



## Conventional Test Set Instructions for Use

### General

The Conventional Test Set is supplied with a link head to replace the detector under test. When the link head is not in use, keep it in the pocket of the carrying case, i.e. not plugged into the test set, otherwise the batteries may discharge rapidly.

The Conventional Test Set is switched on either automatically by plugging in a detector or by pressing and holding down the right button and then pressing the left button and simultaneously letting them go. The Test Set is switched off either automatically after 30 seconds of inactivity or by removing the detector during a test.

After a detector has been plugged in, the Test Set LCD will display the following messages:

Conv. Range Test Set  
Version 3.0\*

*and*

Powering Up Detector  
Please Wait

The Test Set guides the user through the test programme by means of menus. Two buttons are used to select or accept an option. The Test Set will beep to prompt the user to carry out an action. A red LED illuminates to indicate that the detector under the test has changed to the alarm state.

The ionisation and integrating ionisation smoke detectors are both tested without the use of any external stimulus. Optical smoke detectors are tested using an aerosol test gas and heat detectors are tested by applying hot air.

\* Test Set will display actual software version installed.

### Selecting the detector type

Before testing a detector it is necessary to select the type of detector to be tested. To select the detector type press and hold the right button and then press the left button. Release both buttons simultaneously and the configuration menu will appear with the following message:

Select either: 1. Choose New Type 2. Display Last Results
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Press **button 1** shown on the LCD and the following screen will appear:

Detector Range:
S60 < S60LV
S60IS More
Accept Select

To see more ranges available, press '**Select**' until the arrow is pointing to '**More**' and then press '**Accept**'. The following screen will be displayed:

Detector Range:
AlarmSns< S50
S65 More
Accept Select

To get back to the first screen press '**Select**' until the arrow is on the '**More**' option and press '**Accept**'. To choose any of the detector ranges available, press '**Select**' until the range desired has an arrow next to it and then press '**Accept**' and the following screen and choices will appear:

(Selected Range) Type:
Ion Opt
Heat Int Ion
Accept Select

*Note: 'Selected Range' above is dependent on the range the user has chosen. The types of detector displayed will depend on the selected range.*

1. Verify that the power supply – Apollo part number 27248–006 (UK), 27248–012 (EUR), 27248–011 (USA) is working correctly
2. If the power supply is correct, remove the Test Set from its carrying case and place it face down on a clean smooth surface. Remove the six screws holding the two parts of the housing together
3. Carefully lift off the rear housing which contains the battery pack and place it beside the front housing, taking care not to strain the wires connecting the battery assembly to the PCB.
4. Remove the fuse from its holder on the PCB and check it. If the fuse is not blown, the fault is in some other part of the circuit and the Test Set should be returned to Apollo for service.
5. If the fuse is blown, examine the PCB for any evidence of burned or overheated components. If no damaged components are found, replace the fuse with a new one (20mm) rated at 1.25A, quick blow and re-fit the rear housing. Plug in the power supply and check that the “Fast Charge/Power” indicator lights.
6. If any burned or damaged components are found or if the indicator does not light after the fuse has been replaced, the Test Set should be returned to Apollo for service.

#### Notes

1. If the detector under test has an open-circuit fault between L1 IN and L1 OUT, the detector will not power up.
2. If the Test Set display should freeze at any point, unplug the detector under test and plug in again. This action resets the display.
3. The two buttons should only be used after instruction to do so. They have no effect otherwise.
4. Use only Apollo test gas, part no. 29600–065, with associated test pole, part no 29600–029.
5. Test heat detectors with a domestic hairdryer, choosing a heat setting and exposure time appropriate to the type of detector under test

If the range has been chosen by mistake the user should wait 30 seconds for the device to automatically power down, then reselect the correct range or detector type from the menu. Once set, the test set will retain the selected type until a different detector type is selected.

A list of fully compatible detectors for the Coventional Test Set can found below

Series60 Ion	Series60 IS Ion	Series50 Ion
Series60 Heat	Series60 IS Heat	Series50 Heat
Series60 Optical	Series60 IS Integrating Ion	Series50 Optical
Series60 Integrating Ion		
Series60 LV Ion	Series65 Ion	AlarmSense Heat *
Series60 LV Heat	Series65 Heat	AlarmSense Optical *
Series60 LV Optical	Series65 Optical	
Series60 LV Integrating Ion	Series65 Integrating Ion	

\* Requires an adaptor

#### Displaying Last Results

The other option on the first menu screen, after pressing both buttons simultaneously is Option 2 'Display Last Results'. Selecting this will display the most recent set of test results on the screen and hold them there for 30 seconds before the Test Set powers down again.

#### Testing a Selected Detector

Once a detector range and type has been selected, testing of the device is very simple. Simply plug the selected detector onto the Test Set and it will power up and display the following message

Conv. Range Test Set  
Version 3.0\*

quickly followed by the power-up screen:

Powering Up Detector  
Please Wait

If at any time the detector fails the quiescent current test, the message “**µAmp Error**” is displayed and the test set switches off after 30 seconds. If this happens please remove the detector.

