

OPERATING MANUAL

FTU-200

Field Test Unit

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1 TEST PRIMARY FUNCTION

The Senseca BTD-200 Field Test Unit (FTU) simulates lightning flashes, strong electric fields and charged precipitation. It is intended for checking the operation of Senseca BTD-200 thunderstorm warning systems and any connected accessories.



NOTE:

Not for BTD-200 calibration, validation of sensor siting requirements or confirming correct installation.

2 IMPORTANT SAFETY INSTRUCTIONS

2.1 Batteries



WARNING

This product is designed to use **ALKALINE 9V PP3** batteries only.

Use of other battery types or voltages may result in equipment damage, personal injury, or fire.

DO NOT USE RECHARGABLE BATTERIES

2.2 Inappropriate Use



WARNING

This equipment is intended for use only with the **Senseca BTD-200** Thunderstorm Detection Sensor **ONLY**

Connection to other equipment may result in personal injury or equipment damage.

Use of this product in a manner not described or specified in this manual may result in equipment damage or personal injury.

2.3 Environmental Conditions

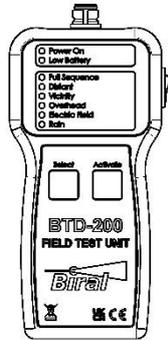


WARNING

Only for use in **DRY CONDITIONS**, with no local thunderstorm activity within **40Km (25Miles)**

3 BOX CONTENTS

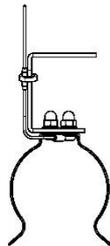
The following equipment is supplied in the BTU-200 FTU carton. Please check the contents carefully and immediately report any missing items to your supplier.



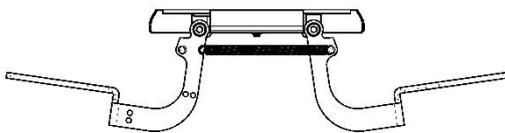
1x FTU Handheld unit



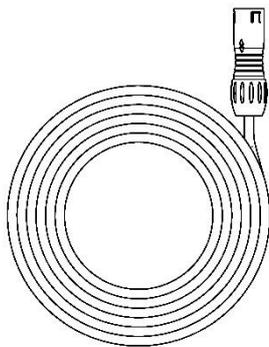
1x PP3 9V Battery



1x Primary Antenna Clamp



1x Secondary Antenna Clamp



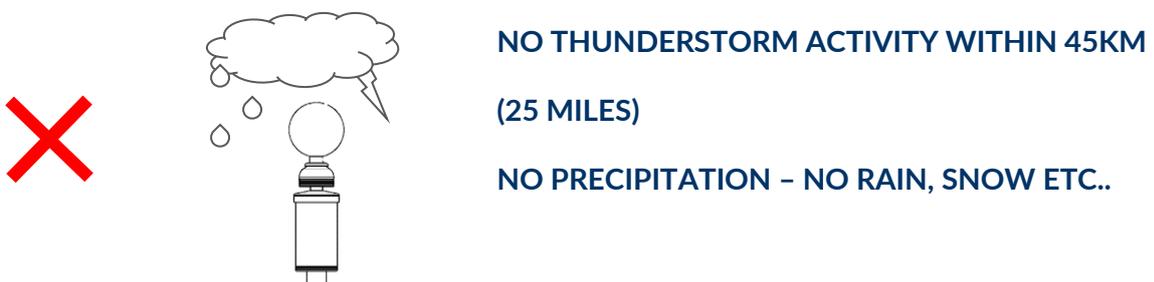
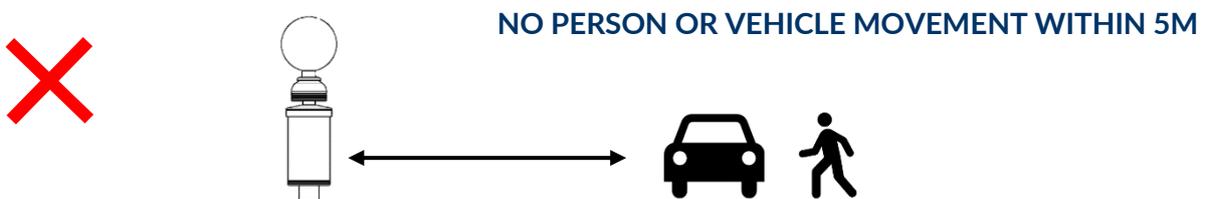
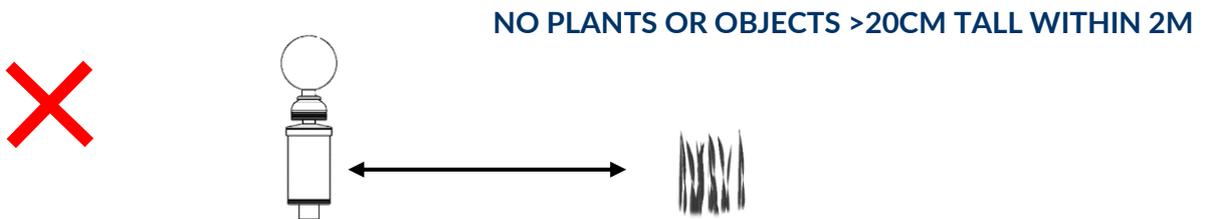
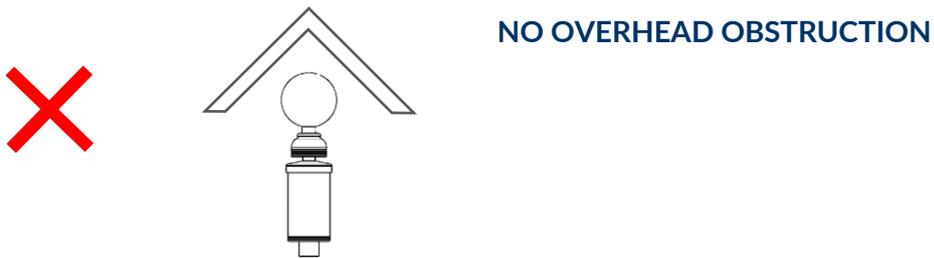
1x FTU Cable assembly
(Hard Wired to Clamps)

1x Microfibre Cloth

4 BTD-200 FIELD TEST UNIT OPERATING INSTRUCTIONS

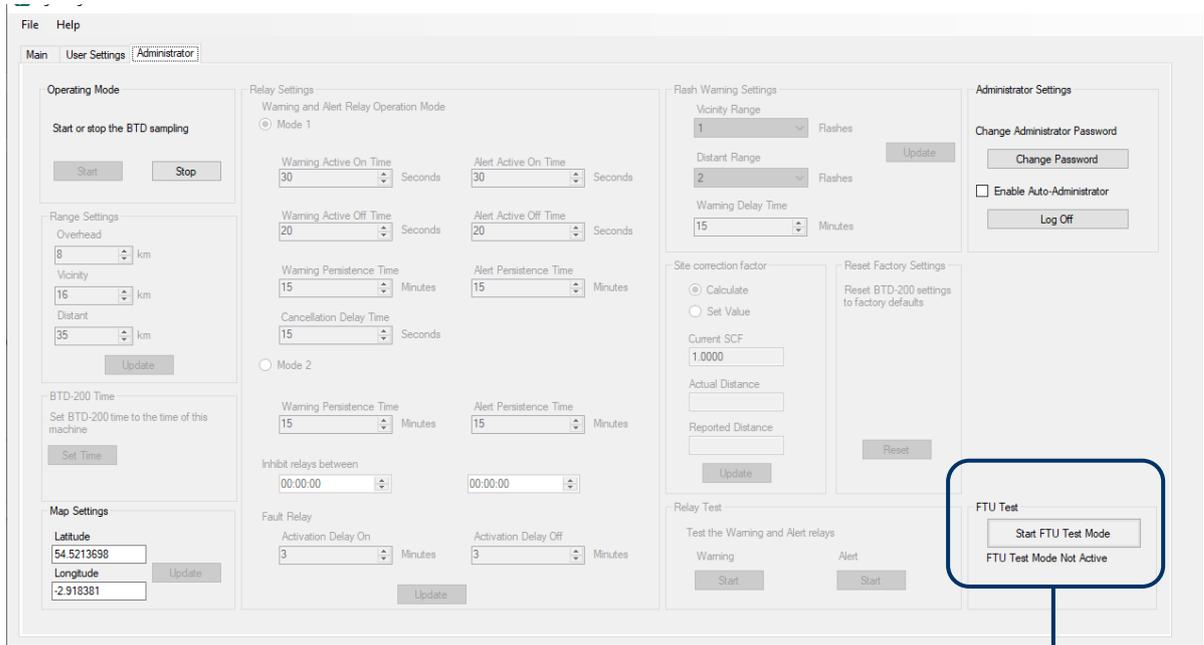
4.1 Pre-test Preparation

4.1.1 Test Environment



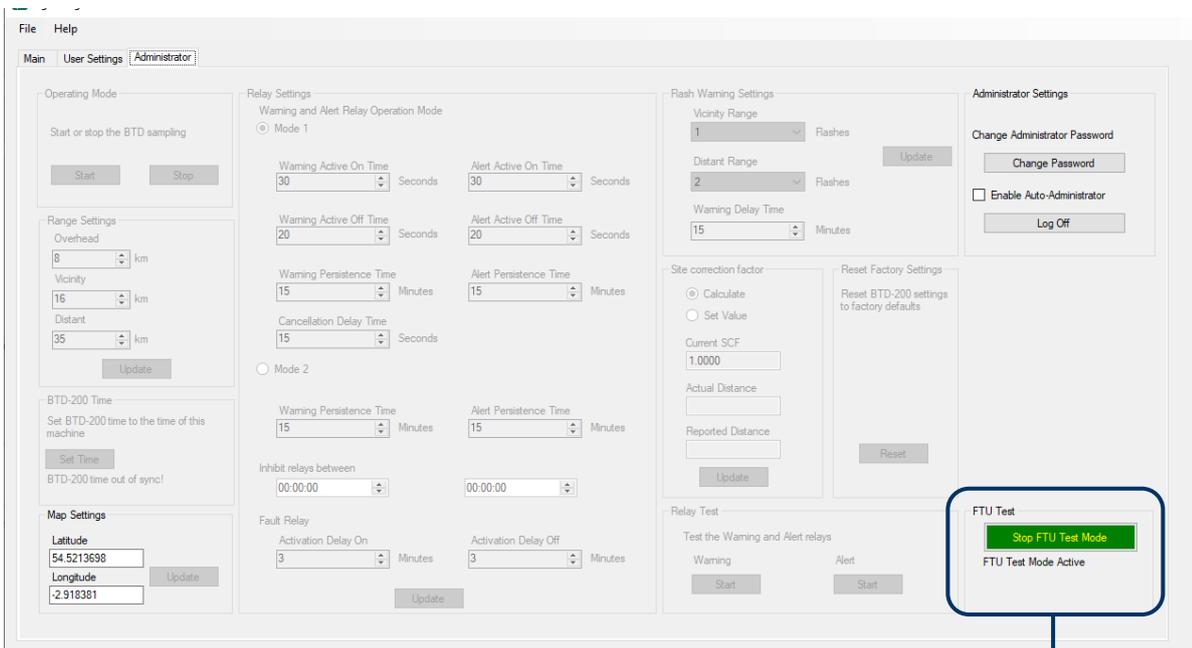
4.1.2 Lightning Works software testing setup (optional software)

4.1.2.1 Press Start FTU Test Mode button



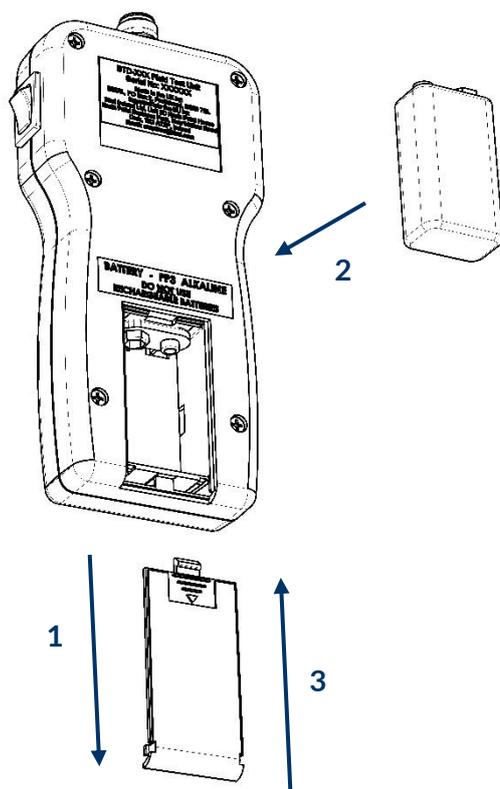
Start FTU Test Mode

4.1.2.2 Wait for FTU test to initialise



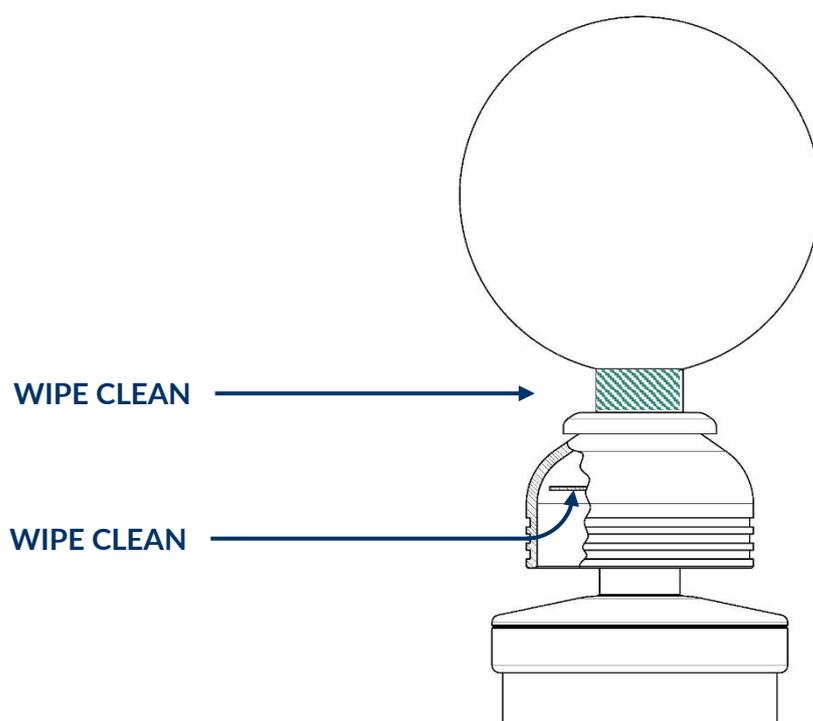
FTU Test Started

4.1.3 FTU Battery installation



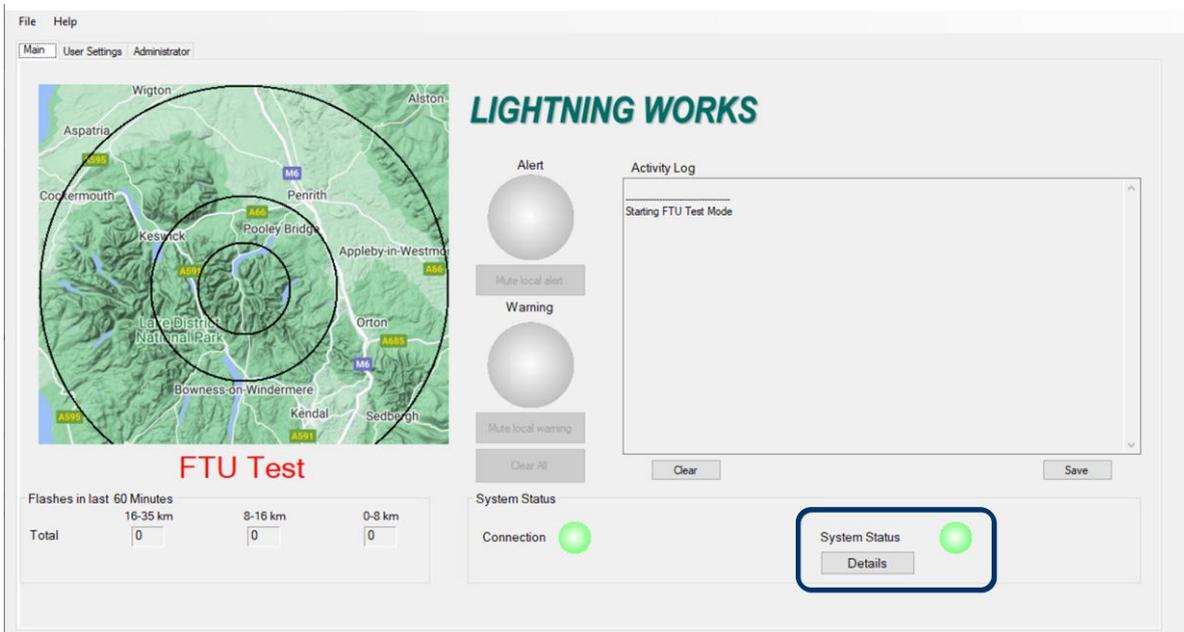
4.1.4 Antenna Cleaning

4.1.4.1 *Using the Microfibre Cloth, wipe dust, dirt and debris, from the contact areas on both antennae before starting any testing.*

