

# Universal Resistance Tester

## Operating Instructions



Model: URT Feb 2014 US



The safety of any system incorporating the equipment referred to in this manual is the responsibility of the installer of the system.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Any warranty is made void if the equipment is not installed, or used, in accordance with the manufacturers instructions.

# Universal Resistance Tester

## Operating Instructions

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# Important Safety Precautions



**This symbol, wherever it appears,  
alerts you to important instructions.**

## Detailed Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use The Universal Resistance Tester on non-intrinsically safe circuits.
6. Do not use the Tester near water.
7. Clean only with a dry cloth.
8. Refer all servicing to qualified service personnel.  
Servicing is required when the apparatus has been damaged in any way, such as if liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

It is recommended that the Universal Resistance Tester is used to check the function of appropriate Newson Gale systems as part of your company's planned-maintenance schedule. Alternatively, an annual check is recommended.

# Product Overview

The Universal Resistance Tester (URT) is designed to ensure that the Ground Loop Monitoring functions of Newson Gale single-mode (resistive) systems are operating within the correct parameters. The tester allows for simple, quick checking of all Newson Gale Resistive systems that utilise a quick-connect within the monitoring circuit.

The Universal Resistance Tester checks the operation of the monitoring circuit and the effectiveness of the cabling, clamp and connections.

## The Universal Resistance Tester Kit

The Kit comprises:

- 1 Universal Resistance Tester
- 1 Set of Instructions
- 2 Stainless Steel Test Plates

The Tester operates on the principle of 'PASS' or 'FAIL' testing.

'PASS' or 'FAIL' results are displayed by the LEDs located on the system. The instructions will indicate what the user should expect to see when each test is carried out.




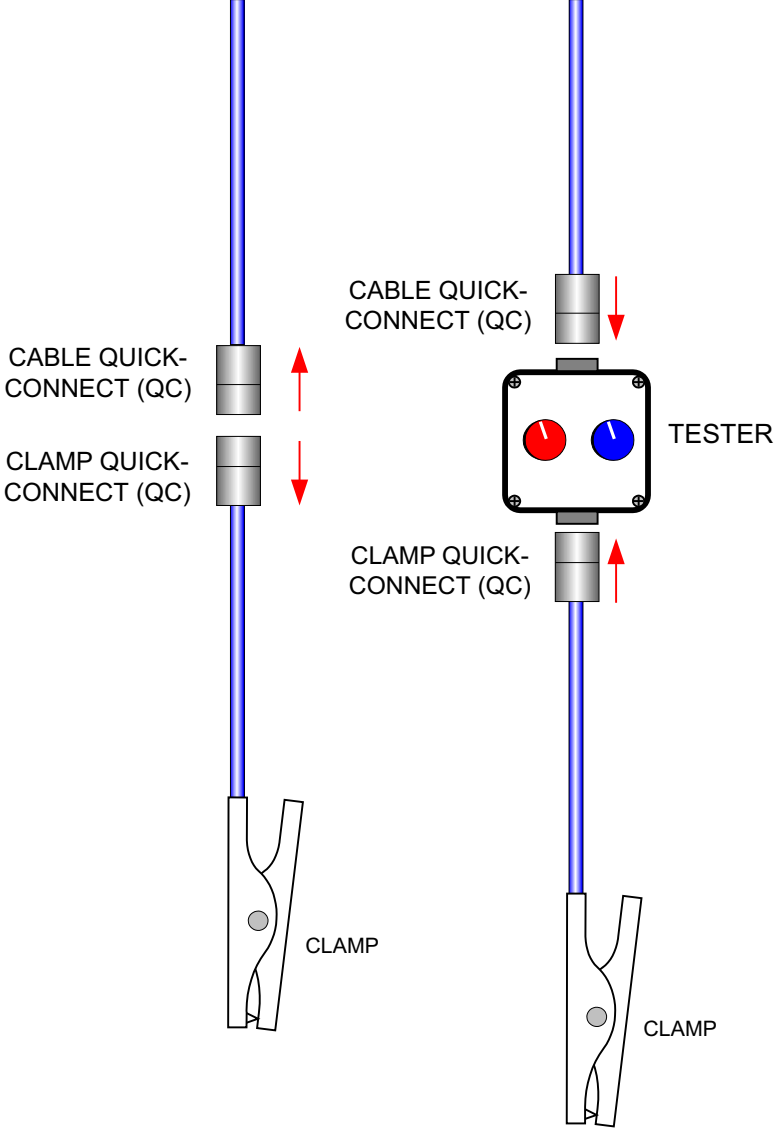
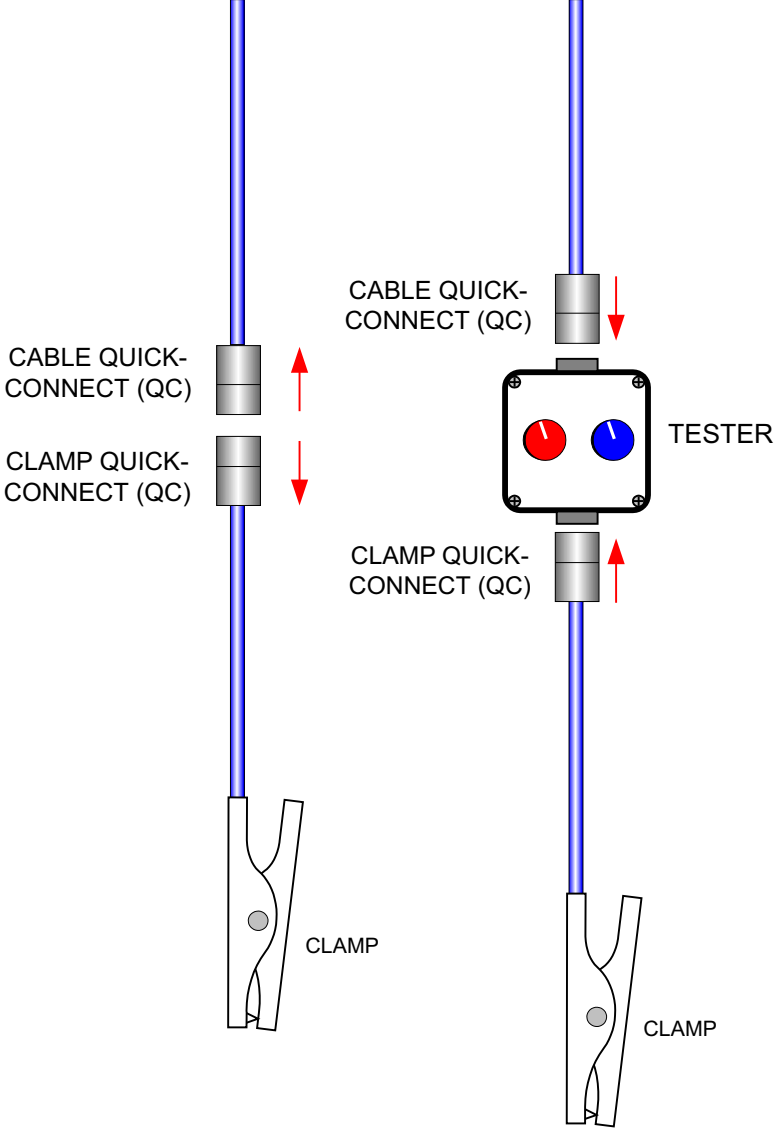
# Technical Specification

