



FireCell

Technical Notes





EMS FireCell and Kentec Syncro – Seamless Integration

To deliver best in class performance as well as an unrivalled user experience EMS continually collaborate with FireCell partners, Kentec and Apollo, to bring innovation and added functionality to the FireCell wireless fire detection system.

The Kentec Syncro control panel is widely established across the fire industry and this software release offers backwards compatibility as well; to allow the use of wireless fire devices, a great way to add a few devices simply and quickly to systems already installed and in use.



FireCell Syncro

FireCell Syncro AS

Using the universal XP95© protocol, FireCell is widely accepted as the leading wireless and hybrid system available and is deployed and protecting properties across many business sectors and locations.

A new software release for FireCell will be launched in March 2016 providing even more flexibility and information. All control panels supplied from this date will be EMS “wireless ready” and have software which will make the installation of a wireless, wired or hybrid fire detection system seamless and intuitive. Just choose the wired or wireless option for each device and programme as normal; it’s as straightforward as that.



The upgrade software can be installed on-site and has simple to follow instructions, making the process straightforward and uncomplicated.

In a few minutes the system becomes EMS “wireless ready”. There is also a new version of Loop Explorer (MLoop 60082) to program the system, once the software has been upgraded.

See overleaf for more information.

Technical Summary

The control panel software has many new features which are available when used with the new Loop Explorer program.

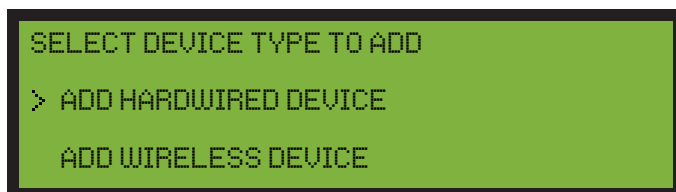
It is therefore recommended that the older program is used on existing panels or that they are upgraded to the latest revision.

A table of recommendations is shown adjacent.

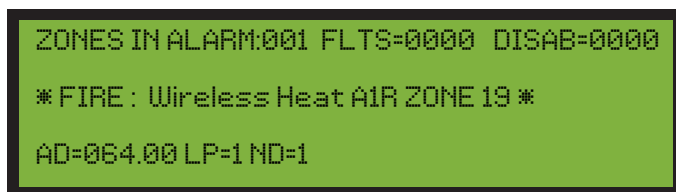
Recommendations	New Loop Explorer MLoop 60082	Loop Explorer MLoop 60020
New Syncro Control Panel Revision 6433 UK	✓	—
New Syncro AS Control Panel Revision 6456AS UK	✓	—
Syncro Control Panel Revision 642 UK or earlier	—	✓
Syncro AS Control Panel Revision 642AS UK or earlier	—	✓

New Control Panel Features

- Control panel menu option available to select different device types.



- Wireless text descriptor easily identifies type of device.

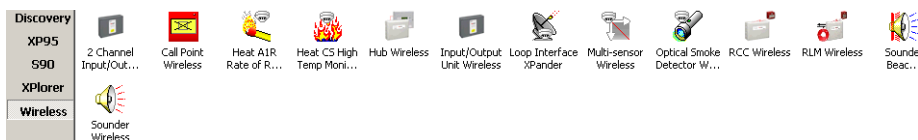


New Loop Explorer Features

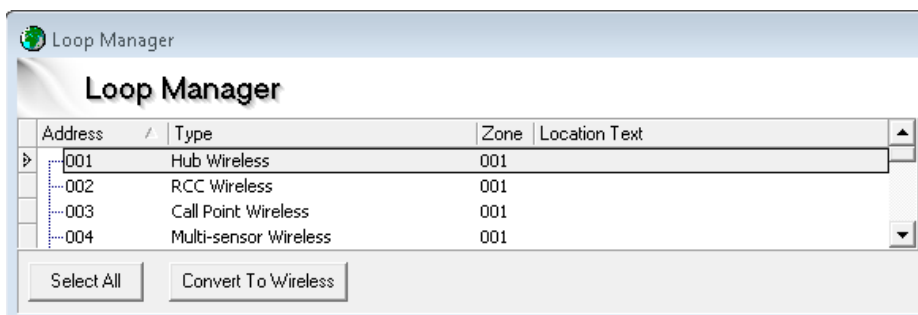
- Panels available for selection are now all standard control panels.



