

Portable Single Gas Monitors



Presented By:

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Date:

April 2016

Product Positioning
Features and benefits
Familiarisation
Markets & competition
Product structure
Summary



Clip



Gasman

C-Test



IR-Link



Gasman software



Crowcon Portables Product Range



Crowcon Clip

Maintenance Free Single Gas Monitor

- Simple to implement
- Simple to use
- Simple to train



CO



H₂S



O₂

Disposable, cost effective compliance



Clip Product Introduction

FEATURES

Simple to implement



Wide temperature range (-40 to +50°C)

A single gas detector for every environment (-35°C for O₂ detector)



IP66 & IP67

Great for outdoor operation in wet weather



25 Events

Audit trail



User configurable alarm levels (with IR link or C-Test)

Easily customise alarm levels for your particular applications



2 year run time from activation

No recharging required!



>2,900 alarm minutes

Equivalent to 4 minutes of alarm per day, for 2 years



> 6 month shelf life

Hold in stock and activate when you issue it

Simple to use



Compact and lightweight

Easy to wear, don't let your detector hinder your work



Single button operation

Extremely easy to use. Just clip on and get to work



Rugged and robust

Don't let work be interrupted by a less robust detector failing



Disposable

When battery is expired simply dispose of clip. Issue to contractors without having to track and return.



Clip Product Introduction

FAMILIARISATION

Activation

- Up to 6 month Shelf Life*
- Ensure no damage due to storage or transport
- Read the Installation and Operation Manual
- 5 Second Button Press
- Alerts demonstrated
- Life remaining shown on screen



* Will be delivered with 6 months minimum shelf life

Simple to train

- Gas type and Model designation
- Top, front and side visible alarm LED's
- 95dB Audible alert
- Vibrate alert as standard
- Single button operation
- Front mount sensor
- Over-moulded, static dissipative anti-shock case



Simple to train

- IR Interface Window
- Stainless Steel Clip
- Certification Label
 - Model
 - Serial Number
 - Certifications
 - Temperature Range
 - CE mark

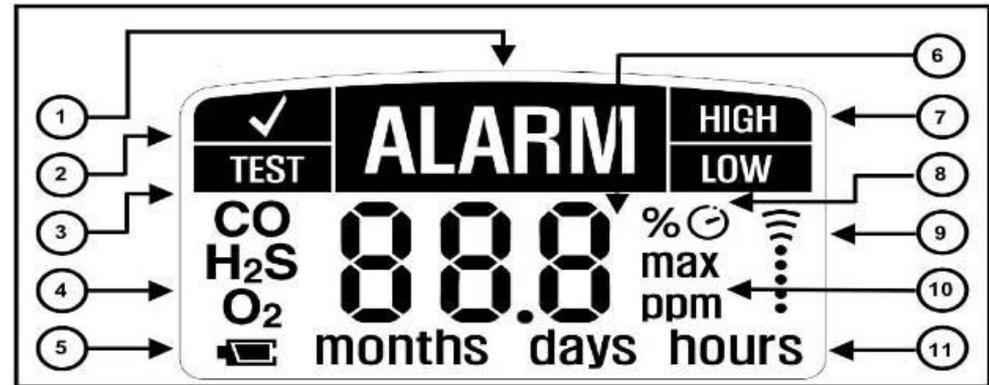


In Use

- Life Countdown
- Less than one month remaining
 - Display switches to Days Remaining
- Less than one day remaining
 - Display switches to Hours Remaining
- At 8 hours remaining
 - Eight slow beeps per minute
 - Eight slow flashes per minute
 - Eight slow vibrations per minute
- Monitor is deactivated by a button press (at <8hrs remaining)
- Displaying 0 hours Crowcon Clip will run for 8 hours