## Universal Resistance Tester

Selector Switches:	Blue switch actuator (loop resistance range setting) Red switch actuator (FAIL and PASS setting) Blue switch is a 4-position switch Red switch is a 2-position switch
Connections	Input: Male Quick Connect Output: Female Quick Connect
Ambient temperature range	-40°C to +60°C
Enclosure material	Static Dissipative Plastic (Carbon-Loaded GRP)
Certification	Simple Apparatus
Loop resistance test levels	10 ohm, 100 ohm, $10^7$ ohm, $10^8$ ohm

**NB: In line with our policy of continual product development, we reserve the right to alter specifications at any time.**

# Operating Instructions

Step	Instruction
	Tests should be conducted with the system powered-up. The Tester is to be used on the Intrinsically Safe (I.S.) circuit of Newson Gale systems. DO NOT use the Tester on any non -I.S. circuits.
1	Disconnect the monitoring clamp from the cable at the cable Quick-Connect <div style="text-align: center; margin-top: 20px;">  </div>
2	Connect the Tester in line with the clamp and cable, with corresponding male and female connectors. Please note that the orientation will differ depending upon the system under test. The actual orientation is shown on the specific system page in section 2 of this instruction manual. <div style="text-align: center; margin-top: 20px;">  </div>
3	Ensure that the red switch is in position 1 (Fail) and the blue switch is in position 2
Note	Where reference is made to a Passive Clamp, the instruction is referring to a clamp that is other than a Bond-Rite or OhmGuard Clamp.



If the test results indicate a fail condition , please check the wiring and connections before repeating the tests. If the test results still indicate a fail condition, please contact Newson Gale, or one of their representatives to discuss the matter further.

# Specific Instruction for using the Universal Resistance Tester with various Newson Gale systems



Blue Switch Setting	Nominal Test Resistance
1	10 ohm
2	10 <sup>8</sup> ohm
3	10 <sup>7</sup> ohm
4	100 ohm

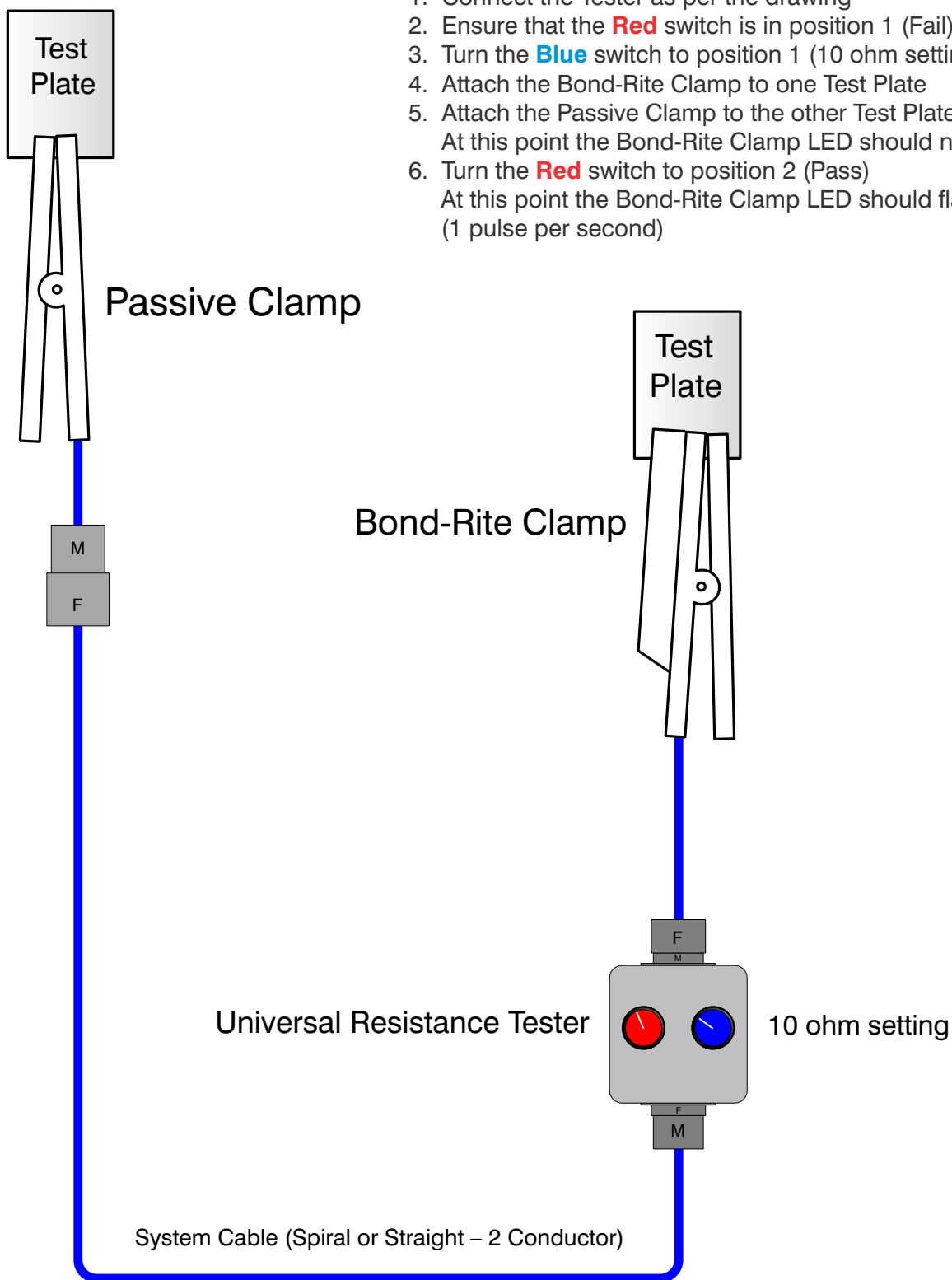
Red Switch Setting	Expected Result
1	Fail
2	Pass

The following pages show how to use the Universal Resistance Tester with various Newson Gale systems

