



# FireClass Addressable Fire Alarm Device Series

# What to use where?

It is advisable to carry out a Fire Risk Assessment of the area to be covered before applying any system design. This will determine the type and specification of the devices required.

Sounders are considered as the most important of all the alarm devices. It is a mandatory requirement that sounders are used as an integral part of the fire detection and alarm system as sounders are considered the most important of all the alarm devices.

VADs are used to supplement sounders, providing an effective means of alerting and evacuating occupants of the building, as part of its fire safety strategy. Regulations and codes of practices recommend that they should be installed in places where audible devices alone would be ineffective, or, where they are simply undesirable. Installation of VADs has been mandatory since January 2014 and, with the introduction of the EN54-23 the use of VADs has grown considerably.

VIDs are generally used as a supplementary indication to raise situational awareness. But, when an event occurs, they cannot be used as the only means to alert people to a potential hazard.



Hospitals

Broadcasting Studios

Impaired Hearing People Alone

Sleeping Areas

Hearing Protection

Typical examples of sites where VADs are needed:

Public assembly buildings - alert staff

Staged Fire

Other



# What is EN54-23?

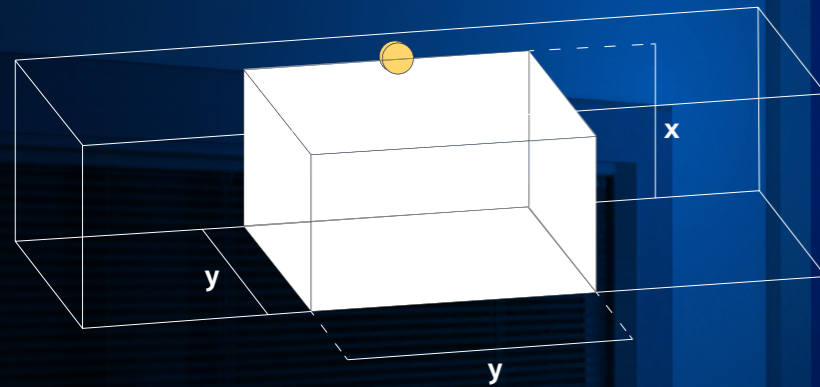
The recent release, by the European Committee for Standardization (CEN), of EN54-23 now clarifies the use of visual alarm devices in fire detection and alarm systems in non-domestic premises. These requirements became mandatory in January 2014.

EN54-23 now provides clarity by standardizing requirements, test methods and performance criteria of Visual Alarm Devices (VADs) and ensures all device parameters are measured in a uniform manner throughout Europe. Prior to this release, misinterpretation and confusion over a particular product's performance was a common concern in the industry as there was no EN standard in existence for VADs.

## Main requirements from EN54-23 are:

- The coverage volume (i.e. volume within which required illumination is achieved) must be stated on the product or supporting documentation.
- The VAD should meet the requirement for coverage volume of at least one of the following categories: W (Wall), C (Ceiling), O (Open Class).
- Required illumination of 0.4 lux on a surface perpendicular to the direction of the light emitted from the VAD.
- The rate of flash should be stated between 0.5Hz and 2Hz.
- The devices must be classified as Type A, indoor and Type B, outdoor.

