Split2 LITE

DIRECT READING DUST MONITOR

INSTRUCTION MANUAL

SKC®

World leader in sampling technologies

NO. FM 24816

CE

SKC Ltd
11 Sunrise Park, Higher Shaftesbury Road
Blandford Forum, Dorset DT118ST
f: 01258 450968 e: info@skcltd.com

CONTACT NUMBERS for SKC Ltd

Tel: 44 (0) 1258 480188
Fax: 44 (0) 1258 480968
Web: http://www.skcltd.com

Keep a record of your equipment history in the space provided

Model	
Serial number	
Date of purchase	

Recalibration record

year	05	06	07	08	09	10	11	12	13	14	15
month											
day											

This manual is for Split2 units supplied after September 2004

FM 24816

SKC Ltd
11 Sunrise Park, Higher Shaftesbury Road
Blandford Forum, Dorset DT118ST
f: 01258 450968 e: info@skcltd.com

CONTENTS

INTRODUCTION

The SPLIT2 uses the principle of near-forward light scattering of an infrared radiation to immediately and continuously measure the concentration in mg/m^3 of airborne dust particles. It can be used as a passive monitor or by connecting a sampling pump such as the SKC Sidekick, an active monitor.

- This principle utilizes an infrared light source positioned at a 90 degree angle from a photodetector.
- As the airborne particles enter the infrared beam, they scatter the light. The amount of light received by the photodetector is directly proportional to the aerosol concentration.
- A unique signal processes internally and compensates for noise and drift. This allows high resolution, low detection limits and excellent base line stability.

The SPLIT2 direct reading dust monitor is a small and compact unit, and can be used as a personal sampler that not only gives a real time profile of dust concentration, but the facility for a concurrent filter sample, all at an extremely low cost.

'Straight out of the box' SPLIT2 is used in a passive mode to monitor dust concentration, giving a displayed value on the LCD of the Respiable fraction, while simultaneously data logging this information for reviewing at a later time. Display will show actual, time weighted average, minimum and maximum concentrations

To monitor for Inhalable, or Respirable dust to ISO/CEN criteria, an I.O.M. inlet with optional foam plug is used. The I.O.M. sampler is accepted as the preferred sampling head in MDHS 14 and complies to the ISO/CEN criteria for particulate sampling. The addition of an external sampling pump, capable of drawing a flow of 2 litres per minute and maintaining this flow within +5%. turns the SPLIT2 into an active monitor capable of collecting a filter sample at the same time. The filter sample can be used for compliance to the health regulations which currently require a gravimetric sample to compare against national exposure level standards. With SPLIT2 you also have a real time profile of the dust concentration over 8 hours, and the facility to correct the real time data to the gravimetric sample. Direct reading instruments are usually calibrated against Arizona Road Dust (ARD) or dust particles with similar characteristics. SPLIT2 allows customisation of its monitoring system to the type of dust you have on your site for more accurate and viable results.

APPLICATIONS

The unit can be used for workplace or environmental monitoring such as:

- Personal monitoring for compliance to health related effects
- Walk through surveys to find 'hot spots'
- Background sampling for general levels of contamination
- Fugitive emission monitoring - find out where the dust is coming from
- General site dust levels
- Fence line monitoring to ensure dust is not being emitted to public places
- Checking that filter systems are working correctly
- Indoor air quality
- Spray booth emissions
- Exhaust fume particulate concentrations
- Roadside dust levels

DIAGRAMS AND PARTS LIST

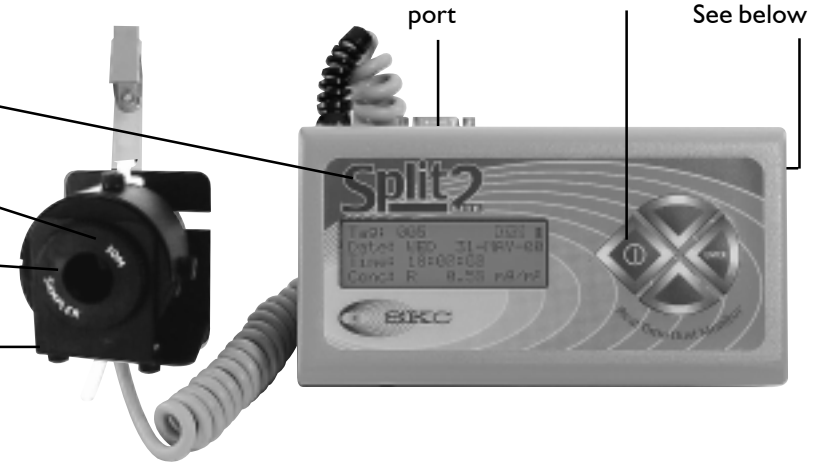
Please unpack your new SPLIT2 and ensure that your kit is complete.

1 SPLIT2 unit in carry pouch, with detachable strap
2 Detachable sensor on a 'curly' cable, with IOM body, and complete IOM cassette.
3 Sensor mounting bracket with lapel clip
4 IOM cassette front with washer, cap and clip
5 IOM front plate
6 Calibration post
7 Zeroing filter
8 Computer cable
9 Factory calibration certificate
10 CD - manual and software

} not illustrated

Data Transfer port
4 button controls
Side view of sockets See below

1 SPLIT2 unit, carry pouch not pictured
2 Detachable sensor on a 'curly' cable
5 IOM front plate
3 Sensor mounting bracket with lapel clip



2 *Detachable sensor on a 'curly' cable as above* with IOM fitted to rear. (Bracket not attached)
Diagram shows the parts of the rear to sensor head

Sensor head with IOM attached
side view
rear view

4 IOM cassette front with washer, cap and clip

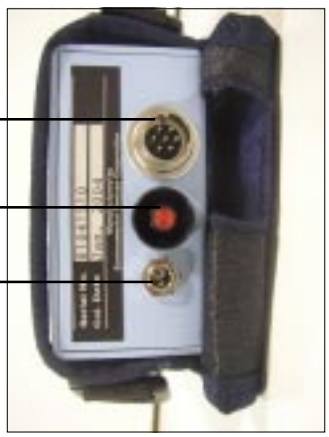
Sensor head front view
parts of the front cassette

6 Calibration post

Location Pin

7 Zeroing filter

Side View
Attaching accesories
Sensor plugs in here
On/off reset
Charging socket
(Unit pictured from side in pouch)



BATTERY AND OPTIC MAINTENANCE

Battery Relacement & charging

This instrument operates on a rechargeable NiMH battery pack. This is recharged while in the unit, using the jack socket and charger supplied.

Please note that the battery charger provided is not recommended for use as a mains adaptor.

The SPLIT2 has a Lithium battery back up for data retention even if the main batteries are exhausted or not fitted.

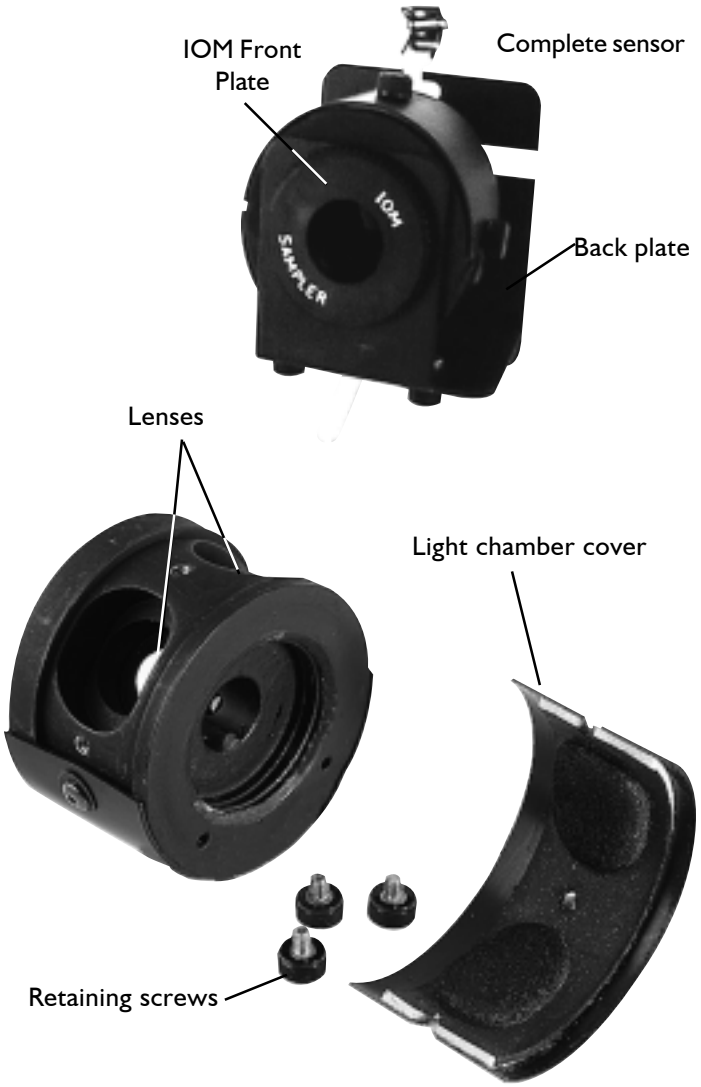
Should it be necessary to replace the battery pack, it is located in the side panel.

- Unscrew the two battery compartment retaining screws and slide out the battery holder.
- Unclip the connector and remove battery pack
- Replace with a suitable SPLIT2 battery pack.

Cleaning the Optics

Regular cleaning of the optics will maintain and optimise the accuracy of the SPLIT2.

- Switch off the unit and disconnect the sensor from the unit
- Remove the sensor from the back plate by unscrewing the two retaining screws.
- Unscrew the 3 retaining screws on the light chamber.
- Remove the light chamber cover.
- This allows access to the emitter and receiver lenses.
- Clean the lenses with Isopropyl Alcohol using a cotton bud
- If required the chamber can also be cleaned with compressed air, of the type used to clean cameras lenses.
- Replace the light chamber cover and retaining screws.
- Remount the sensor on the back plate using the two screws
- An AutoZero should now be performed. see p14.



Using the Software

Take full advantage of all the SPLIT2 features. Save data, create reports, and much more.

Use of the software is covered in the separate manual also included on the CD.
Please read through the software manual before attempting to install the software to your PC.

SPECIFICATION

Calibration	NIOSH 0600 with ARD
Accuracy	+ 10%
Precision	0.02 mg/m³
Sensing range	0.01 to 200 mg/m³
Particle size ranges	0.1 to 10 micron Respirable (Use IOM and selective foam)
	0.1 to 50 micron Thoracic (Use IOM and selective foam)
	0.1 to 100 micron Inhalable (Use IOM inlet)
Recording time	1 second, 1 minute and 10 minute averages
Memory	21,500 data points
Locations	Up to 999 storage locations
Data display	20 character, 4 line backlit LCD
Output	RS-232
Operating temperature	0°-50°C
Humidity range	95% non-condensing
Battery	NiMH rechargeable battery
Battery life	8 hours minimum when fully charged
Size	18 x 8.. x 4.5 cm *protruding sockets and belt clip excluded from measurements*
Weight	780 grammes
Software	Windows™ 98, 2000, NT, XP
Flow rate	2.0 litres per minute using external pump (not included)
Optional Sampling Pump	Sidekick Pump. Part #224-50 or 224-52TX

CONTROLS & LCD

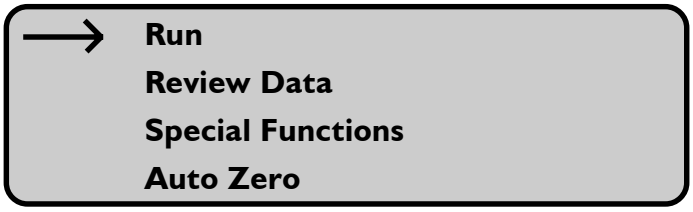
Switching on the SPLIT2

SPLIT2 version 3.2 onwards features a manual on/off switch on the side, located adjacent to the charger socket.

This must be on for the control panel to become activated.

We recommend switching off by this method, to deactivate the keypad at the end of sampling or whenever the unit is put away.

The manual switch can also be used as a reset if required.



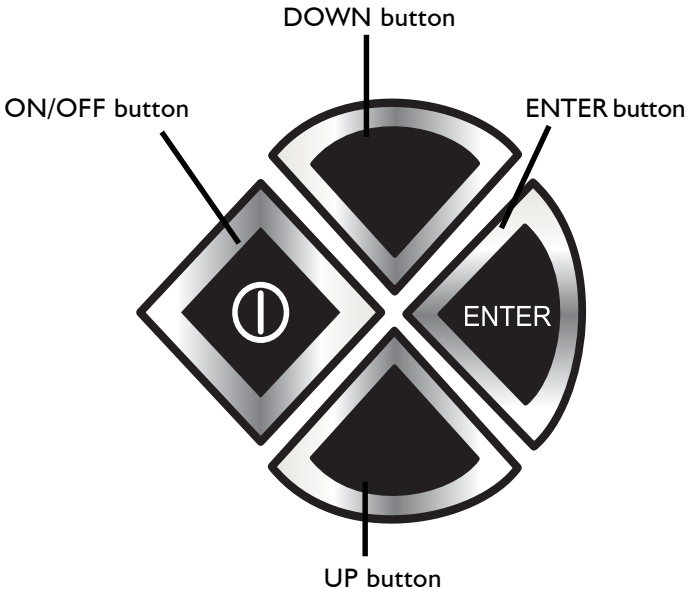
Example of 4 line LCD display of the SPLIT2

ON/OFF button:
Turns the SPLIT2 on and off

ENTER button: Activates the SELECTED option. Shown by an arrow to the left of the menu line

Scrolls the Selection Arrow up one line

Scrolls the Selection Arrow down one line



BEFORE YOU START!

The following conditions must be met BEFORE starting a sampling process

Whether PASSIVE or PUMPED sampling will be used?

If Passive Mode is chosen the following should be noted:

In the passive mode the SPLIT2 is used without any inlets or a filter cassette on the sensing head (see page 11 for details).
This mode means the instrument relies on the NIOSH 0600 method of calibration. This method uses ARD (Arizona Road Dust) as a calibration media and responds to the RESPIRABLE fraction only.
In other words the instrument displays a concentration as if it is seeing ARD and through the design of the sensing head responds to the Respirable fraction only. The SPLIT2 must be set up, through the menus, to the RESPIRABLE option. (see page 12 on how to do this).

The advantage of the SPLIT2 is its ability to be calibrated to the type of dust present in your own specific atmosphere. This is achieved by placing the SPLIT2 in the pumped mode with a design inlet attached.

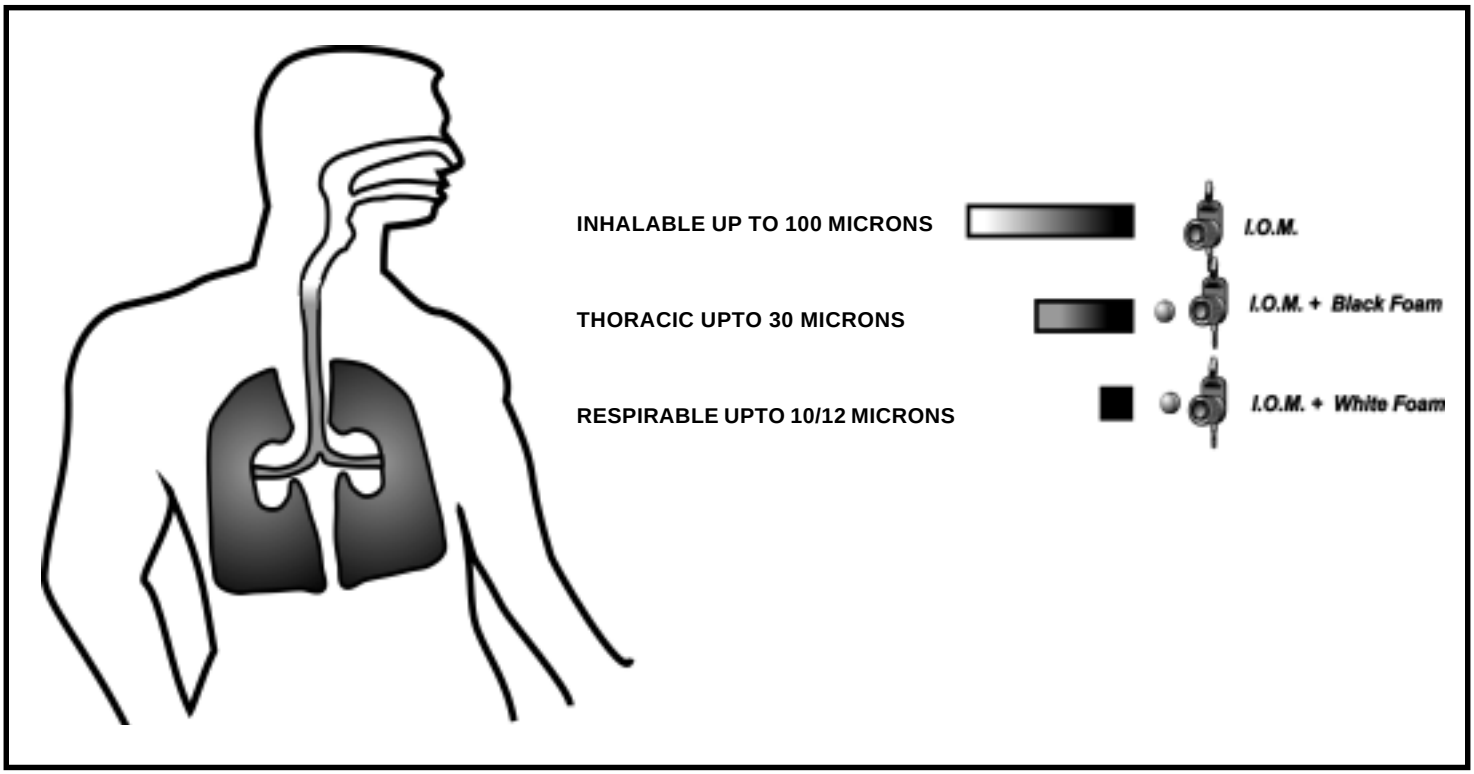
If PUMPED Mode is chosen the following should be observed:

1. The correct particle size must be selected through the instruments menu
2. The correct sampling inlet must be attached
3. The correct date and time must be set
4. The Auto-Zero process must be completed
5. The Alarm level must be set if sampling with the alarm feature.
6. A suitable air sampling pump must be attached to the unit

An explanation of the different dust fractions that can be monitored.

Each dust fraction affects different parts of the respiratory system as shown in the diagram below and follows the ISO Cen convention. To sample for each fraction the appropriate inlet must be used.

Inhalable. ..... IOM inlet.100 micron at 50% cut point
Thoracic. ..... IOM inlet with Black foam insert. 10 micron at 50% cut point
Respirable ..... IOM inlet with White foam insert. 4 micron at 50% cut point



If you would like learn more on the different dust fraction and the appropriate sampling device, may we suggest you attend the SKC Basic Course on Air Sampling. Please contact SKC customer care for more details on 44 (0) 1258 480188

INITIAL SETTING UP OF THE SPLIT2

Attach the sensor. Activate the keypad using the manual on/off switch on the side. Switch the unit on using the **I/O** button. The LCD will show the screen below and a 'beep' heard. (To turn the instrument off please hit the **I/O** button again)

```
** SPLIT2 **
Real-Time
Dust Monitor
SKC Ltd V3.2  2/03
```

It is recommended that you allow at least 10 minutes for the electronics to settle down to ensure a stable base line

After stabilizing press **ENTER** to access the main menu

```
→ Run
  Review Data
  Special Functions
  Auto-Zero
```

Setting the TIME and DATE:

This only has to be done once. The SPLIT2 has a lithium battery back up for the clock
Go to the Special Functions option by pressing either the **DOWN** button or the **UP** button until the arrow is opposite Special Functions. Press **ENTER** button

```
  Run
  Review Data
→ Special Functions
  Auto-Zero
```

Scroll arrow to Date/Time option and press the **ENTER** button

```
  System Options
→ Date/Time
  Set Alarm
  Cancel
```

Press the **ENTER** button to view date and time. If OK press the **ENTER** button to return to the previous menu

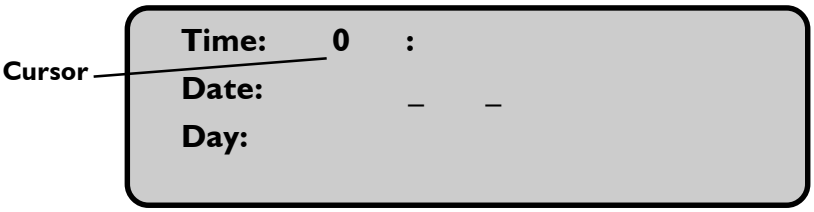
```
→ View Date/Time
  Set Date/Time
  Cancel
```

If the Date/Time is incorrect select **Set Date/Time** and press **ENTER**

```
  View Date/Time
→ Set Date/Time
  Cancel
```

INITIAL SETTING UP OF THE SPLIT2

The following screen will appear with a cursor (line) under the 0 character



The TIME is configured as a 24 hour clock in hours/minutes/seconds. The date is configured as day/month/year. The day is by accepted abbreviation e.g MON

To set all parameters on this screen the following procedure applies:

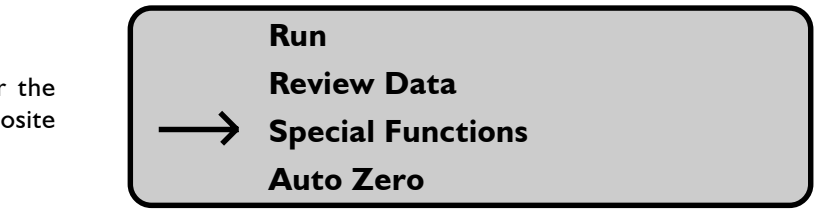
To increase the value of the selected digit... Press the **UP** button.
To decrease the value of the selected digit .... Press the **DOWN** button.

To confirm the digit and select the next field.... Press the **ENTER** button

When all the data is correct press **ENTER** and a screen appears with the following options.
Press **ENTER** again with the arrow opposite the Set Time/Date option to confirm the new data OR...
select the Cancel option to return to the Date/Time screen without saving the changes, so you can re-enter the data.

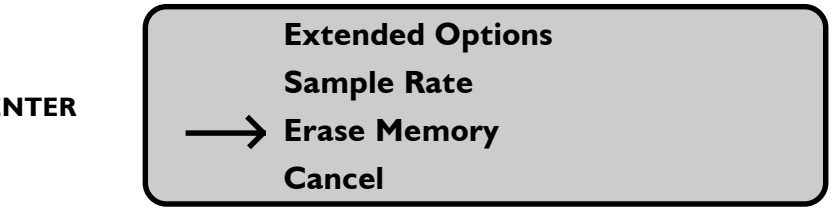
Clearing the memory

Go to the Special Functions option by pressing either the **DOWN** button or the **UP** button until the arrow is opposite Special Functions. Press **ENTER** button

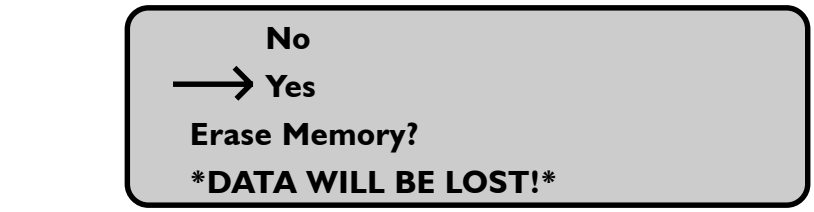


Scroll arrow to System Options and press the **ENTER** button

Scroll arrow to Erase Memory option and press the **ENTER** button



Scroll arrow to Yes option and press the **ENTER** button.
If the data is to be kept, scroll arrow to NO .
The screen will now return to the Main Menu.



PASSIVE OR PUMPED?

There are two modes in which the SPLIT2 can be used: PASSIVE or PUMPED.

PLEASE NOTE: Go to the section on Sampling (p14) before attempting to use the SPLIT2 in the Pumped mode.

To use in the passive mode the sensing head must be configured without any inlets or filter cassettes. The sensor **must** be mounted 'across' the back plate in order to allow air movement through it. See the picture opposite. To fix sensor to the bracket use the IOM front plate **without** the O ring in or the threaded portion present.

Passive mode: use sensing head like this

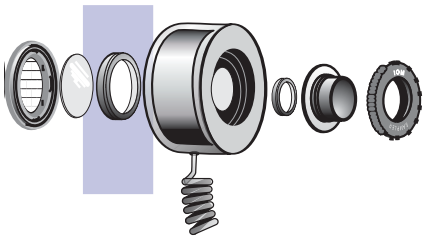
For use in the pumped mode an external sample pump MUST be attached as shown. We recommend the SKC **Sidekick** (part # 224-50 or 224-52TX) as your PREFERRED SAMPLE PUMP. The pump **must** be set at a flow rate of 2.0 litres/minute

Active Mode: use sensing head like this

To use in the pumped mode the sensing head must be configured with the appropriate inlet e.g Inhalable, Thoracic or Respirable and with a pre weighed filter in place. The sensor must be mounted on the back plate pointing forward. See the pictures below and on page 13.

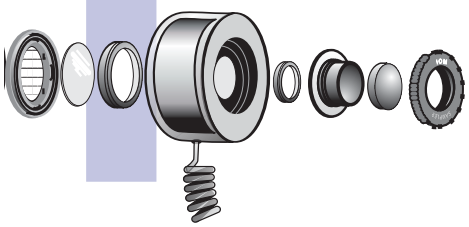
PLEASE NOTE: To configure the sensing head for different dust fraction the IOM inlet with suitable foam is used as shown below. A preweighed filter must also be fitted.

INHALABLE
Filter only

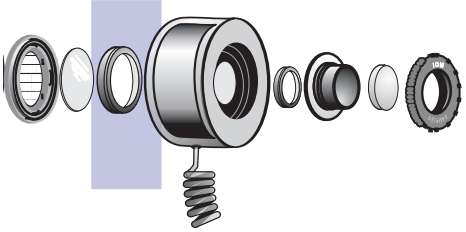


This O ring is permanently affixed.

THORACIC
Filter plus BLACK foam



RESPIRABLE
Filter plus WHITE foam



Note; for weighing procedures when using the IOM with foam inserts please refer to the IOM instruction sheet

PREPARING TO TAKE A SAMPLE

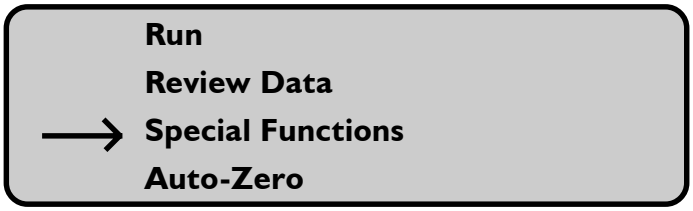
If PUMPED mode is chosen the following should be observed:

1. The correct particle size must be selected
2. The correct sampling inlet must be attached
3. The correct date and time must be set if not done already in the INITIAL SETTING UP, see page 10
4. The Auto - Zero process must be completed
5. The Alarm level must be set, if sampling with the alarm feature.

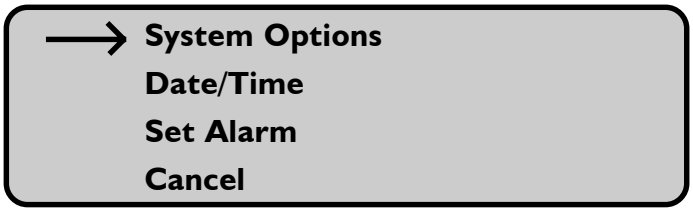
1. Selecting the correct particle size:

PLEASE NOTE: The SPLIT2 will always **default to the last used size selection** if turned off and back on again.

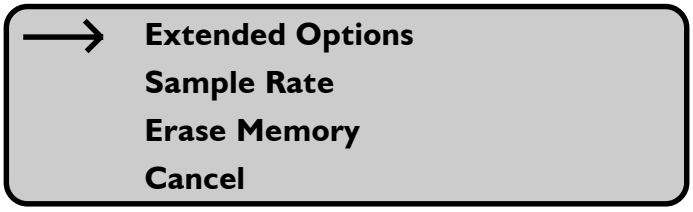
Go to the Special Functions option by pressing either the down button or the up button until the arrow is opposite Special Functions. Press **ENTER** button



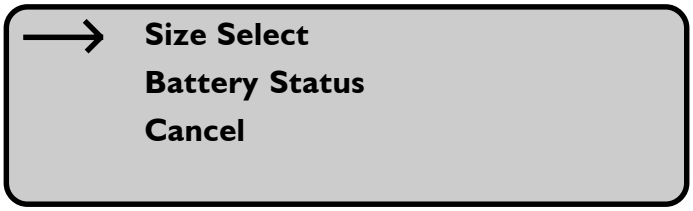
Scroll arrow to System Options option and press the **ENTER** button



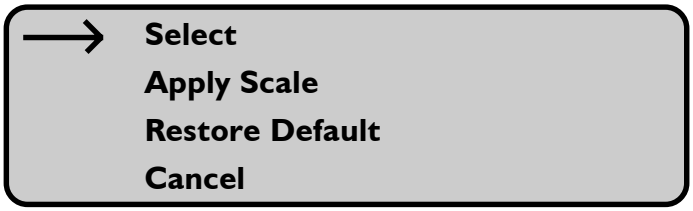
Scroll arrow to Extended Options and press the **ENTER** button
Scroll arrow to Size Select and press **ENTER**



Scroll arrow to Select and press **ENTER**

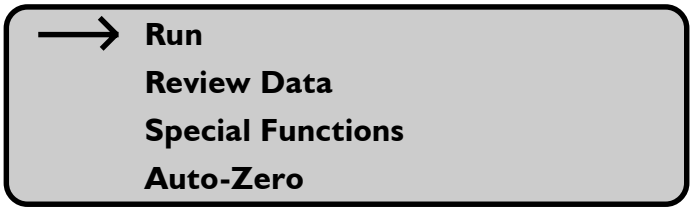


Scroll arrow to Respirable or Thoracic or Inhalable



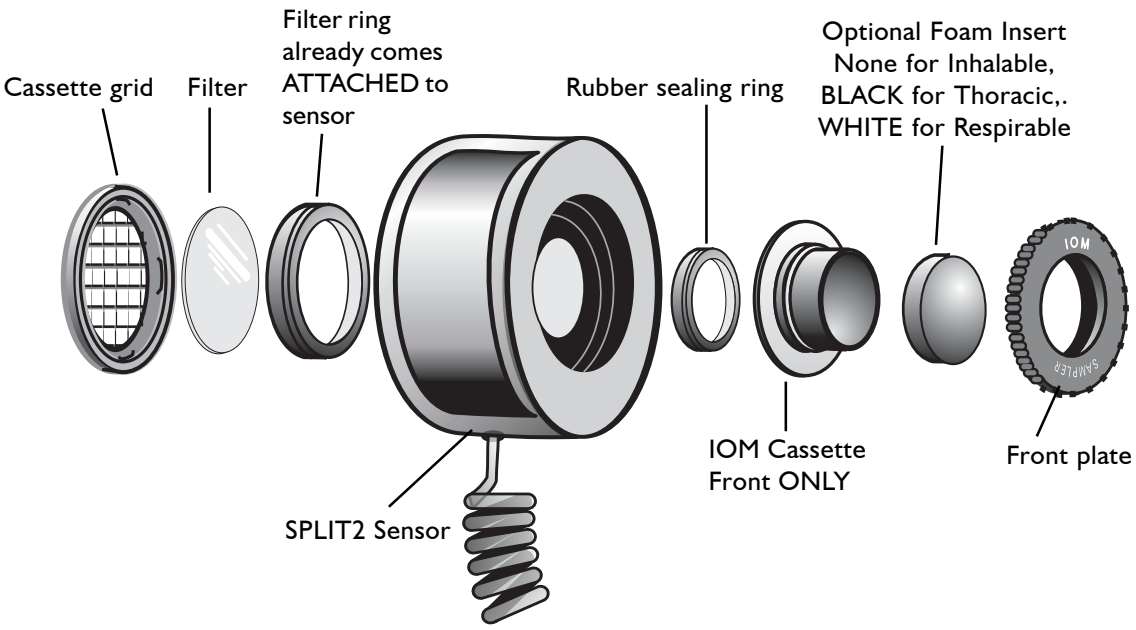
Option and press **ENTER**. The fraction selected depends on the fraction you want to sample.
NOTE: If using the SPLIT2 in the passive mode Respirable **MUST** always be selected.
The screen will now return to the Run screen

2. Fitting the correct inlet:



PREPARING TO TAKE A SAMPLE

The correct inlet must now be fitted as shown below:



3. Setting the time and date:

See page 10.

4. Doing an Auto-Zero

Before using the SPLIT2 to do an actual sample an **AUTO-ZERO** must be performed.
To carry out an AUTO-ZERO in either the Passive or Pumped mode please do the following.
Configure the sensing head for the type of dust fraction required, as shown in the previous page. e.g. Passive or Pumped.
Only if using the Pumped mode Set the pump to run at 2.0 L/min before the Auto - Zero is carried out. Make sure the pump is switched **ON** during Auto-Zero. Only fit the Zero filter for pumped mode. For passive mode choose a clean air area.

Preferably fit the Zero Filter or make sure you are in a dust free area. To go to the AUTO-ZERO option press either the down button or the up button until the arrow is opposite the Auto-Zero option. Press **ENTER** button to go to Auto -Zero mode.

Run
Review Data
Special Functions
→ **Auto-Zero**

A screen will briefly appear suggesting that the optics are cleaned. To clean the optics, remove the cover of the sensing head. Wipe with a lint free cloth or clean with Isopropyl alcohol. Do not spill IPA over the sensor head as this may cause damage

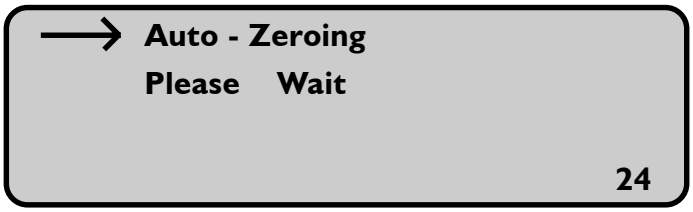
AUTO - ZERO

Please clean optics
before Auto - Zero

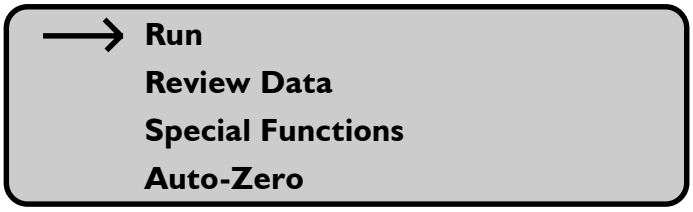
Within a couple of seconds another screen will appear giving the choice of continuing with the Auto - Zero or Cancelling
The arrow should be opposite the Auto - Zero option
Press the **ENTER** button to Auto - Zero
If the Cancel option is taken, additional screens will appear. To get back to the main menu select Cancel on all the screens

→ **Auto - Zero**
Cancel

The Split2 is now Auto - Zeroing. The time in seconds will appear in the bottom right hand corner of the LCD indicating how long for the Auto - Zero to be completed.



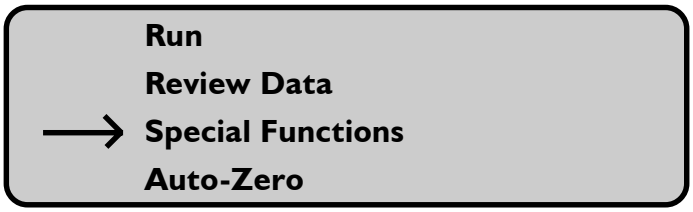
Once completed the SPLIT2 will return to the main menu



5. Setting the Alarm:

Go to the main menu screen. (As a starting point we recommend the alarm is set at 80% of the Occupational Exposure Limit)

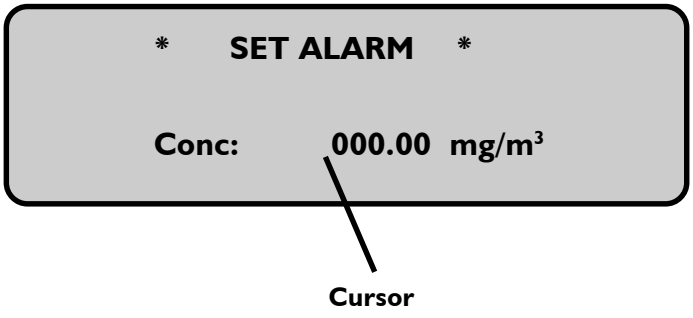
Go to the Special Functions option by pressing either the down button or the up button until the arrow is opposite Special Functions. Press **ENTER** button



Please NOTE: Alarm only works if the Alarm Continue option is taken from the RUN menu. Please see section on TAKING A SAMPLE page 17

Scroll arrow to Set Alarm option and press the **ENTER** button

The following screen will appear with a cursor (line) under the 0 character



The ALARM is configured as concentration in Milligrams per cubic metre (Mg/m^3)

To set all parameters on this screen the following procedure applies:

To increase the value of the selected digit... Press the **UP** button.
To decrease the value of the selected digit .... Press the **DOWN** button.

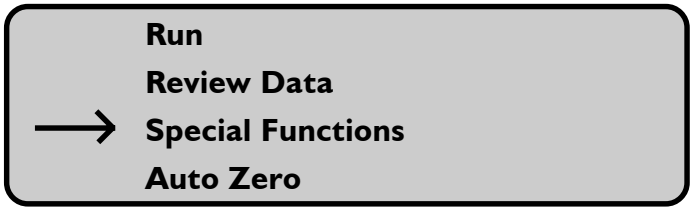
To confirm the digit and select the next field.... Press the **ENTER** button

When all the data is correct press **ENTER** The screen will now return to the Main Menu

PREPARING TO TAKE A SAMPLE

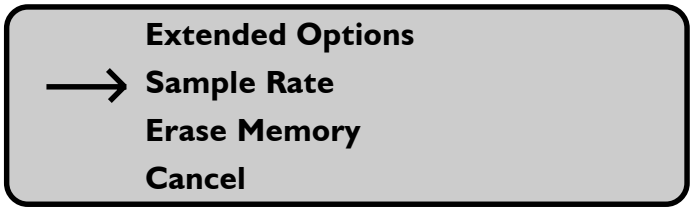
Setting the Sample Rate:

Go to the Special Functions option by pressing either the down button or the up button until the arrow is opposite Special Functions. Press **ENTER** button

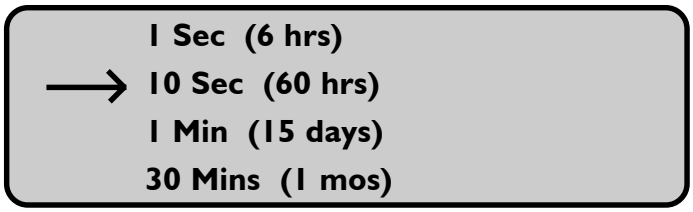


Scroll arrow to System Options and press the **ENTER** button

Scroll arrow to Sample Rate option and press the **ENTER** button

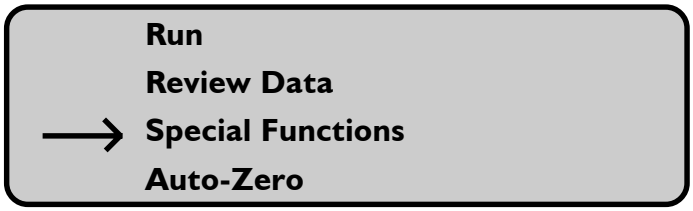


Scroll arrow to sample rate required and press the **ENTER** button. The screen will now return to the Main Menu



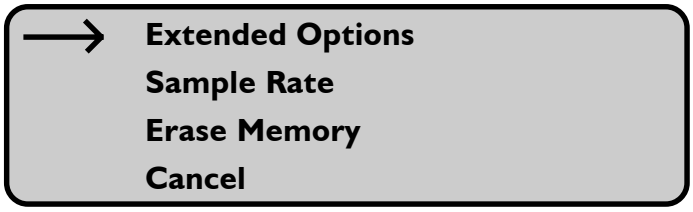
Checking the Battery Status:

Go to the Special Functions option by pressing either the down button or the up button until the arrow is opposite Special Functions. Press **ENTER** button

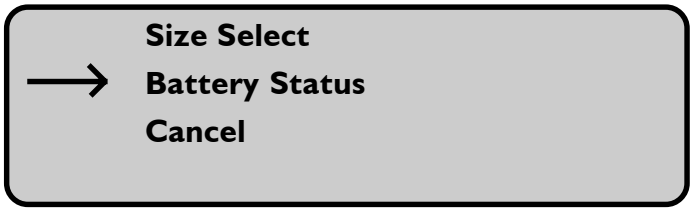


Scroll arrow to System Options and press the **ENTER** button

Scroll arrow to Extended Options and press the **ENTER** button



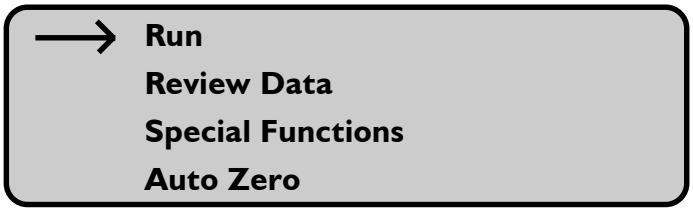
Scroll arrow to Battery Status and press **ENTER**. A screen will now appear showing the battery voltage. To return to the Main Menu press the **ENTER** button



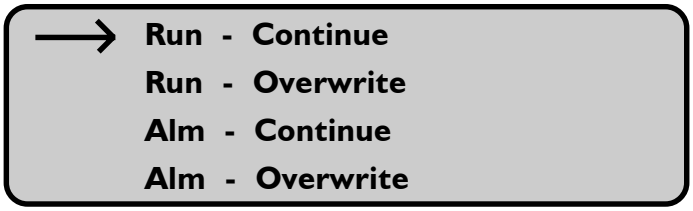
Monitoring Dust Concentrations with the SPLIT2

Once all the preparations have been carried out and the SPLIT2 set up to the correct mode and dust fraction to be monitored, we can start taking samples.

Go to the main menu and by pressing either the down button or the up button position the arrow opposite RUN. Press the **ENTER** button



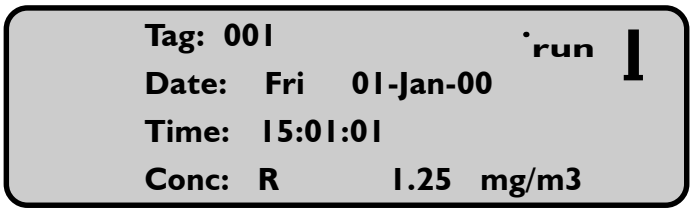
Scroll arrow to type of run you want and press the **ENTER** button. RUN means the unit will monitor without an alarm sounding. Alm means the unit will run and the alarm sound if the preset level is exceeded
To erase all previously recorded data in all locations select OVERWRITE. To add data points to the next consecutive location (Tag) choose Continue

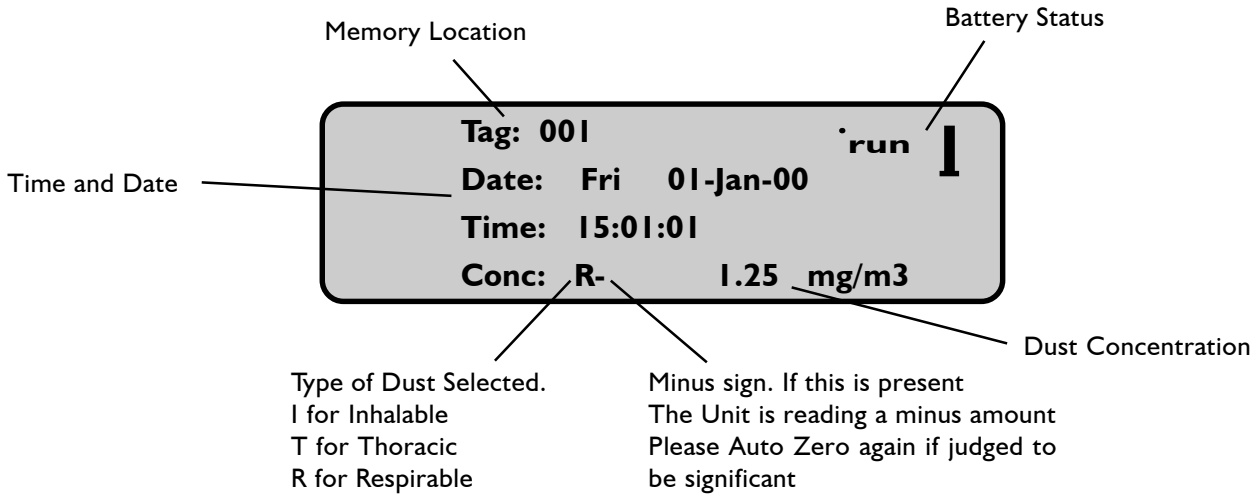


Run or Alarm (Alm) Continue:

If either of these options is selected and the **ENTER** button pressed a screen will appear for a few seconds stating 'Preparing Compensation'. This means the SPLIT2 is now configuring all the options selected during set up ready to start monitoring

Very quickly a new screen will appear with all the sample details. To stop the unit monitoring press the **ENTER** button. Please note that the unit will **not** stop for 20 seconds after this first screen appears.
NOTE: The concentration reading will only change as dust is detected. Don't worry if the concentration reading appears to be static. To test the unit is working, simply place the sensor head near the carpet or an upholstered seat and smartly hit the fabric. This normally release enough particles to register an increase in the concentration reading display.
The LCD backlite is on a timer. Should you wish to turn it back on press either the **UP** or **DOWN** button.



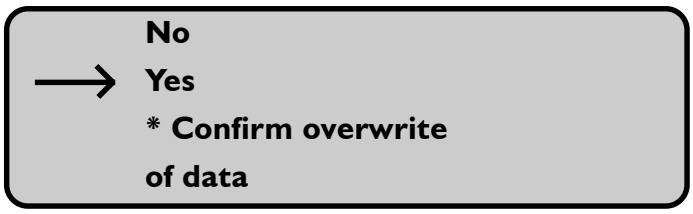


REVIEWING DATA

The Run screen display:

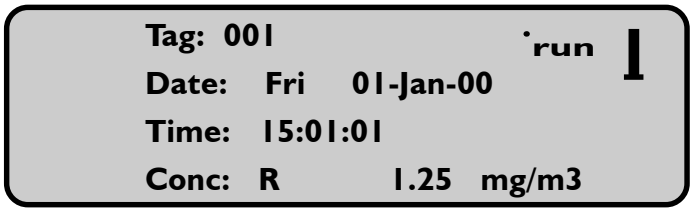
Run and Alarm (Alm) Overwrite:

To erase all previously recorded data in all locations select either of the OVERWRITE options. Scroll arrow to Yes and press the **ENTER** button.



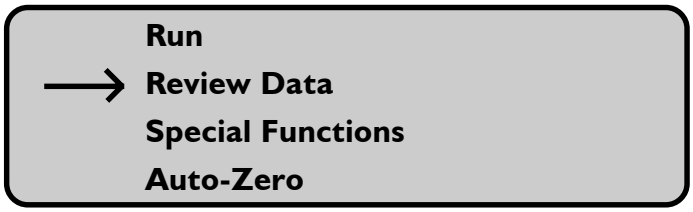
The new data will be logged in Tag 1 (memory location 1)
A new screen will appear for a few seconds stating 'Preparing Compensation'. This means the SPLIT2 is now configuring all the options selected during set up ready to start monitoring

Very quickly a new screen will appear with all the sample details. To stop the unit monitoring press the **ENTER** button. **Please note:** the unit will not allow you to exit from this screen for 20 seconds after it first appears.



Review Data:

After the sample is completed, data can be reviewed on the LCD display.
Scroll arrow to Review Data option and press the **ENTER** button. **NOTE:** It may take a while before the statistics appear on the LCD. This is due to the large number of data points recorded.



