XP95 100dB LOOP-POWERED SOUNDER

LOOP SOUNDER FOR OPEN AREAS

The XP95 100dB Loop Sounder is designed for use in open areas and can be connected to any XP95 or Discovery system.

The most obvious advantage of the new sounder is its output of 100dB(A). It is, however, equipped with sophisticated electronic circuitry which gives the sounder the same addressing and synchronising functionality as the XP95 Sounder Control Unit.

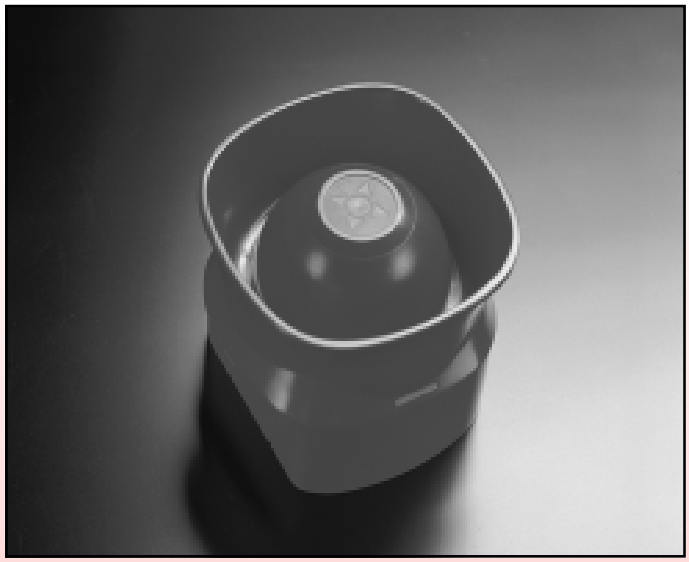
The 100dB Loop Sounder complements the 85dB(A) Low Profile Loop Sounder.

FEATURES

The 100dB Loop Sounder is connected to an XP95 or Discovery loop and is powered and controlled via the loop by the control and indicating equipment.

A guaranteed sound output of 100dB(A) is achieved at a current consumption of only 4.5mA. 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.

Since the 100dB Loop Sounder is 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 100dB Loop Sounder may 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.



Part no *55000-261*

ELECTRICAL CONSIDERATIONS

The XP95 100dB Loop Sounder is line powered and needs no external power supply. It operates at 17–28V DC and is polarity-sensitive.

ADDRESSING

The XP95 100dB Loop 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 (if '0' is selected on the DIL

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switch, the XP95 100dB Loop Sounder will return a pre-set analogue value of 4 to signal a fault); addresses 112 to 126 are used for group addressing, while the synchronisation address, to which all units respond, is '0'. Any 100dB Loop 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 set to 127—group addressing is then disabled. If the 4-segment DIL switch were set to any number other than 127, a pre-set analogue value of 4 would be transmitted to indicate a fault.

The XP95 100dB Loop Sounder is normally polled by its individual address. It responds as described below (See **PROTOCOL BIT USAGE**). If more than one 100dB Loop Sounder is activated in pulsed mode, it is possible for the sounders to be out of synchronisation, such that the sounder tone is not distinguishable as 'pulsed'.

To prevent this, it is recommended that the pulsed-mode synchronisation address '0' be sent once, immediately before energising sounders. The result is that the sounders are synchronised with each other in pulsed mode, 1s on, 1s off. All XP95 100dB Loop Sounders will recognise the '0' address and synchronise their clocks, but they will not return any data to the control panel on such a polling.

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

It may be desirable, in alarm conditions, to switch more than one 100dB Loop 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.

PROTOCOL COMPATIBILITY

The sounder will operate only with control equipment using the Apollo XP95 or Discovery protocol. The features of the XP95 100dB Loop 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 sounder is pulsed, 1 second on, 1 second off.

When **output bit 0** is set to logic 1 on two or more consecutive pollings, the sounder operates continuously. 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.

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 100dB Loop Sounder has been addressed by the control equipment, it returns 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 and 4 if the address is incorrectly set. A fault cannot be detected when a sounder is operated.

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

Bit 2 is set to logic high for group addressing and to logic low if individual addressing has been applied.

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

Bit 0 is set to logic low when the sounder is not operated and to logic high 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 **type bits** are used to identify the type of unit responding. The type code of the 100dB Loop Sounder is 001 00 (bits 2, 1, 0, 4, 3). Bits 2, 1 and 0 of the type code are sent immediately after the input bits. The remaining two bits are sent in the XP95 protocol extension.

The 100dB Loop Sounder transmits **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 sounder.

The next **two bits** sent are the **extended type code** bits (bits 4, 3) which, in this case, are '00'.

The following **five bits**, extension of the analogue value, are not used by the 100dB Loop Sounder.

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 sounder has no alarm reporting function.

MECHANICAL CONSTRUCTION

The 100dB Loop Sounder has a removable backbox with 6 knockouts for surface mounting. It is moulded in red ABS.

Dimensions and weight of 100dB Sounder :
106 x 95 (diameter x depth) 215g

Technical data

Operating voltage	17-28V DC (polarity sensitive)
Current consumption at 24V	
switch-on surge, max 30ms	1.8mA
quiescent	1.1mA
sounder operated 100dB(A)	4.5mA
Operating temperature	–20°C to +60°C
Humidity (no condensation)	0–95%
IP rating	42

CE marked

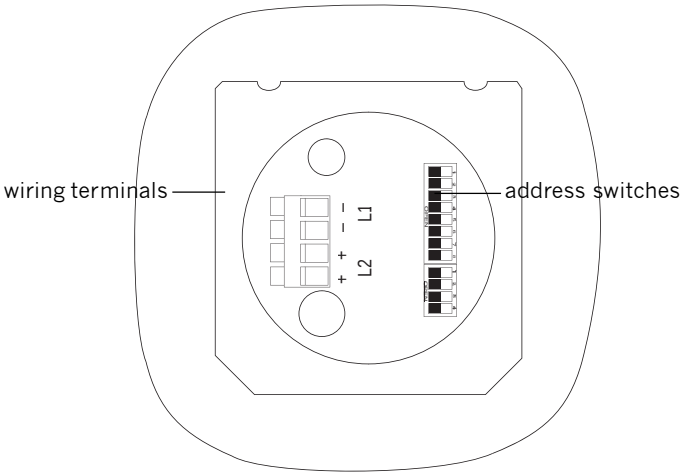

Fig 1 *Rear view of sounder*