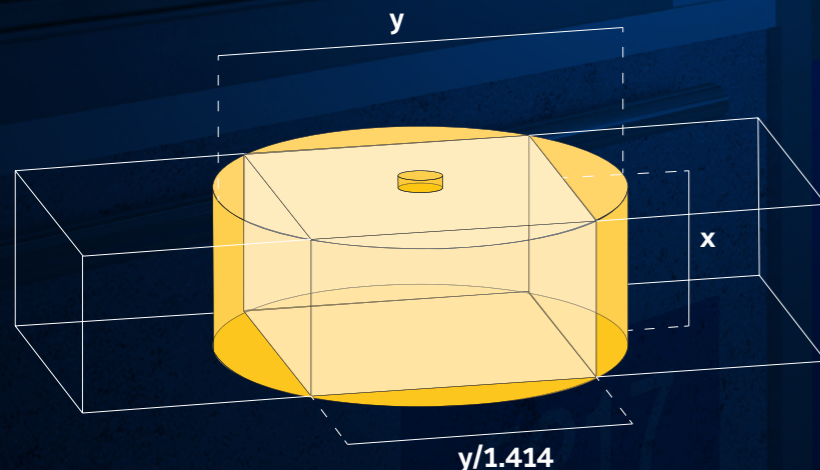
## Coverage Volumes: Wall category



**Coverage volume code:**  
**W – (x) - (y)**  
**W = wall mounted**

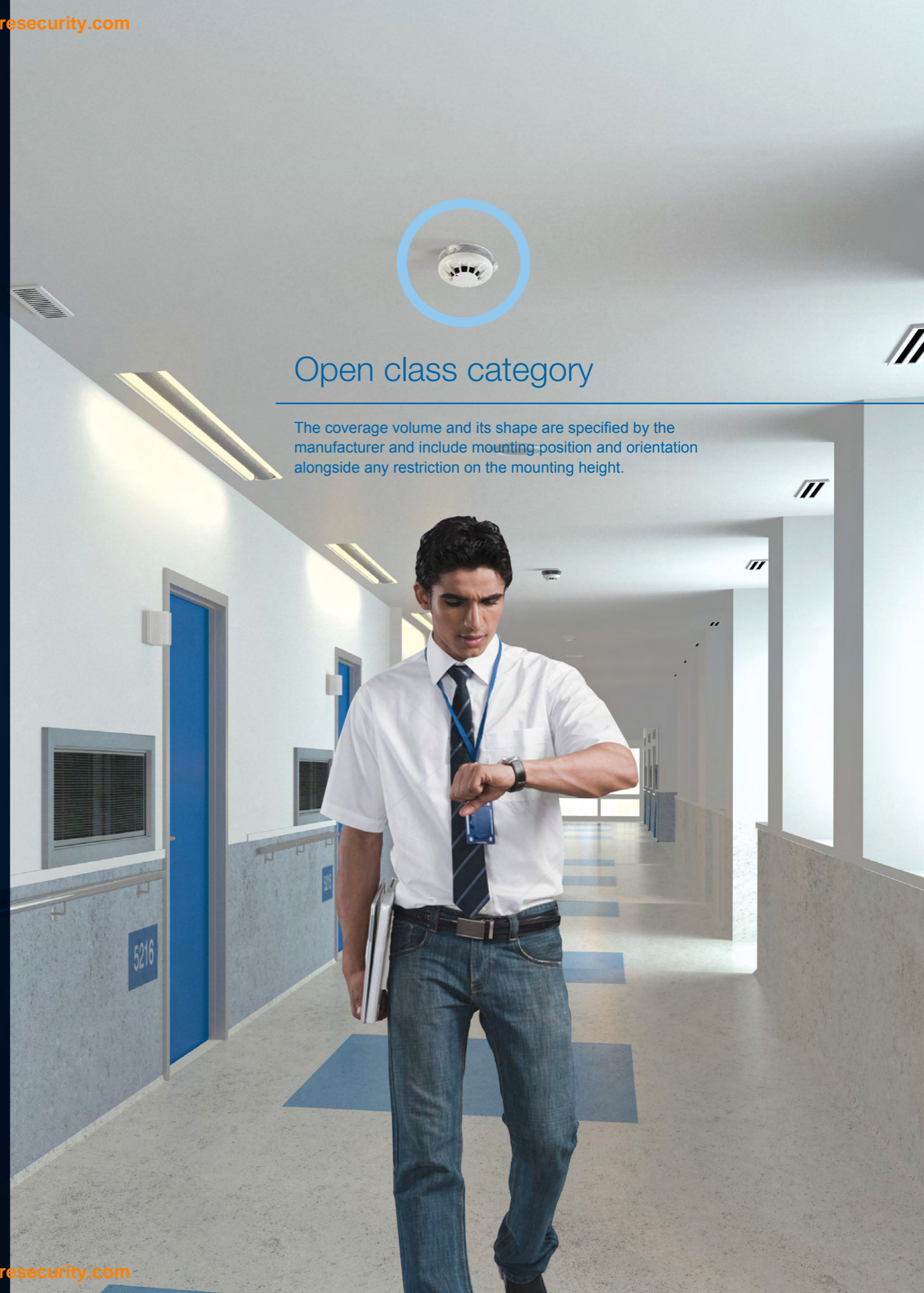
x = maximum mounting height  
 y = length and width in meters of the cubic volume covered (to a minimum level of 0.4 lux) when the device is mounted to the wall at a height of x

