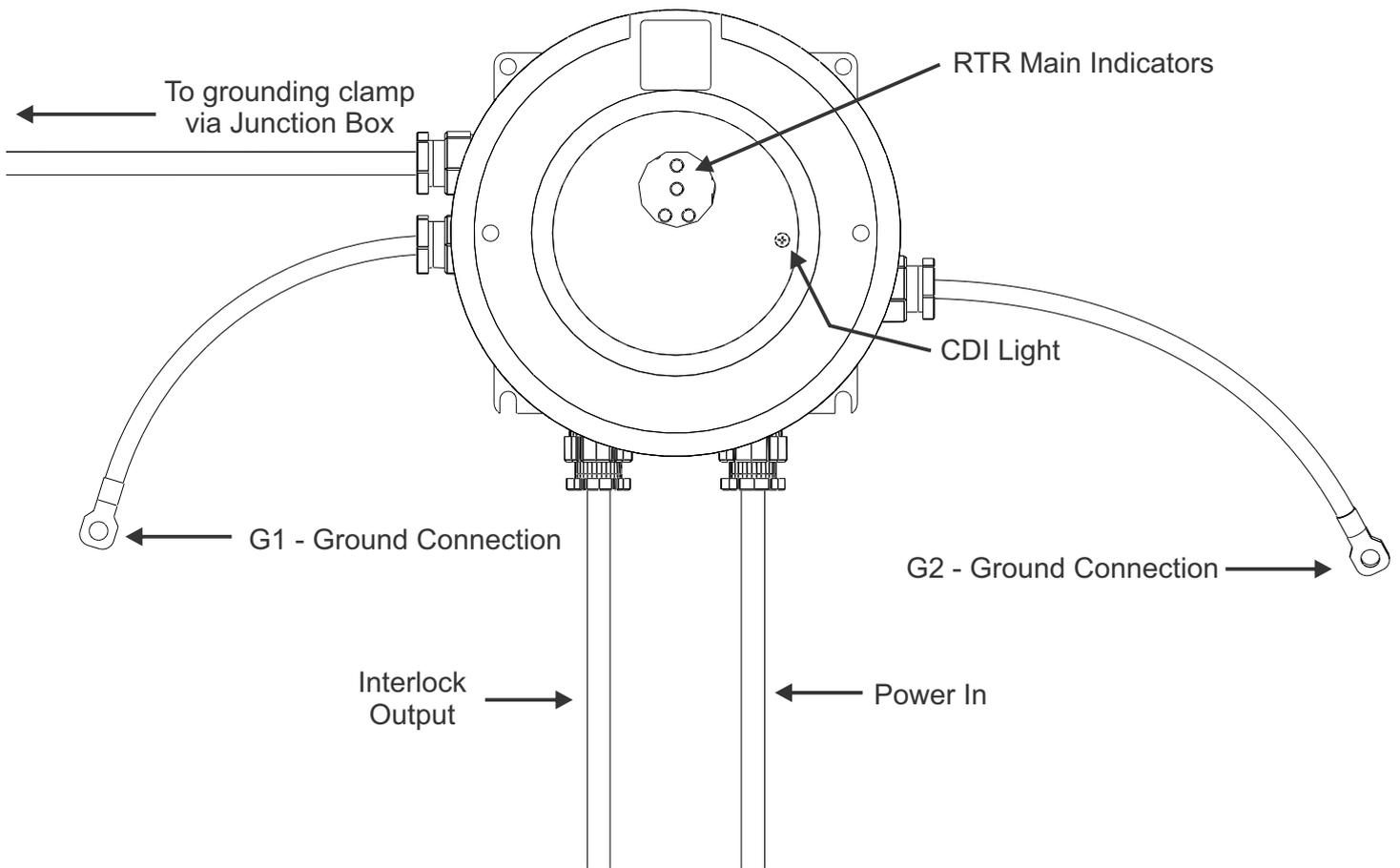
Step	Instruction
1	Check to ensure the RTR system is powered up. The RED LED located inside the enclosure should be ON.
2	<p>Disconnect grounding clamp from spiral cable.</p> 
3	<p>Connect Tester in series with clamp and cable with corresponding male and female connectors.</p>
4	<p>Ensure that both the red switch and the blue switch are in position 1.</p>
5	<p>Attach the grounding clamp to the structure on which the RTR is installed and is connected to the RTR's grounding connections (G1 and G2) – see diagram on page 6.</p>
6	<p>Activate the following settings for the Switches (Blue or Red). The Switch position required for each test is indicated after Blue or Red, e.g. position 2 for the Blue switch = Blue:2.</p>

Road Tanker Recognition Test		These tests ensure that the RTR is capable of verifying when it is connected to a road tanker and should go permissive if it has detected the capacitance characteristic typical of a road tanker. Positive test results are described in the “Expected Indication” column. If the RTR LEDs energise as indicated by the “Expected Indication” column, the RTR has successfully passed each test.		
Step	Switch Positions	Test	Expected Indication	PASS? (Y / N)
7	Blue: 1 / Red: 1	Tester Reset	RED LED ON	
8	Blue: 2 / Red: 1	This test ensures that the RTR goes permissive when it detects a capacitance that is the same as a road tanker.	CDI Light pulses <i>(see explanation for CDI light beneath instructions)*</i> Main RED LED indicator on	
9	Blue: 2 / Red: 4	This test ensures that the RTR remains non-permissive if the clamp is connected to bare metal, such as the loading gantry structure. This ensures that any equipment interlocked with the RTR, e.g. pump, can only be activated if the road tanker is connected to the RTR system.	Main RED LED indicator on CDI Light Off	
10	Blue: 2 / Red: 3	This test ensures that the RTR remains non-permissive if the RTR installation resistance to True earth exceeds 1000 ohms.	Main RED LED indicator on CDI Light Off	