# Using the Universal Resistance Tester with **Bond-Rite EZ**

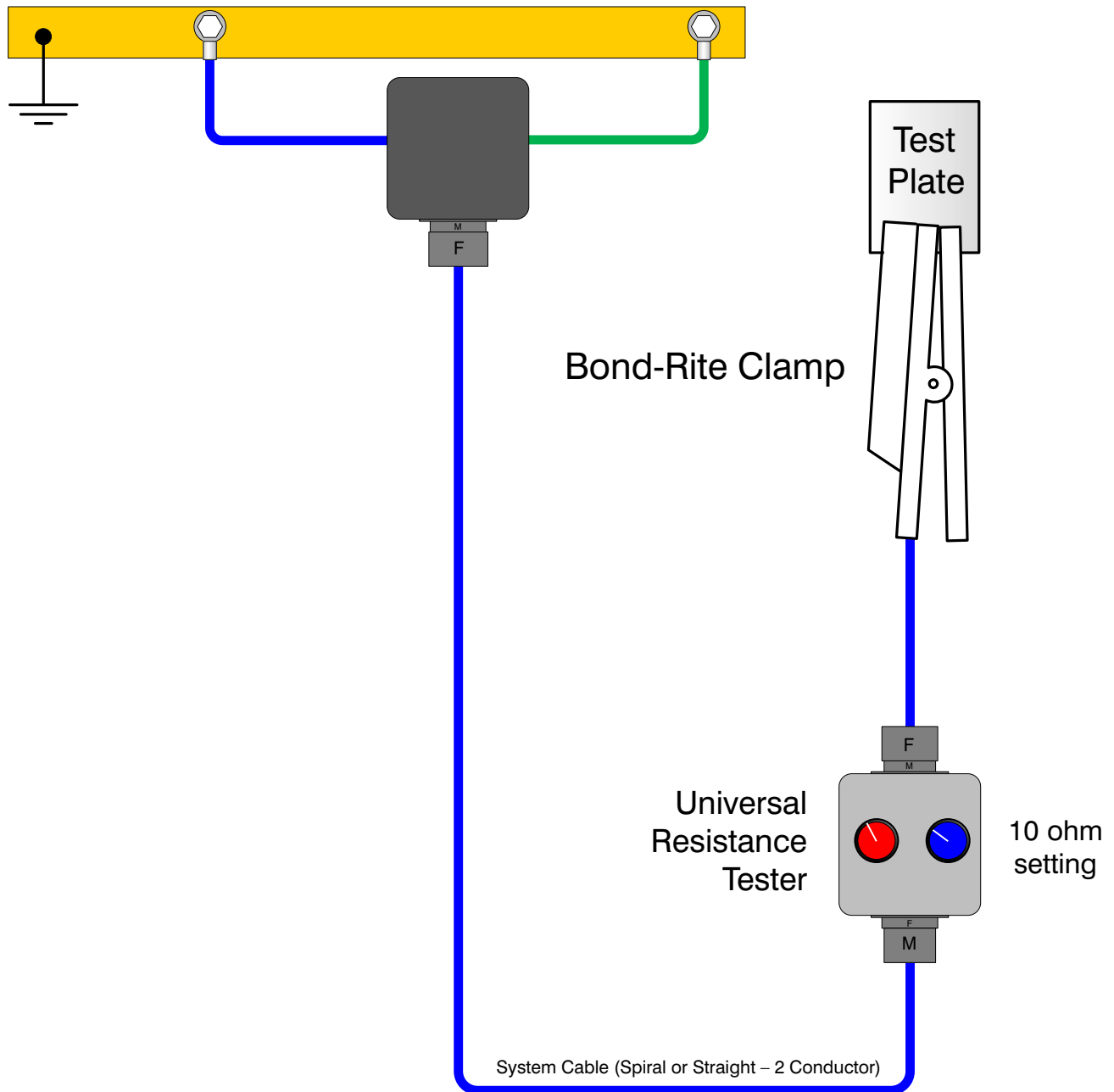
## PROCEDURE

1. Connect the Tester as per the drawing
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 1 (10 ohm setting)
4. Attach the Bond-Rite Clamp to one Test Plate
5. Attach the Passive Clamp to the other Test Plate  
At this point the Bond-Rite Clamp LED should not show
6. Turn the **Red** switch to position 2 (Pass)  
At this point the Bond-Rite Clamp LED should flash  
(1 pulse per second)





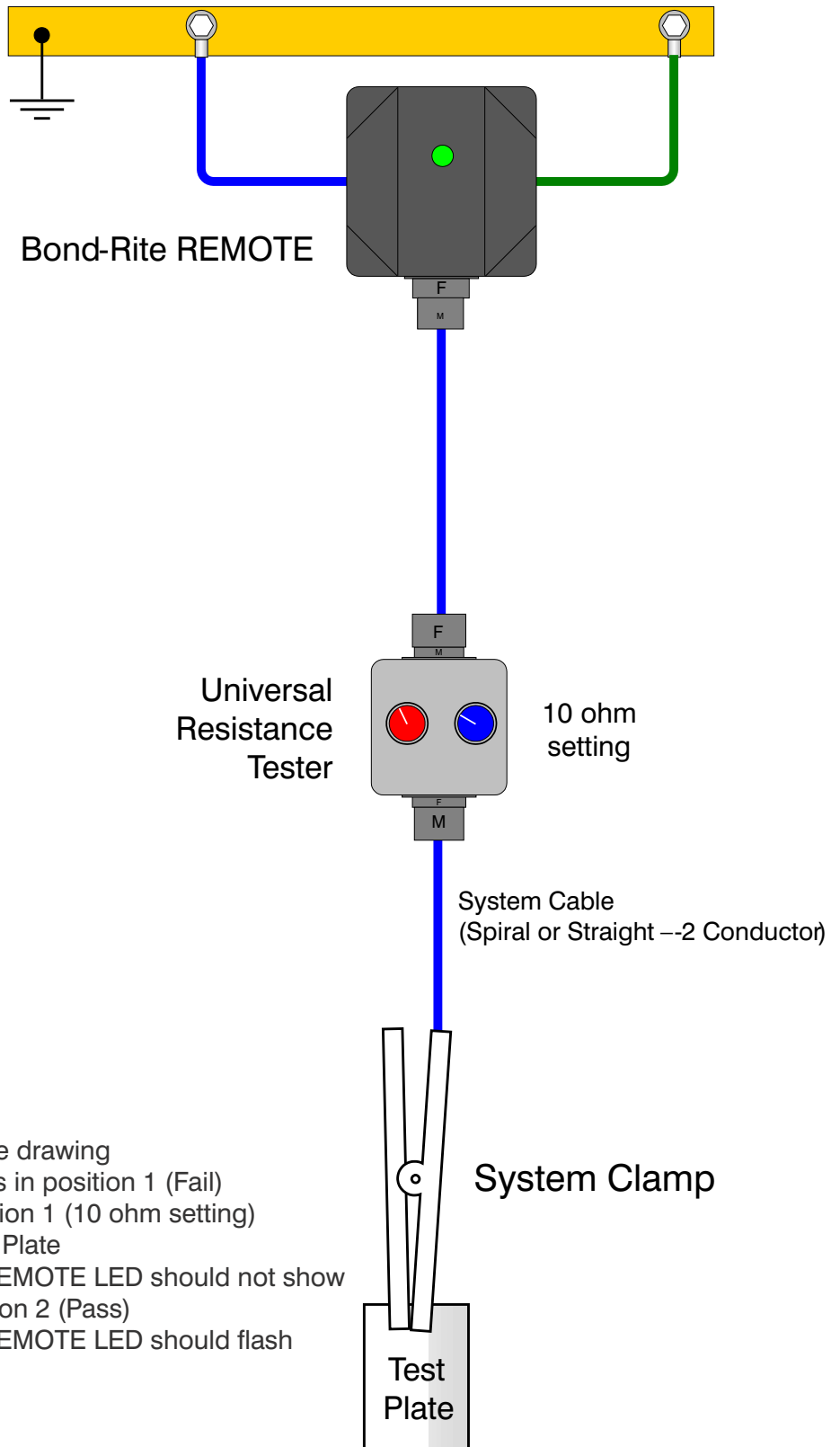
## Using the Universal Resistance Tester with permanent with **Bond-Rite CLAMP**



### PROCEDURE

1. Connect the Tester as per the drawing.
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 1 (10 ohm setting)
4. Attach the Bond-Rite Clamp to Test Plate  
At this point the Bond-Rite Clamp LED should not show
5. Turn the **Red** switch to position 2 (Pass)  
At this point the Bond-Rite Clamp LED should flash (1 pulse per second)