- Addition of generic wireless devices and infrastructure alongside the hardwired options.



- Option available to convert a loop of devices to Wireless (used after auto learning).



For more information or advice, contact EMS Technical Support on +44 (0) 1227 369570.



EMS Universal Power Supply for Radio Cluster Communicators (RCCs) EN54-4

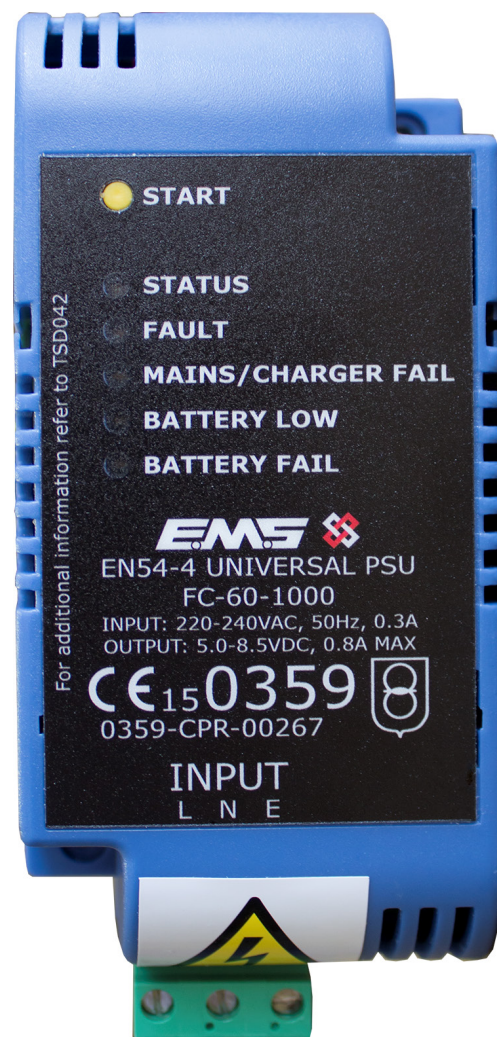
The FC-60-1000 Universal power supply has been newly launched for use in EMS current and future product ranges.

These products include the Radio Cluster Communicator used on the FireCell range for radio device communications.

The power supply has been developed for use in the Fire alarm market place and as expected the unit is fully certified to the EN54-4 standard and has third party certification.

General Specification

- The power supply is internally housed in the Radio Cluster Communicator as per previous product revisions.
- Input Voltage 220-240v ac 50Hz.
- 6v dc output voltage to the Radio Cluster Communicator pcb.
- Charging voltage for the internal 6v 4Ah battery.
- Provides the Radio Cluster Communicator with a 72 hour standby time.
- Mounting possible in either orientation to allow mains entry from the left or right hand side of the product.
- Can be used as a straight replacement for previous 113117 versions of RCC power supplies. Refer to the instruction manual TSD042 for full details.



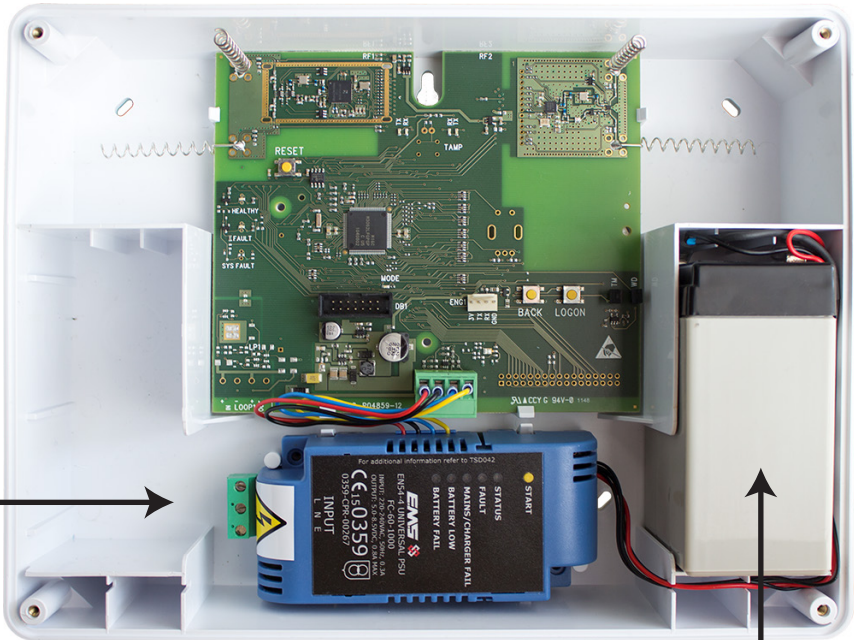
A full product technical specification is shown to the rear of this document.