## Ceiling category



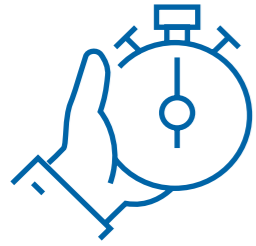
**Coverage volume code:**  
**C – (x) - (y)**  
**C = ceiling mounted**

x = maximum mounting height  
 y = length and width in meters of the cubic volume covered (to a minimum level of 0.4 lux) when the device is mounted to the wall at a height of x



## Open class category

The coverage volume and its shape are specified by the manufacturer and include mounting position and orientation alongside any restriction on the mounting height.



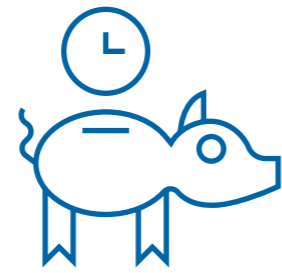
## Faster reaction to alarm activation 20ms Pulse Length

In the last decade, power efficient LED technology become more prevalent and replaced xenon as light source in most of the visual indicating and alarm devices in the market. Recent research has shown that the effect of the LED light on the human eye is influenced by the light pulse length and this may not be the same as that emitted by a Xenon light.

Independent laboratory tests show that duration of the pulse within visual alarm devices influences the way people react to it. Interestingly, the shorter the pulse duration, the faster the reaction. Consequently shorter pulse durations of LED devices will result in improved reactions as attention to the light is drawn sooner.

At FireClass we understand how the shorter pulse length is a crucial element in improving reaction times.

The new range of devices from FireClass capture these latest innovations and breakthroughs in light technology to operate LED devices with a pulse duration that does not exceed 20ms. This can have an effect on the human eye that is comparable to Xenon light.



## Low current

Power consumption is the biggest consideration when complying with EN54-23. The new visual alarm and indication devices from FireClass have been specifically designed to operate with low levels of current consumption, meaning more devices can be used on a loop. This makes system design and installation easier and far more cost effective.





## Reflective Monitoring and Self Test

Regular testing of fire detection systems is necessary but is often disruptive especially in buildings such as hospitals or hotels. The new range of fire alarm devices from FireClass are, smart enough to test themselves without disruption when required.

Reflective Light Monitoring (RLM) is used to perform a full self-test of all VADs.

Reflective Sound Monitoring (RSM) enables a full-self test of sounding devices.

RSM and RLM measure and test sound and light output. These are not based on electronic measurements or simulations, but on real output. This method of testing is highly accurate and reassures the end user by providing a high level of confidence in the performance of the system.

These self-tests can be triggered from the panel user interface at any time..

N.B. Available on FC32/64/240 panels only

## High quality and expertise

Our group has extensive expertise for notification devices within the USA. We have sold millions of devices improving our product and sales knowledge. Now, FireClass can benefit from this impressive knowledge.

Our new alarm devices are made in world-class globally certified European factories, which ensure the highest levels of quality and environmental health and safety.



## FC440AVW, FC440AVR, FC445AVR

Addressable wall sounder VADs



### General Information

The FC440AV range of compact addressable wall sounders with a visual alarm device (VAD) includes three models with the same low current and high output specification; red and white body indoor models plus an IP rated version for either outdoor or harsh environment applications.

