CHANNEL

SAFETY SYSTEMS

AlarmSense

2 wire conventional alarm system

from Channel Safety Systems

BAFE

FIA Fire Industry Association

apollo PARTNER PLUS

BSI UKAS 003

CSL DualCom

AlarmSense

2 wire conventional alarm system

Two-wire AlarmSense has been developed to make the design and installation of a fire detection and alarm system easier and more economic for small to medium sized buildings. The range also allows an existing system to be extended or modified if necessary, this flexibility makes AlarmSense an excellent choice for use in Houses of Multiple Occupation (HMO's).

Most conventional fire systems are designed to work with two pairs of wires per zone: one pair for detection devices such as smoke detectors, heat detectors and manual call points; the other for alarm devices such as bells, sounders or strobes. By using different voltage bands for quiescent and alarm states, AlarmSense components can be connected to the same pair of supply wires.

When powered and controlled by the AlarmSense two-wire fire panel, this reliable technology takes all the complexity out of fire alarm system design, leading to quicker, less expensive and more flexible installations. Research shows an **AlarmSense two-wire systems can achieve up to 40% reduction of labour over a standard four wire conventional system.**

Features

- Designed to comply with EN54 parts 2 and 4
- Installer-friendly design accommodates easy first fix and straightforward maintenance
- Attractive flush or surface mountable plastic lid and enclosure
- Auxiliary remote, fire, fault and reset outputs
- 'Class change' and alert inputs
- Four conventional sounder circuits (for use with non-AlarmSense sounders)
- Low quiescent current - for extended standby times with small batteries
- Intuitive user-friendly interface
- Multiple indicators provide a comprehensive overview of system status.
- Push button access code or keyswitch entry (dependent on model purchased) to a wide range of Engineering functions, including:
    - Selectable zone delay facility
    - Zone test facility
    - Coincidence (double-knock) facility
    - Non-latching zones facility
    - Comprehensive fault diagnostic facilities
- System expansion connections for up to eight two-wire repeater panels and a range of Relay Output Cards
- 2, 4 and 8 zone versions available
- Wide range of engineering functions including zone test, coincidence, zone delay and non-latching zones
- Two on-board relays (Fire and Fault)
- Two open-collector outputs (Remote and Reset)
- Panels are supplied without battery
- Low quiescent current
- Multiple indicators
- End of line units included (one per zone)
- Ancillary system expansion connections provided for up to eight two-wire repeaters (one CHS/RDC network driver card required per system) and optional relay boards
- Space for two x 12V 3.2Ah VRLA batteries
- Third-party LPCB tested and approved

Image shows from left to right F/CHAS/2 , F/CHSM/P/AS & F/CHWB/RD/AS

Depth of product 96mm

Weight 1.75kg (without batteries)

PRODUCT CODE	DESCRIPTION
F/CHAS/2	AlarmSense 2-zone fire panel requires 24/2.1 battery
F/CHAS/4	AlarmSense 4-zone fire panel requires 24/2.1 battery
F/CHAS/8	AlarmSense 8-zone fire panel requires 24/3 battery
F/CH24/2.1	24V 2.3 AH battery
F/CH24/3	24V 3 AH battery
F/CHSC/R	AlarmSense 8-zone repeater panel
F/CHSC/RDC	Repeater driver card
S/E20/A	Relay card for use with AlarmSense (fitted in panel)
S/E20/ZL	Zone relay card for use with AlarmSense (fitted in panel)
F/CHRM/AS	AlarmSense relay module (fitted on zone wiring)

POWER SUPPLY SPECIFICATIONS	
Mains supply voltage	230V ±10% 50/60Hz
Mains rated current	350mA maximum
Internal power supply	19V - 28.5V (27V nominal), Ripple 7V maximum (battery fault)
Total output current limited to	1.5A @ 230Vac (ImaxA = 146mA)
Maximum internal battery resistance	Ri max = 1.5 Ω
Supply and battery charger monitored for failure	YES (battery charger is also temperature compensated)
Batteries monitored for disconnection and failure	YES
Max. battery size and type	2 x 12V 3.2Ah VRLA type, connected in series. Minimum battery size 1.2Ah
Mains fuse (F1)	240V 1A HRC ceramic 20mm compliant with IEC (EN60127 PT2)
Battery fuse	1.6A F 20mm compliant with IEC (EN60127 PT2)
Current draw from battery (Mains failed)	1.5A maximum