Installation Changes

It should be noted that for installation ease the power supply is now factory fitted with the 220-240v ac mains input to the left of the product.

Radio Cluster Communicator
Part Number FC-555-001 in picture shown


Factory Fitted Mains Access
(On previous versions right hand access was standard).



Battery Part Number FC-006-004

Technical Data

Specification	
Operating Temperature	-10°C to 50°C (ambient)
Power Requirements	Mains Powered 220-240V AC
Min/Max Electrical Ratings	Input: 220-240V AC, 50Hz, 0.3A Output Current: Imin 0.0 Amps, Imaxa 0.8Amps, Imaxb 0.8Amps
Input / Output Fuse Ratings	Input: T3.15A (Non replaceable) Output: 300mA and 750mA Max (Resettable)
Battery Backup	1 x 6V 4Ah Yuasa NP4-6 FR, or 1 x 6V 4Ah YuGel Y4-6
Battery Standby Time	72 hours
Maximum Battery Internal Resistance	0.7 Ohms
Maximum Current Drawn from the Battery by the PSE with Mains Disconnected	5mA (PSU), plus 100mA (RCC PCB)
Dimensions	53mm (W) 110mm (H) 39mm (D)
Weight	150g

Regulatory information	
Manufacturer	EMS Security Group Ltd. Technology House, Sea Street, Herne Bay, Kent, CT6 8JZ, United Kingdom
Certification	CE 15
Certification body	0359
CPR Certificate DOP	0359-CPR-00267
Approved to	EN54-4:1998 Incorporating Amendments Nos. 1 and 2. Fire detection and fire alarm systems. Part 4: Power supply equipment.
Application	Intended for use in fire detection and fire alarm systems in and around buildings. Indoor use only.
European Union Directives	EMS Security Group Ltd hereby declares that this device is in compliance with the essential requirements and other relevant provisions of EN 50130-4:2011.
	2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see www.recyclethis.info Dispose of your batteries in an environmentally friendly manner according to your local regulations.
Contact Information	
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FireCell System EN54-23 Visual Alarm Devices (VAD's)

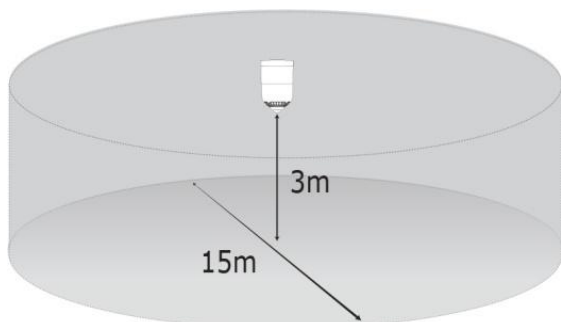
The new standard for Visual Alarm Devices (VADs), EN54 Part 23, was introduced in December 2013 and it specifies the requirements, test methods and performance criteria for VADs in automatic fire detection and alarm systems.

VADs now have to comply with this European standard and EMS has introduced a new range of wireless VADs that meet its exacting requirements.

The EMS FireCell range now has new EN54 part 23 beacons and EN54 part 3 and 23 sounder beacons which are available in wall mounted and ceiling mounted versions. Each product is provided in either red or white coloured mouldings and each beacon type will flash with a high intensity white light.