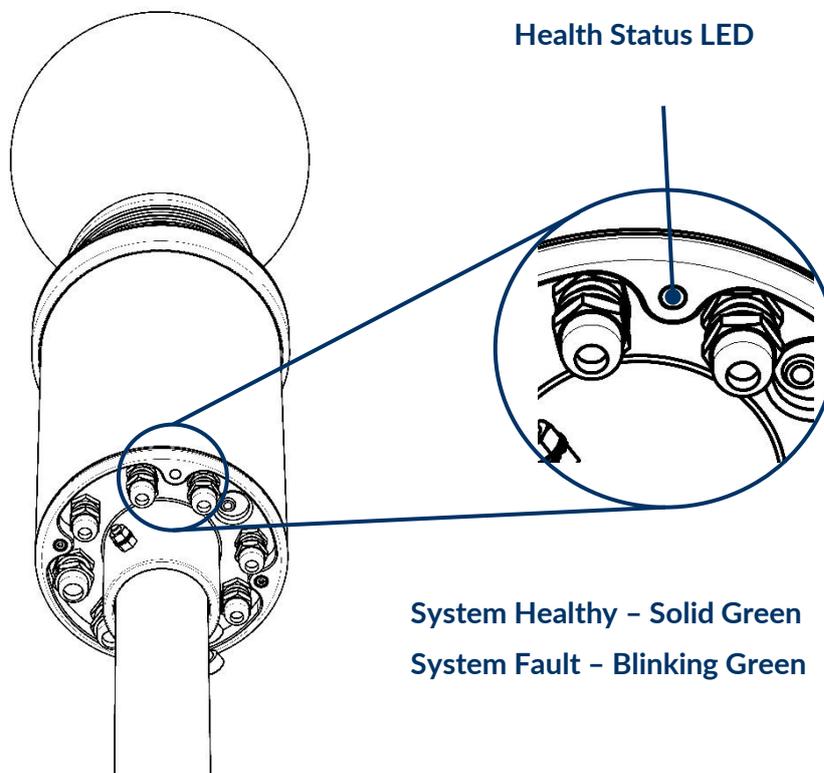


Self-Test Status

4.1.4.2 Ensure system self-test status is healthy via either Lightning Works or on-sensor indicator



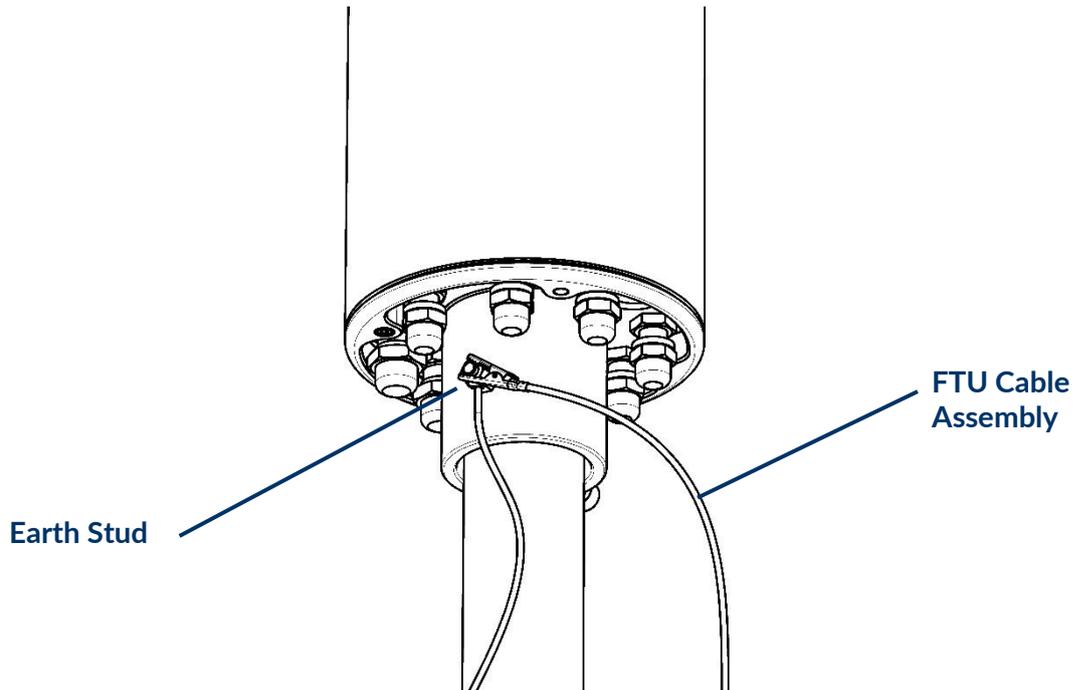
OR



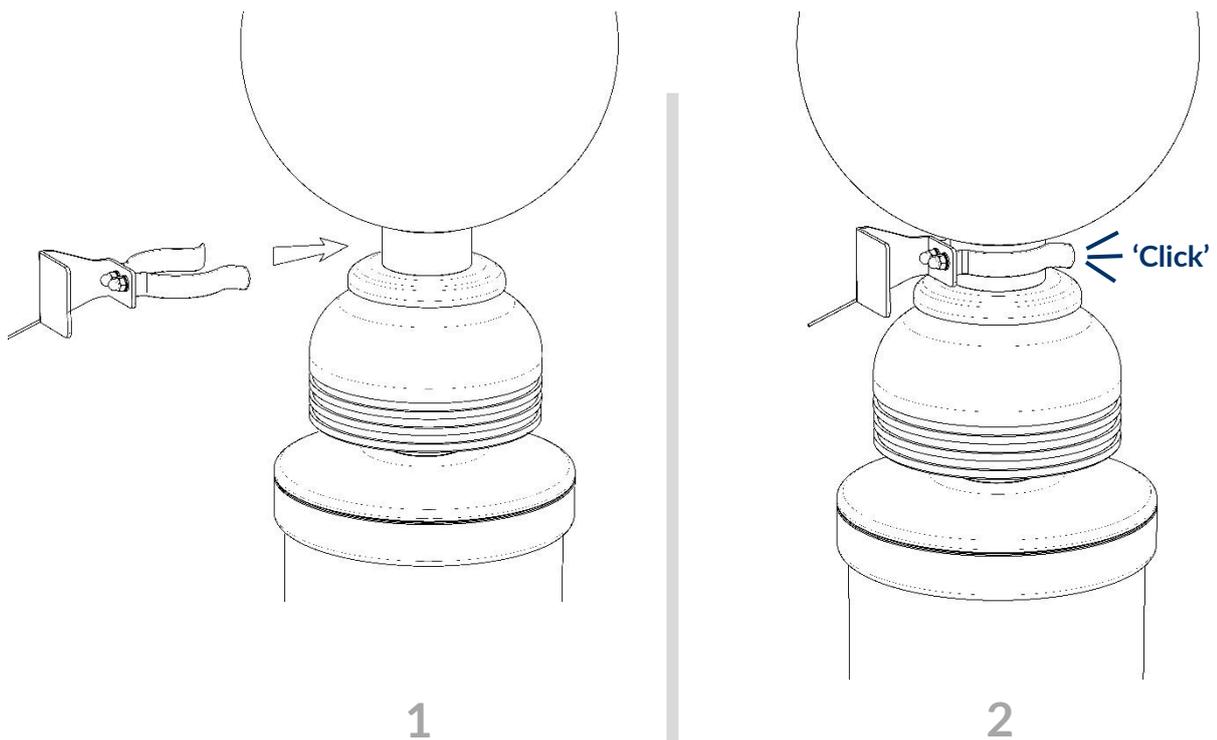
5 OPERATION

5.1 Antenna/Earth Reference Connections

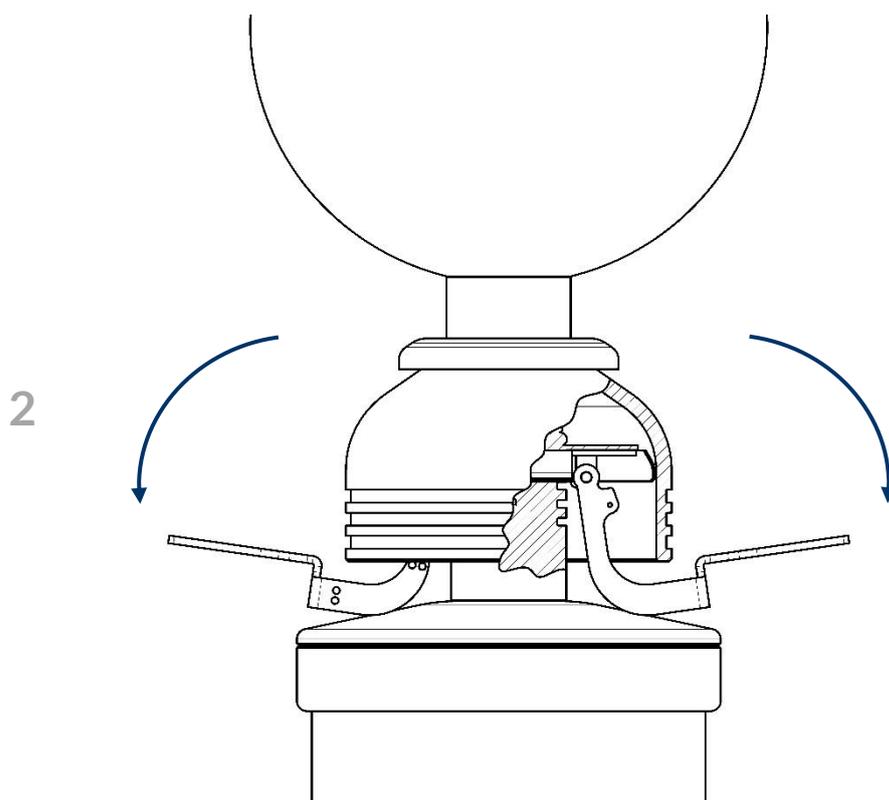
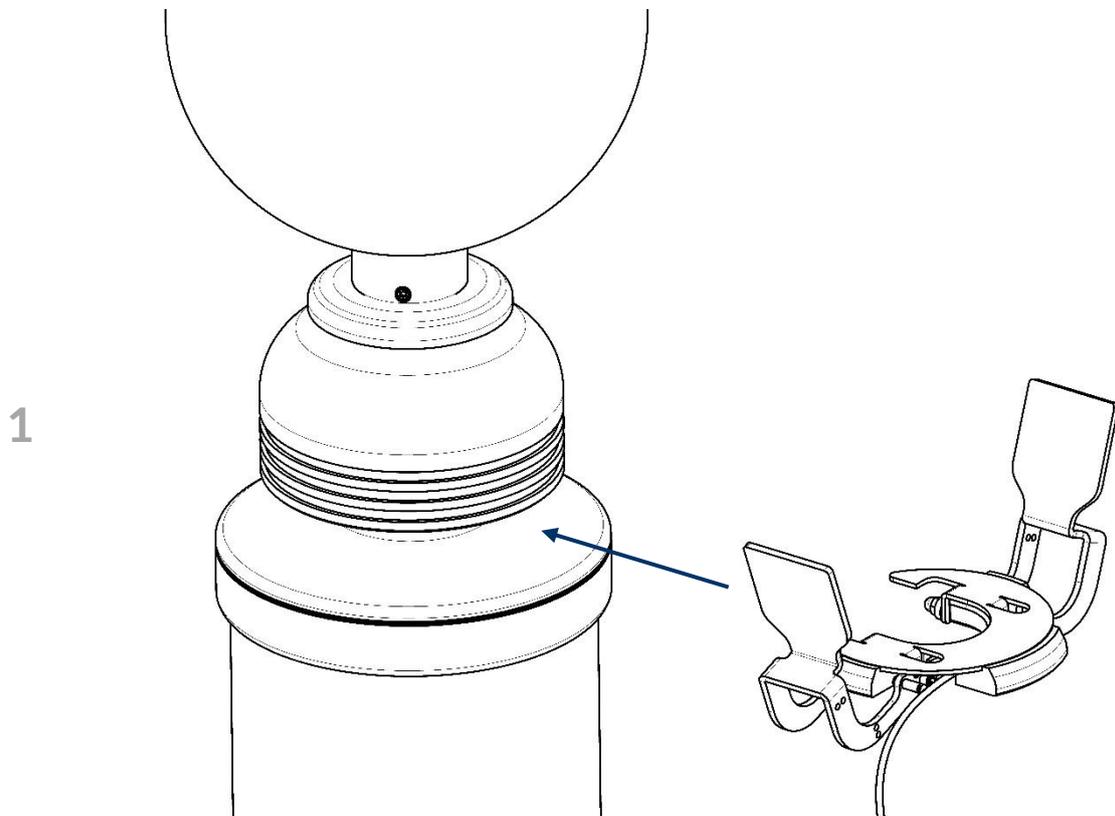
5.1.1 Attach clip to Earth Stud at Base of BTD-200



