Multi-Tone Open-Area Alarm Devices

FUNCTION

The Multi-tone Open-Area Alarm Devices are designed for use in open areas and can be connected to any XP95® or Discovery® system.

The range comprises sounders and sounder beacons. Details are shown in Table 1 overleaf.

Note: These are not compatible with systems using Discovery sounders

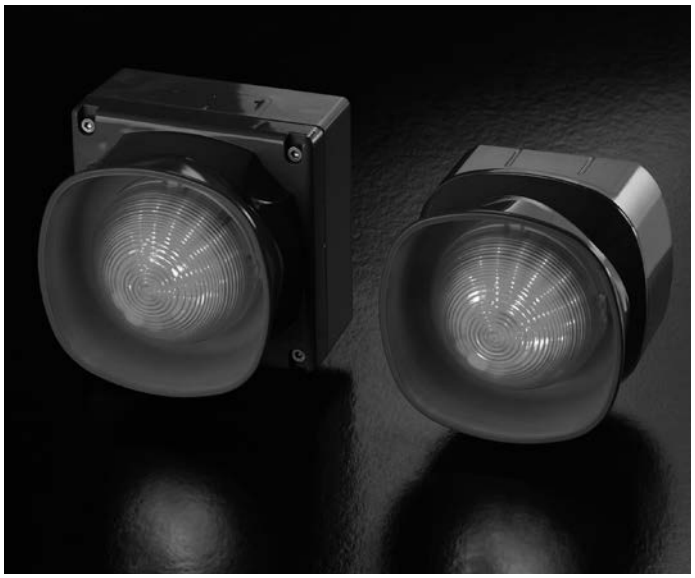
FEATURES

The Alarm Devices complement Apollo's Integrated Base Sounders and Sounder Beacon Bases.

The Alarm Devices offers:

- two volume settings 92dB(A) and 100dB(A)
- synchronisation of 'alert' and 'evacuate' tones
- individual & group addressing
- available with or without built-in isolator
- weatherproof version available
- red or white options
- three tones on standard devices; Apollo, slow whoop and DIN – all of which comply with EN54–3:2001

Synchronisation of the tones ensures the integrity of the signal – tones from different sounders do not merge into one signal that could be mistaken for a different tone.



Multi-tone Open-Area Sounder Beacons

A nominal sound output of 100dB(A) is achieved at a current consumption of 5mA in the case of the sounder and 9mA for the sounder beacon. Many control panels will be able to drive up to 20 sounders per loop on average. The maximum number of sounders that may be connected to a particular loop should, however, be determined by a loop loading calculation using the Apollo Loop Calculator. This is available via the Apollo website www.apollo-fire.co.uk/loop-calc

Since the Multi-tone Open-Area Alarm Devices are intended for use in open areas, it is possible for more than one sounder to be audible at any given point in a building. For this reason, the operation of all the sounders may be synchronised by sending address '0' in exactly the same way as for the XP95 Sounder Control Unit. Not only that, the Multi-tone Open-Area Alarm Devices can be assigned group addresses as well as individual addresses, so that the functional options of the sounder are identical with those of the Sounder Control Unit.

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Part Number	Product Name	Type	Colour
55000-278	Multi-tone Open-Area Sounder	Indoor (Type A)	Red
55000-279	Multi-tone Open-Area Sounder	Indoor (Type A)	White
55000-274	Multi-tone Weatherproof Open-Area Sounder	Outdoor (Type B)	Red
55000-275	Multi-tone Weatherproof Open-Area Sounder	Outdoor (Type B)	White
55000-293	Multi-tone Open-Area Sounder Beacon with Isolator	Indoor (Type A)	Red
55000-294	Multi-tone Open-Area Sounder Beacon with Isolator	Indoor (Type A)	White
55000-291	Multi-tone Open-Area Sounder Beacon	Indoor (Type A)	Red
55000-292	Multi-tone Open-Area Sounder Beacon	Indoor (Type A)	White
55000-298	Multi-tone Weatherproof Open-Area Sounder Beacon with Isolator	Outdoor (Type B)	Red
55000-299	Multi-tone Weatherproof Open-Area Sounder Beacon with Isolator	Outdoor (Type B)	White
55000-296	Multi-tone Weatherproof Open-Area Sounder Beacon	Outdoor (Type B)	Red
55000-297	Multi-tone Weatherproof Open-Area Sounder Beacon	Outdoor (Type B)	White

Table 1 *Multi-tone Open-Area Alarm Devices*

ELECTRICAL CONSIDERATIONS

The Multi-tone Open-Area Alarm Devices are powered directly from the loop and need no external power supply. They operate at 18–28V DC and are polarity sensitive.

TONE FREQUENCY AND VOLUME CONTROL

The Multi-tone Open-Area Alarm Devices have three selectable tones either — Apollo, Slow Whoop or DIN (see Table 2).

The volume control can be used to adjust the sound from 100dB(A) to 92dB ±3dB(A) if required.

The sounder also offers synchronisation of continuous and pulsed tones. This ensures the integrity of the alert signals – tones from different sounders do not merge into one signal that could be mistaken for an 'evacuate' tone.