#### FC440AVW

#### FC440AVR

#### FC445AVR

Coverage volume code	W-2.4-7.5	W-2.4-7.5	W-2.4-7.5
Devices per loop	Up to 36 (*)	Up to 36 (*)	Up to 36 (*)
Flash rate	0.5 / 1 Hz	0.5 / 1 Hz	0.5 / 1 Hz
Dimensions (WxHxD) mm	89 x 135 x 40 (without BackBox)	89 x 135 x 40 (without BackBox)	105 x 135 x 97 (with IP BackBox)
Sound output @ 1m	Up to 100dBA	Up to 100dBA	Up to 100dBA
Body colour	White	Red	Red
Flash colour	White	White	White
IP code	IP21C	IP21C	IP55
Approvals	EN54-3, 23, 17	EN54-3, 23, 17	EN54-3, 23, 17

(\*) Full intensity VAD with sounder at high volume, 0.5 A loop.  
Loop quantities are for guidance only and should be verified with loop the calculator.

### General Features

- A compact and unobtrusive sounder solution
- Reflective Sound Monitoring (RSM)
- Reflective Light Monitoring (RLM)
- Self-test (\*\*)
- Shorter Light Pulse for faster response
- Indoor and outdoor versions
- Indoor models can be semi-flush or surface mounted including a choice of shallow or deep back box
- IP rated option has a deep surface back box for use with suitable IP-rated glands and cabling
- Power and data from the loop. No additional wiring or power supplies required
- Built-in line isolator
- 16 selectable tones
- Realistic Conventional Bell Tone
- 2 selectable volumes
- 2 selectable flash rates
- Select the tone volume and flash rate using panel configuration software
- Independent addressable control of the sounder and beacon
- Different tones can be used for fire alarm and class change
- Rectangle wall mount for an aesthetically pleasing option
- A locking pin/screw supplied which prevents unauthorized removal

### Product Order Codes

<b>576.440.007(*)</b> FC440AVW Addressable Wall Sounder VAD White	<b>557.080.010</b> A-BOX Flush Back Box Adaptor For Indoor Wall Sounder / VAD / VID
<b>576.440.008(*)</b> FC440AVR Addressable Wall Sounder VAD Red	<b>557.080.011</b> D-BOXR Deep Surface Back Box For Indoor Wall Sounder / VAD / VID Red
<b>576.440.009(*)</b> FC445AVR Addressable Wall Sounder VAD IP Red	<b>557.080.012</b> D-BOXW Deep Surface Back Box For Indoor Wall Sounder / VAD / VID White
<b>557.080.007</b> S-BOXR Shallow Surface Back Box For Indoor Wall Sounder / VAD / VID Red	
<b>557.080.008</b> S-BOXW Shallow Surface Back Box For	

## FC440AIW, FC440AIR and FC445AIR

Addressable wall sounder and VIDs



### General Information

The FC440AI range of compact addressable wall sounders with the visual indicating device (VID) includes three models with the same low current and high output specification; red and white body indoor models plus an IP rated version for either outdoor use or for harsh environment applications.

#### FC440AIW

#### FC440AIR

#### FC445AIR

Devices per loop	Up to 46 (*)	Up to 46 (*)	Up to 46 (*)
Flash rate	0.5 / 1 Hz	0.5 / 1 Hz	0.5 / 1 Hz
Dimensions (WxHxD) mm	89 x 135 x 40 (without BackBox)	89 x 135 x 40 (without BackBox)	105 x 153 x 97 (with IP BackBox)
Sound output @ 1m	Up to 100dBA	Up to 100dBA	Up to 100dBA
Body colour	White	Red	Red
Flash colour	Red	Red	Red
IP code	IP21C	IP21C	IP55
Approvals	EN54-3, 17	EN54-3, 17	EN54-3, 17

(\*) Beacon at 0.5Hz with sounder at high volume, 0.5 A loop.  
Loop quantities are for guidance only and should be verified with the loop calculator.