Display icons



1. Alarm condition
- 2, 3. Self test status/reminder
4. Gas type
5. Battery indicator (real time gas reading mode)
6. Life remaining / gas reading
7. High / low Alarm indicator
8. Life remaining clock flashes when screen is refreshing
9. IR Active Indicator
10. Unit / peak level indicator
11. Life remaining units

Single Press

- Low and High alarm set points shown
- User ID shown
- Peak gas level (above low alarm)
- Hours, days, months since peak reading
- 'CLP' shown – stands for 'clear peak' – press the button to clear



Start Self Test

- Press while low alarm set point is shown

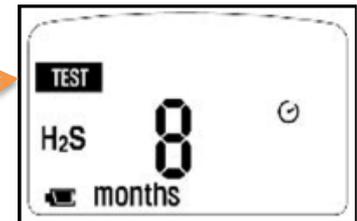


Self Test

Clip is always on - so audible / visual / vibrate alarms not demonstrated during power up

Self Test feature prompts user to check these daily

'Test' indicates Self Test is due



To test, press the button:

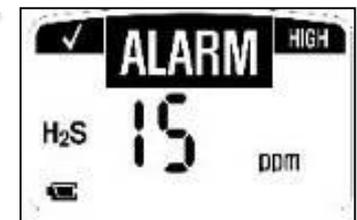
Screen elements displayed

Audible, visual and vibrate alarms demonstrated

High and low alarm levels displayed



✓ indicates self test is complete



Interval configurable 8-20 hours

Low Alarm

Audible, visual and vibrate alert every second

High Alarm

2 Audible, visual and vibrate alerts every second



When bump test due:

- 'bup' displayed
- 'test' will not clear following Self Test

Manual test

- Attach flow plate
- 0.5 l/m regulator required, ensure correct gas level
- Exhaust into safe area
- Press button, 'gas' will be display
- Clip will wait up to 45 seconds for bump test gas
- Bump test event is recorded on pass

Or use C-Test (shown later)



CO & H₂S

Calibrated using C-Test

O₂

C-Test or direct

Will request O₂ calibration every 30 days (default)

- Ensure monitor in clean air
- Press and hold the operator button
- 'CAL' displayed, 'O₂' flashes

Pass: 1 beep / flash / vibrate

Fail: 'CAL' still displayed



- Clip Configuration
 - Alarm level update
 - Calibration interval
 - Set bump test interval and indicator
 - Set User ID
 - Self test interval
 - Lifetime clock or gas reading on screen
- Event Log download



Crowcon IR LINK [ver 1.3.0.2]

Hardware Version	000
Firmware Version	0.0
Serial Number	SH10000000
Life Remaining	24 Months 0 Days
Sensor Type	H2S
High Alarm	5.0
Low Alarm	10.0
Calibration Interval	0 Days
Bump Interval	0 Days
User ID	
Self Test Interval	20 hours
Display	Sensor/Life Remaining

Hide bump due LED flashing

Read File Read Device Write File Write Device Hibernate

Save Event Log Sensor Calibration

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sales@crowcon.com

12-06-27 10:02:45



Clip Product Introduction

PRODUCT STRUCTURE

In the box

- Quick Start Guide
- User Manuals (CD)
 - Dutch
 - English
 - French
 - German
 - Italian
 - Polish
 - Spanish
- Flow Cap
- Calibration Certificate



Clip label

Serial Number
Certification

Build Date

Model Number
Gas Type
Alarm Levels



Temperature Range
Quality checks
Activate Before Date

2D barcode
Serial number
Country of origin

Support Materials

- Manuals
- Datasheet
- Launch Pack
- Web page
- Competitor Comparison
- Posters & Advertising



CROWCON
Gas Detection You Can Trust

Crowcon Clip & Clip+

Maintenance-Free Single Gas Monitor

Toxic and Oxygen



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Channel Partner Launch Pack July 2012