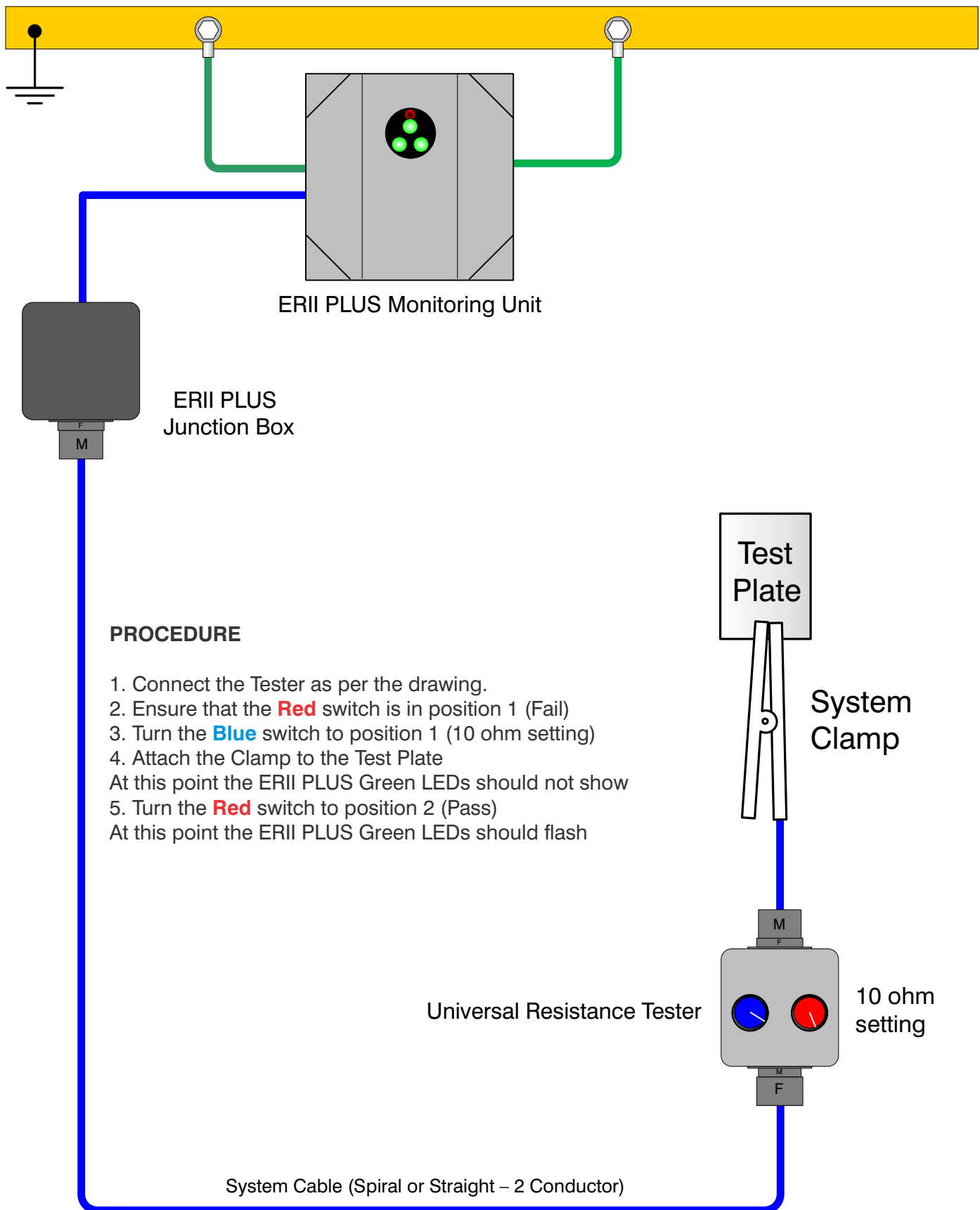
## Using the Universal Resistance Tester with **Bond-Rite REMOTE**



### PROCEDURE

1. Connect the Tester as per the drawing
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 1 (10 ohm setting)
4. Attach the Clamp to the Test Plate  
At this point the Bond-Rite REMOTE LED should not show
5. Turn the **Red** switch to position 2 (Pass)  
At this point the Bond-Rite REMOTE LED should flash  
(1 pulse per second)

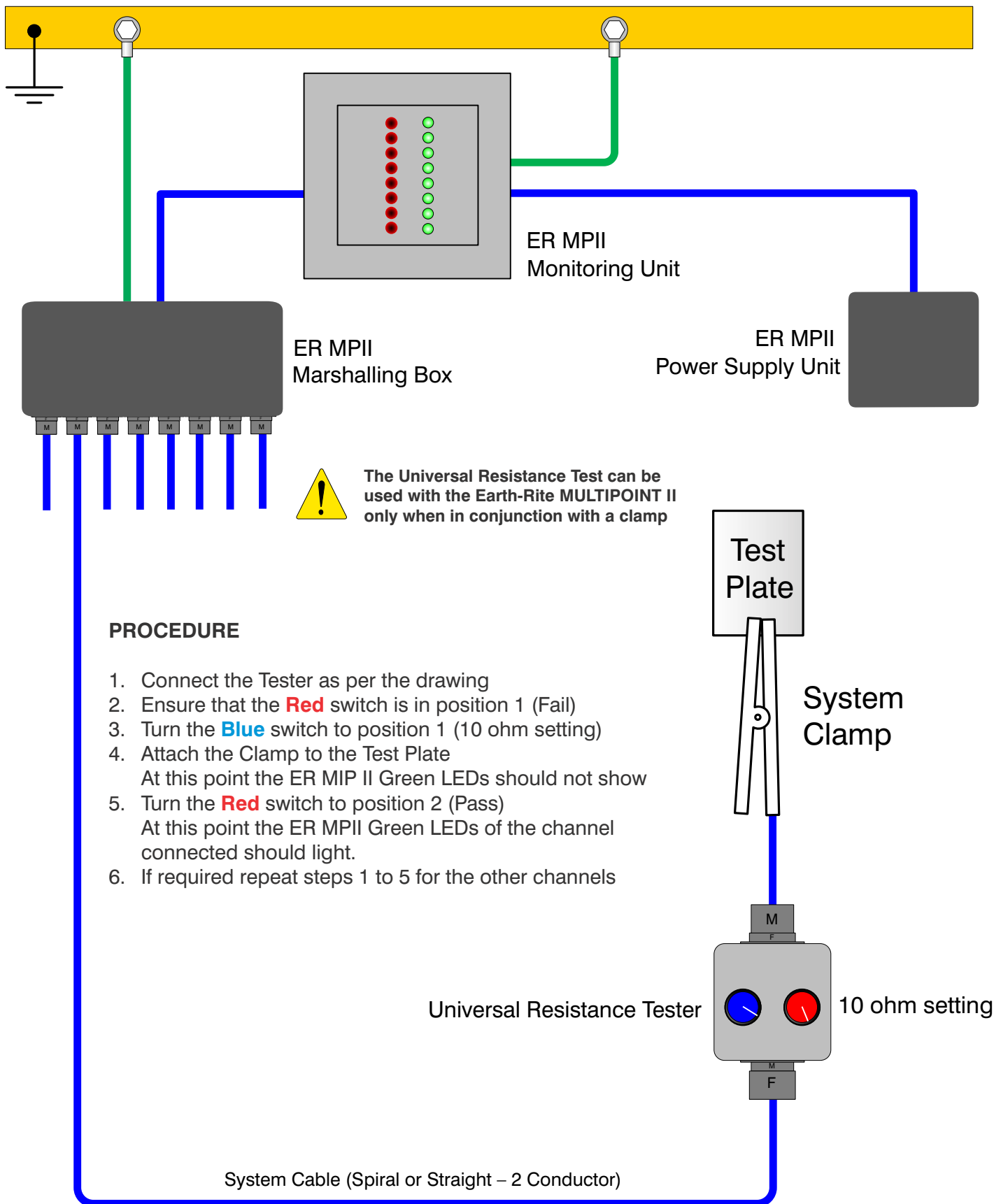
## Using the Universal Resistance Tester with **Earth-Rite II PLUS**