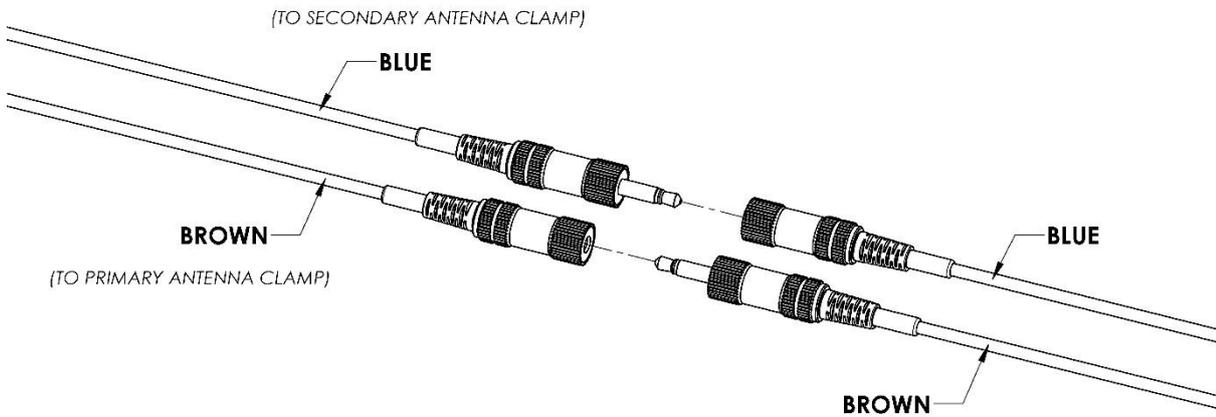
5.1.2 Attach Primary Antenna Clip



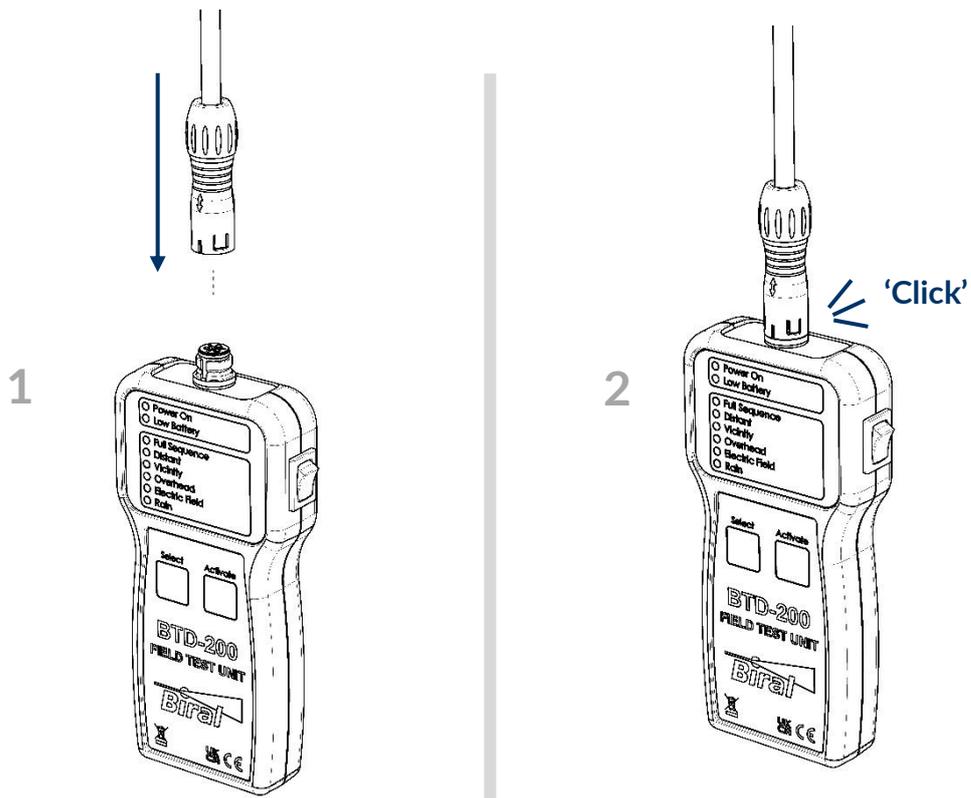
5.1.3 Attach Secondary Antenna Saddle



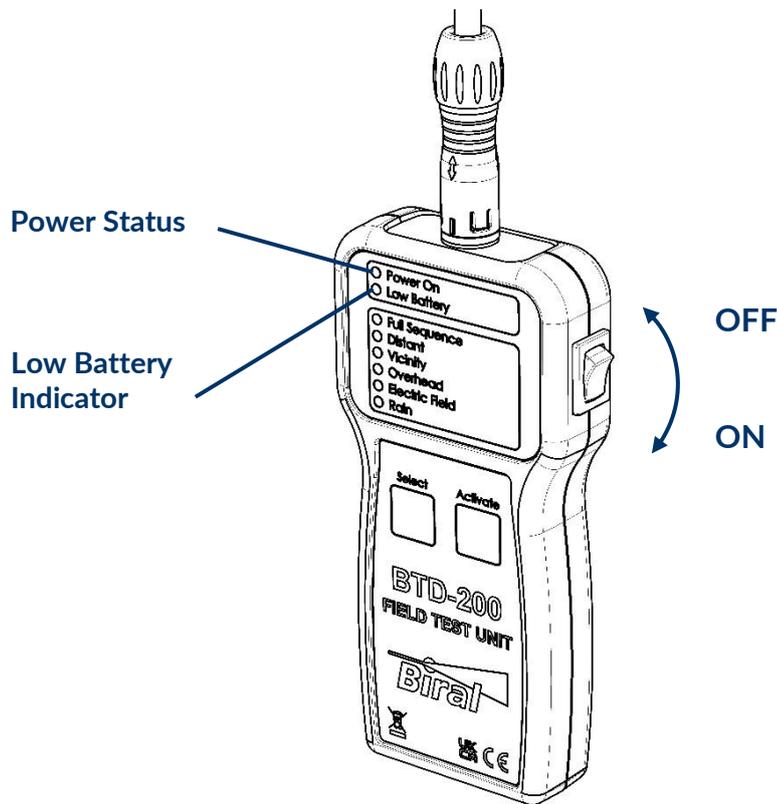
5.1.4 Connect Primary and Secondary Antenna Clamps to the Cable Assembly:



5.1.5 Connect Antenna Assembly to FTU Handheld Unit



5.2 Power-On FTU Handheld Unit



WARNING

Field Test Unit will not execute tests if low battery is indicated. Both touch buttons will be deactivated



NOTE

Select and Activate buttons may not work correctly when wearing gloves.

5.3 Operator Location during Test

Move away from the BTU-200 to the maximum extent of the Cable. Do not pull the Cable tight. Remain still for the duration of the tests.

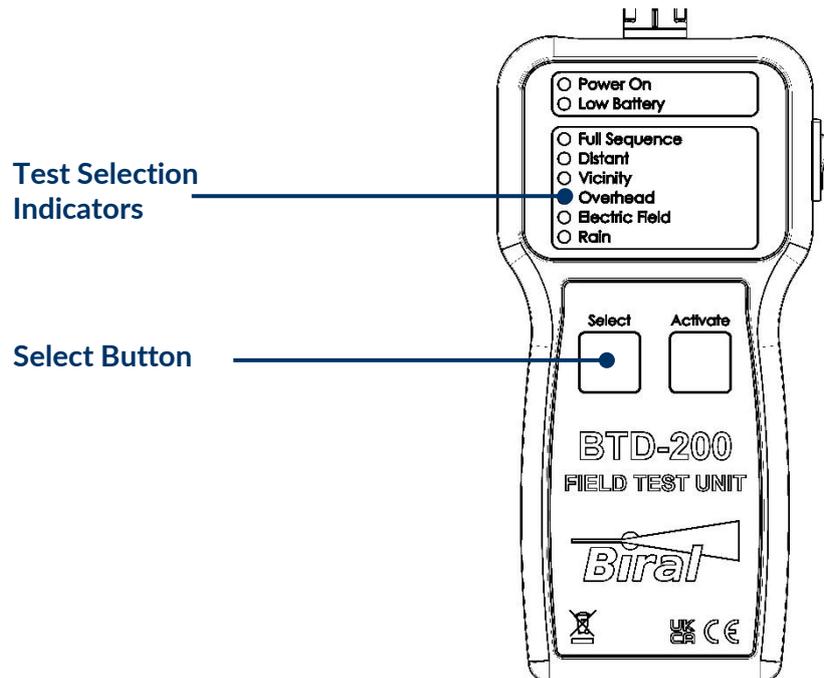