GASMAN

Fully featured Single Gas Monitor

- Wide range of gases including flammables
- Rechargeable and serviceable



Lightweight, robust specialty single gas

Gasman Product Introduction

FEATURES



Compact and lightweight

Comfortable to wear for extended periods



Rechargeable or single use Li-Ion battery (toxics only)

Single use for short projects, rechargeable for long term roll-out



Wide range of sensors

For specialist gas detection applications



...including flammables

With LEL presets for 5 different flammables gases



IP65

Great for outdoor operation in wet weather



38 day data logging and 4,800 events

Comprehensive audit trail



Backlight

View gas levels in dark environments

Features (2)



Visual, vibrate and powerful 95 dB audible alarms

Effective alerts to gas hazards in industrial environments



Single button operation

Extremely easy to use with one hand while wearing gloves



Rugged and robust

Don't let work be interrupted by a less robust detector failing



Serviceable

Replaceable sensors dramatically increase Gasman lifetime



Features

Advanced safety features including time weighted average (TWA) measurement of toxics and peak mode

Charging and communications



Single charger cradle
Supplied without power supply



Multi-region power supply



Communications kit
Cradle includes: RS-232 port for communications,
Power inlet for charging



5 way cradle charger

Accessories



Clip on dust filter
Prolong sensor
lifetime in dusty/grimy
environments



Aspirator kit
Sample gas in
confined
environment
before entering



Leather carry case
For wearing Gasman on a
belt or using a shoulder strap



Gas test kit
For calibration and
gas testing



Chest
Harness Kit



Hard hat
harness



Shoulder
strap

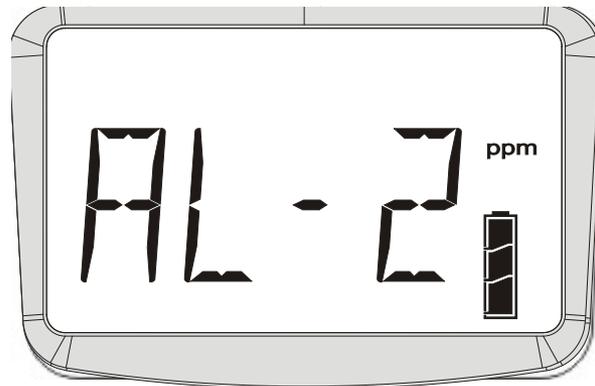
Gasman Product Introduction

FAMILIARISATION

Operation

Very similar to Tetra 3, T4 and Gas-Pro

- Start up - press until red led flashes
- Backlight - press button
- Alarm clear - press button
- Menu - double click button
- Switch off - press & hold countdown



Menu functions



Peak display

When Peak mode is selected the instrument shows the highest value for flammable and toxic gases, or the lowest value for oxygen since switch on or last Peak Reset. This is useful for vertical entry checks where the Gasman can be lowered down the shaft rather than using a sampling tube and for viewing peak exposure at the end of a shift.



TWA display

Shows the 15 minute and 8 hour TWA, for toxic gases, monitored since last turn on.



Peak Reset

Before a Peak entry test is performed select this menu option to clear any previously stored Peak value.



Zero

Performs Zero on your Gasman unit. (Please ensure you are in clean air).

Data and Event logging

- Adjustable data rate set to 1 minute
- 900 hours / 3 days data at 1 min intervals
- Event log file
- All significant events logged
- 4,800+ event capacity



Great for auditing gas exposure – for worker compliance

2 alarm thresholds:

AL-1
AL-2

2 time weighted average alarms:

LTWA
STWA

Flammable over range alarm:

9999

Power to pellistor is cut-off for 200 seconds to protect pellistor if flammable gas concentration exceeds 100%

