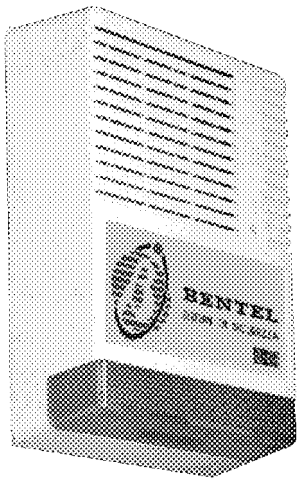
BENTEL SECURITY

SELF-POWERED SIREN
for external use

ECHO

V4.2 BUFQ 2.1 231298



GENERAL NOTES

- Self-powered siren with flasher.
- Strong polycarbonate box designed to withstand the most adverse weather conditions.
- Extra protection given by tropicalized metal inner cover.
- Continuous tone with frequency modulation sound emission.
- High performance exponential horn.
- Protected against wire cutting and tamper.
- Alarm timeout adjustment.
- Test circuit for flasher inhibition on battery low.
- Easy installation.
- Drill pattern.
- Meets requirements of CEI 79-2/2nd Ed. 1993 normative: performance grade II. (DAT IMQ n. U0264).

TECHNICAL FEATURES	
Power supply rated voltage (terminal +N)	*13.8 V⎓ ± 0.2 V*
Current on + N	*max. 0.6 A*
Appliance rated voltage	*12 V⎓*
Alarm current	*1.4 A (max. 2.8 A)*
Battery required	*6.5 Ah (65x149x93 mm)*
Fundamental frequence	*1475 Hz*
Sound pressure at 3 m	*103 dB(A)*
Case protection grade	*IP34*
Temperature range	*-25 ÷ +55 °C*
Size (L x H x W)	*180 x 270 x 90 mm*
Weight (with battery)	*5 Kg*

FUNCTIONS

When in alarm status the ECHO siren emits a continuous high modulated frequency sound. The modulation extremes (1300 and 2000 Hz) have been selected to generate a high note, which is particulary bothersome to the hearing, and a low note that can be heard at a considerable distance.

If alarm status continues for over 7 minutes (the maximum alarm time), the acoustic signal is automatically inhibited, whilst the flasher remains active. Removal or breakage of the flasher automatically signals tamper status to internal circuit of the siren. The flasher is inhibited if the battery is not fully charged, in this case the remaining power is utilized to sound the siren.

The siren starts when its power voltage fails on the +N terminal or when -A terminal is short-circuited to ground. The alarm ceases when the previous conditions are restored (voltage on +N and -A terminal disconnected). The siren is also protected against tamper by two microswitches (fig. 4):

- the first (MS1) is on-board, and is activated when the metal inner cover is removed;
- the second (MS2) is fixed on the wall with the siren, its lever is held in position by the srew used for closing the policarbonate box. Therefore, the tamper circuit is activated when the siren is pulled off the wall or the box is removed.

These two microswitches send tamper signaling to the internal circuit of the siren, or to the control panel, by means of the S and S2 terminals.

CONNECTIONS

The control panel alarm command may be assigned to the +N terminal or -A terminal. Use of the +N terminal is advised, as it is equipped with a wire cutting protection. The +N termianl of the BENTEL control panels is directly compatible with the +N terminal of the siren. In fact, when in standby status, the +N terminal of BENTEL control panels have a 13.8 V tension, which fails when the control panel generates alarm status. If such a terminal is not available on the control panel in use, use the free contacts of the alarm relay, as illustrated in figure 1A. If -A is used as an alarm command, it must be connected to the terminal on the control panel which closes to earth in the event of alarm, as illustrated in figure 1B.

In each case, between the +N terminal board and the siren earth a 13.8 V tension (min. 0.6 A) is required, this maintains the standby battery level. Other connections on the terminal board, depend on the selected function mode for siren tamper.

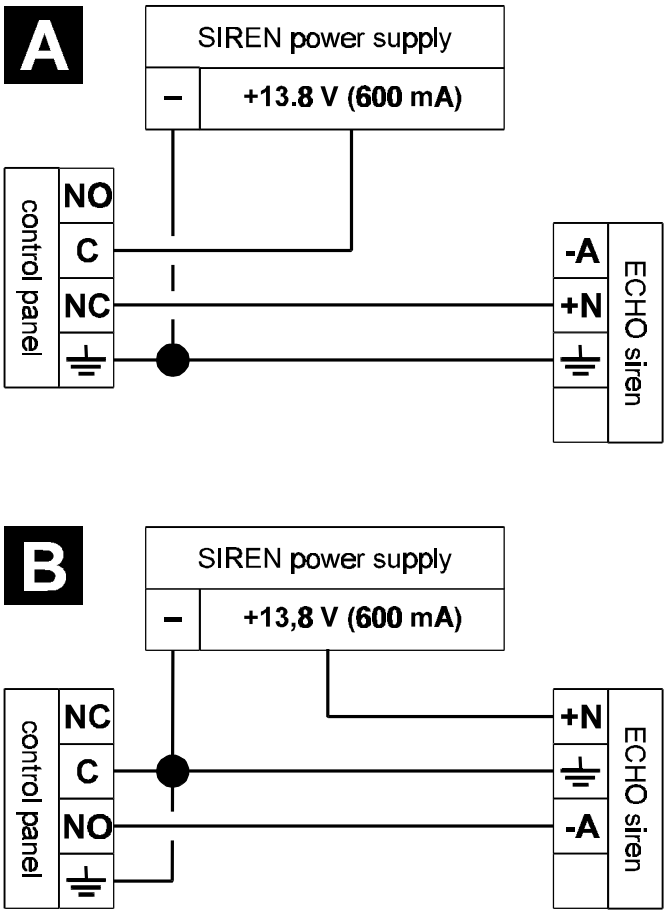


Fig. 1 - *Activation modes.*

AUTOMATIC METHOD (FIG. 3A)

This is the functional method set by the manufacturer (jumper J2 and J3 connected).The microswitches are connected to the siren logic that, in the event of tamper generate an alarm, independent of the status of the +N and -A terminals. The alarm ceases 40 seconds after the closure of both microswitches or at the most, after 7 minutes (maximum alarm-time). With this function mode, the control panel does not acknowledge tamper status, therefore, there is no signalling on the terminal and no activation of other connected alarm devices (such as the telephone dialler, supplementary siren etc.).

NORMAL METHOD 1 (FIG. 3B)

If control panel acknowledgement of tamper status is required, removal of the J3 jumper is necessary as well as the closure of the control panel tamper line on the siren S terminal. In fact, this is closed to ground, when in standby status, whilst is disconnected when one of the microswitches is open (fig. 2A). In this case, the maximum alarm time is 7 minutes (max. alarm-time) or less (timeout set on the control panel).

NORMAL METHOD 2 (FIG. 3C)

If control panel acknowledgement of tamper status is required, but the control panel tamper line closes on a device that is not the siren (e.g. Bentel Electronic key), it is necessary to disconnect jumpers J2 and J3, present on the board. In this way, the tamper microswitches are no longer connected to the siren ground (fig. 2B), therefore, connect terminal S and S2 to the control panel tamper line. The alarm timeout is that set on the control panel (maximum 7 minutes).

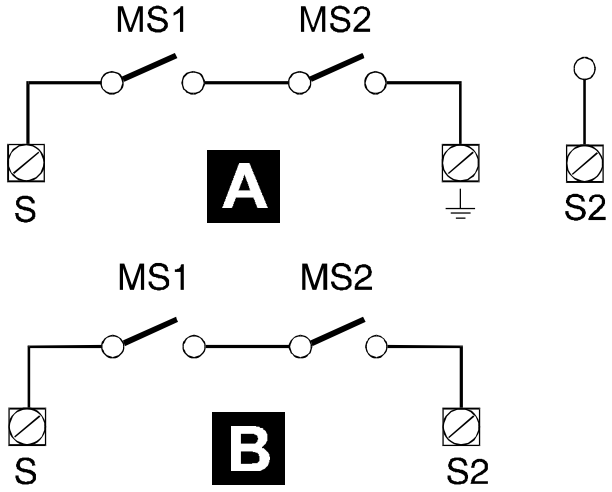


Fig. 2 - *Antitamper microswitches diagrams.*

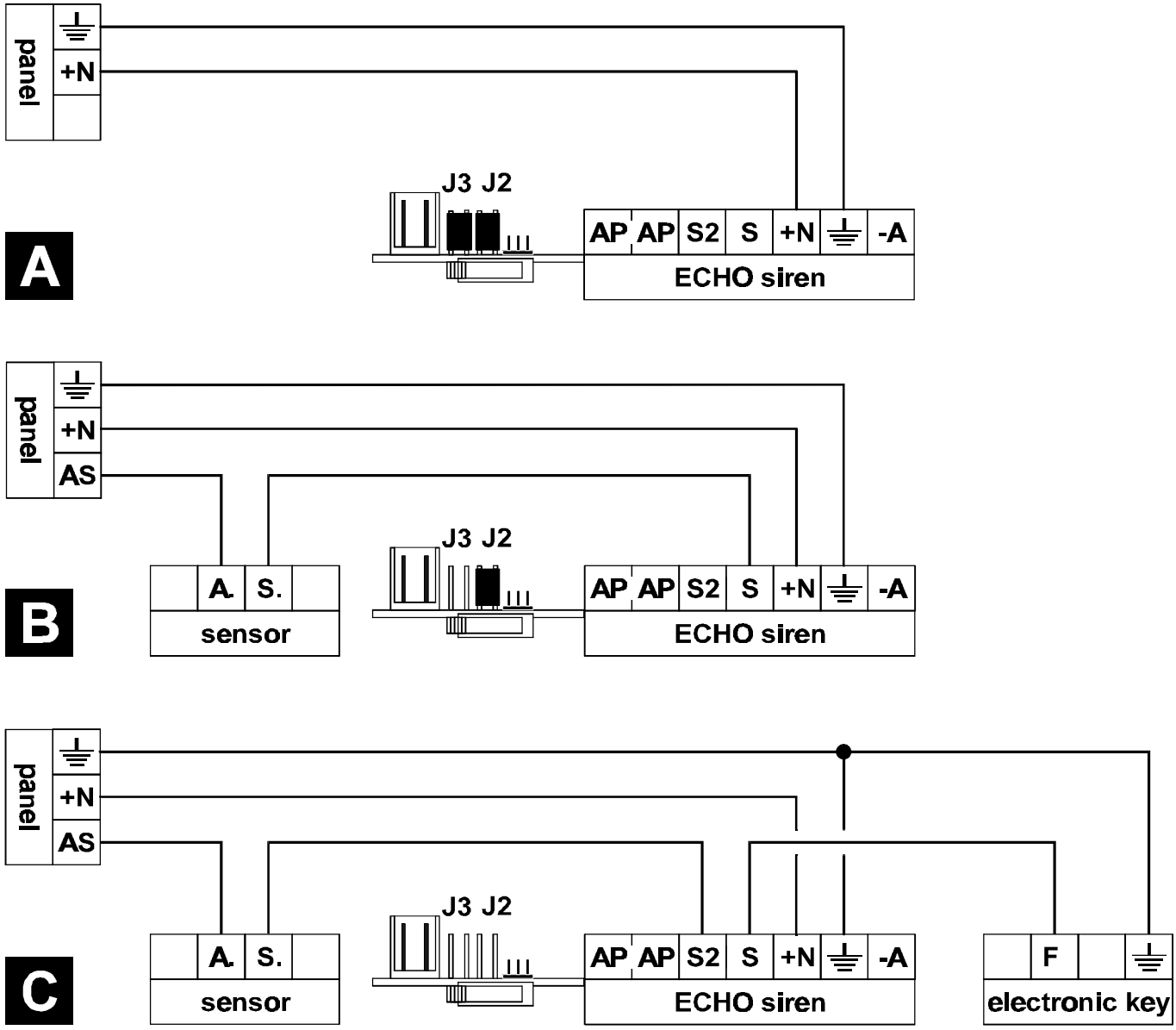


Fig. 3 - *Tamper terminal connection according to the selected function mode.*

TERMINAL BOARD DESCRIPTION	
AP	*Exponential horn terminals are connected to these terminal board.*
⏚	*Power negative terminal and internal circuit ground.*
+N	*Power positive terminal. A tension of 13.8 V is applied to this terminal which keeps the siren battery charged. If for any reason (wire cutting or alarm) this tension fails the siren is automatically activated.*
-A	*This terminal may be used as an alternative to the +N terminal for alarm activation: the siren is activated if the -A is grounded.*
S - S2	*In the normal functional method the tamper microswitches MS1 and MS2, are placed in series between these terminals (see fig. 2B). For the automatic functional method the S2 terminal remains disconnected, whilst the S terminal is grounded until one of the two tamper microswitches opens (see fig. 2A).*