5.4 Conducting a Test

WARNING

Ensure pre-test criteria (section 4.1) conditions are met before commencing testing

5.4.1 Selecting a Test

Touch 'Select' Button to cycle through test options to desired test sequence.

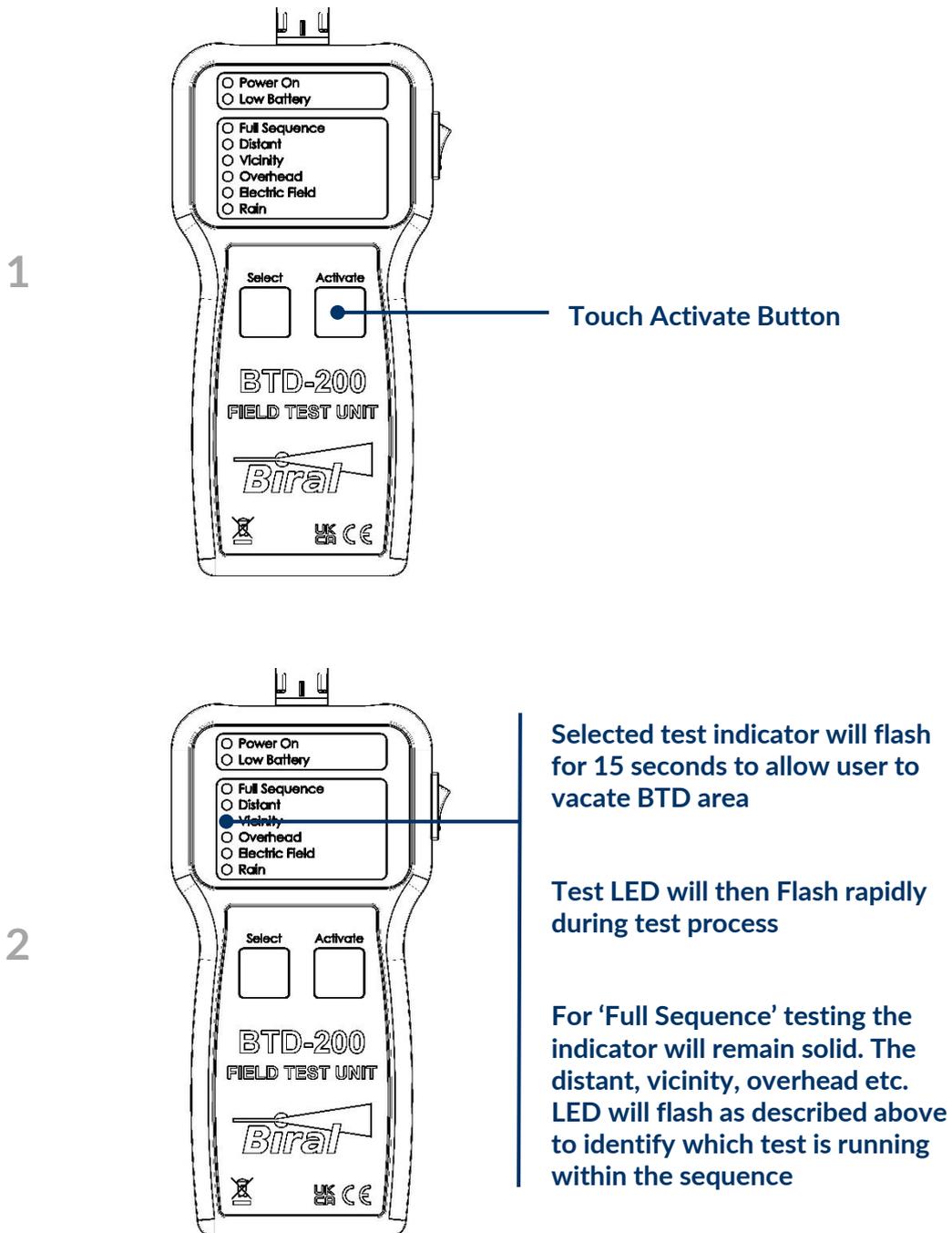


5.4.1.1 Test Options

Test Name	Description	Range and Event Time
Electric Field	Simulation of strong atmospheric electric field	5 seconds
Rain	Simulation of Charged Precipitation	5 seconds
Overhead	Simulation of lightning activity	2 flashes, 3 seconds apart, 6-8Km
Vicinity	Simulation of lightning activity	2 flashes, 3 seconds apart, 9-11Km
Distant	Simulation of lightning activity	2 flashes, 3 seconds apart, 17-21Km
Full Sequence	Sequence of simulations	Sequence order: Distant - Vicinity - Overhead - Electric Field - Rain