Test / Calibration

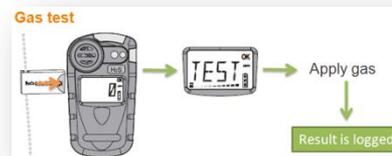
Gas test



Calibration



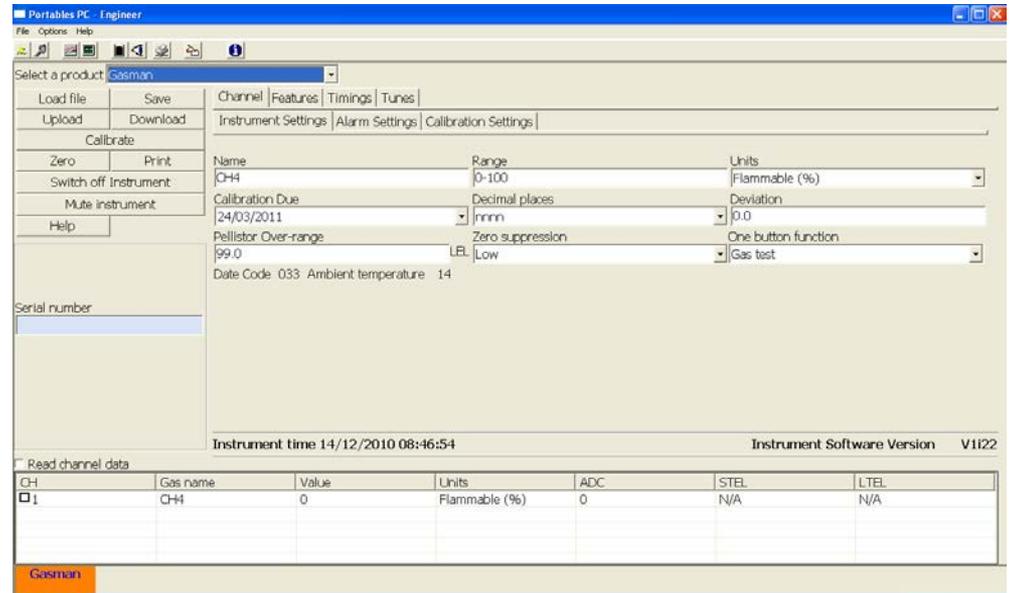
Gas test Within 15 minutes



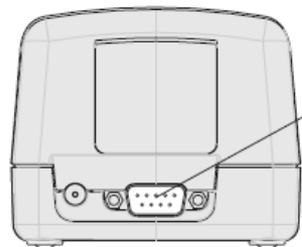
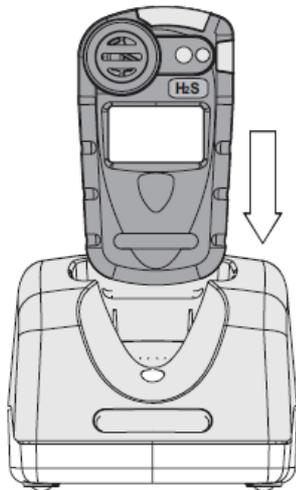
Sensor calibrated

Portables PC

Detector configuration
Data/event log download
Zero and calibration
Reporting



Download from partners portal on crowcon.com



RS 232 link (USB – RS-232 adapter may be required)

Applications and Markets



Gas	Range	Alarm (UK)	Oil, gas and chemical	Utilities	Manufacturing and steel	Brewing, food and beverage	HVAC	Marine
Ammonia (NH ₃)	0-100 ppm	25 ppm	X			X		
Carbon monoxide (CO)	0-500 ppm	30 ppm	X	X	X	X	X	X
Carbon dioxide (CO ₂)	0-5% vol.	0.5% vol.	X	X	X	X	X	
Chlorine (Cl ₂)	0-20 ppm	0.5 ppm	X			X		
Flammable	0 - 100% LEL	20% LEL	X	X	X	X		
Fluorine (F ₂)	0-1 ppm	0.1 ppm		X		X		
Hydrogen (H ₂)	0-2000ppm	N/A	X		X			
Hydrogen cyanide (HCN)	0-25 ppm	5 ppm	X					
Hydrogen fluoride (HF)	0-10 ppm	1 ppm	X					
Hydrogen sulphide (H ₂ S)	0-100 ppm	5 ppm	X	X	X	X	X	
Nitric oxide (NO)	0-100 ppm	25 ppm						
Nitrogen dioxide (NO ₂)	0-20 ppm	1 ppm						X
Oxygen (O ₂)	0-25% vol.	19%/23% vol	X	X		X	X	X
Ozone (O ₃)	0-1 ppm	0.1 ppm		X		X		
Phosphine (PH ₃)	0-5 ppm	0.2 ppm	X					
Phosgene (CCL ₂)	0-1 ppm	0.1 ppm	X		X			
Sulphur dioxide (SO ₂)	0-20 ppm	1 ppm	X	X		X		

