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INTEGRATED BASE SOUNDER

FUNCTION

Apollo Fire Detectors offers a loop-powered sounder combined with a standard XP95/Discovery mounting base which is used to signal a fire alarm in enclosed areas.

FEATURES

The sounder offers:

- two tone ranges 55–75dB and 75–91dB
- synchronisation of 'alert' and 'evacuate' tones
- individual and group addressing
- available with or without built-in isolator
- unique acoustic self-test
- in addition to the standard tone a slow whoop tone to Dutch standard NEN2575 is available

The low tone range is useful in areas such as hospitals where a fire alert is initially intended to warn staff only. The sounder is set to the high range for general use.

Synchronisation of 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.



Integrated Base Sounder shown with an optical detector

Group addressing is a simple method of alerting an entire area or group of rooms without delay.

For systems requiring isolators at every point the built-in isolator saves installation time and cost.

The acoustic self-test means that the sounder listens to itself when it is switched on. If no sound is detected a fault signal is transmitted when the sounder is polled.

ELECTRICAL CONSIDERATIONS

The integrated base sounder is line powered and needs no external power supply. It operates at 17–28V DC and is polarity-sensitive.



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Assessed to ISO 9001: 2000
Quality Systems Certificate number 010



TONE FREQUENCY AND VOLUME CONTROL

The tone frequency of the sounders is published in a separate document available for Apollo Fire Detectors PP2203.

ADDRESSING

The integrated base sounder responds to its own individual address set with a DIL switch. It also responds both to a group address, set by means of a 4-segment DIL switch and to a pulsed-mode synchronisation address which is embedded in the unit.

Addresses 1 to 111 are used exclusively for individual addresses; addresses 112 to 126 are used for group addressing, while the synchronisation address, to which all units respond, is '0'. Any integrated base sounder on a loop may be freely assigned to a group. The address for any group *must* be chosen from the range 112–126.

Addresses 112–126 *may* be used as individual addresses but *only* if the 4-segment DIL switch is not used ie, group addressing is disabled. If the 4-segment DIL switch were set to any number other than the default 127, a pre-set analogue value of 4 would be transmitted to indicate a fault.

The integrated base sounder is normally polled by its individual address. It responds as described below (See **PROTOCOL BIT USAGE**). If more than one integrated base sounder is activated it is possible for the sounders to be out of synchronisation with the result that the signal is not clear.

To prevent this, it is recommended that the synchronisation address '0' be sent by the control panel at regular intervals to align the internal clock of all sounders. The result is that the sounders are synchronised with each other in both 'alert' and 'evacuate' modes.

NB: Units on two or more loops can be synchronised only if the panel transmits address '0' to all loops synchronously.

GROUP ADDRESSING

It may be desirable, in alarm conditions, to switch more than one integrated base sounder simultaneously. To enable this, sounders may be controlled as a group and given a group address which is common to all sounders in the group. When a device recognises its group address, it will process the forward command bits but it will not return any data to the control panel on that address. If it is required to confirm the status of the outputs of devices

under group address control, it is necessary to interrogate all devices in the group at their individual addresses.

SELF TEST

An important safety feature has been incorporated into the integrated base sounder: when it is switched on it tests itself by checking the actual sound output. If no sound is detected within 5 seconds of the Integrated Base Sounder being switched on it will transmit an analogue value of 1 (= sounder fault) when it is next polled.

This can also be used during commissioning or periodical maintenance testing. Simply activate the sounder for at least 5 seconds and check the control panel for a fault signal. If none is received, the sounder is working properly.

PROTOCOL COMPATIBILITY

The sounder will operate only with control equipment using the Apollo XP95 or Discovery protocol. The features of the Integrated base sounder 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:

When **output bit 1** is set to logic 1 on two or more consecutive pollings, the 'alert' tone is sounded.

When **output bit 0** is set to logic 1 on two or more consecutive pollings, the 'evacuate' tone is sounded. The sounder will also operate continuously if both output bit 1 and output bit 0 are set to logic 1 on two or more consecutive pollings.

DIMENSIONS AND WEIGHT

Part no	Description	Dimensions	Weight
45681-278 45681-291	Sounder Slow whoop sounder	115 x 38mm	140g
45681-277 45681-290	Sounder with isolator Slow whoop sounder with isolator	115 x 38mm	140g
45681-292	White Cap	100 x 9mm	20g
45681-293	Red Cap	100 x 9mm	20g

Table 1 Dimensions and weights

Output Bit	Function	Bit usage	Input Bit	Function	Bit usage
2	group mode	1 = off 0 = on	2	group mode confirmed	1 = group 0 = individual
1	'alert' mode	1 = on 0 = off	1	'alert' mode confirmed	1 = on 0 = off
0	'evacuate' mode	1 = on 0 = off	0	'evacuate' mode confirmed	1 = on 0 = off

Table 2 Function of input and output bits

TECHNICAL DATA

Operating voltage (polarity sensitive)	17–28V DC
Protocol pulses	5–9V
Current consumption at 24V switch-on surge, <1s	1.2mA
quiescent	<1.2mA
sounder operated 50–75dB or 75–91dB	5mA
Maximum sound output at 90°	91db(A)
Maximum sound output to EN54	83db(A)
Sound pressure level data is published in PIN sheet PP2203 available from Apollo	
Operating temperature	–20°C to +60°C
Humidity (no condensation)	0–95%
IP rating (standard version)	21D

Notes

1. The Integrated Base Sounder complies with EN54–3 when it is used in the higher tone range.
2. The lower tone range does not comply with EN54–3 and should not be used as part of an alarm application.

The purpose of the lower tone range is to provide a warning in specific cases such as hospital staff stations.
3. The Integrated Base Sounder is a Type A sounder, ie, for indoor use only.