Scroll arrow to Statistics option and press the **ENTER** button.
A screen will appear offering the following options:-

Review Tag 00?. The number at the end will be the last Tag (memory location) reviewed. If this is the sample data you want to look at press the **ENTER** button .
If you want to look at any previous sample data scroll the arrow to NEW TAG and press **ENTER**

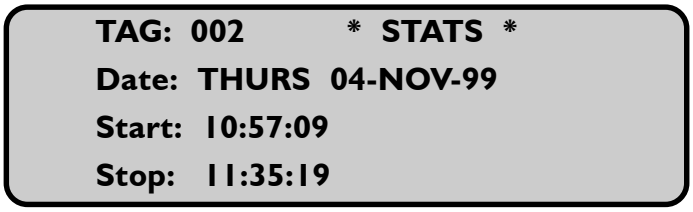
A screen will appear with the Range: (number of Tags - memory locations saved) and an option of which Tag you want to review.

To increase the value of the selected digit... Press the **UP** button.
To decrease the value of the selected digit .... Press the **DOWN** button.

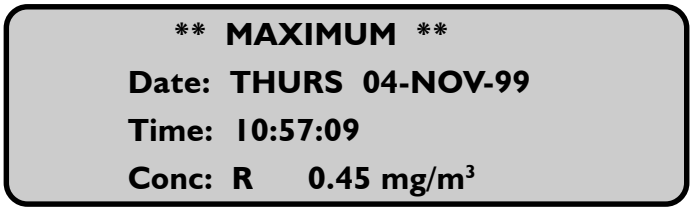
To confirm the digit and select the next field.... Press the **ENTER** button

DOWNLOADING TO A PC

Once the Tag has been selected and the **ENTER** button pressed you may see a screen stating 'SCANNING MEMORY' for a time. This will change to the first of 5 information screens. The first screen shows the Start and Stop time, date and Tag number.



Press the **DOWN** arrow to display the next screen, which will detail the MAXIMUM Concentration in mg/m^3.
Press the **DOWN** arrow again for the next screen which will detail the MINIMUM concentration in mg/m3. Next comes the TWA screen followed by the STEL screen. To view a STEL the unit must have run for at least 30 minutes.



A final press of the **DOWN** button will return to the STATISTICS screen.

Downloading data to a PC:

To download the data to a PC scroll the arrow down to the DOWNLOAD option and press the **ENTER** button. Make sure the SPLIT2 is connected to the computer and follow the instruction on screen, while referring to the SPLITCOMM SOFTWARE users Guide provided with the instrument. Downloading can take several minutes to complete. Please be patient during this operation.

Correction of dust concentrations for different types of dust:

Why do we need to correct for dust type?
Light scattering instruments are calibrated to the NIOSH 0600 method using Arizona Road Dust. This type of dust is very regular in shape and gives a good correlation for calibration purposes.

However, as different types of dust have different reflection and defraction properties that may differ from Arizona Road Dust the ability to correct for this difference allows the SPLIT2 to be 'tuned' to the type of dust your are monitoring. For example; Wood dust has different light scattering properties than coal dust even if the concentrations are the same.

The theory:
By collecting the dust that has passed through the sensor onto a preweighed filter we are doing a basic calibration of the light scattering system to a gravimetric (mass of dust) sample. Once the monitoring exercise has finished, the filter is post weighed giving a Time Weighted Average result in mg/m3.
This TWA is then used to correct the readings on the SPLIT2 by entering a SCALE factor into the units software. The TWA can also be applied to the SPLITCOMM software package to correct the real time data and hence correct the graphic display of time against concentration.

If this is done a number of times in the same monitoring situation. e.g. a work process an average SCALE factor can be obtained for that particular circumstance. Subsequently this scale factor can be applied to similar work situations.

The COSHH regulations advise that after monitoring has been carried out in compliance with the appropriate methodology, in this case MDHS 14/n, (Gravimetric using a pump, IOM sampler and filter), providing the material or the process does not change it can be assumed exposure will remain at or around that level. The SCALE factor system with the SPLIT2 works on the same principle. A final note: At this time light scattering instruments cannot be used to show compliance to Occupational Exposure Standards in the UK.

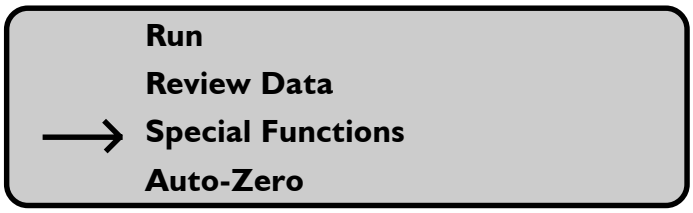
To correct the concentration reading on the instrument to the dust cloud in your particular circumstance the following procedure is advised.

DUST FRACTION CORRECTION

1. Dust Fraction correction on the SPLIT2

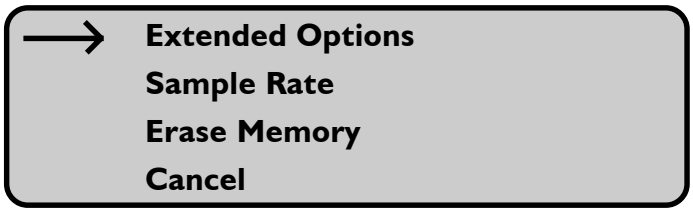
Before a SCALE factor can be entered, a gravimetric result must be obtained from the filter contained behind the sensing head. The filter must be preweighed.

Go to the Special Functions option by pressing either the down button or the up button until the arrow is opposite Special Functions. Press **ENTER** button

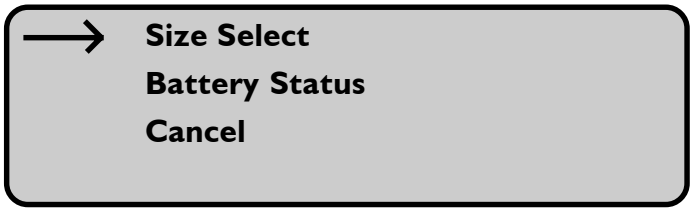


Scroll arrow to Systems Options option and press the **ENTER** button

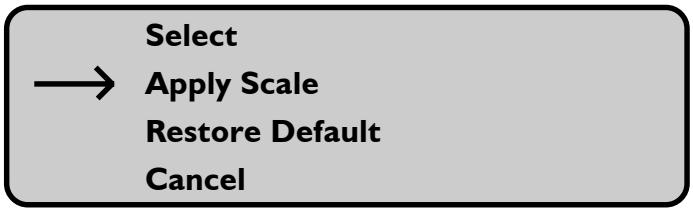
Scroll arrow to Extended Options and press the **ENTER** button



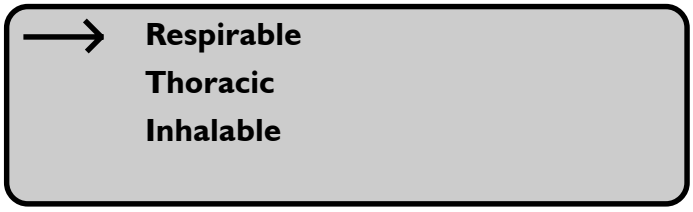
Scroll arrow to Size Select Option and press **ENTER**



Scroll arrow to apply scale Option and press **ENTER**



Scroll arrow to Respirable, Thoracic or Inhalable Option and press **ENTER**. The fraction selected depends on the fraction you have sampled and obtained a gravimetric result for.
NOTE: To do this for Respirable you must have a gravimetric result, obtained by using the IOM with foam and a filter.



A default scale of 01.00 will be seen. Enter the SCALE factor required by using the **UP, DOWN** and **ENTER** buttons.
The screen will now return to the APPLY SCALE screen.

CALCULATING THE SCALE

How to calculate the SCALE factor:

The TWA result obtained from the filter used during a monitoring exercise is compared against the TWA displayed by the SPLIT2 LCD in the REVIEW DATA option (see page 17).