ZONE CIRCUIT SPECIFICATIONS	
Number of circuits	2, 4 & 8
Max cable length per circuit	500 metres
Internal power supply	19V - 28.5V (27V nominal), Ripple 7V maximum (battery fault)
Line monitored for head out, open & short circuit faults	DC monitoring
Maximum allowable impedance (each conductor)	20
Maximum cable capacitance (per circuit)	0.27µF
Max. number of detectors/manual call points per zone	25 per zone
Max. number of sounders per zone	The panel's power supply is designed to give a max. output current of 1.5A. In addition to powering the sounders, this current is also used for handling short circuit faults and supplying the panel's battery charging circuit and any output relays which may be fitted. As a safe margin and to allow for these other loads, the total sounder loading for the panel should not exceed a maximum of 1.25A. Each zone circuit and each sounder circuit will support a max. sounder alarm current of 200mA. Currents in excess of this will cause the circuit's fuse to trip. The sounders should be distributed throughout the site according to the sound levels required, but the load should be distributed as equally as possible across each circuit.

CONVENTIONAL SOUNDER CIRCUIT SPECIFICATIONS	
Number of circuits	4
End of line resistor value	6800 ohm 5% Tol. 0.25W (blue, grey, red, gold)
Each circuit monitored for open and short circuit	reverse voltage DC monitoring. Indicated by common fault.
Alarm voltage	27V maximum, 20V minimum (final battery voltage)
Sounder circuit fuses	Each circuit protected by resetable fuses. (200mA min. hold current; 400mA max. trip current; Approx. 50mA when tripped. Reset when faults removed)
Maximum total sounder output current to all outputs	4 x 200mA = 800mA
Maximum No. of bells @ 25mA	32
Maximum No. of electronic sounders @ 20mA	40 (sounders must be polarised)

AUXILIARY RELAY OUTPUTS SPECIFICATIONS	
Aux. Fire relay output (AUX)	Voltage free single pole changeover; Max. switching current 1A; Max. switching voltage 30Vdc
Fault relay output (FAULT)	Voltage free single pole changeover; Max. switching current 1A; Max. switching voltage 30Vdc

AUXILIARY OPEN COLLECTOR OUTPUTS SPECIFICATIONS	
Reset auxiliary output (RESET)	Non monitored, open collector type. Active during reset cycle.
Remote auxiliary output (REM)	Non monitored, open collector type. Active during any fire condition (provided all relevant delays have expired)
Max. sink current	30mA each
Max. open circuit voltage	24V aux power output (for use with the above) Output protected by a resetable fuse (100mA min. hold current) . Fuse resets when fault removed

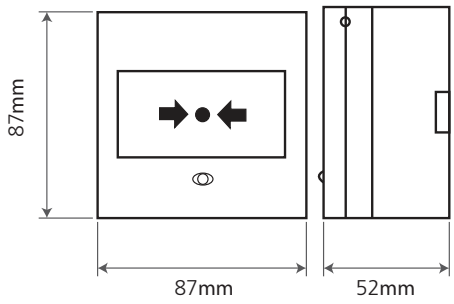
AUXILIARY INPUTS SPECIFICATIONS	
Class Change (makes sounders sound continuously)	Connect to OV to trigger. Max. input voltage 27V. (Non-latching)
Alert (makes sounders pulse intermittently)	Connect to OV to trigger. Max. input voltage 27V. (Non-latching)

Manual Call Point

The AlarmSense Manual Call Point is compliant with EN54:11. It is different from other conventional call points in that it can be detected as an operated call point rather than a detector that has changed to the alarm state.

Features

- Resettable element
- Red LED to signal alarm



SPECIFICATIONS	
Operating Voltage Range	9-33V
Polarity	Polarity insensitive
Quiescent current @ 15V	<50µA
Alarm Current @	2-8.5V - <1.5mA 10.5-15V - 25 ± 2mA 18-24V - <1.5mA 33V - <2mA
Maximum Rest Voltage	2V
Reset Time	1s
LED Indicator	red
Maximum Supply Interruption	40ms
EMC	CE marked to EN50130-4
Weight	170g

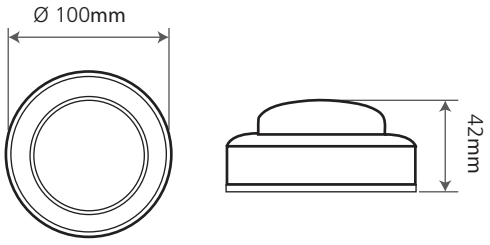
PRODUCT CODE	DESCRIPTION
F/CHBG/S/AS	AlarmSense surface break glass

Optical Smoke Detector

The AlarmSense Optical Smoke Detector works using the light scatter principle. The detector changes to alarm state at a pre-set threshold of smoke penetration into the sensing chamber.