The power-up phase of the testing can take up to 60 seconds and once this stage is complete a message will be displayed depending on the type of detector that was selected for test.

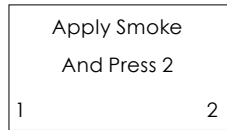
These messages are as follows:

#### For ionisation and integrating ionisation detectors:

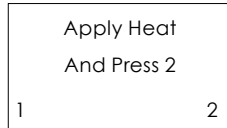
PLEASE WAIT–TESTING  
dv ramping

\* Test Set will display actual software version installed.

#### For optical detectors:



#### For heat detectors:



The ionisation and integrating ionisation detectors require no input from the user for the Test Set to begin its test but for both optical and heat detectors the user MUST press **button 2** on the Test Set for the test to begin. If this is not done within 30 seconds the test set will time out and power down. Once confirmation is given by the user, the injection test gas (optical detector, see note 4 on page 6) or the application of hot air (heat detector see note 5 on page 6) is necessary to push the detectors into alarm state. If the detector does not reach the alarm state within 30 seconds of the confirmation, the message **"Alarm Failed – Remove Detector"** is displayed and the test is ended. Otherwise the Test Set will display the results screen. See **'Displaying Results'** section on page 3

#### Testing AlarmSense Detectors

To test an AlarmSense detector on the Test Set, an adaptor is required. This is available from the Technical Sales Department at Apollo. If this adaptor is not used, the Test Set will fail every AlarmSense detector.

When the adaptor is being used, please ensure that the detector to be tested is fitted to the adaptor PRIOR to it being attached to the Test Set. After the test is complete remove both the adaptor and the detector from the Test Set before testing another AlarmSense detector

*Note:* The AlarmSense adaptor is ONLY compatible with AlarmSense detectors. DO NOT use it when testing any other range of Apollo detector on the Test Set.

#### Displaying Results

Once a device has been tested, a **"Pass"** or **"Fail"** message will be displayed on the screen along with the type of device that was tested and the following information:

- Delta voltage (ions and integrating ions devices only)
- Quiescent current ( $\mu\text{A}$ )
- Alarm current at 24V (mA)
- Alarm current at 12V (mA) (AlarmSense detectors only)
- Holding current at 5V (mA)

*Note:* The final line on the LCD screen alternates between the alarm current at 24V and holding current at 5V. Both are displayed during the 30 second period prior to the Test Set powering down.

If the detector being tested is an AlarmSense device, the last line alternates between the alarm current at 24V and the alarm current at 12V. (Alarm current at 12V is greater than the alarm current at 24V and the AlarmSense detector – see AlarmSense data sheets for more details.)

If the detector has not gone into alarm within 30 seconds of the confirmation from the start of the test, i.e. pressing button 2 or the dv ramping message being displayed, the LCD screen will display the following message:



If this happens the test has been terminated and the user should remove the detector. The results of the most recent test are held in memory until a new detector is fitted to the Test Set. To display these results after the initial end of test display see 'Displaying Last Results' section on page 3.

#### Integrating Ionisation Detectors

The Test Set cannot accurately measure the delta voltage of this type of detector but it can measure the time response of the delta voltage ramp test and ascertain whether or not the integrating ionisation detector is within specified safety parameters. If this is the case, a **"Pass"** notice will be displayed after the delta voltage section of the results, rather than a numeric value. If the detector being tested fails this test, a **"fail"** notice will be displayed after the delta voltage section of the results and the detector should be returned to Apollo for re-calibration.

#### Notes

1. The remote indicator LED on the Test Set stays on until the Test Set powers down after the test. This is normal function.

2. The environmental conditions affect ionisation response. Detectors at the extreme limits of the tolerance band may, therefore, marginally pass or fail on two consecutive tests. Detectors at such extremes should be returned to Apollo for re-calibration.

#### Battery Charging

A mains adapter is supplied. The Test Set can be charged, whether it is in use or not. At temperatures of +10°C to +40°C the Test Set can be fast charged so that a fully discharged battery will be fully charged within 90 minutes. At higher temperatures and when necessary to avoid overcharging, the Test Set will automatically revert to a trickle charge. An LED will illuminate red during fast charging and green during trickle charging. Do not allow a single charge to exceed 100 hours since overlong charging sessions may shorten the life of the battery.

A fully charged battery will allow the testing of 300 detectors. Once the "battery low" message is constantly displayed, approximately 25 further tests may be carried out before charging is essential. The life of the battery depends on usage, but it is expected to be at least four years or four hundred charging cycles. Test Sets are fitted with fully charged batteries. The batteries may, however, discharge during storage before first use of the sets.

#### Fuse Replacement

An internal fuse protects the charger input against excessive voltages which could damage the Test Set. If this fuse is blown the charger input will be isolated from the Test Set and the "Fast Charge/Power" indicator will not light.

In this case it is recommended that the Test Set be returned to Apollo for service. If, however, this is not practical the fuse may be replaced by a qualified engineer using the following procedure: