

Apollo Test Set



Apollo Test Set

SA7800-870APO

Features and Benefits

What is it?

The Apollo Test Set is a portable test unit featuring a touch screen display capable of providing several functions in interrogating and controlling all devices connected to the unit, either individual devices or complete circuits of analogue addressable devices in the Apollo ranges (CoreProtocol, Discovery and XP95).

How does the product work?

The standard view allows devices to be scanned and controlled through the manipulation of the devices output bits. Devices can also be self-tested using the test set and the different functionality modes can also be controlled.

The unit may be powered from an AC mains charger unit or from its own internal batteries.

The loop or individual address can be connected to the unit using loop connection ports which are located on the top of the device.

The device also has the functionality to test the diagnostics and integrity of the loop to find earth faults etc.

What problem does this help solve?

The device offers fault finding capabilities which allows for time spent on site to be cut down during the commissioning stage of the system installation. The result of this is time reduced on site for the end user which reduces the overall costs of installing Apollo systems.



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What's in the box?

The Apollo Test Set contains:

- The Apollo Test Set Unit
- A universal charger
- Two red connector cables
- Two black connector cables
- Two yellow connector cables
- Green connector cable
- XPERT 8 Intelligent Mounting Base
- Carry strap
- Quick Start Guide

All of the above is fitted into a custom built carry case.

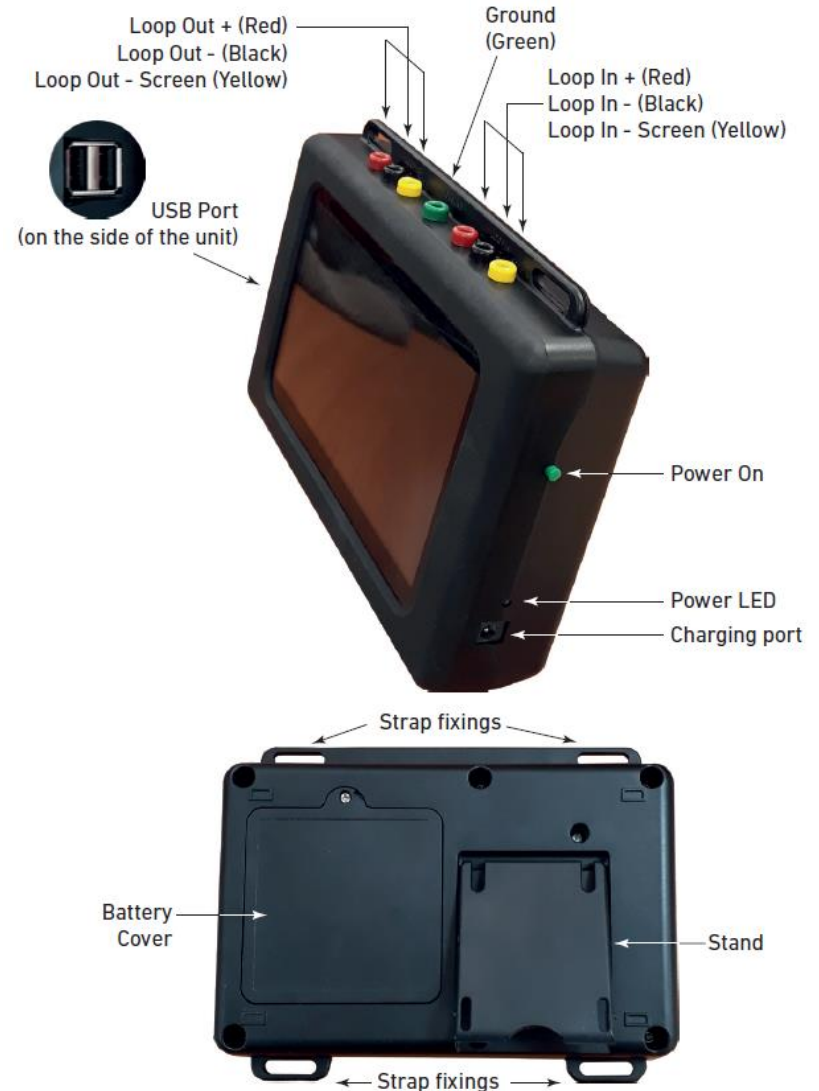


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Technical Information

- Protocols CoreProtocol, Discovery, XP95
- Power source Lithium-ion battery pack or 12 V dc Power Supply Unit
- Battery charging time Approx. 3 hours
- Operating temperature 0°C to 40°C
- Humidity 10% to 95% RH
- Dimensions 215 mm x 165 mm x 50 mm
- Weight 935 g