Features

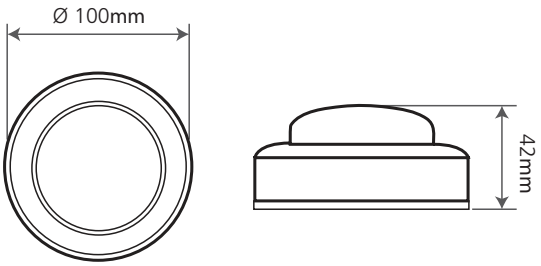
- Responds well to slow-burning, smouldering fires
- Well suited for bedrooms and escape routes
- 360°C visibility of LEDs
- Reduces false alarms
- Quick and simple installation



SPECIFICATIONS	
Operating Voltage Range	9-33V
Polarity	Polarity insensitive
Quiescent current @ 15V	<50µA
Alarm Current @	2-8.5V - <1.5mA 10.5-15V - 25 ± 2mA 18-24V - <1.5mA 33V - <2mA
Maximum Rest Voltage	2V
Reset Time	1s
Maximum Supply Interruption	40ms
EMC	CE marked to EN50130-4
Weight	100g

PRODUCT CODE	DESCRIPTION
F/CHSM/P/AS	AlarmSense optical detector complete with base

Heat Detectors



There are two heat detectors in the AlarmSense range designed to suit a wide variety of operating conditions. A static heat detector (CS) which responds only when a fixed temperature has been reached and a rate-of-rise detector (A1R) which has a fixed upper limit, but in addition, measures the rate of increase in temperature.

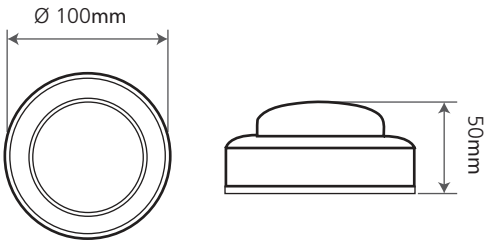
Features

- Can be used for applications where smoke detectors are unsuitable
- Ideal environments that are dirty or smoky under normal conditions
- Ideal for use in environments with rapid temperature fluctuations such as boiler rooms
- Reduction of false alarms

SPECIFICATIONS	
Operating Voltage Range	9-33V
Polarity	Polarity insensitive
Quiescent current @ 15V	<50µA
Alarm Current @	2-8.5V - <1.5mA 10.5-15V - 25 ± 2mA 18-24V - <1.5mA 33V - <2mA
Maximum Rest Voltage	2V
Reset Time	1s
Available Grades	A1R & CS
Maximum Supply Interruption	40ms
EMC	CE marked to EN50130-4
Weight	100g

PRODUCT CODE	DESCRIPTION
F/CHHF/A/HT/AS	AlarmSense 90˚ fixed heat detector complete with base
F/CHHR/A/AS	AlarmSense 55˚ rate of rise heat detector complete with base

Combined Heat Detectors



There are three combined heat detectors with sounders for use with the AlarmSense range designed to suit a wide variety of operating conditions.

Features

- Can be used for applications where smoke detectors are unsuitable
- Ideal environments that are dirty or smoky under normal conditions
- CS detectors are ideal for use in environments with rapid temperature fluctuations such as boiler rooms
- 360°C visibility of LEDs
- Reduction of false alarms
- Quick and simple installation

SPECIFICATIONS	
Operating Voltage Range	9-33V
Polarity	Polarity insensitive
Quiescent current @ 15V	<50µA
Alarm Current @	2-8.5V - <1.5mA 10.5-15V - 25 ± 2mA 18-24V - <1.5mA 33V - <2mA
Maximum Rest Voltage	2V
Reset Time	1s
Available Grades	A1R & CS
Maximum Supply Interruption	40ms
EMC	CE marked to EN50130-4
Weight	100g

PRODUCT CODE	DESCRIPTION
F/CHHF/HT/AS/WB	AlarmSense high temp heat detector and sounder base type CS
F/CHHR/AS/WB	AlarmSense heat detector with sounder base A1R type
F/CHHR/AS/WB/BN	AlarmSense heat detector with sounder base and visual indicator A1R type

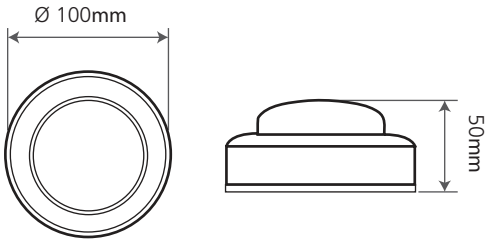
Combined Optical Smoke

The AlarmSense Optical Smoke Detector works using the light scatter principle. The detector changes to alarm state at a pre-set threshold of smoke penetration into the sensing chamber.