Cost effective IR detection of CO₂

White Paper: CO₂

Gasman - Detect and protect against carbon dioxide

Carbon dioxide (CO₂) occurs widely in the drinks industry. It has the potential to kill, but not everyone is aware of the true nature of the risk.

"Reliance on oxygen alarms to monitor the presence of carbon dioxide has previously led to fatalities."

This toxic gas can make you unwell at concentrations as low as 0.5%. Extended periods of low level exposure can have severe consequences. To ensure safety, correct use of a CO₂ personal monitor is essential.

To learn more, download our FREE white paper.

 **Download white paper**

 [Or click here to ask about current Gasman offers](#)

Introducing the Gasman CO₂ - market leading personal single gas monitor

The compact, lightweight Gasman is simple to fasten securely to clothing and can be comfortably worn for an entire 8-hour shift.

Featuring simple single button operation, it has a large easy-to-read display showing local environmental levels of carbon dioxide (CO₂).

Gasman guards against the short term and long term exposure of the wearer, as well as exposure to peak levels, which require immediate evacuation. The combination of audible, visual and vibrating alarms ensures the wearer will not miss an alarm, even if wearing ear defenders.

The unit reduces the costs of ownership compared to some competitors because the IR-technology based sensor has a longer life expectancy.



Table 1: The toxic effects of CO₂ on the human body at different concentrations

Percent CO ₂	Symptoms
2%	Headache and laboured breathing
5%	Headache, shortness of breath, dizziness, confusion, respiratory distress
8% - 10%	Severe headache, weakness, dizziness of vision, tremor and loss of consciousness in 5 - 10 mins.
10%	Difficulty breathing, vomiting, hyperaemia. May be fatal
20% - 30%	Exposure can cause convulsions and coma within 1 minute

Ensure compliance - keep safe

So, in an environment where CO₂ is used in many different ways and likely to be regularly encountered, even at low levels, how can people be protected from such exposure?

- Personal monitors**
 - In order to ensure compliance with occupational exposure limits calculated as TWA, it is necessary to monitor the levels of CO₂ each worker is exposed to, individually, to achieve this, personal monitors are required.
- Monitor in the breathing zone**
 - As the device is to monitor the air that the staff member is inhaling, it is vital that the unit is worn close to the breathing zone. This could be achieved by wearing it on the collar or breast pocket, but not in a belt or trouser pocket. Breathing it directly must be avoided, however, as this could set it into alarm.
- Fit its best for CO₂**
 - Infrared (IR) sensors are more robust sensors, better suited for this application. They have a much longer life compared to other commonly used sensor types, making them more cost-effective. They are also not affected by high levels of gas, which some other sensors can be.
- Ensure reliability**
 - Clearly the wearing tools for demanding environments must be as tough as possible, with reliable electronics housed in impact resistant casings. With the need to have gas monitors exposed to the atmosphere means that no instrument can be fully sealed, a high degree of protection against dust and water ingress is essential.
- Maintain**
 - While wear gas monitor you choose, the importance of maintenance and calibration can't be overemphasised. Regular checking with gas (bump testing) is the only way to check that a detector reacts correctly to exposure to the relevant gas, and it should be a routine part of device maintenance.
- User-friendly monitoring**
 - Use of units that are light and compact enough to wear for an entire shift will encourage compliance. A bulky unit would be uncomfortable, and could even be an impediment to freedom of movement.