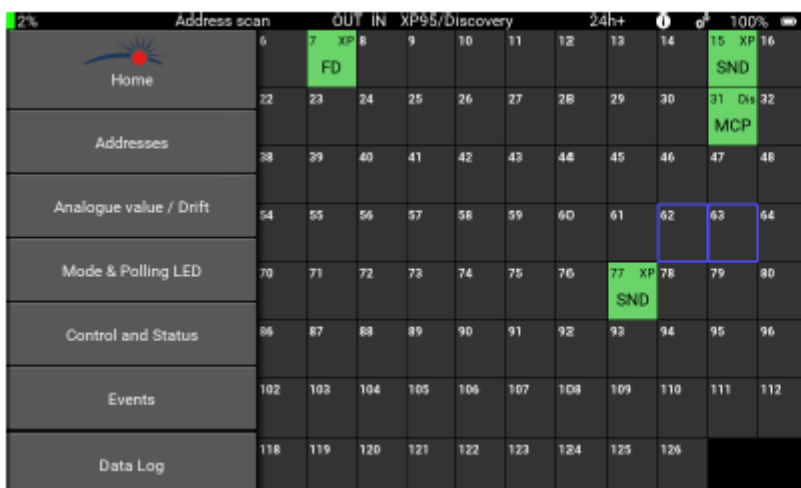
Basic Controls

How do I switch the Test Set on and off?

- To turn the unit on, hold the green power button down for roughly three seconds till a solid LED light appears.
- To turn the unit off, press the power button seen on the home page.
- The unit can be hard reset by holding down the green button in the event of the unit malfunctioning.

How do I navigate through the various menus?

- From the home screen there are various main menus and further sub menus.
- From the home screen each of these main menus is accessed by pressing these buttons.
- From the loop view menu there are further sub menus which are accessed by swiping from the edge of the screen on the left:



By swiping right on the left of the screen the menu selection bar appears.



Tap the menu you want to move to and the main screen changes. Tap Home to return to the Home Screen. The menu selection bar moves out of view after you have made your selection.

Basic Controls

How do I get back to the home screen?

- There are two methods depending on the screen you are in.
 - From the loop view menu, swipe the menu selection bar across from the left and select “Home”
 - From all other menus, click the arrow in the top left hand corner

Help Screens

- Help screens can be accessed from the following:
 - From the Home Screen
 - From the Loop View Screen
- Help screens can be accessed from these screens by clicking the “ i ” information button in the top bar.
- The information on these help screens is basic hints and tips on how to use the device and what each of the icons they are seeing represents.

Home Screen



From the home screen the following sub menus are accessed:

- **Settings**
Change basic information; screen size, cable types, date and time etc.
- **Loop View**
View the connected loop with various sub menus to assist with fault finding
- **Programmer Mode**
Change modes, control polling LED, view device information
- **Loop Diagnostics**
Assists with fault finding on loop
- **Location**
Stores data from a particular recorded location
- **Stored Events, Data logs**
Records all events that occur once selected i.e. faults, alarms, tamper etc

To access the settings menu, tap the cog icon in the top bar on the home screen.

Screen Settings

- To adjust screen brightness, press and hold the slider to desired level.
- The time delay to dim the screen and also turn off the screen can also be selected from here.
- The test can also be changed to large view to assist the user.

Locations

- The Locations section of the Settings screen enables you to:
 - Add a new location – By tapping “Add new location”
 - Remove a location from the list – By tapping the dustbin icon.
 - Clear all data at the selected location – By tapping the brush icon

Cable Types

- The Cable types section of the Settings screen enables you to:
 - Add a new cable type to the list
 - Add new dimensions to a cable type
 - Remove a cable type from the list
 - Remove a dimension from the list

Date and Time

- The date and time settings allows the user to set the date and time to their local requirements via the drop down boxes.

Language

- The language of test set can be selected using the drop down box.
- Currently supporting English and Slovenia. German, Dutch and Spanish currently being implemented. Others possible via a simple software update.

Loop View







To access the loop view menu, tap the loop view button on the home screen.

Basic Controls in Loop View

- When the loop view button is selected the loop powers up and is opened on to the “Address Scan” sub menu. To access further sub menus the menu selection bar can be accessed by sliding from the left as previous stated.
- The top bar can be seen at the top of the screen showing a selection of icons, this can be opened further by sliding down the open.