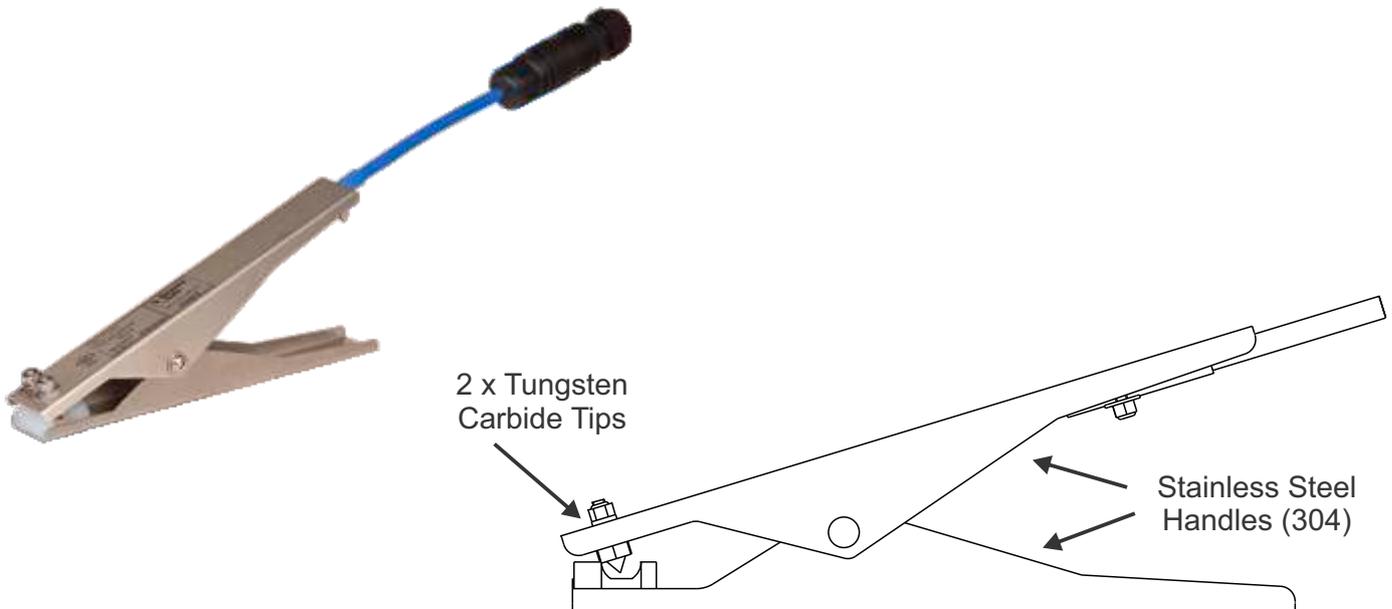
* The CDI Light is a diagnostic LED that pulses continuously when the RTR system has detected a capacitance that is similar to a road tanker, but detects a resistance greater than 10 ohms in the Continuous Ground Loop Monitoring circuit. The CDI Light stays green, (does not pulse), when the RTR has detected a combined positive test for the Road Tanker Recognition and a Continuous Ground Loop resistance of 10 ohms or less. The location of the CDI Light can be seen on page 6.

Continuous Ground Loop Monitoring Test		This series of tests introduce various values of resistance in the ground loop circuit made between the road tanker and the earthing (grounding) points of the RTR. These tests indicate that the RTR can detect when the resistance in this circuit is greater than 10 ohms.		
Step	Switch Positions	Test	Expected Indication	PASS? (Y / N)
11	Remove the clamp from the point to which it is attached.			
12	Blue: 1 / Red: 1	TESTER RESET	RED LED ON	
13	Attach the grounding clamp to the structure on which the RTR's grounding connections (G1 and G2) is connected.			
14	Blue: 2 / Red: 1	This test imposes an artificial resistance greater than 10 ohms in the Continuous Ground Loop Monitoring circuit. This ensures the RTR system will only go permissive if it detects a resistance of 10 ohms or less in this circuit. The RED LED should remain on.	RED LED ON (CDI Light pulses*)	
15	Blue: 3 / Red: 1	This test imposes an artificial resistance of less than 10 ohms in the Continuous Ground Loop Monitoring circuit. This ensures the RTR will only go permissive if it detects a resistance of 10 ohms or less in this circuit. The 3 main GREEN LEDs should be pulsing continuously.	3 GREEN LEDs pulsing	
16	Blue: 4 / Red: 1	This test ensures the resistance through the grounding clamp's teeth, conductors and connectors are in good condition. There is no resistance artificially introduced into the RTR circuit. If the equipment is in good condition the 3 main GREEN LEDs should be pulsing continuously.	3 GREEN LEDs pulsing	

* The CDI Light is a diagnostic LED that pulses continuously when the RTR system has detected a capacitance that is similar to a road tanker, but detects a resistance greater than 10 ohms in the Continuous Ground Loop Monitoring circuit. The CDI Light stays green, (does not pulse), when the RTR has detected a combined positive test for the Road Tanker Recognition and a Continuous Ground Loop resistance of 10 ohms or less. The location of the CDI Light can be seen on page 6.



Earth-Rite RTR Static Grounding System



Earth-Rite RTR Static Grounding Clamp

Comparison between the original Earth-Rite II RTR/MGV Tester and the Version 2 Tester



Original
Earth-Rite II RTR/MGV Tester



Version 2
Earth-Rite II RTR/MGV Tester

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