### General Features

- A compact and unobtrusive sounder solution
- Reflective Sound Monitoring (RSM)
- Light is electronically monitored by the control panel
- Self-test (\*\*)
- Indoor and outdoor versions
- Indoor models can be semi-flush or surface mounted including a choice of shallow or deep back box
- IP rated option has a deep surface back box
- Power and data from the loop. No additional wiring or power supplies required
- Built-in line isolator
- 16 selectable tones
- Realistic Conventional Bell Tone
- 2 selectable volumes
- 2 selectable flash rates
- Select the tone volume and flash rate using panel configuration software
- Independent addressable control of the sounder and beacon
- Different tones can be used for fire alarm and class change
- Rectangle wall mount for an aesthetically pleasing option
- A locking pin/screw supplied which prevents unauthorized removal

### Product Order Codes

<b>576.440.011</b> FC440AIW Addressable Wall Sounder VID White	<b>557.080.010</b> A-BOX Flush Back Box Adaptor For Indoor Wall Sounder / VAD / VID
<b>576.440.012</b> FC440AIR Addressable Wall Sounder VID Red	<b>557.080.011</b> D-BOXR Deep Surface Back Box For Indoor Wall Sounder / VAD / VID Red
<b>576.440.013</b> FC445AIR Addressable Wall Sounder VID IP Red	<b>557.080.012</b> D-BOXW Deep Surface Back Box For Indoor Wall Sounder / VAD / VID White
<b>557.080.007</b> S-BOXR Shallow Surface Back Box For Indoor Wall Sounder / VAD / VID Red	
<b>557.080.008</b> S-BOXW Shallow Surface Back Box For Indoor Wall Sounder / VAD / VID White	

## FC440SW, FC440SR and FC445SR

### Addressable wall sounders



#### General Information

The FC440S range of compact addressable wall sounders includes three models with the same low current and high output specification; red and white body indoor models plus an IP rated version for either outdoor use or for harsh environment applications.

#### FC440SW

#### FC440SR

#### FC445SR

<b>Devices per loop</b>	Up to 59 (*)	Up to 59 (*)	Up to 59 (*)
<b>Dimensions (WxHxD) mm</b>	89 x 135 x 40 (without BackBox)	89 x 135 x 40 (without BackBox)	105 x 153 x 97 (with IP BackBox)
<b>Sound output @ 1m</b>	Up to 100dBA	Up to 100dBA	Up to 100dBA
<b>Body colour</b>	White	Red	Red
<b>IP code</b>	IP21C	IP21C	IP55
<b>Approvals</b>	EN54-3, 17	EN54-3, 17	EN54-3, 17

(\*) Sounder set at high volume, 0.5 A loop.  
Loop quantities are for guidance only and should be verified with the loop calculator.

#### General Features

- A compact and unobtrusive sounder solution
- Reflective Sound Monitoring (RSM)
- Self-test (\*\*)
- Indoor and outdoor versions
- Indoor models can be semi-flush or surface mounted including a choice of shallow or deep back box
- IP rated option has a deep surface back box
- Power and data from the loop. No additional wiring or power supplies required
- Built-in line isolator
- 16 selectable tones
- Realistic Conventional Bell Tone
- 2 selectable volumes
- Select the tone volume using panel configuration software
- Different tones can be used for fire alarm and class change
- Rectangle wall mount for an aesthetically pleasing option
- A locking pin/screw supplied which prevents unauthorized removal

#### Product Order Codes

<b>576.440.003</b> FC440SW Addressable Wall Sounder White	<b>557.080.010</b> A-BOX Flush Back Box Adaptor For Indoor Wall Sounder / VAD / VID
<b>576.440.004</b> FC440SR Addressable Wall Sounder Red	<b>557.080.011</b> D-BOXR Deep Surface Back Box For Indoor Wall Sounder / VAD / VID Red
<b>576.440.005</b> FC445SR Addressable Wall Sounder IP	<b>557.080.012</b> D-BOXW Deep Surface Back Box For Indoor Wall Sounder / VAD / VID White
<b>557.080.007</b> S-BOXR Shallow Surface Back Box For Indoor Wall Sounder / VAD / VID Red	
<b>557.080.008</b> S-BOXW Shallow Surface Back Box For Indoor Wall Sounder / VAD / VID White	

## FC440AVB and FC441AVB

### Addressable sounder VAD bases



#### General Information

The FC440AVB and FC441AVB are addressable sounder bases with a visual alarm device specifically for use with the FireClass addressable detectors. The bases are available as fire alarm sounders with visual alarm device (VAD) in two power outputs, Standard and High. The High power option provides more coverage for the VAD compared to Standard. Each has an address so they can be monitored and controlled from the fire alarm control panel, which is independent of the detector fitted to the base. The power and communications for the sounder, VAD and detector are provided by the digital loop. This helps to reduce installation costs as no additional wiring is required.