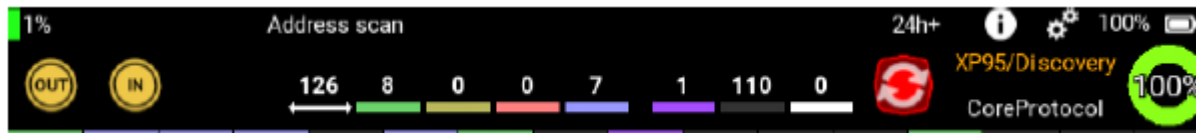
- The icons represent as follows:

	Direction enabled (yellow)/disabled (grey) - tap to change the current status
	Voltage 28 V/35V - tap the icon to switch voltages (CoreProtocol only)
	Sounder synchronisation - tap to synchronise sounders
	Tap to save Loop Report/Loop configuration (only available in Control and Status - Mode and Polling LED)
	Loop health - calculation based on received data (address confirmation, a parity bit and checksum)
	Loop noise - this is a calculation based on current pulse amplitude

Loop View

Basic Controls in Loop View Continued

- From the top bar you are also able to turn the protocol from XP95/Discovery to CoreProtocol.
- It will always be set at XP95/Discovery by default



- The following bar shows the absolute polling range, showing the total number of devices with the same colour status:



- The colours represent the following:

Corrupt data	Empty address	Dual address	Analogue value ≥ 8	$8 < \text{analogue value} \leq 44$	$45 \leq \text{analogue value} \leq 54$	Analogue value ≥ 55	Drift Value $> 30^\circ$

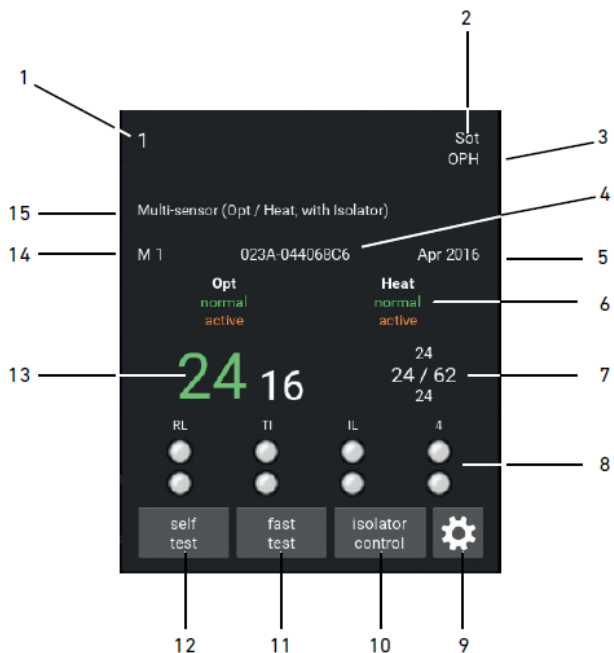
Selecting a Polling Range

- As default the test set will scan the full loop of 126 addresses or 254 addresses in CoreProtocol
- To select a smaller range of address:
 - Press and hold the address you want to start at
 - Drag your finger to the address you want to finish at
- To go back to the full loop scan, tap anywhere outside of the polling selection.

Loop View

Single Address View

- To access the single address you want to view, tap it from the loop view sub menus



- Key
- 1 Device address
 - 2 Range ID - see page
 - 3 Device type test set ID - see page
 - 4* Serial Number in HEX XXXX-XXXXXXXX (MSB to LSB)
 - 5 Manufacture date - first three letters of month, year
 - 6* Sensor status - first row, sensor type, second row live sensor status, third row last sensor status. Blue - fault, Green - normal, Orange - active, Red alarm
 - 7 Analogue value - max/min/average
 - 8 Input/Output status. Top row - bit name - see page 10, Middle row - output bit status, Bottom row - input bits status. Red - On, Grey - Off
 - 9** Configuration status
 - 10** Isolator control
 - 11 Fast Test - tab only enabled for devices that allow fast test
 - 12 Self Test - tab only enable for devices that allow self test
 - 13 Drift Value
 - 14*** Detection Mode
 - 15 Description of device type

Abbreviation	Output bit name
BO	Beacon On
CO	Continuous Output
DL	Detector LED
EV	Evacuate
FS	Fault Simulation
GA	Group Addressing
IL	Internal LED
NU	Not Used
OR	Output Relay
PO	Pulsed Output
RL	Remote LED
RO	Remote ON
RS	Reset
SO	Sounder ON
TI	Test Initiated

* Soteria devices only ** Soteria devices that allow this option only *** Discovery and Soteria devices only

- To change the output bit status of a particular device, tap on the required address and tap the output bit icon that you would like to change the status of.

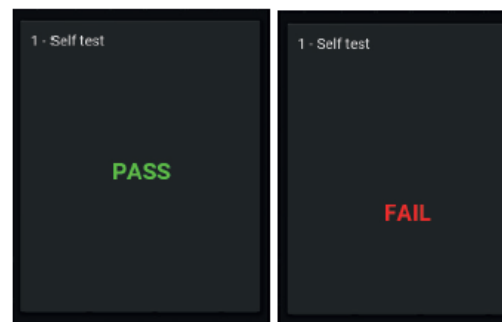
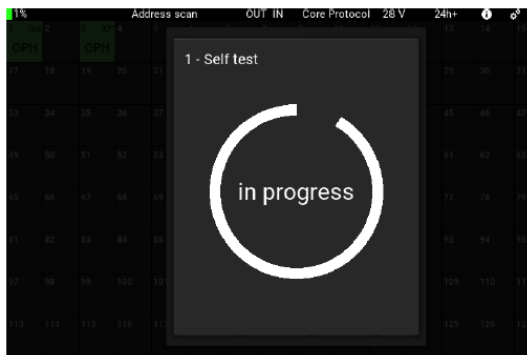


Loop View

Self Test and Fast Test

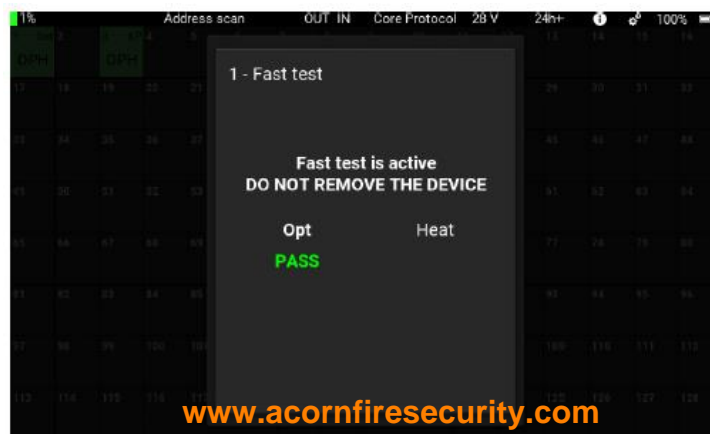
Self Test

- When the Self Test menu is selected a 20 second timer is activated and the unit attached will do a self test. If the AV reaches 55 before the timer ends the “Pass” screen will appear.



Fast Test

- When the Fast Test menu is selected, the unit attached will enter Fast Test if it is capable of it.
- When smoke or heat is then applied and each sensor enters alarm, the sensor will state pass.



Loop View

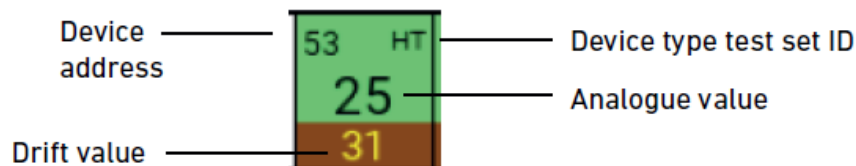
Loop View Sub Menus

Address Scan

- This menu shows all of the allocated addresses on the loop and their status.

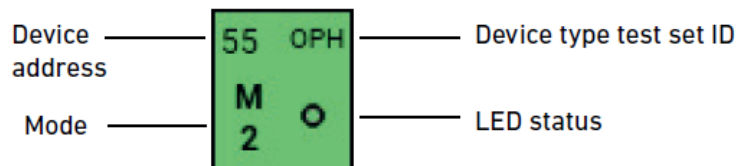
Analogue Value/Drift

- This menu enables you to view the analogue and drift values of the devices on the loop.



Mode and Polling LED

- This menu enables you to see the mode and LED status of the devices on the loop.



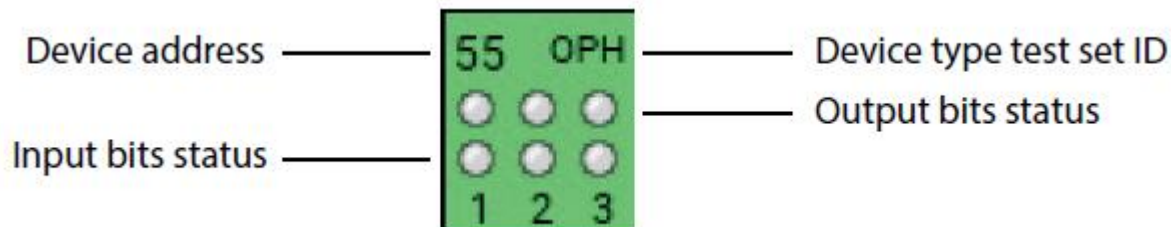
- M 2 Device mode (in this instance Mode 2)
- LED status (if this section is empty the status is not available)
 - LED off
 - ☀ LED on

Loop View

Loop View Sub Menus

Control and Status

- This menu enables you to view the current status of input and output bits.