Ceiling Mounted Variant

The ceiling mounted variant has an EN54-23 approved coverage pattern of C-3-15. Therefore each device can be mounted up to 3m high and provide a 15m cylinder diameter coverage which can cover a 10.6m x 10.6m square room with a single device.

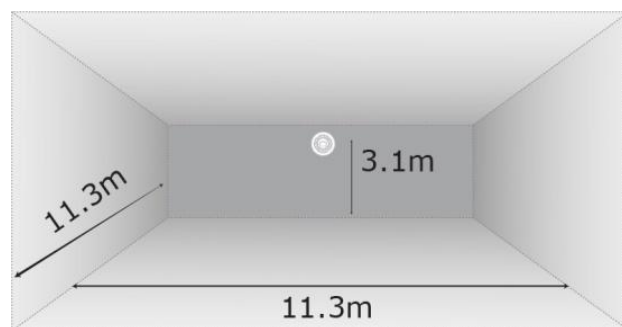


EN54-23 Coverage: C-3-15

Wall Mounted Variant

The wall mounted variant has an EN54-23 approved coverage pattern of W-3.1-11.3. Therefore each device can be mounted up to 3.1m high and can cover an 11.3m x 11.3m square room with a single device.

Existing visual indicators on FireCell systems can be upgraded in just a few minutes simply by changing it with an EN54 part 23 compliant VAD while at the same time retaining the installed wireless base. When replacing an existing wall mounted visual indicator with a wall mounted VAD, it may be necessary to re-orientate the wireless base mounting plate to



EN54-23 Coverage: W-3.1-11.3
ensure that the light is projected correctly.

The current visual indicator devices and the combined detector bases are still current and will still be supplied by EMS.

To meet the requirements of EN54 part 23 the new VAD devices have had to make use of different optical and sounder technologies than those that are used in the current products. While the new VADs are compatible with the wireless base the synchronisation between the new and old technologies is different.

A table outlining the synchronisation between the old and new VAD products is shown below:-



Synchronization Table	Wall Mounted VAD Sounder Beacon	Wall Mounted VAD Beacon Only	Ceiling Mounted VAD Sounder Beacon	Ceiling Mounted VAD Beacon Only	Sounder Visual Indicator	Visual Indicator Only	Existing Sounder	Combined Sounder	Combined Sounder Visual Indicator
Wall Mounted VAD Sounder Beacon	✓	✓	✓	✓	✗	✗	✗	✗	✗
Wall Mounted VAD Beacon Only	✓	✓	✓	✓	✗	✗	✗	✗	✗
Ceiling Mounted VAD Sounder Beacon	✓	✓	✓	✓	✗	✗	✗	✗	✗
Ceiling Mounted VAD Beacon Only	✓	✓	✓	✓	✗	✗	✗	✗	✗

Should you wish to purchase an upgrade to your FireCell system this can be organised by contacting EMS Customer Service at Head Office on 01227 369570 or via your Regional Business Development Manager.

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FC-179-002 Weather Resistant Kit IP55

EMS is pleased to announce that the Weather Resistant Kit, part number FC-179-002, is certified in accordance with BS EN60529:2000 and rated as **IP55**.

The Weather Resistant Kit can be used with the EMS wireless sounders, EN54-23 beacons and visual indicators as detailed below.

List price for this product is £50.00 ex VAT.

Suitable for use with:

Wireless Sounder Bases

FC-171-001 'White Sounder Base

FC-171-002 'Red Sounder Base

In conjunction with:

Sounder Heads

FC-172-001 'White Sounder

FC-172-002 'Red Sounder

Sounder Beacon Heads

FC-315-CA1 'White Ceiling Sounder Beacon

FC-315-CA2 'Red Ceiling Sounder Beacon

FC-315-WA1 'White Wall Sounder Beacon

FC-315-WA2 'Red Wall Sounder Beacon

Beacon Heads

FC-323-CA1 'White Ceiling Beacon

FC-323-CA2 'Red Ceiling Beacon

FC-323-WA1 'White Wall Beacon

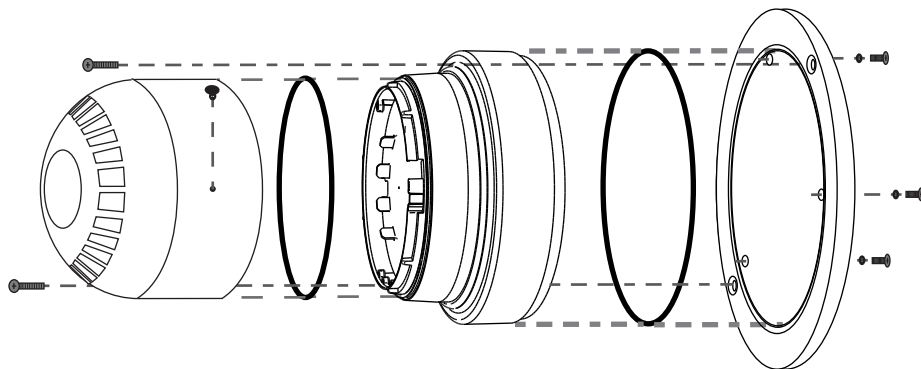
FC-323-WA2 'Red Wall Beacon

Visual Indicator Heads

FC-173-002 'Red Visual Indicator

FC-173-003 'Amber Visual Indicator

FC-173-004 'Clear Visual Indicator





Support is crucial to the success of any product. EMS embraces both existing and future technologies to ensure each customer gets information when they want it and when they need it.

EMS provides full telephone technical support on all our products from 08.00 until 18.00* Monday to Friday.

We believe that information should be clear and easy to use, and our YouTube channel is just that. With a number of short detailed help videos providing essential information on our products you can access this resource 24 hours a day.

Using a Smartphone is also an important part of our support package and EMS has two "must have" apps available.

The first is our FireCell support app which gives you access to a world of detailed information and assistance. It is also an ideal way to introduce customers to the benefits and features of wireless technology.

FireCell Guide

Making paper manuals a thing of the past...



Tablet ✓



Phone ✓

Free download on Google Play



To underpin this we also have a BS5839 app outlining the basic fundamentals of the standards, a great source of reference when you are on site or just need to review a piece of information.

Our ethos is one of ensuring each customer gets the service and support they need and to ensure trouble free installation EMS provides comprehensive training packages. These can be booked online, at a date which meets your schedule.

Normally we run courses at our Herne Bay Head Office but if you need us to visit you or perhaps deliver this training off site then this can also be arranged.

The EMS Technical Support department has recently introduced a new call logging system to improve not only department efficiency and traceability but also to ensure that the system engineer on site receives the "best in class" support service available.

The system logs each call with the site/engineer details and all relevant support information to provide a detailed and comprehensive audit trail

You can contact the team by telephoning +44 1227 369570 or email technical@emsgroup.co.uk

*UK Time

MK17 V4 November 2015



Management & Maintenance Recommendations for FireCell Optical Detection Heads

This Technical bulletin highlights drift compensation and pre-alarm response features of the EMS FireCell smoke detector and contains service management recommendations to ensure optimum performance and minimize unscheduled service calls.

The EMS FireCell optical smoke detector is an addressable conventional smoke detector which has been independently tested and approved to the standard: EN54-7:2000+A1:2002 for point smoke detectors.

The detector is also compliant with the essential requirements of the EMC Directive 2004/108/EEC and the Construction Products Directive 89/106/EEC.

In addition to the mandated requirements referred to above the EMS optical smoke detector incorporates drift compensation and pre-alarm features.

Drift Compensation & Pre Alarm Events

Smoke detectors irrelevant of manufacture and/or design origin are susceptible to dirt ingress which can alter the sensitivity of a detector over a period of time and eventually result in false/unwanted alarms.

Many high end smoke detectors and systems, including the EMS FireCell detector, incorporate "drift compensation" to overcome unwanted changes to analogue values caused by dirt ingress.