Keep it simple
When it comes to keeping safe, a detector with a clear display and simple one-button operation is best. This makes it easy to train people to use it. On the (hopefully) rare occasion the unit goes into alarm, they will be better able to remember and follow the training.

Don't miss the warning sign
A detector should contain powerful audible and visual signals to warn when gas levels are reached, to alert the wearer even in noisy environments. If a unit goes into alarm, how to react will depend on the level at which the alarm is set. Make sure everyone knows what they should do under which circumstances.

It is vital that the unit be worn in the breathing zone.

"It is vital that the unit be worn in the breathing zone."

Crowcon CO₂ white paper



Clip/Gasman Product Introduction

SUMMARY

Single Gas Monitors



Fixed Life

- Zero maintenance
- 2 year run time
- 95 dB alarm
- Easy, one button operation
- Limited event log
- Specific gases (H₂S, O₂, CO)
- Bump test function
- C-Test test/cal station
- Disposable



Full Function

- Designed for servicing
- > 5 year life, rechargeable battery
- 95 dB alarm
- Easy, one button operation
- Data and event logs
- Very wide range of gases
- Gas test function
- Menu functions
- TWA, peak level functions

Clip Product Introduction

C-TEST

C-Test for Clip

C-Test

- Bump Test &/or Calibrate
- Audible alert test
- Event Log storage
- Clip Configuration
 - Alarm level update
 - Set bump test interval and indicator
 - Self test interval
 - Life time clock or gas reading on screen
- USB data storage



C-Test for Clip

C-Test

C-Test

- CO Gas Test 14s
- H₂S Gas Test 17s
- < 2 minute calibration
- Extremely low gas usage:



C-Test Gas Consumption	
Cylinder Capacity (L)	Number of Bumps
110	1100
58	580
34	340

C-Test

- Gas/Bump Test

- Place the monitor sensor first into the monitor bay
- Press the green button
- Await the test result
 - Green Test LED = Pass / Red Test LED = Fail

- Calibration

- Place the monitor sensor first into the monitor bay
- Press the red button
- Await the test result
 - Green Test LED = Pass / Red Test LED = Fail



Configuration

Via C-Test

- Maximum gas (bump) test time
- Gas expiration date
- Cylinder lot number (for traceability)
- Cylinder gas concentration
- Allow calibration / gas test
- Allow configuration / firmware updates

C-Test Manager v1.0.17

C-Test Crowcon Clip Logs

Serial Number

Version

Location

Number Event Logs

Auto Power-Off Time seconds

Maximum bump time seconds

Gas Expiration Date

Gas Bottle Lot#

Allow Calibrations

Allow Bump Tests

Allow Hibernate

Allow Configurations

Allow Firmware Upgrades

Gas	Concentration
H2S	<input type="text" value="25.0"/>
CO	<input type="text" value="100"/>
O2	<input type="text" value="18.0"/>