ADDRESSING

The Multi-tone Open-Area Alarm Devices responds to their own individual address set with a DIL switch.

They can also respond to a 'Group Address' which allows multiple sounders to be controlled simultaneously. A group address may be any spare address between 112 and 126 and is selected by means of a 4 segment DIL switch. An Alarm Device under group address control must have an individual address between 1 and 111 otherwise a fault value of 4 is transmitted. Alarm Devices not using the group address facility may be addressed at any address (1–126).

SYNCHRONISATION

The Multi-tone Open-Area Alarm Devices can be synchronised with other sounders by using address '0'. It is recommended that address '0' be sent at ten minute intervals by the control panel.

NB: Units on two or more loops can be synchronised in pulsed mode only if the panel transmits address '0' to all loops synchronously, with the output bits set to '0'.

PROTOCOL COMPATIBILITY

The devices will operate only with control equipment using the Apollo XP95 or Discovery protocol. The features of the Multi-tone Open-rea Alarm Devices are available only when the sounder is connected to a control panel with the appropriate software.

PROTOCOL BIT USAGE

The **output (or forward command) bits** from the control panel have the following function:

Output bit 2 is used to apply the required address mode — group addressing or individual addressing.

Group addressing is selected by setting output bit 2 of the individual address to logic 0 on two or more consecutive cycles and output bit 2 of the group address to logic 1 on two or more consecutive pollings. All other output bit 2 combinations result in the application of the individual address mode.

Whichever address mode — individual or group — is applied in any polling, the use of the other output bits is identical:

The **seven bits** which are then transmitted by the control panel correspond to the individual or the group **address (as set on the relevant DIL switch)** of the device or devices to be polled. These bits may also be set to zero to enable the unit to respond to the embedded address '0'.

After the Multi-tone Open-Area Alarm Devices have been addressed by the control equipment, return data if (and only if) its individual address has been applied. No data is returned when the group address is polled. The response after individual addressing will, however, reflect whatever commands have been set, whether by individual or by group address mode. The response is as follows:

The **interrupt bit** is always set to '0', logic low.

The **analogue value bits** are set to report a pre-set analogue value of 16 in quiescent condition.

The **input bits** confirm the execution of the commands given by the output bits:

Bit 2 is set to logic '1' for group addressing and to logic '0' if individual addressing has been applied.

Bit 1 is set to logic '0' when the sounder is not operated and to logic '1' to indicate that the sounder has been switched to operate in pulsed mode, one second off, one second on.

Bit 0 is set to logic '0' when the sounder is not operated and to logic '1' when it is operated continuously. If both bits 1 and 0 are set high, this also indicates that the sounder is in continuous mode.

The Multi-tone Open-Area Alarm Devices transmit **seven bits** to confirm its address and then places **one bit** to indicate that the device is using the XP95 protocol **(XP95 flag).**

The **alarm flag** is not placed by the Alarm Devices.

The following **five bits,** extension of the analogue value, are not used by the Alarm Devices

The **parity bit** is set to '0' or '1' in the same way as it is by XP95 detectors.

The **final seven bits,** alarm/interrupt address, are not used, since the Alarm Devices have no alarm reporting function.

MECHANICAL CONSTRUCTION

The Multi-tone Open-Area Alarm Devices are fitted to the mounting surface with four screws. The weatherproof versions have an additional square backbox and there are three drill centre points for cable entry marked on the upper and lower face.

DIMENSIONS AND WEIGHT OF ALARM DEVICES

Standard: 105mm x 105 x 90 (L x W x H) 290g
Weatherproof: 110mm x 110 x 113 (L x W x H) 294g

TECHNICAL DATA

Operating voltage	18–28V DC (polarity sensitive)
Maximum Loop Current consumption at 24V	
switch-on surge,	1.2mA for <1 sec
quiescent	330µA
operated Sounder	5mA
operated Sounder Beacon	9mA
Sound output	100dB(A)
IP rating (standard version)	21C
IP rating (weatherproof version)	66
Standard / Indoor Temp	-10°C to +55°C
Weatherproof / Outdoor Temp	-20°C to +70°C

For sound pressure levels measured to EN54-3 see document PP2203 and for isolator operation information see document PP2090, both available upon request.

Note: All dB(A) figures are to within ±3dB(A)

DIL Switch Setting		Tone	Output Bit 1 Set to logic 1	Output Bit 0 Set to logic 1	Output Bit 0&1 Set to logic 1
5	6				
0	0	Apollo Standard	Apollo alert & Beacon	Apollo Evacuate & Beacon	Apollo Evacuate & Beacon
1	0	Slow Whoop	Constant tone & Beacon	Dutch NEN2575 & Beacon	Dutch NEN2575 & Beacon
0	1	DIN Tone	Constant tone & Beacon	German DIN33404 & Beacon	German DIN33404 & Beacon
1	1	Apollo Standard	Apollo alert & Beacon	Apollo Evacuate & Beacon	Apollo Evacuate & Beacon

Table 2 *Tone selection*

Note: The beacon flash rate is 1Hz