#### FC440AVB

#### FC441AVB

<b>Coverage volume code</b>	C-3-8	C-3-15
<b>Devices per loop</b>	Up to 43 (*)	Up to 27 (*)
<b>Flash rate</b>	0.5 / 1 Hz	0.5 / 1 Hz
<b>Dimensions (ØxH) mm</b>	135 x 45	135 x 45
<b>Sound output @ 1m</b>	Up to 90dBA	Up to 90dBA
<b>Body colour</b>	Clear	Clear
<b>Flash colour</b>	White	White
<b>IP code</b>	IP21C	IP21C
<b>Approvals</b>	EN54-3, 23, 17	EN54-3, 23, 17

(\*) Full intensity VAD with sounder at high volume, 0.5 A loop.  
Loop quantities are for guidance only and should be verified with loop the calculator.

#### General Features

- A compact and discrete solution
- VAD approved to EN54-23 with two ranges, standard power and high power available
- High Power option provides a larger VAD coverage volume compared to Standard
- Reflective Sound Monitoring (RSM)
- Reflective Light Monitoring (RLM)
- Self-test (\*\*)
- Shorter Light Pulse for faster response
- Optimise the system design for lowest power requirements and lowest cost installation
- Triple light source
- One point of installation for detector, sounder and visual indicator with no additional wiring
- Independent addressable control of the sounder and beacon
- Built-in line isolator
- Select the tone, volume and flash rate using panel configuration software
- 15 selectable tones. Allows users to select the tone with which they are most familiar.
- Realistic Conventional Bell Tone
- 2 selectable volumes
- 2 selectable flash rates
- Different tones can be used for fire alarm and class change
- VADs and sounders are synchronised over the entire loop
- A locking pin supplied with the base which prevents the unauthorized removal of the detector
- Provides an EN54-23 approved upgrade path for legacy systems

#### Product Order Codes

<b>576.440.006 (*)</b> FC440AVB Addressable Base Sounder VAD Standard Power	<b>557.080.001</b> B-CAP Blanking Cap For Sounder / VID / VAD Bases White
<b>576.440.014 (*)</b> FC441AVB Addressable Base Sounder VAD High Power	<b>557.080.002</b> A-CON Conduit Adaptor For Sounder / VID / VAD Bases White

## FC440SB and FC440AIB

Addressable sounder base and addressable sounder VID base



### General Information

The FC440SB is an addressable sounder base specifically for use with the FireClass addressable detectors. The base incorporates a fire alarm sounder that carries its own address so it can be monitored and controlled from the fire alarm control panel, which is independent of the detector fitted to the base. Both power and communications for the sounder and detector are provided by the digital loop. This helps to reduce installation costs as no additional wiring is required. Additionally, the FC440AIB houses an addressable LED beacon to provide a visual indicator otherwise known as a VID.

#### FC440SB

#### FC440AIB

<b>Devices per loop</b>	Up to 115 (*)	Up to 74 (**)
<b>Flash rate</b>	N/A	0.5 / 1 Hz
<b>Dimensions (ØxH)mm</b>	114 x 45	114 x 45
<b>Sound output @ 1m</b>	Up to 90dBA	Up to 90dBA
<b>Body colour</b>	White	Clear
<b>Flash colour</b>	N/A	Red
<b>IP code</b>	IP21C	IP21C
<b>Approvals</b>	EN54,3, 17	EN54,3, 17

(\*) Sounder at high volume, 0.5 A loop.

(\*\*) Beacon at 0.5 Hz with sounder at high volume, 0.5 A loop.

Loop quantities are for guidance only and should be verified with the loop calculator.