Features

- Responds well to slow-burning, smouldering fires
- Well suited for bedrooms and escape routes
- 360°C visibility of LEDs
- Reduces false alarms
- Quick and simple installation

SPECIFICATIONS	
Operating Voltage Range	9-33V
Polarity	Polarity insensitive
Quiescent current @ 15V	<50µA
Alarm Current @	2-8.5V - <1.5mA 10.5-15V - 25 ± 2mA 18-24V - <1.5mA 33V - <2mA
Maximum Rest Voltage	2V
Reset Time	1s
Maximum Supply Interruption	40ms
EMC	CE marked to EN50130-4
Weight	100g



PRODUCT CODE	DESCRIPTION
F/CHSM/P/AS/WB	AlarmSense optical detector complete sounder base
F/CHSM/P/AS/WB/BN	AlarmSense optical smoke combination

Base Sounders

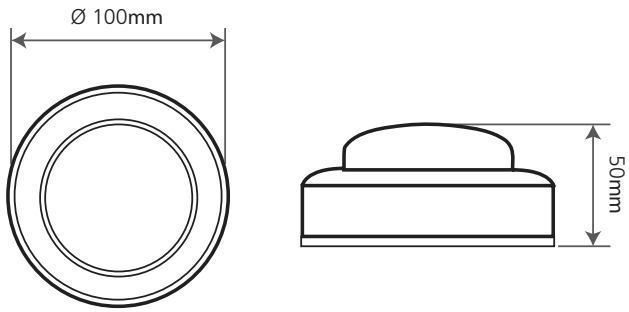
The AlarmSense Sounder Base can only be used with AlarmSense systems. It is fitted with electronic circuitry to monitor the presence of detectors and signals any unauthorised removal of detector heads.

It is supplied with a high or low volume setting and red or white caps are available for stand-alone installation.

Features

- AlarmSense priority/non priority signal recognition
- Detects the removal of a detector head and reports a fault
- Continues to work during unauthorised removal of detectors
- Quick and simple installation
- Provides audible signal and detection at one point
- High and low volume ranges

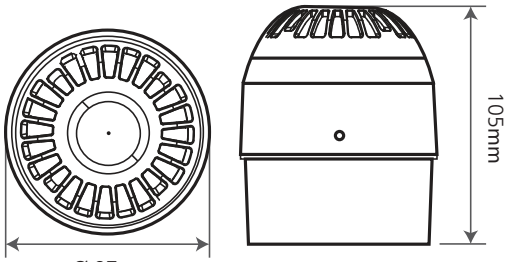
SPECIFICATIONS	
Sounder Output	87dBa (max)
Polarity	Polarity insensitive
Operating Voltage	Sounders active, 18-33V Sounders off, <15V
Quiescent Current @ 12V	<20µA
Sounder Active Current @ 24V	5mA
Head Removal Load	47Ω for 10ms every 4s
EMC	CE marked to EN50130-4
Weight	150g



PRODUCT CODE	DESCRIPTION
F/CHWB/D/AS	AlarmSense base sounder
F/CHWB/D/BN/AS	AlarmSense base mounted electronic warbler/ visual indicator
F/CHWB/AS/CAP/RD	Red locking cap for AlarmSense base
F/CHWB/AS/CAP/WH	White locking cap for AlarmSense base

Open Area Sounders

Image shows from left to right F/CHWB/BN/RD/AS & F/CHWB/RD/AS



PRODUCT CODE	DESCRIPTION
F/CHWB/BN/RD/AS	AlarmSense open-area red sounder visual indicator
F/CHWB/RD/AS	AlarmSense open area red sounder

The AlarmSense Open-Area Sounder is designed for use in open-areas.

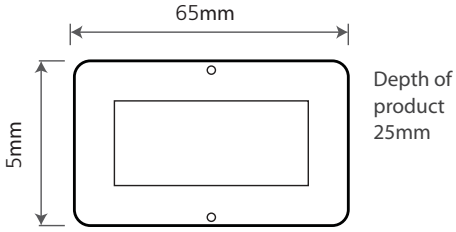
Features

- Polarity insensitive
- IP65 rated
- Apollo tone - synchronised with AlarmSense sounders and sounder visual indicator bases

Please note that only a maximum of 5 open-area devices to be connected per zone, if you require more than 5 please contact our Technical Services department by emailing technical@channelsafety.co.uk