### PROCEDURE

1. Connect the Tester as per the drawing.
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 1 (10 ohm setting)
4. Attach the Clamp to the Test Plate  
At this point the ERII PLUS Green LEDs should not show
5. Turn the **Red** switch to position 2 (Pass)  
At this point the ERII PLUS Green LEDs should flash

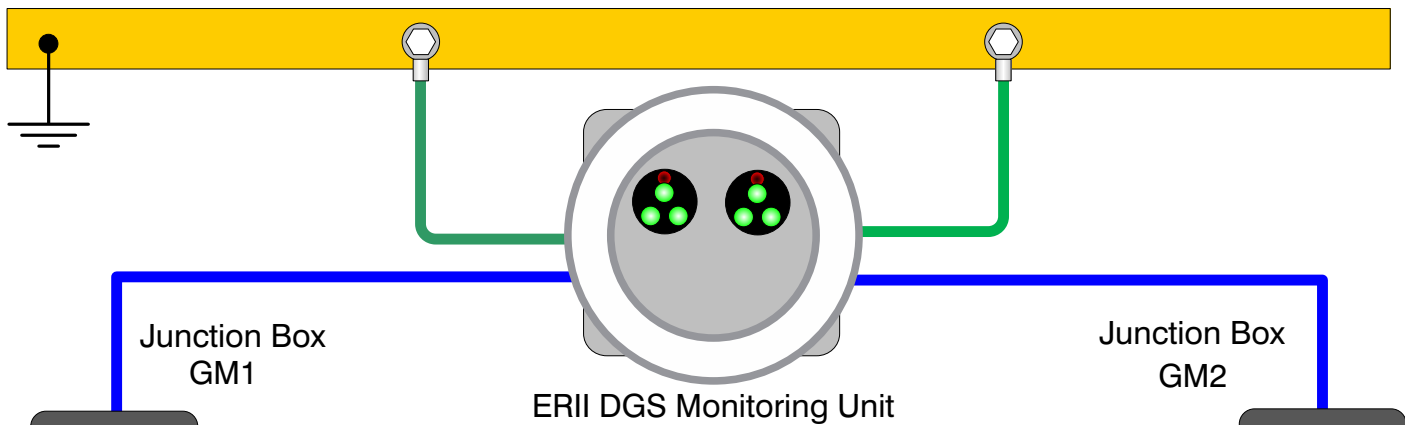
## Using the Universal Resistance Tester with Earth-Rite MULTIPOINT II



### PROCEDURE

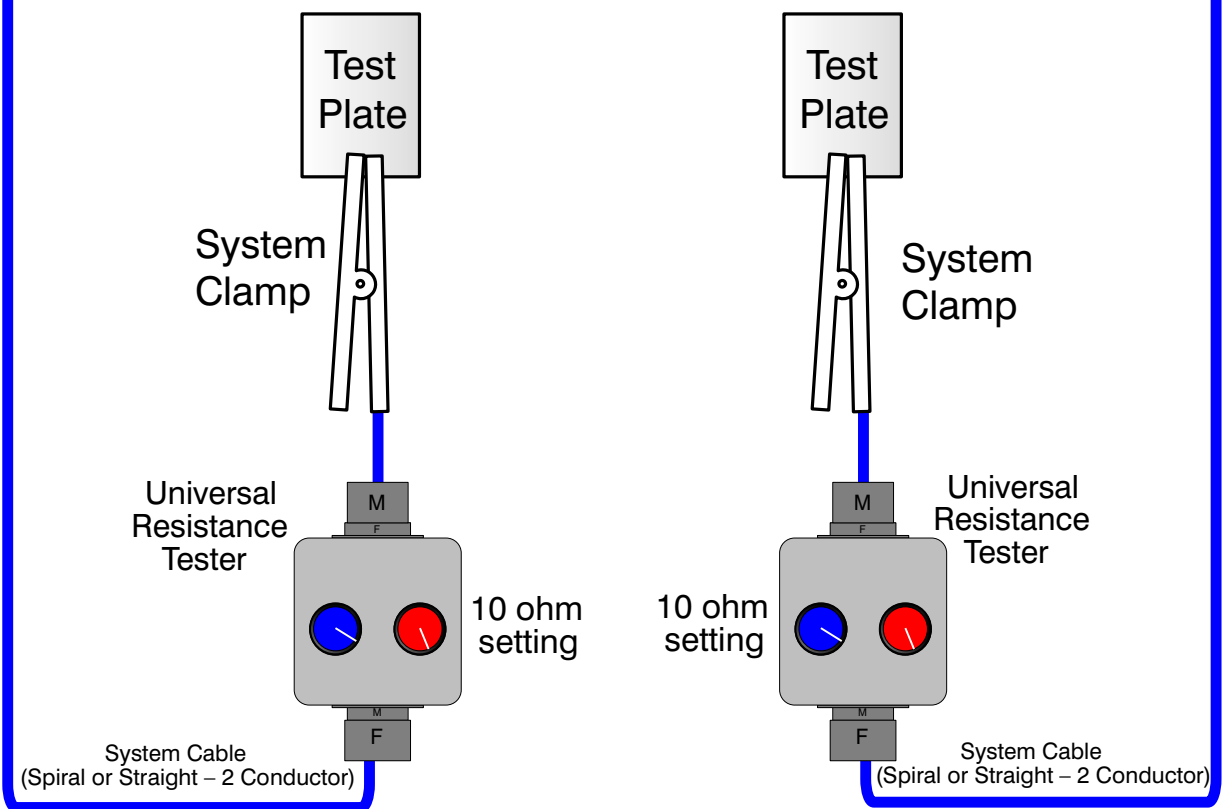
1. Connect the Tester as per the drawing
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 1 (10 ohm setting)
4. Attach the Clamp to the Test Plate  
At this point the ER MPIO Green LEDs should not show
5. Turn the **Red** switch to position 2 (Pass)  
At this point the ER MPIO Green LEDs of the channel connected should light.
6. If required repeat steps 1 to 5 for the other channels