Detectors and systems that incorporate drift compensation announce that a device is "dirty" when a preset level of contamination within the detector is reached. In the instance of the FireCell smoke detector the device remains fully operational and capable of detecting a fire post reporting a "head dirty/contamination" event.

Similarly many high end detectors also incorporate a "pre-alarm" feature which in the instance of the FireCell detector indicates either that the detector has reached its upper most level of contamination compensation or that a slow burning low energy, smoky environment is present.

As the pre-alarm event also provides an earlier warning to the user of a potential fire it is essential that such events should always be thoroughly investigated in all instances.

If the environment is clear and no potential fire condition exists then the detector should be serviced as soon as possible as it is at the higher contamination level.

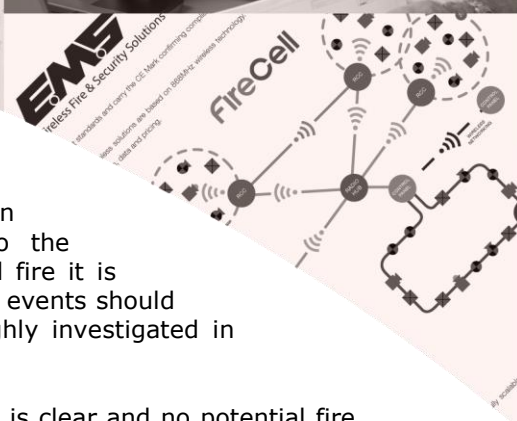
Of note is that once the EMS FireCell detector has gone into pre-alarm the device remains fully operational and capable of detecting a fire. If however the device is left in this state for a prolonged period it may result in "false" / "unwanted" / "nuisance" alarms being generated due to the sensitivity of the device being compromised.

Refer to figure 1: When drift compensation is active the alarm and pre-Alarm analogue levels are automatically adjusted to ensure factory set calibration is maintained. The difference in the analogue value between the clean air level and the alarm and pre-alarm level remain constant ensuring the full sensitivity of the detector is retained and thus nuisance alarms are alleviated.

When the drift compensation limit is reached a head dirty/compensation fault (analogue value 35) is annunciated and when analogue 50 is reached a pre-alarm is annunciated. Further contamination above analogue level 50 will result in a reduction in the sensitivity of the device.

Device Management & Maintenance Routines

Drift compensation and pre-alarm features are not a requirement within EN standards and neither are they a requirement within installation codes of practice. As these are enhanced features of a fire detector / detection system and not defined within standards there is no absolute prescribed levels at which the events are annunciated and thus they will differ between detectors and systems.



It is also perfectly acceptable to switch these features off or where deployed in systems that allow select a management routine to best suit the installation, maintenance company and end-user.

The EMS FireCell System facilitates management of the reporting of both contamination and pre-alarm event annunciation.

The Radio Hub in a FireCell System, SW V2.3 and above, controls by menu selection the ability for the automatic reporting conditions of the head dirty / compensation analogue 35 event. This enables the detectors to be managed by the maintenance company and the condition of the detection heads reviewed during routine maintenance visits. This is undertaken without any reduction in the system's performance and also ensures the end user is not subjected to nuisance event reporting.

As standard it is recommended that the Analogue 35 automatic reporting is set to the off condition. On routine maintenance visits the reporting value should then be selected. This will then indicate to the maintaining engineer, via the Radio Hub, detection heads that are currently in the contaminated condition.

An immediate on site decision can then be made for detectors displaying this condition to be either swapped out or left in situ until a pre-alarm condition and or a more convenient service time is available.