5.4.2 Activating a Test

Touch 'Activate' button to start selected test

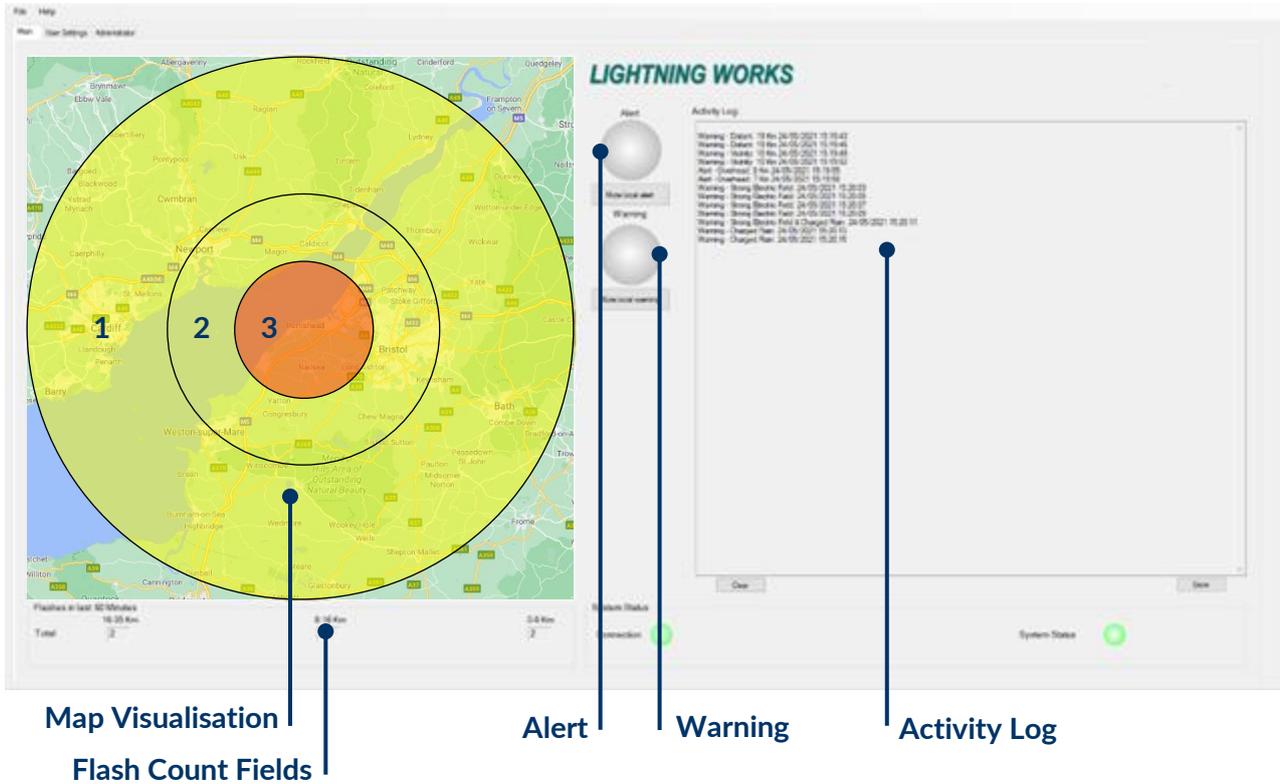


! WARNING

Field Test Unit will not execute tests if low battery is indicated. Both touch buttons will be deactivated.

5.5 Test Results/System Behaviour

5.5.1 For systems using Lightning Works.



5.5.1.1 Map Visualisation & Flash Count Fields

Zone	Map Highlight	Flash count in last 60 minutes
Zone 1	Highlights yellow during 'Distant' test	2 flashes in 16-35Km field
Zone 2	Highlights yellow during 'Vicinity' test	2 flashes in 8-16Km field
Zone 3	Highlights red during 'Overhead' test	2 flashes in 0-8Km field

5.5.1.2 Alert & Warning Lamps

Lamp Output	Activating Test(s)
Warning	Electric Field, Rain, Vicinity, Distant
Alert	Overhead
Warning & Alert	Full Sequence, either lamp will illuminate as above, dependent on current test in sequence

5.5.1.3 Activity Log entry format

[Alarm type][Thunderstorm activity type : Distance][Event Date][Event Time]

5.5.1.4 'Full Sequence' Activity Log example

Warning – Distant: 19 Km 24/05/2021 15:19:43
Warning – Distant: 19 Km 24/05/2021 15:19:46
Warning – Vicinity: 10 Km 24/05/2021 15:19:49
Warning – Vicinity: 10 Km 24/05/2021 15:19:52
Alert – Overhead: 8 Km 24/05/2021 15:19:55
Alert – Overhead: 8 Km 24/05/2021 15:19:58
Warning – Strong Electric Field: 24/05/2021 15:20:03
Warning – Strong Electric Field: 24/05/2021 15:20:05
Warning – Strong Electric Field: 24/05/2021 15:20:07
Warning – Strong Electric Field: 24/05/2021 15:20:09
Warning – Strong Electric Field & Charged Rain: 24/05/2021 15:20:11
Warning – Charged Rain: 24/05/2021 15:20:13
Warning – Charged Rain: 24/05/2021 15:20:15

Expect 2-4 entries here

Expect 2-4 entries here

5.5.2 For systems utilising alarms or relay actuated accessories, the alarms and relay(s) will activate as they would with lightning flashes, rain or strong electric fields, see 4.4.1.1 for output definitions.



NOTE:

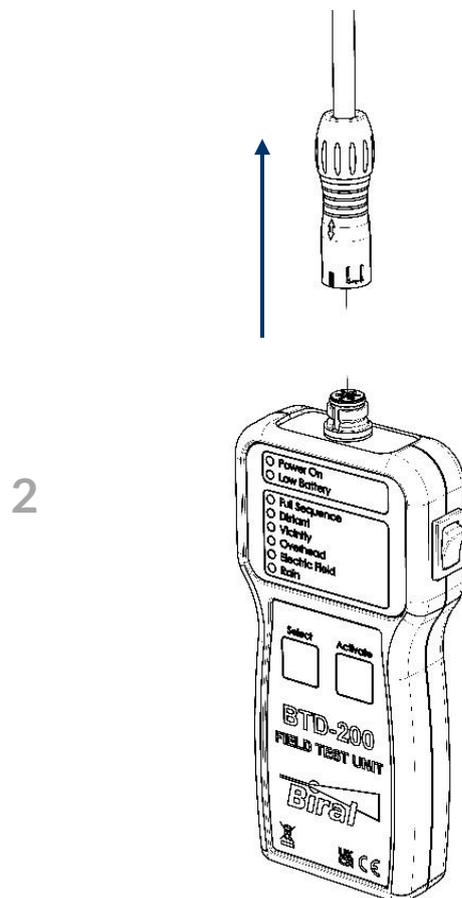
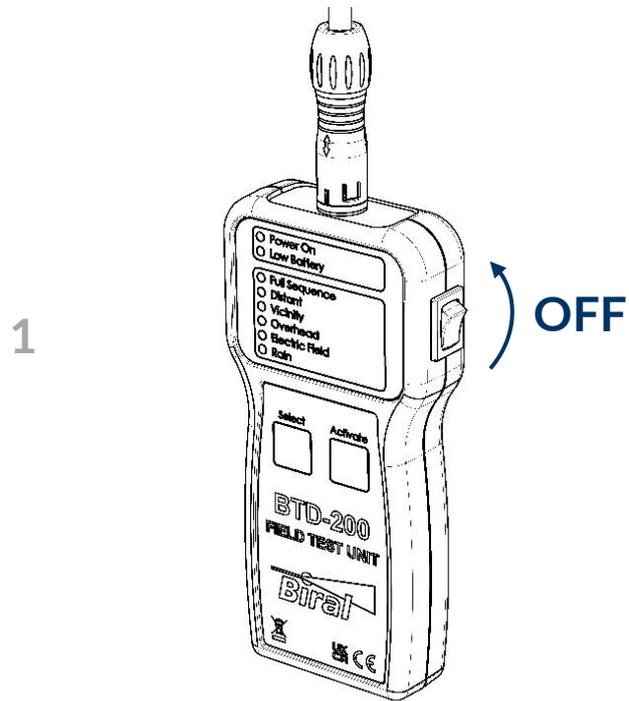
Relays will reset after 15 minutes, wait until relay reset before running additional tests.