Firmware Upgrade Image

CROWCON
Gas Detection You Can Trust

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sales@crowcon.com

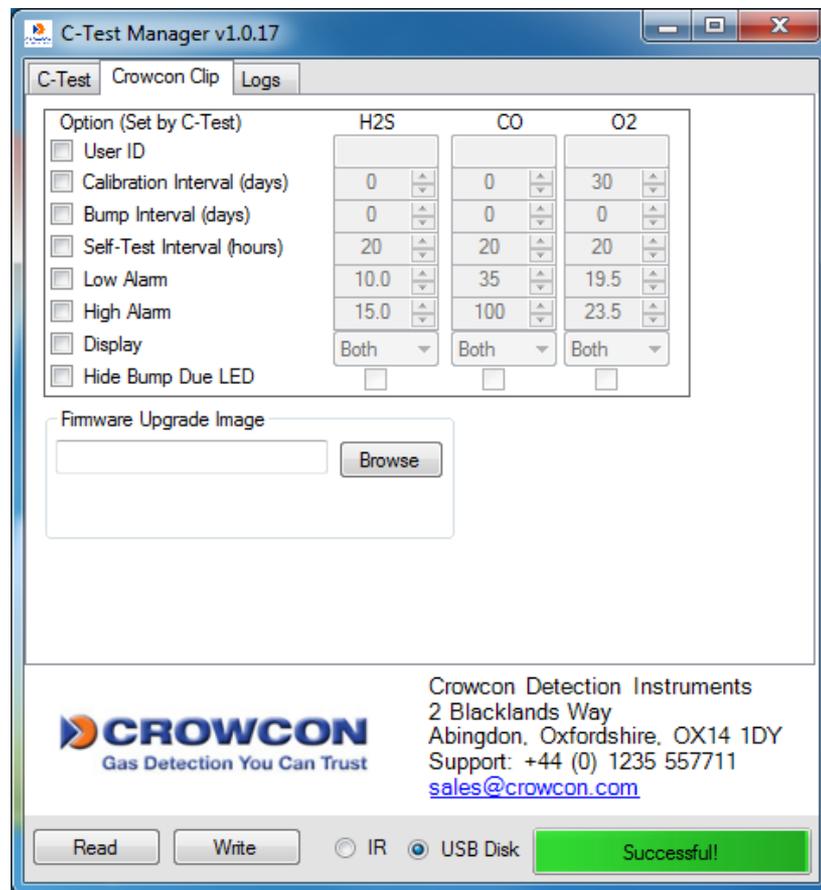
IR USB Disk



Configuration

Via C-Test

- User ID
- Calibration Interval
- Bump Interval
- Self Test Interval
- High & Low Alarm points
- Display Life Remaining or Real Time Gas
- Gas Test Due LED indication (on/off)



Event Log Management

Crowcon Clip Event Logs

Product Name	Crowcon Clip				
Log Type	Event Log				
Serial Number	SH12057358				
Firmware Version	4				
ID	1ST				
Life Remaining	22 months 18 days				
Total Number of Events	11				
Duration of Events	00:02:03				
Number of self-tests	4				
Event Date	Event Time	Bump Test	Duration	Sensor Reading	Alarm
27/06/2012	16:55:43	Yes	00:00:17	15	High Alarm
27/06/2012	16:59:30	No	00:00:06	12.2	Low Alarm
27/06/2012	17:01:38	Yes	00:00:17	15	High Alarm

Event Log Management

C-Test Event Log (TS-CC)

Date	Time	Test	Test Station	Serial	Overall Result	F/W version	H/W version	Location							
		Bay Num	Detector	Serial	Result	F/W version	H/W version	Audio		Num Sensors	Options				
				Sensor	Result	Reading	Bottle Lot #	Bottle Expiry	Bottle Concentration	Options					
27/06/2012	16:59:28	Bump Test	TS-CC	TS90001009	Pass	2.0.17		3 Crowcon							
27/06/2012	16:59:28	1	Crowcon Clip	SH12057358	Pass	4	1	Pass		1 T	F F	1ST	20		
27/06/2012	16:59:28			H2S	Pass	7.7	Cylinder123	2012 July 06	15	15	10 0	1 N/A	1		
27/06/2012	17:01:48	Calibration	TS-CC	TS90001009	Pass	2.0.17		3 Crowcon							
27/06/2012	17:01:48	1	Crowcon Clip	SH12057358	Pass	4	1	Pass		1 T	F F	1ST	20		
27/06/2012	17:01:48			H2S	Pass		Cylinder123	2012 July 06	15	15	10 0	1 N/A	1		