## Using the Universal Resistance Tester with Earth-Rite DGS

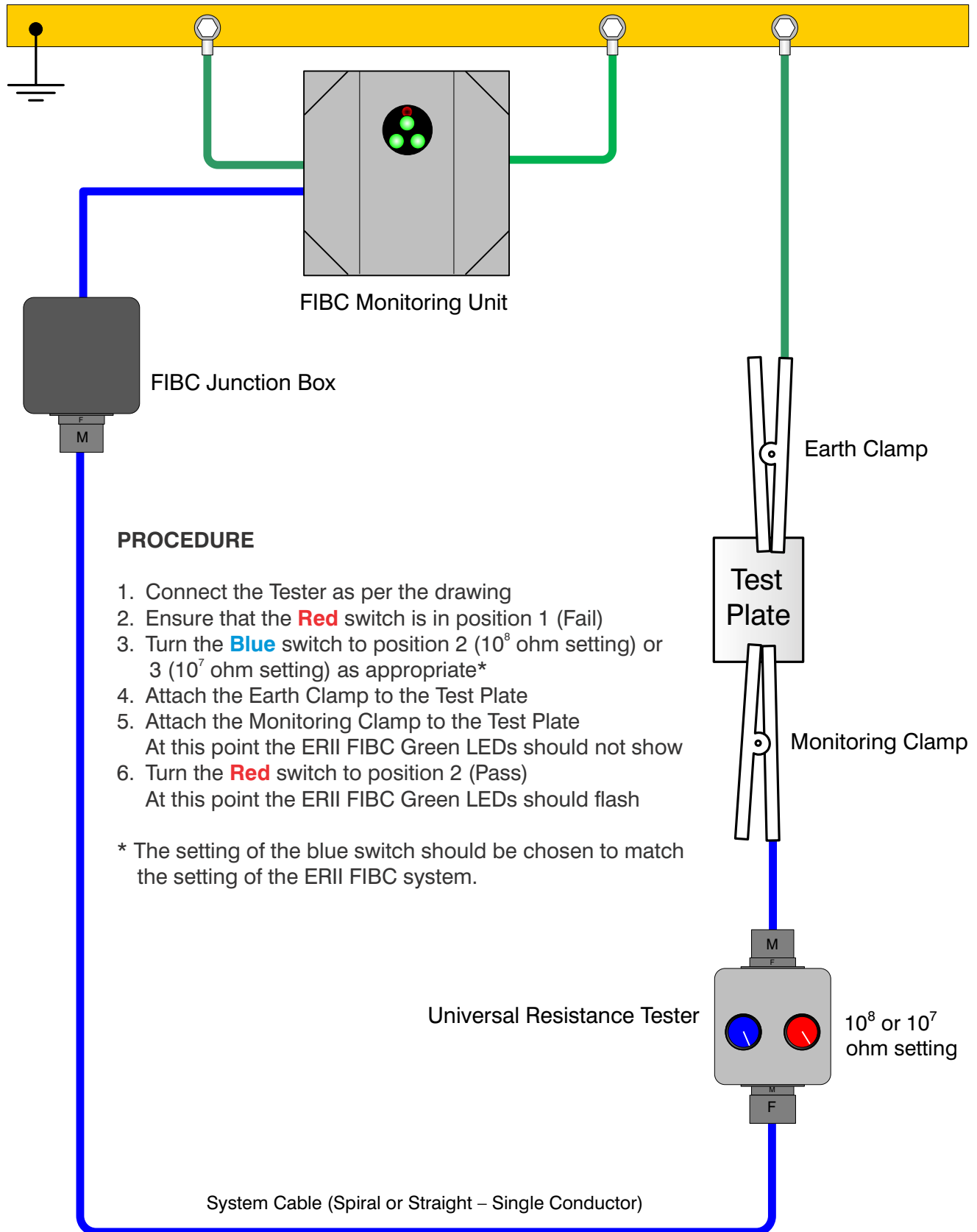


### PROCEDURE

1. Connect the Tester as per the drawing for either GM1 channel on the left or GM2 channel on the right
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 1 (10 ohm setting)
4. Attach the Clamp to the Test Plate
- At this point the ERII PLUS Green LEDs should not show
5. Turn the **Red** switch to position 2 (Pass)
- At this point the ERII PLUS Green LEDs should flash
6. Repeat steps 1 to 5, if necessary, for the other GM1 or GM2 channel



# Using the Universal Resistance Tester with **Earth-Rite II FIBC** with Supplementary Earth Clamp

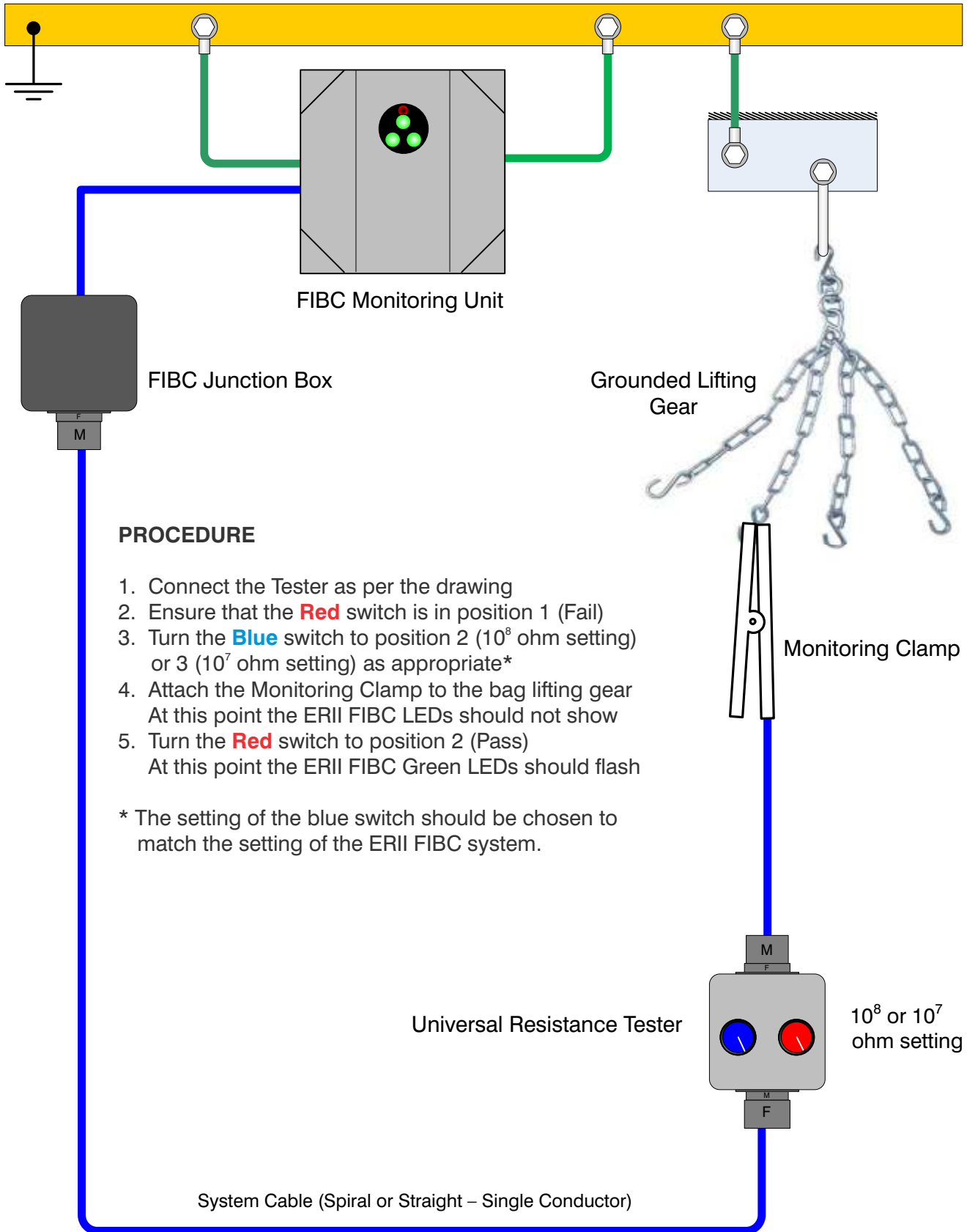


### PROCEDURE

1. Connect the Tester as per the drawing
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 2 (10<sup>8</sup> ohm setting) or 3 (10<sup>7</sup> ohm setting) as appropriate\*
4. Attach the Earth Clamp to the Test Plate
5. Attach the Monitoring Clamp to the Test Plate  
At this point the ERII FIBC Green LEDs should not show
6. Turn the **Red** switch to position 2 (Pass)  
At this point the ERII FIBC Green LEDs should flash

\* The setting of the blue switch should be chosen to match the setting of the ERII FIBC system.

## Using the Universal Resistance Tester with **Earth-Rite II PLUS** without Supplementary Earth Clamp

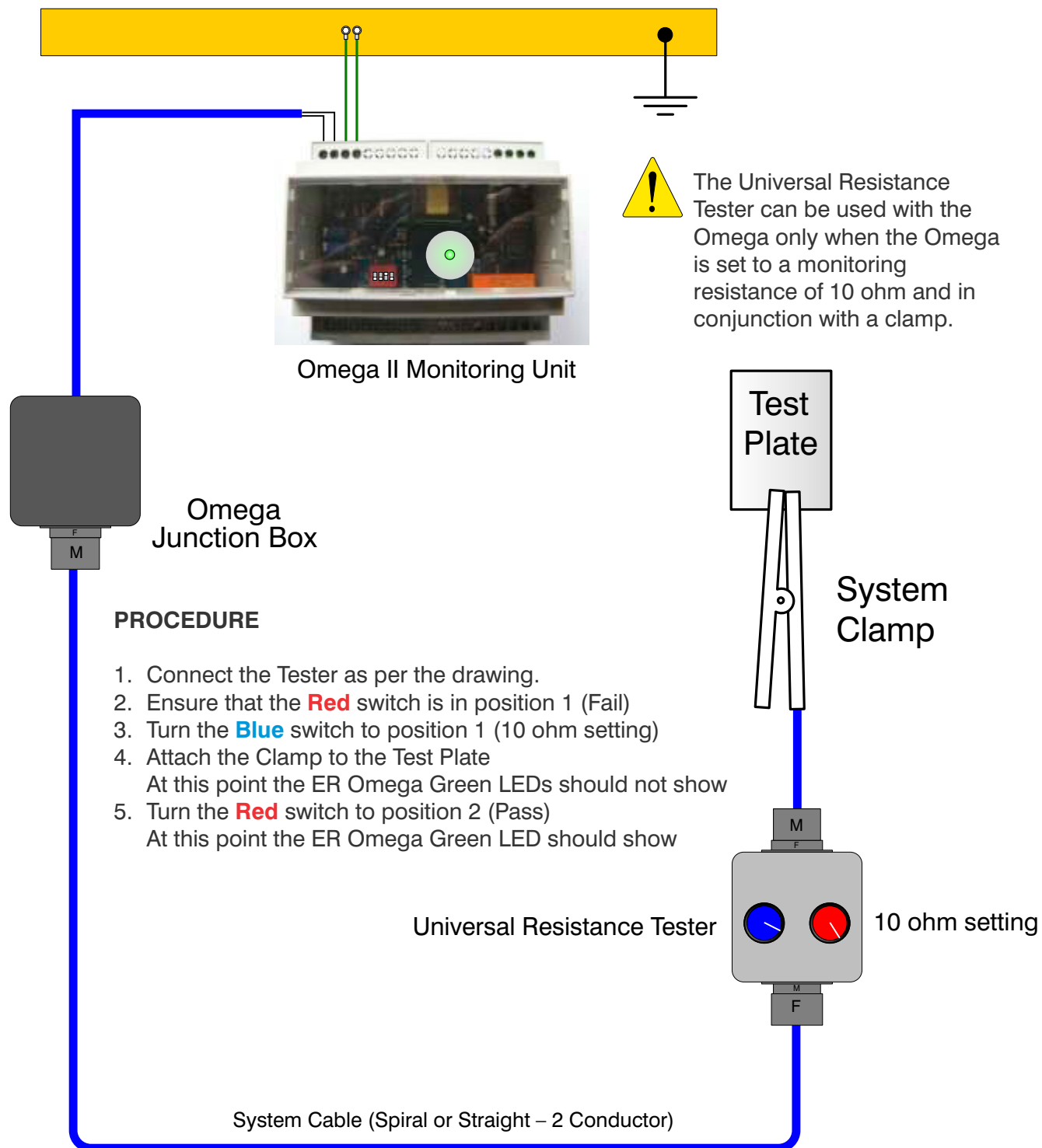


### PROCEDURE

1. Connect the Tester as per the drawing
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 2 (10<sup>8</sup> ohm setting) or 3 (10<sup>7</sup> ohm setting) as appropriate\*
4. Attach the Monitoring Clamp to the bag lifting gear  
At this point the ERII FIBC LEDs should not show
5. Turn the **Red** switch to position 2 (Pass)  
At this point the ERII FIBC Green LEDs should flash

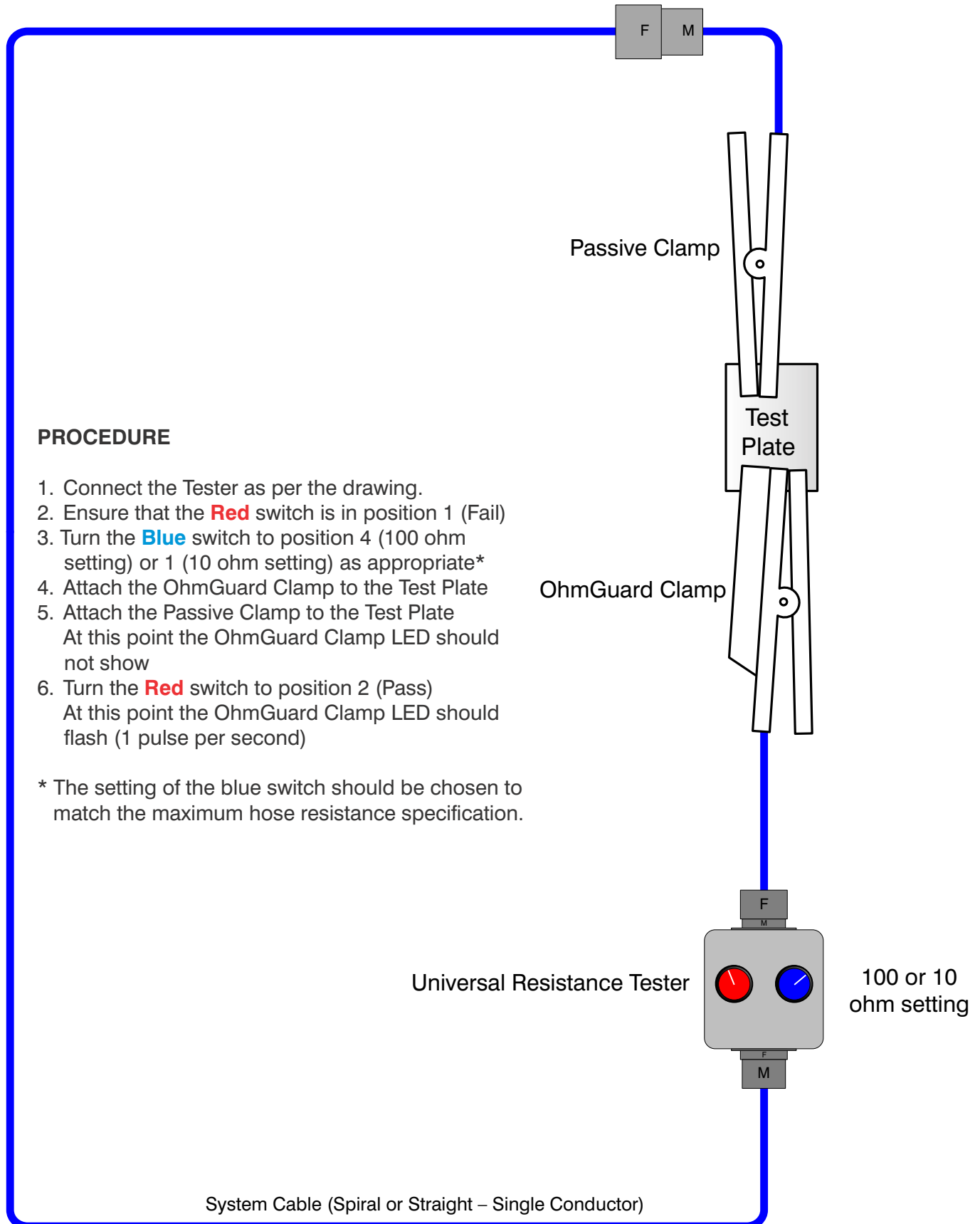
\* The setting of the blue switch should be chosen to match the setting of the ERII FIBC system.