From the two results a simple calculation is used to obtain the SCALE factor for that sample. and atmosphere type.

$$\frac{\text{Filter TWA result}}{\text{SPLIT2 TWA result}} = \text{SCALE}$$

Example:

Filter TWA was 5 mg/m3

SPLIT2 TWA was 2.5 mg/m3

$$\frac{5}{2.5} = 2$$

Scale factor to be entered for the next sample in the same atmosphere is 02.00

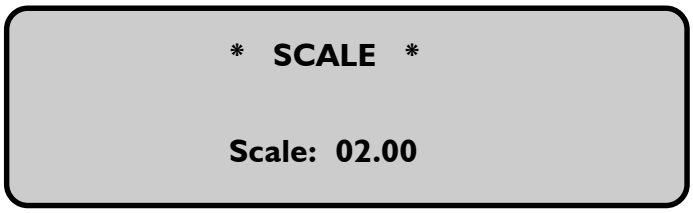
Help requested with SCALE factors:

As you note down your correction factors using the table below you are recording actual work place situations and exposures. In order to build up information on these factors we would very much appreciate feed back from you on your results.
If you would like to be part of this project, please send a copy of the table below listing your scale factors to:

SKC Ltd.
Unit 11, Sunrise Park
Higher Shaftesbury Road
Blandford
Dorset DT11 8ST

We assure you that we will not release any information on your company or employees. The information will be used to investigate the possibility of issuing correction factors for common dusts at a future time.

We look forward to your involvement.



IMPORTANT NOTE: Applying a scale factor to the instrument should **not** be done using only a single result. It is strongly recommended that 10 of the above procedures should be undertaken and averaged to obtain a typical correction factor.

Record your SCALE factor results here for future reference.

DUST TYPE	PROCESS TYPE	FILTER TWA	SPLIT2 TWA	SCALE	DATE	SIGNED

SPAN CHECK USING THE CALIBRATION POST

Span Check

Span checks should be performed once per month, but if the instrument has been dropped or knocked, a span check should be carried out immediately.

The SPLIT2 **MUST** be reset to its defaults.

You must then perform the Auto-Zero sequence, see page 13.

Once the Auto-Zero has finished remove the Zero-Filter and sampler inlet if fitted.

Insert the Calibration Post making sure the location pin is lined up with corresponding hole in the sensor head. The easiest way to do this is to push the calibration post into the sensing head and while maintaining forward pressure, turn the post until you feel it locate. Once located the post will not twist from side to side.

Finally run the unit on the RUN OVERWRITE option for at least 2 minutes. The display will show a figure of around 200.00

Compare the displayed figure to the K Factor printed on the calibration post. If the difference between these two figures is more than +10% repeat the above procedure.

If the difference is still greater than + 10% you have two options.
1. Correct for the difference by entering a value in to the SCALE option. see p19
2. Return the SPLIT2 for a recalibration and service.

Span Check correction:

After a Span Check you find the displayed value to be greater than +10%.

To correct for the difference use the following calculation.

$$\frac{\text{Displayed value}}{\text{K Factor from calibration post}} = \text{SCALE}$$

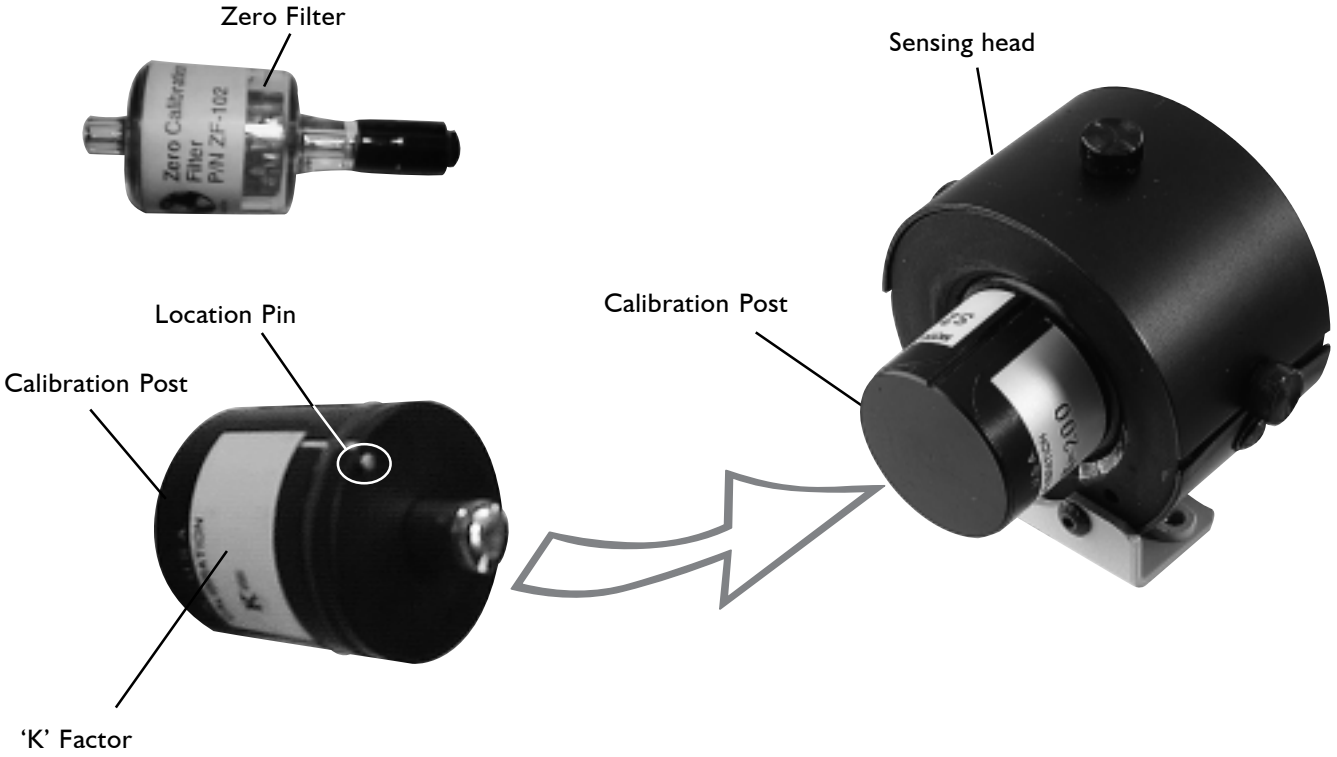
Example:

Displayed value is 180.00

K Factor is 200.00

$$\frac{180}{200} = 0.9$$

* SCALE *
Scale: 00.90



TEMPERATURE CHANGES

This section is IMPORTANT as it covers the procedure involved to ensure the reliability and accuracy of your unit is optimised despite the often unavoidable changes in temperature.

Drastic changes in the environment temperature could affect the readings from the Split2. Temperature changes can occur, for example, when transferring between indoor and outdoor monitoring, or if the unit has been stored overnight in a cold room or vehicle, before being used in a warm room.

Follow this procedure:

1. Take the SPLIT2 to the area where you wish to sample
2. Run the unit for 15-20 minutes with the zeroing filter on and the perform an auto zero.
3. Remove zeroing filter.
4. Choose overwrite option. This will erase all the previous memory locations already stored and allow the electronics to stabilize (to the sampling temperature). The auto zero will activate the temperature compensation.

It is recommended to auto zero the unit each time the user changes location, this resets the temperature compensation to ambient

CONSUMABLES & SPARES

CONSUMABLES

IOM cassette, plastic	225-71A
Foam inserts for Respirable selection	225-772
Other selector foams not currently available	---
GFA 25 mm filters	225-58F

PARTS & ACCESSORIES

Sidekick air sampling pump	224-50
Sidekick air sampling pump with timer	224-52TX
(224-52TX is an intrinsically safe pump)	
Charger for Sidekick	223-203C*
Tygon flexible tubing (one metre)	225-13-4A
DC Lite calibrator	717-01K
Rotameters also available - see options in the latest catalogue	
Calidaptor to connect DC Lite/rotameter	390-01
Replacement SPLIT2 Battery Pack	770-303
SPLIT2 Battery Charger	770-310C*
Replacement data cable	770-114
Replacement calibration standard	770-207
Replacement zero filter	770-112
Manual	770-300M

*C denotes a UK plug. For a European 2 pin plug use B

SPECIALISTS IN AIR SAMPLING

SAMPLING PUMPS

APPLICATION SPECIFIC SAMPLE PUMP KITS

COSHH OR ENVIRONMENTAL SAMPLING

NOISE MONITORS

TEMPERATURE, LIGHT,

WORKPLACE LIGHT - NOISE - TEMPERATURE

PASSIVE BADGES

SORBENT TUBES

PASSIVE OR ACTIVE SAMPLE MEDIA

SKC Ltd
11 Sunrise Park, Higher Shaftesbury Road
Blandford Forum, Dorset DT118ST
f: 01258 450968 e: info@skcltd.com