Abbreviation	Output bit name
BO	Beacon On
CO	Continuous Output
DL	Detector LED
EV	Evacuate
FS	Fault Simulation
GA	Group Addressing
IL	Internal LED
NU	Not Used
OR	Output Relay
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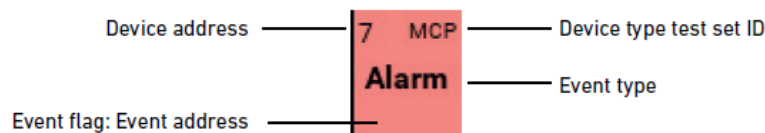
Loop View

Loop View Sub Menus

Events

- The Events menu shows event flags, event types and event addresses. When the Events menu is selected the unit starts recording all events that occur.

Occupied address	Empty address	Dual address	Tamper*	Alarm*	Fault*



Examples of the event types, event flag: event address are:

	Description	Text on screen
Event	Alarm, MCP alarm	Alarm
	Fault	Fault
	Tamper	Tamper
Event flag: event address	The device at the address 10 placed an alarm bit	A:10
	The device at the address 1 placed an interrupt bit	I:1

- The event log of each individual address can be accessed by tapping the individual address.
- When you go to select a new sub menu, a splash screen will appear asking if you would like to save your event log.
- The saved event log can then be accessed via the Stored Data button on the home screen.

Loop View

Loop View Sub Menus

Data Log

- This menu gives a list of all events on the loop. This can range from mismatched data through to the current device status. When the sub menu is selected, the recording starts. Changes are then shown in different colours:

Occupied address	Empty address	Dual address	Mismatched data

- Tap on the address you want to see on the data log, this will then show you a full log of that individual device.



1% Data Log: address 7 OUT IN XP95/Discovery 24h+ 100%

Received Data Errors: Address 0, I/P bits 14, Device type 0, MCP 0, Alarm 0, Other 0

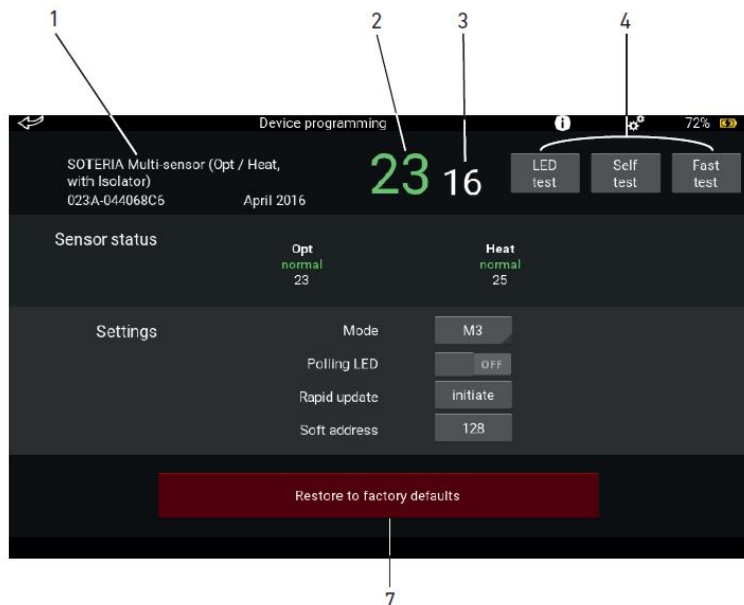
Time	Address	Device type	Address confirmation	O/P bits	I/P bits	Analogue value	Drift flag	Events	Parity	Power Up flag	Checksum
14:46:48	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:46:39	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:46:31	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:46:22	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:46:13	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:46:04	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:55	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:46	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:37	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:28	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:19	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:10	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:45:01	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:44:52	7	MCP	✓	✓	✗	16 / 64 / 64	✓		✓		
14:44:43	7	MCP	✓	✓	✓	16 / 16 / 16	✓		✓		
14:44:35	7	MCP	✓	✓	✓	16 / 16 / 16	✓		✓		
14:44:26	7	MCP	✓	✓	✓	16 / 16 / 16	✓		✓		

97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112

113 114 115 116 117 118 119 120 121 122 123 124 125 126

Programmer Mode

- To access the programmer mode, tap the programmer mode button on the home screen.



- Currently fitted device information
 - Device type description
 - Serial number in hex XXXX-XXXXXXXX (MSB to LSB)*
 - Date of manufacture - month name, year**
- Live analogue value
- Drift value - if device is enabled for this
- Test buttons - only enabled if device will allow these tests.
 - Grey button - deactivated
 - Blue button - activated
- Sensor status*
- Settings ** - available options depend on device type code
- Restore to factory defaults button**

*Note: * Soteria devices only, ** Soteria and Discovery devices only*

The Sensor status section of the programmer mode splash screen is divided into three rows:

- The top row shows the sensor type
- The middle row shows the last sensor status - the colour of the text indicates its current state:
 - Blue - Fault
 - Green - normal
 - Orange - active
 - Red - alarm
- The bottom row shows the raw sensor value - live temperature for a heat sensor, live optical sensor value or live CO sensor value.

Loop Diagnostics

- To access the loop diagnostics, tap the loop diagnostics button on the home screen.
- Loop diagnostics allows the user to do the following tests:
 1. Wire connection test
 2. Short circuit fault test
 3. Earth fault test
 4. Loop voltage and current measurement
 5. Loop cable impedance measurement
 6. Automatic detection of earth fault location
- These tests and measurements are divided into four groups
 1. Short circuit fault / earth fault detection
 2. Loop supply – from OUT – voltage and current measurement
 3. Loop supply – from IN – voltage and current measurement
 4. Earth fault location search
- The User Manual provides full diagnostic procedures in order to assist the user fault find step by step

Loop Diagnostics

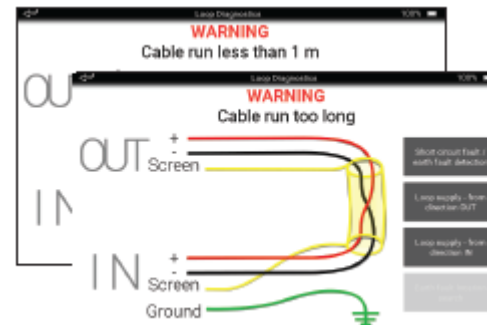
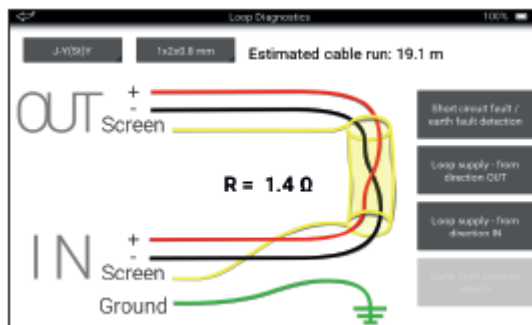
Short circuit fault / earth fault detection

This is the core test for loop diagnostics. It shows the rest of the wire connection test, short circuit test, earth fault test and loop cable impedance measurement.

The steps the unit tests for are as follows:

1. Broken wire or if a wire is not plugged into a socket, the message will state which wire carries the fault (screen, positive or negative)
2. Short circuit fault detected, the message will state between which wires (+ and -, + and screen, - and screen)
3. Earth fault detected, the message will state where it has been identified (+ and GND, - and GND, Screen and GND)

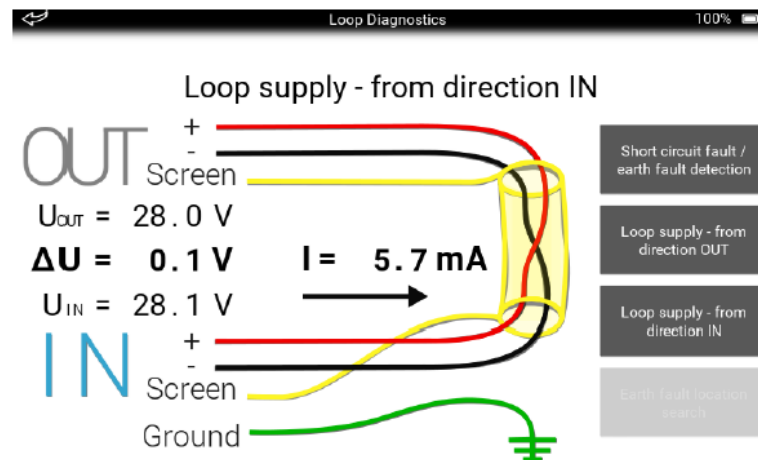
When cable is run between 1 and 4178 metres, cable impedance and cable run values are shown. If the cable is below 1 metre or more than 4178 then a warning message appears.



Loop Diagnostics

Loop supply – from OUT & IN – voltage and current measurement

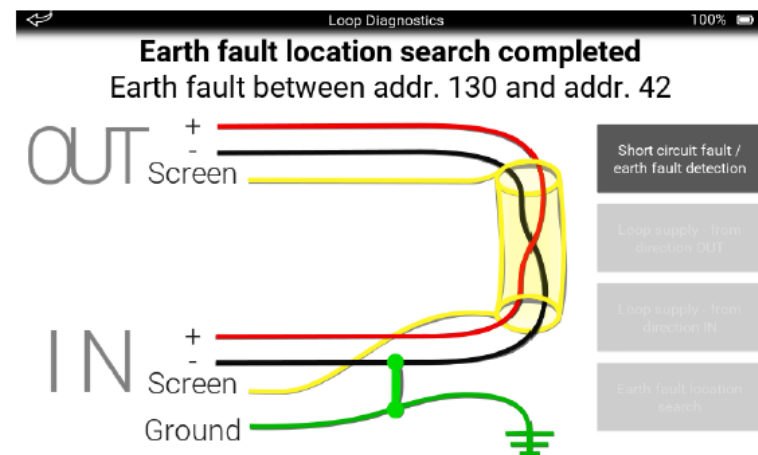
If no faults are seen on the loop then the screen will show the voltage in and out and the difference between the two.



Earth fault location search

This function can only be used on Soteria systems, the steps are as follows:

1. The occupied addresses are searched to ensure there are no legacy devices, non isolated devices or dual addresses.
2. The test set then builds a map of the “as fitted” order.
3. If an earth fault is then detected, the results show between which two addresses the fault is located

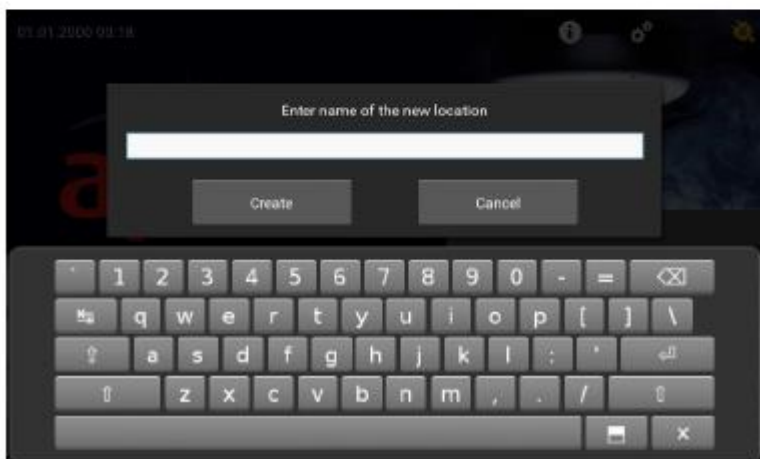


Location

- The Location function enables you to enter a location where a test has been done.



To enter a location, on the home screen tap the 'Location' tab. This is the tab immediately below 'Location' on the home screen. A drop-down appears listing all the locations.



Either tap an existing location, or 'new location', an on-screen keyboard appears.

Type in the name of the new location and tap 'Create'. The on-screen keyboard closes and a tab with the new location appears in the drop-down.

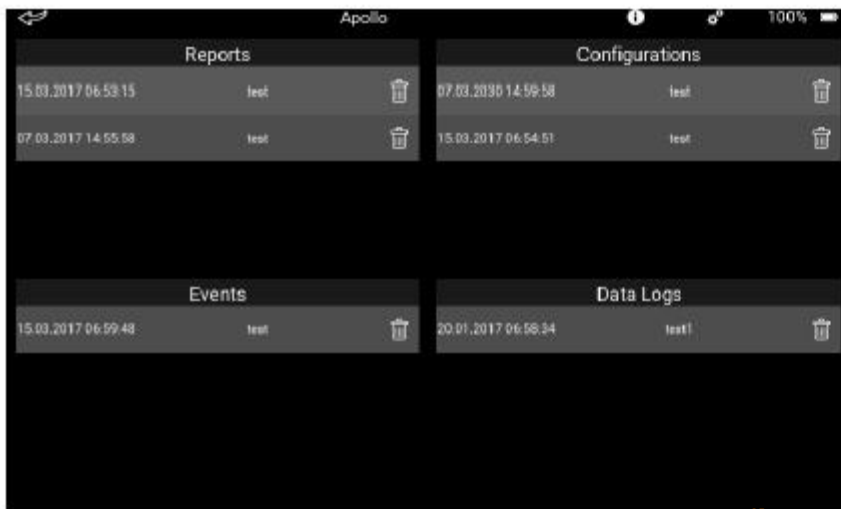
When a location is added, the Stored Events, Data logs tab becomes available for that location.

Stored Events, Data Logs

- If a location is entered on the Test Set, the stored events and data logs tab becomes available for that location



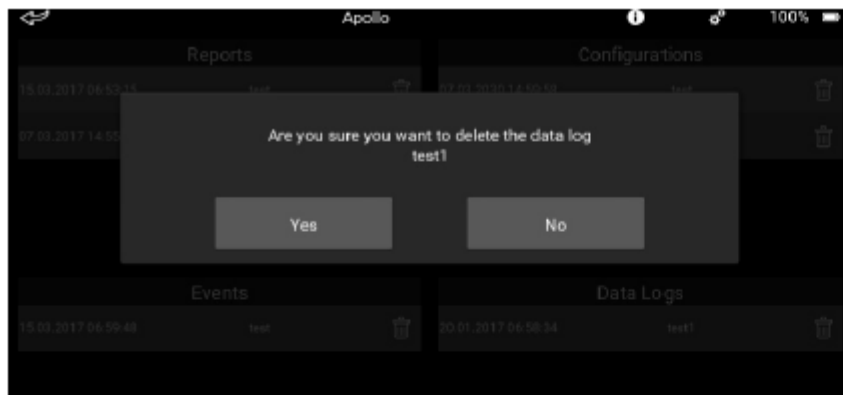
Tap the 'Stored Events, Data Logs' tab. The stored data and events screen appears.



Tap the report that you want to see in detail. The message 'Loading in progress' appears, followed by the report screen.

Stored Events, Data Logs

- From the report screen you can, go back to the main stored events screen, delete the report or export the report.



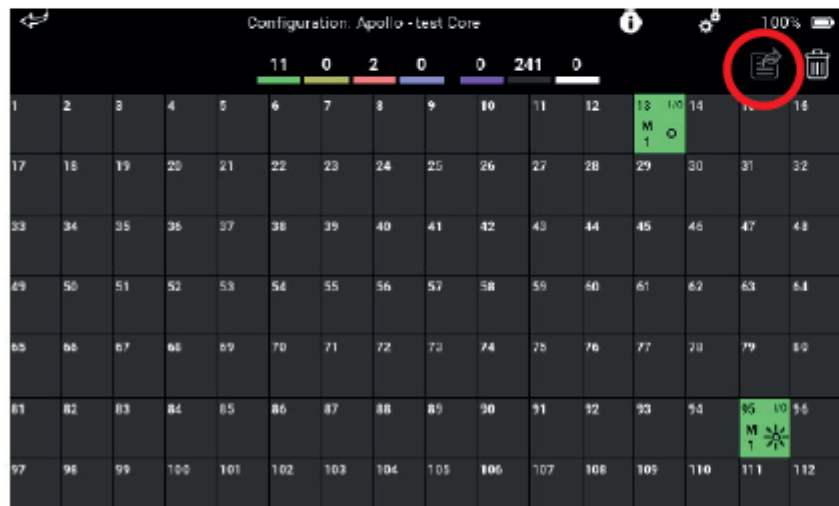
To delete the report:



Tap the dustbin icon. A splash screen appears asking you to confirm the deletion.



Tap 'Yes' to delete the report, tap 'No' to return to the report screen.



To export the report onto a USB device as a .csv file:



1. Insert a USB flash stick into the USB slot on the side of the Loop Test set. The export icon is highlighted.

2. Tap the highlighted icon. The on-screen keyboard appears.

3. Enter the file title and tap 'Export'

Firmware Updates

How do I update firmware?

- Firmware updates ensure the test set operates efficiently. From time to time, updates will be released to fix bugs, add new products, add new languages or other additional features.
- To install firmware:
 1. Connect the power supply cable to the Loop Test Set and a suitable power supply.
 2. Plug the USB flash drive containing the firmware update into the USB socket of the Loop Test Set.
 3. Make a note of the firmware update version number.
 4. A splash screen appears on the test set, click the update to be installed
 5. A warning screen appears to make sure the user has connected the power cable, tap continue
 6. An “Installing firmware” screen appears.
 7. Once complete the unit will state the installation was successful and touch to shut down