## Using the Universal Resistance Tester with Earth-Rite OMEGA II





# Using the Universal Resistance Tester with a portable OhmGuard Clamp



## PROCEDURE

1. Connect the Tester as per the drawing.
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 4 (100 ohm setting) or 1 (10 ohm setting) as appropriate\*
4. Attach the OhmGuard Clamp to the Test Plate
5. Attach the Passive Clamp to the Test Plate  
At this point the OhmGuard Clamp LED should not show
6. Turn the **Red** switch to position 2 (Pass)  
At this point the OhmGuard Clamp LED should flash (1 pulse per second)

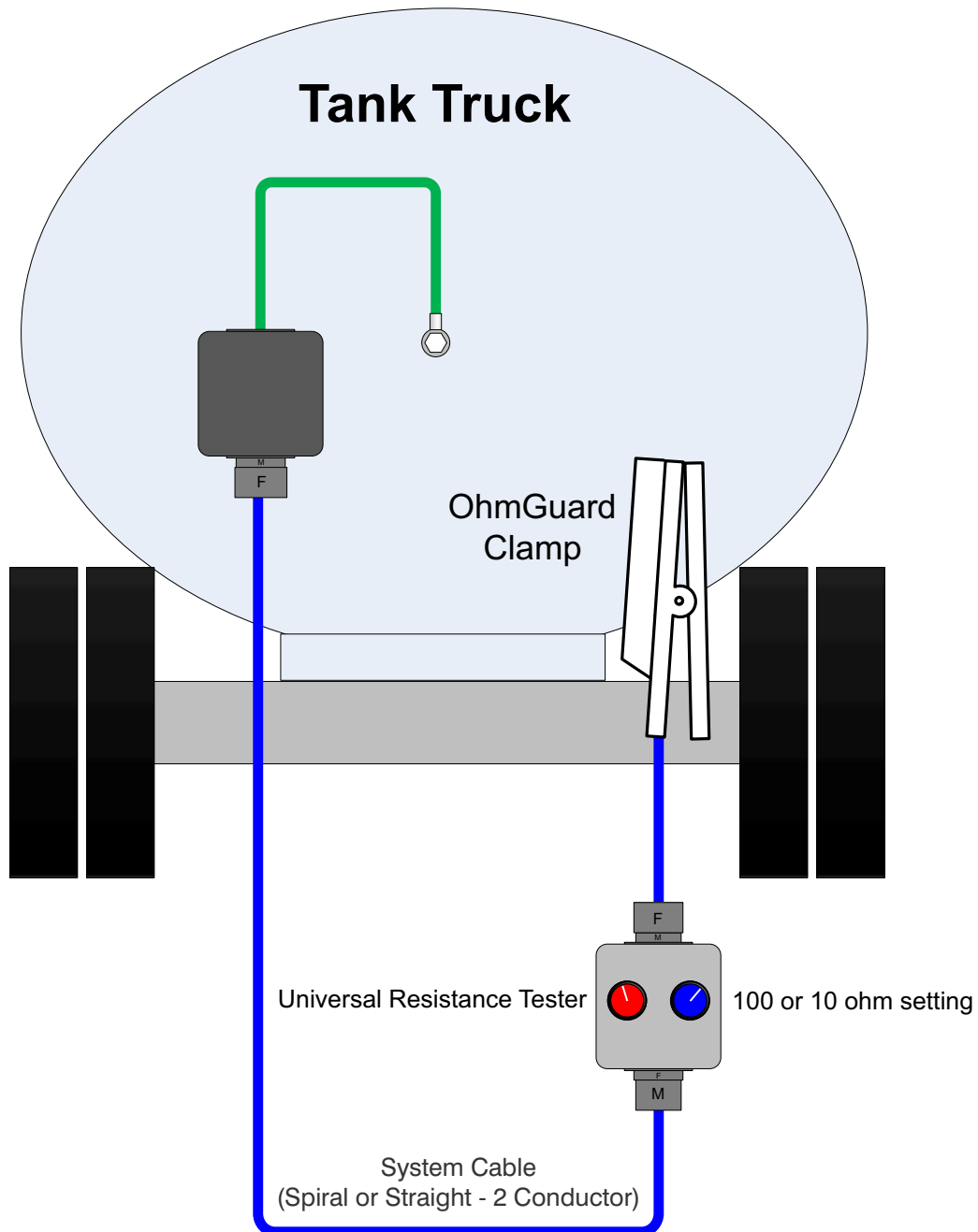
\* The setting of the blue switch should be chosen to match the maximum hose resistance specification.

# Using the Universal Resistance Tester with a tanker-mounted OhmGuard Clamp

## PROCEDURE

1. Connect the Tester as per the drawing.
2. Ensure that the **Red** switch is in position 1 (Fail)
3. Turn the **Blue** switch to position 4 (100 ohm setting) or 1 (10 ohm setting) as appropriate\*
4. Attach the OhmGuard Clamp to the Tank Truck chassis, ensure that the clamp teeth are in good contact with the metal of the chassis  
At this point the OhmGuard Clamp LED should not show
5. Turn the **Red** switch to position 2 (Pass)  
At this point the OhmGuard Clamp LED should flash (1 pulse per second)

\* The setting of the blue switch should be chosen to match the maximum hose resistance specification.





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**United Kingdom**  
Newson Gale Ltd  
Omega House  
Private Road 8  
Colwick, Nottingham  
NG4 2JX, UK  
+44 (0)115 940 7500  
groundit@newson-gale.co.uk

**Deutschland**  
IEP Technologies GmbH  
Kaiserswerther Str. 85C  
40878 Ratingen  
Germany  
+49 (0)2102 5889 0  
erdung@newson-gale.de

**United States**  
IEP Technologies LLC  
417-1 South Street  
Marlborough, MA 01752  
USA  
+1 732 961 7610  
groundit@newson-gale.com

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