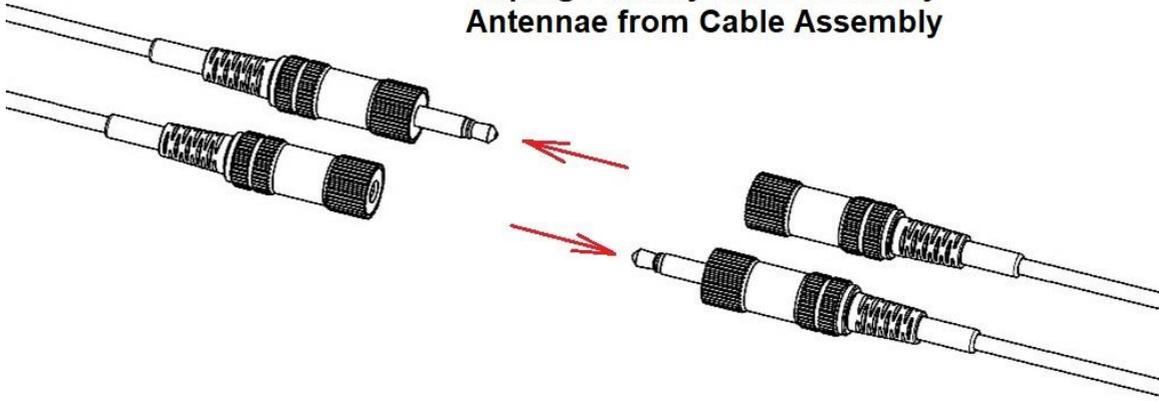
NOTE:

Full sequence test not recommended for systems without Lightning Works software.

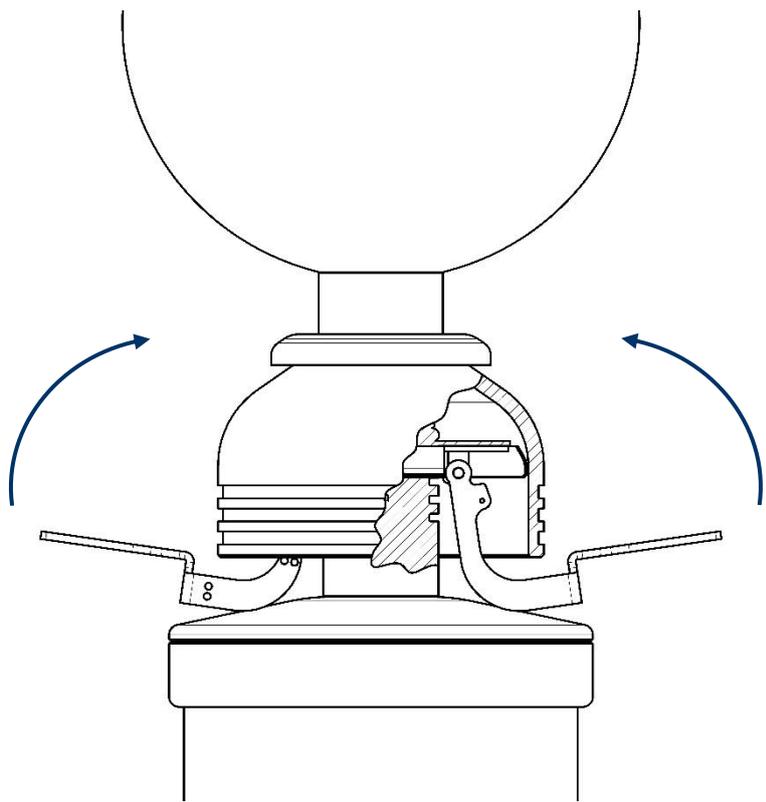
5.6 Ending BTU-200 Test Procedure



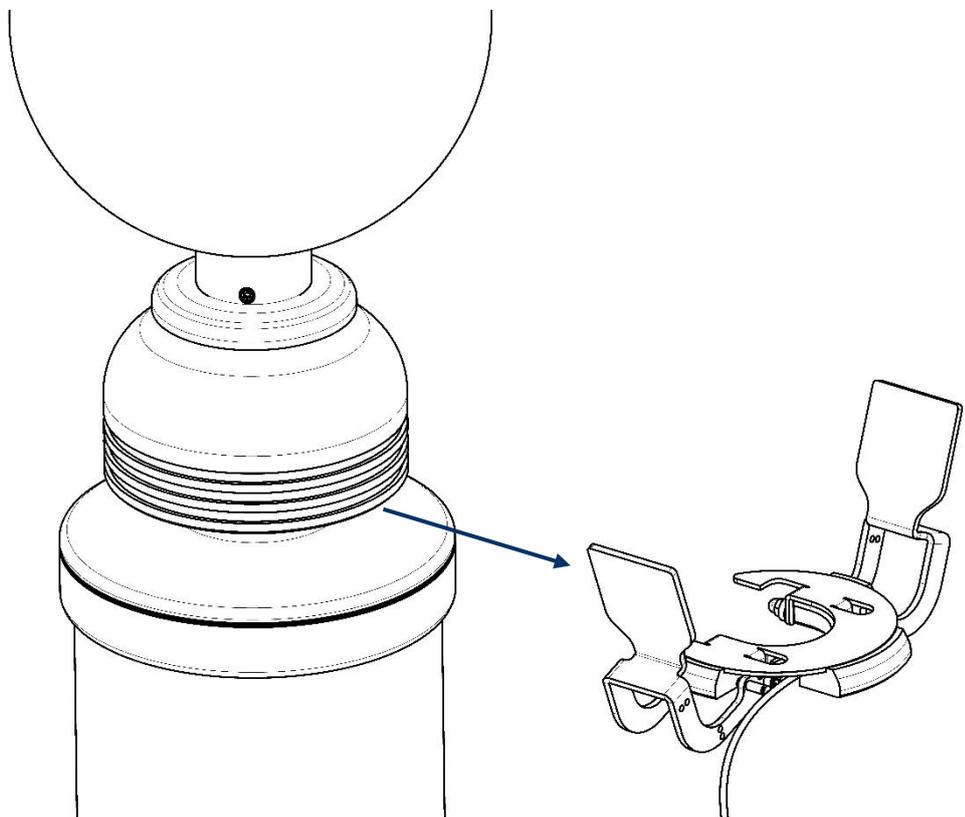
**Unplug Primary and Secondary
Antennae from Cable Assembly**

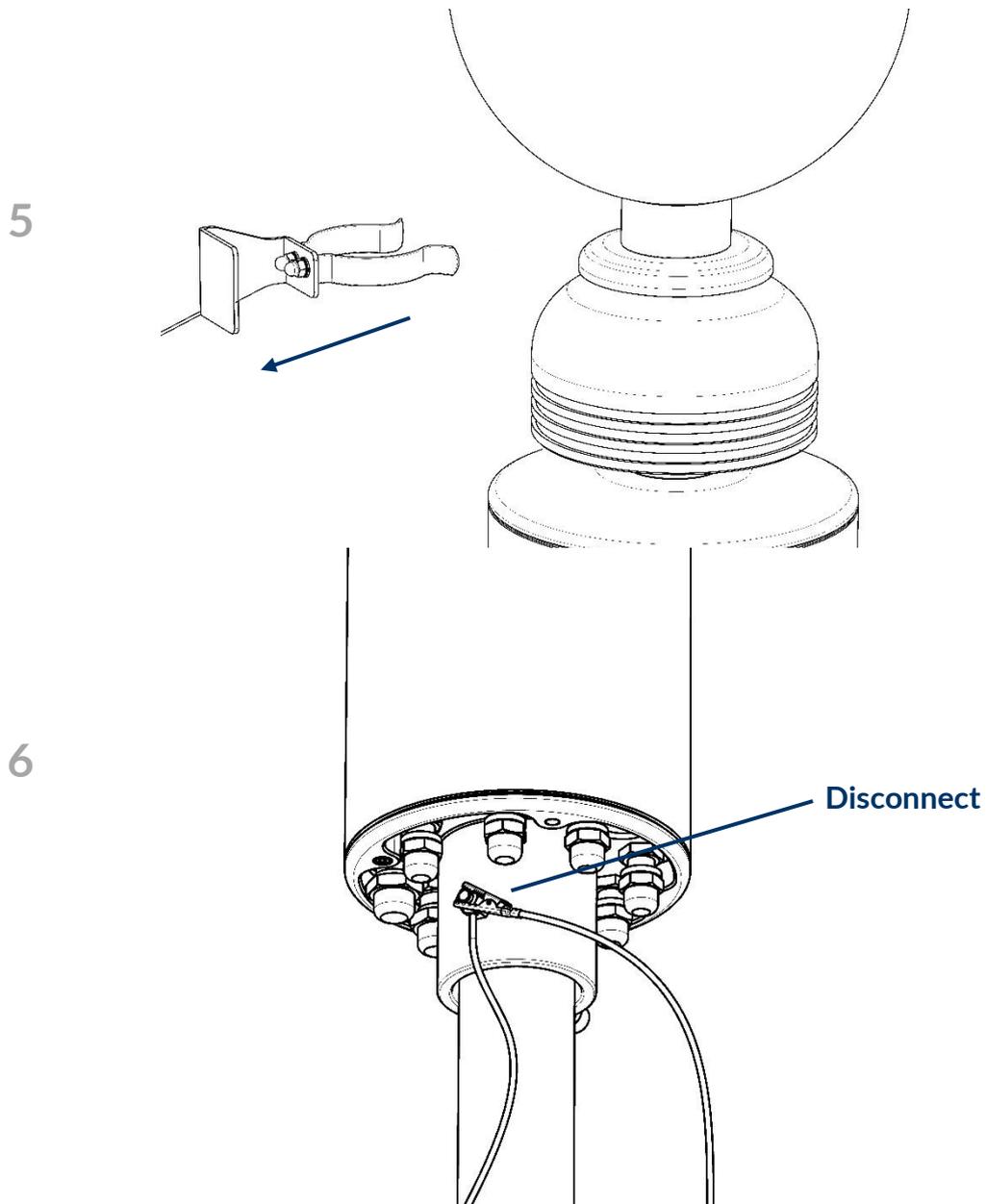


3



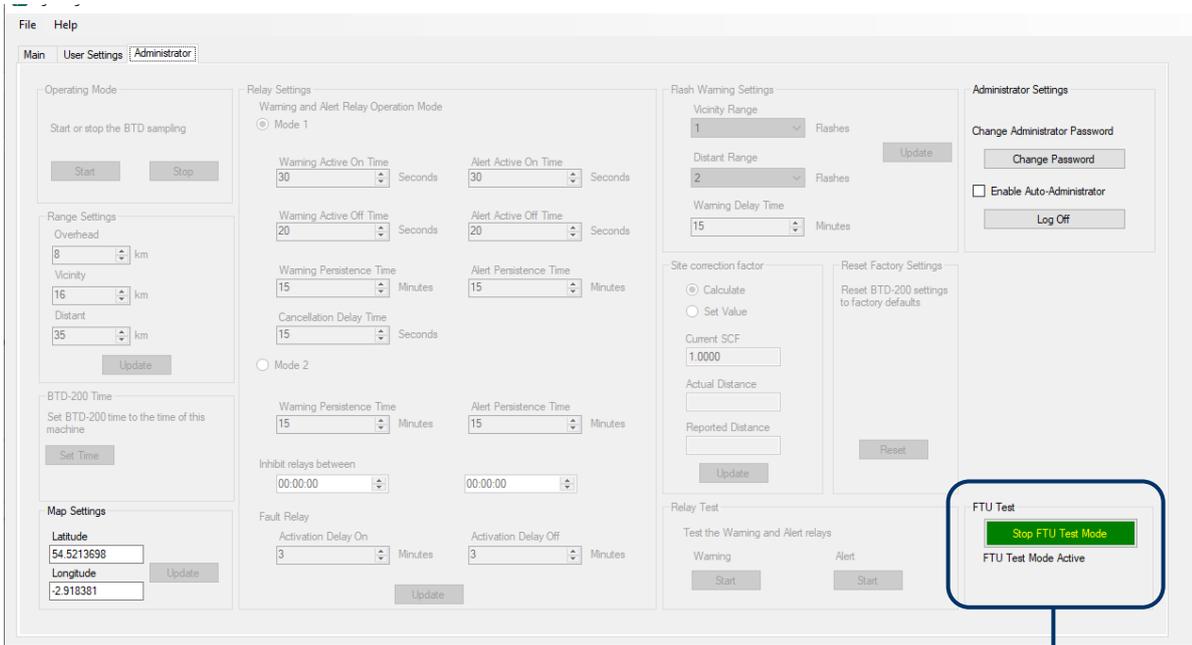
4





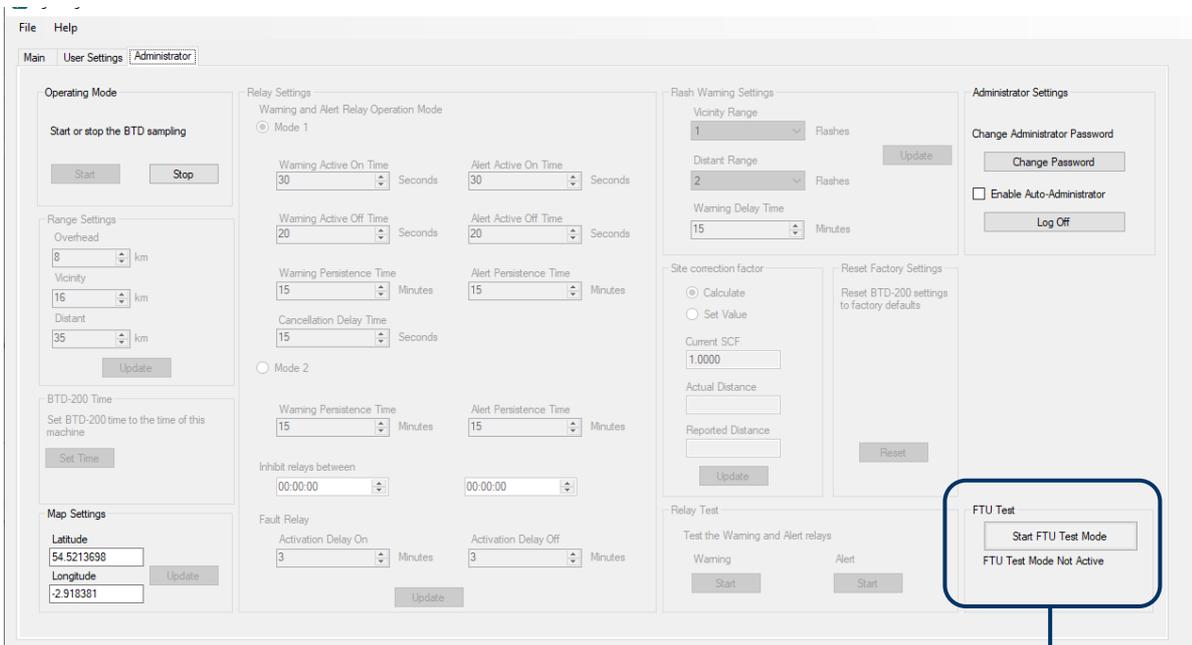
5.6.1 Resetting Lightning Works

5.6.1.1 Press Stop FTU Test Mode button



Stop FTU Test Mode

5.6.1.2 Wait for the FTU Test Mode to stop and the button background to clear



FTU Test Mode Finished

5.7 Storage

Disconnect and remove FTU Battery if not being used for a period of 3 weeks or more

6 CERTIFICATION AND COMPLIANCE

CE and UKCA marked
EMC: EN61326-1:2013 Industrial immunity, industrial emissions
RoHS and WEEE compliant

Senseca's BTM sensors and equipment comply with the requirements for CE and UKCA marking. Once installed, it is the user's responsibility to ensure that all connections made to the equipment comply with all Local and National safety requirements.

7 MAINTENANCE AND CALIBRATION

The BTM-200 FTU is used to check the operation of the BTM-200 sensor, it is not a calibration device. The BTM-200 FTU does not require any periodic maintenance or calibration.

8 CONTACTING SENSECA

If you would like technical assistance, advice or you have any queries regarding the operation of the FTU please do not hesitate to contact us.

Contact us by telephone on:

+ 44 (0)1275 847787

Contact us by email at:

info.bristol@senseca.com

NOTES

NOTES

WARRANTY

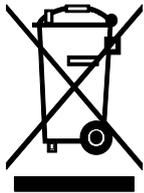
The manufacturer is required to respond to the "factory warranty" only in those cases provided by the Consumer Rights Act 2015. Each instrument is sold after rigorous inspections; if any manufacturing defect is found, it is necessary to contact the distributor where the instrument was purchased from. During the warranty period (12 months from the date of invoice) any manufacturing defects found will be repaired free of charge. Misuse, wear, neglect, lack or inefficient maintenance as well as theft and damage during transport are excluded. Warranty does not apply if changes, tampering or unauthorized repairs are made on the product.

The manufacturer repairs the products that show defects of construction in accordance with the terms and conditions of warranty included in the manual of the product.

TECHNICAL INFORMATION

The quality level of our instruments is the result of the continuous product development. This may lead to differences between the information reported in the manual and the instrument you have purchased. We reserve the right to change technical specifications and dimensions to fit the product requirements without prior notice.

DISPOSAL INFORMATION



Electrical and electronic equipment marked with specific symbol in compliance with 2012/19/EU Directive must be disposed of separately from household waste. European users can hand them over to the dealer or to the manufacturer when purchasing a new electrical and electronic equipment, or to a WEEE collection point designated by local authorities. Illegal disposal is punished by law.

Disposing of electrical and electronic equipment separately from normal waste helps to preserve natural resources and allows materials to be recycled in an environmentally friendly way without risks to human health.



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