INSTALLATION

It is necessary to mount the ECHO siren on an even wall, free from hollows or excessive bumps which might jeopadize the proper functioning of the tamper device.
To facilitate system installation, a drill pattern is included in the package, as are also the adequate screws for the correct mounting. There are five holes on the fitting pattern **F1**, **F2**, **F3** and **F4** corresponding to the fitting points on the back of the siren, **F5** is for the **S** bracket (see fig. 4).
Be careful not to over tighten this last screw as this may damage the tongues **A** (see fig. 4).
Once the siren is mounted, it is possible to carry out the connections on the **M** terminal board **M**. The battery should then be positioned on the battery support **MP** (fig. 4), and then connected: the flasher will then start to function. Fit the inner cover and container and wait for the flasher to stop (approx. 45 secs). At this point the siren is enabled and ready for testing.

PROBLEMS

If the flasher does not function when the battery is connected, it may indicate that the battery is low. To check the battery status, close the cover, wait approximately 45 seconds and provoke an alarm. If the siren starts, even at low acoustic level but the flasher does not function, the battery is low: it can then be recharged in several hours by means of the +N terminal.
If when the battery is connected, the covers are closed, and the 45 seconds have passed, the flasher continues flashing, check that both microswitches are closed properly, and the adequate tension is present (13.8 V on +N, -A disconnected) on the alarm terminal board.

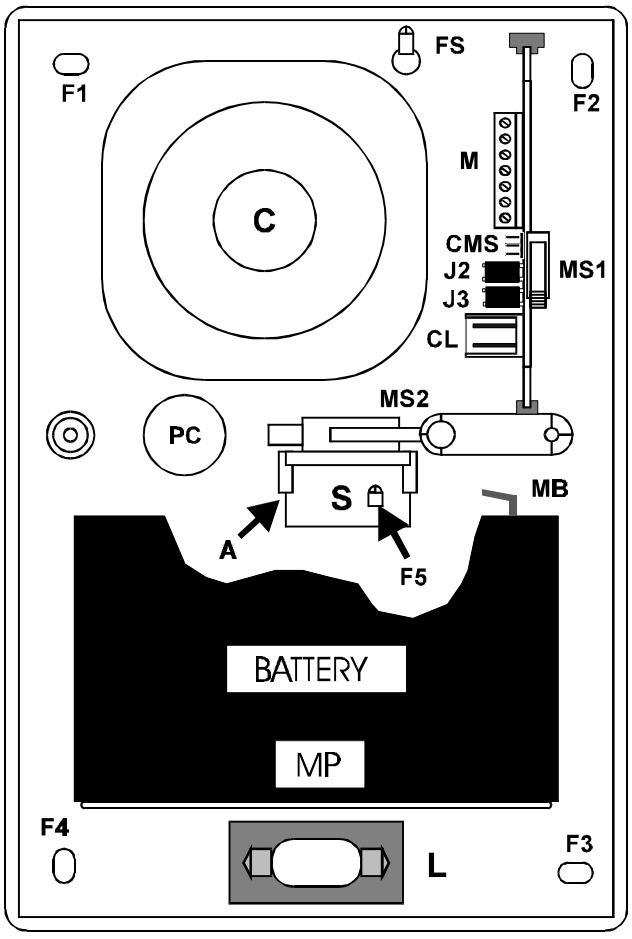


Fig. 4 - *Identification of the parts.*

IDENTIFICATION OF THE PARTS	
F1-F2-F3-F4	*Fixing holes.*
F5	*Supplementary hole.*
FS	*Braket fixing hole.*
PC	*Cable passage.*
L	*Flashing light.*
MP	*Battery support.*
S	*Microswitch braket.*
A	*Tongues.*
C	*Exponential horn.*
MS1-MS2	*Antitamper microswitches.*
M	*Terminal board.*
CMS	*MS2 connection.*
J2-J3	*Jumpers.*
CL	*Flashing light connection.*
MB	*Battery terminal board.*

+ ***The technical specifications of the product are subject to change without notice.***