### General Features

- A compact and discrete solution
- One point of installation for detector, sounder and visual indicator with no additional wiring
- Reflective Sound Monitoring (RSM)
- Light is electronically monitored by the control panel
- Self-test (\*\*\*)
- Independent addressable control of the sounder and beacon
- Built-in line isolator
- Select the tone, volume and flash rate using panel configuration software
- 15 selectable tones. Allows users to select the tone with which they are most familiar
- Realistic Conventional Bell Tone
- 4 selectable volumes
- 2 selectable flash rates
- Different tones can be used for fire alarm and class change
- VIDs and sounders are synchronised over the entire loop
- A locking pin supplied with the base which prevents the unauthorized removal of the detector

### Product Order Codes

- 576.440.002** FC440SB Addressable Base Sounder
- 576.440.010** FC440AIB Addressable Base Sounder VID
- 557.080.001** B-CAP Blanking Cap For Sounder / VID / VAD Bases White
- 557.080.002** A-CON Conduit Adaptor for Sounder / VID / VAD Bases White

## FC440DSB Detector Sounder Base

Detector activated sounder base



### General Information

The FC440DSB is a detector base specifically for use with the FireClass addressable detectors. The base incorporates a fire alarm sounder that is activated directly by the detector.

#### FC440DSB

<b>Devices per loop</b>	Up to 128 (*)
<b>Dimensions (ØxH) mm</b>	114 x 45
<b>Sound output @ 1m</b>	Up to 90dBA
<b>Body colour</b>	White
<b>IP code</b>	IP21C
<b>Approvals</b>	EN54,3

(\*) Sounder at high volume, 0.5 A loop.

Loop quantities are for guidance only and should be verified with the loop calculator.

### General Features

- A compact and discrete solution
- One point of installation for detector and sounder with no additional wiring
- Low power with up to 250 sounders on a single loop. Provides uncompromised system design solutions
- Simple to select the tone and volume using switches. No special training or tools needed
- 9 selectable tones
- 4 selectable volumes
- A locking pin supplied with the base which prevents the unauthorized removal of the detector
- Replaces FC430SB and it is compatible with FireClass addressable detectors

### Product Order Codes

- 576.440.001** FC440DSB FireClass Detector Base Sounder
- 557.080.001** B-CAP Blanking Cap for Sounder / VID / VAD Bases White
- 557.080.002** A-CON Conduit Adaptor for Sounder / VID / VAD Bases White

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## FC445CAV and FC440CAVB

Addressable wall sounder VAD and sounder VAD base



### General Information

Those two models are equivalent respectively of FC445AVR and FC440AVB but they are compatible with FC510 and FC520 panels and should be used only with those panels. The panel display will show device type of the previous FC410LPBS and FC430LPBSB.

#### FC445CAV

#### FC440AVB

Coverage volume code	W-2.4-7.5	C-3-8
Devices per loop	Up to 44 (*)	Up to 67 (*)
Flash rate	0.5 / 1 Hz	0.5 / 1 Hz
Dimensions (WxHxD)/ (ØxH) mm	105x 153x 97 (with IP BackBox)	135x45
Sound output @ 1m	Up to 100dBA	Up to 90dBA
Body colour	Red	Clear
Flash colour	White	White
IP code	IP55	IP21C
Approvals	EN54-3, 23, 17	EN54-3, 23, 17

(\*) Low Intensity VAD with sounder at high volume, 0.5A loop.  
Loop quantities are for guidance only and should be verified with loop the calculator.

### General Features

- A compact and unobtrusive sounder solution
- Shorter Light Pulse for faster response
- FC445CAV is outdoor versions with a deep surface back box for use with suitable IP-rated glands and cabling
- Power and data from the loop. No additional wiring or power supplies required
- Built-in line isolator
- 16 selectable tones for FC445CAV
- 15 selectable tones for FC440AVB
- Realistic Conventional Bell Tone
- 2 selectable volumes for FC445CAV
- 4 selectable volumes for FC440CAVB
- 2 selectable flash rates
- Select the tone volume and flash rate using panel configuration software

### Product Order Codes

576.440.016 FC440CAVB FireClass Addressable Base Sounder Beacon VAD BC

576.440.017 FC445CAV FireClass Addressable Wall Sounder Beacon VAD BC