SPECIFICATIONS	
Quiescent Current at 12V	<100µA
Maximum Surge Current	200µA
Head Removal Load	47Ω for 10ms every 4s
Polarity	Polarity insensitive
Operated Current (Nominal) @ 24V	Sounder - 17.5mA Visual indicator - 8mA Sounder visual indicator - 19mA
Sounder Output (Head)	up to 99dB (A) at 1m
IP Rating	IP65
Weight	Sounder - 225g & Sounder visual indicator - 260g

Relay Module



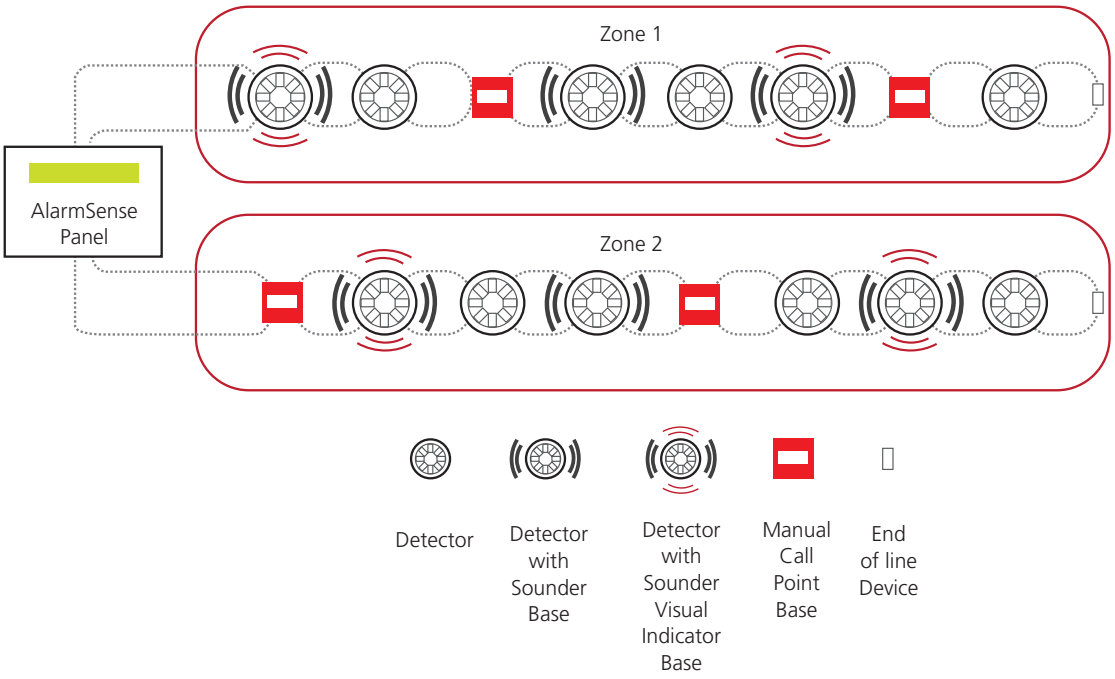
PRODUCT CODE	DESCRIPTION
F/CHRM/AS	AlarmSense relay module

The AlarmSense relay module operates in three configurations:

- Relay activation places AlarmSense zone voltage on the output contact terminals
- Relay activation reverses the polarity of the AlarmSense zone voltage on the output contact terminals. This mode is designed to allow the use of monitored conventional sounders fitted with series diodes
- Two sets of volt-free contacts for use by door closure units, etc

SPECIFICATIONS	
Operating Voltage Range	9-33V
Polarity	Polarity insensitive
Relay Operation Voltage	>18V
Relay Reset Voltage	>15V
Quiescent Current @12V	<20µA
Surge Current @ relay set voltage	15mA for 20ms
Relay set current @ 24V	<120µA
Relay contact ratings	1A at 30V DC
Weight	35g

Zone Wiring Diagram



Please note: Do Not use Series 65 detectors on AlarmSense Systems, they could cause severe system malfunction.

FREE DESIGN SERVICE

On the basis of receipt of order on contract award

Channel Safety Systems offers a complete Design, Supply & Commissioning service:-

Fire Alarm, to BS.5839. Part 1 2013

Emergency Lighting to BS.5266 Part 1 2011

Nurse Call Systems

Disabled Refuge Systems

CCTV and Access Control Systems

As our Project Sales Engineers and Service Engineers are based across the UK, we offer a fast and efficient service for design, site surveys, project management and all commissioning and maintenance services requirements. All our external team members are fully qualified to 'sign off' designs and Channel maintains all the relevant insurance policies which means the legal onus is on us, not the contractor.

For all requirements please contact Channel Technical Services team on 0845 884 7000