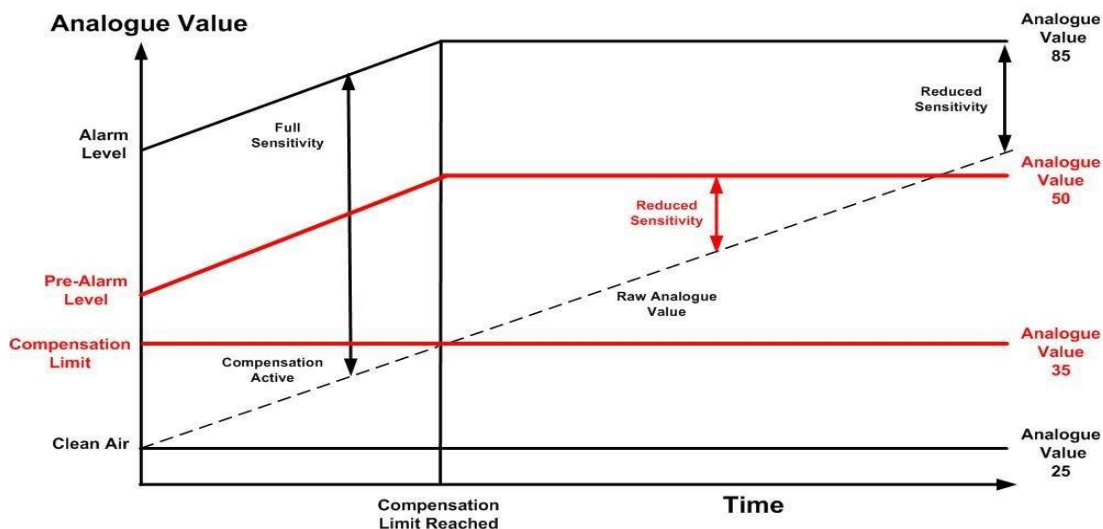
When contaminated detectors have been exchanged the event annunciation will automatically clear from the Radio Hub. The analogue value 35 event reporting should then be returned to the "off" setting ready for future maintenance visits.

Should pre-alarms from devices due to contamination require managing this can also be accommodated by the EMS FireCell system. If certain devices are activating into a pre-alarm condition due to the head becoming dirty and the sensitivity being reduced it is possible via the control panel on an individual basis to select detectors not to annunciate the pre-alarm condition.

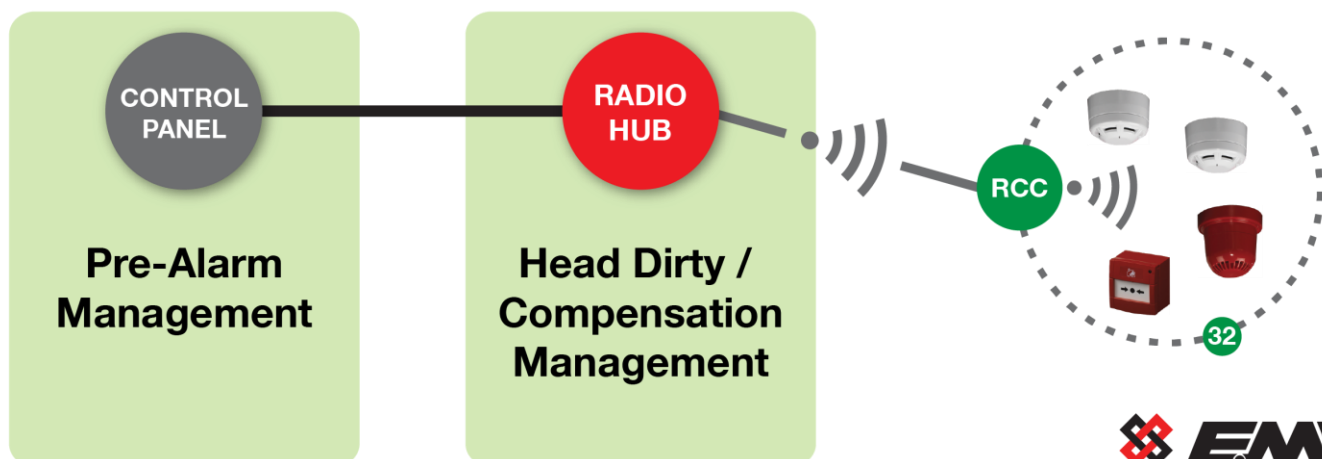
This feature is at maintenance engineer access level and particularly useful should no replacement device be immediately available.

In summation drift contamination reporting may be managed by the installation/maintenance company by menu selection at the FireCell Radio Hub unit and pre alarm reporting may be managed by menu selection at the fire alarm panel.

Figure 1



Overview





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